Nuclear Radiology (First Year, First Block)
This rotation involves interpretation of a wide range of radionuclide imaging studies, functional radionuclide studies, SPECT, PET, and radiotherapy of thyroid disease and lymphoma.

Patient Care

Goal
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:
(1) Identify basic nuclear radiology equipment and describe pertinent quality control measures,
(2) State appropriate indications for commonly ordered nuclear medicine studies, and
(3) Describe basic concepts of radionuclide therapy for thyroid carcinoma and hyperthyroidism including radiation safety issues.

Skill Objectives:
(1) Be facile with PACs and utilize available information technology to manage patient information,
(2) Interpret the following types of nuclear radiology studies: bone, V/Q, hepatobiliary, GI bleeding, thyroid, parathyroid and basic renal scans,
(3) Correlate findings with radiographs and other imaging studies and prescribe additional studies when appropriate,
(4) Coordinate activities in the reading room, including providing direction for the technologists, consultation for other clinicians, and answering the phone,
(5) Actively interact with patients and ordering physicians, along with self-directed review of clinical notes to accurately assess any effects of radioactive iodine administration on the patient.

Behavior and Attitude Objectives:
(1) Work with the health care team in a professional manner to provide patient- centered care.
(2) Notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.

Medical Knowledge
Goal
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:
(1) Describe physical properties of commonly used radionuclides,
(2) State organ localization and clinical uses of common radiopharmaceuticals, and
(3) Discuss quality control of Technetieum-99m.

Skill Objectives:
(1) Participate in quality control processes as outlined by the Nuclear Regulatory Commission (NRC) requirements (see checklist), and
(2) Complete reading list topics (see reading list).

Behavior and Attitude Objectives:
(1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

Goal
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:
(1) Assess images for quality, identify sources of artifact, and suggest methods of improvement.

Skill Objectives:
(1) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
(2) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:
(1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
(2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal
Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:
(1) Understand how their image interpretation affects patient care.

Skill Objectives:
(1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay,
(2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
(3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:

(1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:
(1) Understanding of the need for respect for patient privacy and autonomy, and
(2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:
(1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:
(1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:
(1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:
(1) Produce concise and accurate reports on most examinations,
(2) Communicate effectively with physicians, other health professionals, and
(3) Effectively communicate radiation safety issues to patients receiving radioactive iodine therapy, to be accomplished by first “role playing” the informed consent process with an attending nuclear medicine physician followed by obtaining an informed consent of a patient while being observed by an attending nuclear medicine physician.

Behavior and Attitude Objectives:
(1) Work effectively as a member of the patient care team.

Nuclear Radiology (Second Year, Second Block)
This rotation involves interpretation of a wide range of radionuclide imaging studies, functional radionuclide studies, SPECT, PET, and radiotherapy of thyroid disease and lymphoma.

Patient Care

Goal
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:
(1) Summarize concepts of SPECT imaging, including quality control, image acquisition and study interpretation,
(2) Describe pharmacologic interventions in nuclear radiology including morphine/cholecystikinin hepatobiliary imaging, ACE inhibitor (Captopril) renography, Diamox brain imaging, Lasix renography, and Reglan gastric emptying, and
(3) Describe the indications for PET imaging and tumor for which PET is of more limited use, proper patient preparation, and technical factors associated with PET acquisition.

Skill Objectives:
(1) Accurately interpret radionuclide scans related to infection and tumor such as Octreoscan, CEA scan, leukocyte scan, Gallium scan, MIBG scan, Thallium brain scan and hemangioma studies, and HMPAO brain scans
(2) Actively interact with patients and ordering physicians, along with self-directed review of clinical notes to accurately assess any effects of radioactive iodine administration on the patient.

Behavior and Attitude Objectives:
(1) Work with the health care team in a professional manner to provide patient- centered care, and
(2) Notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.

Medical Knowledge

Goal
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:
(1) Describe physical characteristics of commonly used radionuclides,
(2) State organ localization and clinical uses of common radiopharmaceuticals, and
(3) Discuss quality control of Technetieum-99m.

Skill Objectives:
(1) Participate in quality control processes as outlined by Nuclear Regulatory Commission (NRC) requirements (see checklist), and
(2) Complete reading list topics (see reading list).

Behavior and Attitude Objectives:
(1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice- Based Learning and Improvement

Goal
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:
(1) Assess nuclear medicine images for quality, identify sources of artifact, and suggest methods of improvement.

Skill Objectives:
(1) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
(2) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:
(1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
(2) Follow-up of interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal
Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:
(1) Understand how their image interpretation affects patient care.

Skill Objectives:
(1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay,
(2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
(3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:
(1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal
Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:
(1) Understanding of the need for respect for patient privacy and autonomy, and
(2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:
(1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:
(1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal
Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:
(1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:
(1) Produce concise and accurate reports on most examinations,
(2) Communicate effectively with physicians, other health professionals, and
(3) Obtain informed consent for therapy patients with the utmost professionalism. Iodine therapy informed consents will be performed under observation of a nuclear medicine attending, with the goal of independent informed consent by the end of the rotation.

Behavior and Attitude Objectives:
(1) Work effectively as a member of the patient care team.

Nuclear Radiology (Third Year, Third Block)
This rotation involves interpretation of a wide range of radionuclide imaging studies, functional radionuclide studies, SPECT, PET, and radiotherapy of thyroid disease and lymphoma.

Patient Care

Goal
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:
(1) Summarize the NRC and Louisiana rules concerning radionuclide imaging and therapy, completing a radiation safety review in the department with a nuclear medicine physicist, and
(2) Distinguish among the different nuclear cardiology examinations, including exercise versus pharmacologic stress tests and MUGA studies and types of radiotracers used, including T1-201, Tc-99m Sestamibi, and Tc-99m Teboroxime.

Skill Objectives:
(1) Accurately interpret most nuclear cardiology examinations,
(2) Perform and log the required number of radionuclide treatments for hyperthyroidism and cancer,
(3) Actively interact with patients and ordering physicians, along with self-directed review of clinical notes to accurately assess any effects of radioactive iodine administration on the patient

Behavior and Attitude Objectives:
(1) Work with the health care team in a professional manner to provide patient- centered care, and
(2) Notify referring clinician for urgent, emergent, or unexpected findings, and document in dictation.

Medical Knowledge

Goal
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:
(1) Describe physical characteristics of commonly used radionuclides,
(2) State organ localization and clinical uses of common radiopharmaceuticals, and
(3) Discuss quality control of Technetieum-99m.

Skill Objectives:
(1) Complete recommended nuclear cardiology reading list in Crawford.

Behavior and Attitude Objectives:

(1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

Goal
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:
(1) Assess nuclear medicine images for quality, identify sources of artifact, and suggest methods of improvement.

Skill Objectives:
(1) Demonstrate independent self-study using various resources including texts, journals, teaching files, and other resources on the internet, and
(2) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:
(1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
(2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal
Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:
(1) Understand how their image interpretation affects patient care.

Skill Objectives:
(1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay,
(2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
(3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:
(1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:
(1) Understanding of the need for respect for patient privacy and autonomy, and
(2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:
(1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:
(1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal
Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:
(1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:
(1) Produce concise and accurate reports on most examinations,
(2) Communicate effectively with physicians, other health professionals, and
(3) Obtain informed consent with the utmost professionalism.

Behavior and Attitude Objectives:
(1) Work effectively as a member of the patient care team.

Nuclear Radiology (FourthYear, Fourth Block)
This rotation involves interpretation of a wide range of radionuclide imaging studies, functional radionuclide studies, SPECT, PET, and radiotherapy of thyroid disease and lymphoma.

Patient Care

Goal
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to:

Knowledge Objectives:
(1) Identify radionuclide therapy for controlling bone pain, and
(2) Describe the basic concepts in radiolabeled antibody imaging (CEA scan, NeutroSpec, ProstaScint) and therapy (Zevalin, Bexxar).

Skill Objectives:
(1) Accurately interpret most nuclear cardiology examinations,
(2) Perform and log the required number of radionuclide treatments for hyperthyroidism and cancer,
(3) Use and describe staging systems for lung cancer and head and neck cancer using PET to identify lymph node stations,
(4) Submit two cases from the follow up case conference to the resident teaching file, and
(5) Actively interact with patients and ordering physicians, along with self-directed review of clinical notes to accurately assess any effects of radioactive iodine administration on the patient.

Behavior and Attitude Objectives:
(1) Work with the health care team in a professional manner to provide patient- centered care.
(2) Notify referring clinician for urgent, emergent, or unexpected finding, and document in dictation.

Medical Knowledge

Goal
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Residents are expected to:

Knowledge Objectives:
(1) Identify the different systems used for PET acquisition – coincidence detectors, dedicated PET systems, and PET/CT systems, and
(2) Describe the indications and use of PET agents in nuclear cardiology including F-18 FDG, Rubidium, and ammonia.

Skill Objectives:
(1) Complete reading from the PET readings in Wahl and Requisites

Behavior and Attitude Objectives:
(1) Recognize limitations of personal competency and ask for guidance when appropriate.

Practice-Based Learning and Improvement

Goal
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to:

Knowledge Objectives:
(1) Assess images for quality, identify sources of artifact, and suggest methods of improvement.

Skill Objectives:
(1) Demonstrate independent self studying using various resources including texts, journals, teaching files, and other resources on the internet, and
(2) Facilitate the learning of students and other health care professionals.

Behavior and Attitude Objectives:
(1) Incorporate formative feedback into daily practice, positively responding to constructive criticism, and
(2) Follow-up interesting or difficult cases without prompting and share this information with appropriate faculty and fellow residents.

Systems Based Practice

Goal
Residents must demonstrate an awareness of, and responsiveness to, the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Knowledge Objectives:
(1) Understand how their image interpretation affects patient care.

Skill Objectives:
(1) Provide accurate and timely interpretations to decrease length of hospital and emergency department stay,
(2) Appropriately notify the referring clinician if there are urgent or unexpected findings and document such without being prompted; and
(3) Practice using cost effective use of time and support personnel.

Behavior and Attitude Objectives:
(1) Advocate for quality patient care in a professional manner, particularly concerning imaging utilization issues.

Professionalism

Goal

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate:

Knowledge Objectives:
(1) Understanding of the need for respect for patient privacy and autonomy, and
(2) Understanding of their responsibility for the patient and the service, including arriving in the reading room promptly each day, promptly returning to the reading room after conferences, completing the work in a timely fashion, and not leaving at the end of the day until all work is complete. If the resident will be away from a service (for time off, meeting, board review, etc.), this must be arranged in advance with the appropriate faculty.

Skill Objectives:
(1) Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Behavior and Attitude Objectives:
(1) Respect, compassion, integrity, and responsiveness to patient care needs that supersede self-interest.

Interpersonal and Communication Skills

Goal
Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Knowledge Objectives:
(1) Know the importance of accurate, timely, and professional communication.

Skill Objectives:
(1) Produce concise and accurate reports on most examinations,
(2) Communicate effectively with physicians, other health professionals, and
(3) Obtain informed consent with the utmost professionalism.

Behavior and Attitude Objectives:
(1) Work effectively as a member of the patient care team.