

Nuclear Medicine Accreditation Program Requirements



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Revisions

Date	Page Number	Description of Revisions
5/2/2016	5	Added Osteopathic Continuous Certification (OCC) for AOBR to physician qualifications.
6/23/2016	9	Added Maintenance of Certification for Medical Physics to physicist qualifications
6/23/2016	7	Added use and dosage of contrast to physician qualifications
9/18/2017	11	Added to <i>*The weekly resolution phantom is not necessary on cameras with pixilated detectors but a resolution image using either the ACR SPECT phantom (preferred) or a 4-quadrant bar phantom must be done at least semi-annually and also submitted with the accreditation application to 2. Intrinsic or System Spatial Resolution</i>
1/18/2018	3	Added “ACR” to the following sentence: <i>Every unit used to produce diagnostic clinical images for patients must successfully pass ACR accreditation testing for the facility to be accredited.</i>
2/27/2018	6	Added Maintenance of Certification (MOC) for ABIM to cardiology qualifications.

Overview

The Nuclear Medicine Accreditation Program involves the acquisition of clinical and phantom images and corresponding data for each unit. The acquisition of the phantom images involves the use of a designated SPECT phantom. Accreditation in nuclear medicine is unit based. Every unit used to produce diagnostic clinical images for patients must successfully pass ACR accreditation testing for the facility to be accredited. Facilities that use units that have been withdrawn, expired, or failed accreditation testing or facilities that never submit a unit for accreditation testing are subject to revocation of their accreditation. Such revocation could adversely affect reimbursement. Facilities will be able to choose from one or more of three modules for accreditation:

- **Module 1** – General Nuclear Medicine (planar imaging)
- **Module 2** – SPECT (single photon emission computed tomography)
- **Module 3** – Nuclear Cardiology Imaging

The facility must apply for all modules that are performed at the site. In addition, the site must apply for all isotopes used on each unit. Information will be collected on the quality control and quality assurance program in place, follow-up procedures, data collection, reporting, radiopharmaceutical procedures, and laboratory safety. Facilities are required to submit copies of their most recent state or Nuclear Regulatory Commission (NRC) audits. The written response to any violations must be included.

Medicare Improvement for Patients and Providers Act of 2008 (MIPPA)

It is important to note that under the Medicare Improvement for Patients and Providers Act of 2008 (MIPPA), all facilities that bill for advanced diagnostic imaging services, such as breast MRI, under technical component of part B of the Medicare Physician Fee Schedule must be accredited by a CMS designated accrediting organization by January 1, 2012 to qualify for Medicare reimbursement. This rule affects providers of MRI, CT, PET and nuclear medicine imaging services for Medicare beneficiaries on an outpatient basis.

For accredited facilities that receive reimbursement from Medicare for the technical component of imaging examinations under the Fee Schedule there are additional mandatory requirements. As with all accreditation requirements verification of compliance with these requirements will take place during any on site survey by the ACR or CMS.

1. Each facility must have a process in place for all patients to obtain copies of their records and images that is HIPAA compliant. Patients should be made aware of this process at the time of examination or if requested by the patient at a later date.
2. Each facility must have a procedure for documenting the qualifications of the facility's personnel from the primary source when appropriate for licenses and certifications. Facilities must also verify that personnel are not included on the Office of Inspector General's (OIG) exclusion list at <http://oig.hhs.gov/fraud/exclusions.asp>.
3. All facilities must make publically available a notification for patients, family members or consumers that they may file a written complaint with the ACR.

While these procedures are mandatory only for facilities that receive reimbursement from Medicare for the technical component of imaging examinations under the Fee Schedule, the ACR encourages all facilities to implement such procedures.

Mandatory Accreditation Time Requirements

Submission of all accreditation materials is subject to mandatory timelines. Detailed information about specific time requirements is located in the *Overview for the Diagnostic Modality Accreditation Program*. Please read and be familiar with these requirements.

Materials Required	Due
Renewal application	60 calendar days from date sent
Testing materials	45 calendar days from date sent
Repeat Option forms (after deficiency)	15 calendar days from date sent

Withdrawn, Added, or Replacement Units

The Nuclear Medicine Accreditation Program is unit based. Consequently, facilities **must notify the ACR** if they have permanently **withdrawn** (i.e., removed) a unit from service, if they have **replaced** that unit with a new one or have **added** another unit. The type of accreditation options available for a new unit will depend on the amount of **time the facility has left on its current accreditation certificate**:

- **Over 13 months** – The facility needs to submit only unit information and additional testing materials. Once accreditation is approved, the new unit’s expiration date will be the same as the previous expiration date.
- **Less than 13 months** - The facility must renew accreditation for all units at the facility including the new one. Once approved, all of the units at the facility will have an expiration date that is three years from the old expiration date.

Loaner unit

Accredited facilities may use a “loaner” unit to temporarily replace an accredited unit that is out of service for repairs, etc. for up to six months without submitting clinical and phantom images for evaluation. The accredited facility must immediately notify the ACR of the installation date, manufacturer and model of the loaner. Any loaner unit that is in use for more than one month will be required to submit evidence of testing by a qualified medical physicist within 90 days of installation. If the loaner is in place for longer than six months, the facility must submit the unit for accreditation evaluation, including clinical and phantom image assessment and the corresponding fee.

Emergency Use of Units

Facilities may use units that are not accredited in specific modules for other types of nuclear medicine imaging in emergency cases without jeopardizing a facility’s accreditation status. An emergency situation would be one in which less than 5 examinations are performed outside a unit’s accreditation status in any 30 day period, or less than 25 examinations in any 12 month period. If the volume of examinations exceeds these limits, the facility must notify the ACR and submit testing for this module.

Personnel Qualifications

All interpreting physicians, medical physicists and technologists working in nuclear medicine (including part-time and locum tenens staff) *must meet and document* specific requirements in order for their facility to be accredited by the ACR.

The continuing education and continuing experience requirements are based on previous full calendar years. For example, if a site renews their accreditation in July 2014, the physicians at that site must have met the full requirement for continuing education from January 1, 2011 to December 31, 2013. Likewise, they must have met the full continuing experience requirements from January 1, 2011 to December 31, 2013. If they did not meet these requirements in the given timeframes, the ACR will accept continuing education credits or continuing experience obtained in 2014.

Physician Qualifications

All physicians who supervise and/or interpret nuclear medicine examinations must be a licensed medical practitioner who meets the following minimum criteria:

Requirements for all Physicians Supervising and/or Interpreting Nuclear Medicine Examinations		
Qualifications	Interpreting Nuclear Medicine Physician	Non-Nuclear Medicine Physician/Radiologist Interpreting Cardiovascular Nuclear Medicine Only
Initial	<ul style="list-style-type: none"> Board certified in radiology or diagnostic radiology, nuclear radiology, or nuclear medicine by: <ul style="list-style-type: none"> American Board of Radiology, American Board of Nuclear Medicine, American Osteopathic Board of Radiology, American Osteopathic Board of Nuclear Medicine, Royal College of Physicians and Surgeons of Canada, or Le College des Mediciens du Quebec, For physicians graduating from residency after June 30, 2014, board certified or board eligible as defined by the American Board of Radiology Physicians trained prior to 1975 may be accepted as qualified if they interpreted at least an average of 50 scintigrams per month for the past 10 years. <p style="text-align: center;">Occasional Readers</p> <p>Occasional who are providing imaging services to and for the practice readers are not required to meet the interpreting physician initial qualifications or continuing experience requirements. However, the reads of all occasional readers combined should not exceed 5% of the total volume of reads per practice and per modality. There must be an active written review process in place at the institution for occasional readers based on each institution's credentialing requirements. Validation of this process will take place during any site visit by the ACR.</p>	<ul style="list-style-type: none"> Board certified in cardiology by: <ul style="list-style-type: none"> American Board of Internal Medicine, American Osteopathic Board of Internal Medicine, Royal College of Physicians and Surgeons of Canada, or Le College des Mediciens du Quebec, <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> Certification in nuclear cardiology by the Certification Board of Nuclear Cardiology (CBNC) <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Completion of the Level 2 Core Cardiology Training Symposium (COCATS) training program in nuclear cardiology (see Attachment I). <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Cardiologists who trained prior to July 1995 must be board certified in cardiology and have the equivalent of Level 2 training.
	OR	
At a minimum, completion of a formal Accreditation Council of Graduate Medical Education (ACGME)-approved general nuclear medicine program which must include 200 hours in radiation physics and 500 hours of preparation in instrumentation, radiochemistry, radiopharmacology, radiation dosimetry, radiation biology, radiation safety and protection, and quality control. In addition, 1,000 hours of clinical training in general nuclear medicine is required which must cover technical performance, calculation of dosages, evaluation of images, correlation with other diagnostic modalities, and interpretation.		
Continuing Experience	<p>Upon renewal, physicians reading nuclear medicine must meet the following:</p> <p>Currently meets the Maintenance of Certification (MOC) in Radiology or Nuclear Medicine (See ABR MOC or ABNM MOC) or the Osteopathic Continuous Certification (OCC) for AOBR (See AOBR OCC) or the Maintenance of Certification for ABIM (See ABIM MOC)</p> <p style="text-align: center;">OR</p> <p>Read a minimum of 200 studies/3 years in nuclear medicine¹</p>	
Continuing Education	<p>Upon renewal must meet one of the following:</p> <p>1. Currently meets the Maintenance of Certification (MOC) requirements for the ABR (See ABR MOC or ABNM MOC), the Osteopathic Continuous Certification (OCC) for AOBR (See AOBR OCC) or the Maintenance of Certification for ABIM (See ABIM MOC).</p> <p style="text-align: center;">OR</p> <p>2. Completes 150 hours (that includes 75 hours of Category 1 CME) in the prior 36 months pertinent to the physician's practice patterns (See ACR Parameter)</p> <p style="text-align: center;">OR</p> <p>3. Completes 15 hours CME in the prior 36 months specific to the imaging modality or organ system (half of which must be category 1)</p>	

¹ Double-reading (2 or more physicians interpreting the same examination) is acceptable. Interpreting physicians may also re-interpret a previously interpreted examination and count it towards meeting the continuing experience requirement, as long as he/she did not do the initial interpretation. Examinations that are reviewed and evaluated for RADPEER™ or an alternative physician peer review program may count toward your continuing experience numbers.

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In addition, all physicians supervising and/or interpreting nuclear medicine examinations must satisfy all applicable state and federal regulations, as well as any institutional policies that pertain to the in vivo use of radiopharmaceuticals, the use and dosage of contrast if applicable, the performance of imaging procedures and the safe handling of radioactive materials.

Facilities monitoring cardiac stress studies must have one individual that has current Advanced Cardiac Life Support (ACLS) certification present during the stress testing.

In addition to being in compliance with the interpreting physician qualifications stated above, the supervising physician also has the following responsibilities:

- Develop, implement and enforce policies and procedures related to radiation protection, the hazards of radiation exposure to both patients and radiological personnel, and appropriate monitoring requirements.
- Develop, implement and enforce policies and procedures to address safety issues, including sedation, and reduce exposure as much as reasonably possible for pediatric patients.
- Develop, implement and enforce policies and procedures to identify pregnant or potentially pregnant patients.
- Develop, implement and enforce policies and procedures consistent with ACR's Position Statement on Quality Control and Improvement, Safety, Infection Control, and Patient Education.
- Be responsible for reviewing (along with the radiation safety officer and medical physicist) the laboratory safety manual at least annually.
- Be responsible for assuring compliance with the recommendations of the medical physicist.
- Be responsible for the oversight and submission of all materials, including clinical and phantom images, as appropriate, quality control data and such other information as required by the Nuclear Medicine Accreditation Program.
- Be responsible for notifying the ACR within 15 days of any changes in imaging equipment (units) or changes in the use of equipment that could affect clinical or phantom images (i.e., in CT an adults-only approved scanner being used to scan pediatric patients).
- Ensure that all accreditation criteria are met and that the same standard of performance is maintained during the 3-year accreditation period.
- Provide immediate written notice to the ACR upon the termination of any accredited services provided by the Practice Site or a change in ownership of the operating location.
- Ensure that all physicians providing services at this facility are actively participating in a formal peer review program that meets the stated accreditation requirements.

Nuclear Medicine Technologist

All technologists performing nuclear medicine examinations **must** meet the minimum criteria in the table below. The ACR **recommends** that technologists be certified and actively registered in the modality they perform.

Qualifications	Nuclear Medicine Technologist
Initial	<ul style="list-style-type: none"> • ARRT(N) or NMTCB registered or equivalent state license for nuclear medicine technology OR • Completion of a training program in nuclear medicine that must include training in the basic and medical sciences as they apply to nuclear medicine technology and practical experience in performing nuclear medicine procedures.
Continuing Education	<ul style="list-style-type: none"> • Registered technologists <ul style="list-style-type: none"> - In compliance with the CE requirements of their certifying organization for the imaging modality in which they perform services - CE includes credits pertinent to the technologist's ACR accredited clinical practice • State licensed technologists <ul style="list-style-type: none"> - 24 hours of CE every 2 years - CE is relevant to imaging and the radiologic sciences, patient care - CE includes credits pertinent to the technologist's ACR accredited clinical practice • All others <ul style="list-style-type: none"> - 24 hours of CE every 2 years - CE is relevant to imaging and the radiologic sciences, patient care - CE includes credits pertinent to the technologist's ACR accredited clinical practice

In addition, **nuclear medicine technologists** must:

- Satisfy all applicable state and federal regulations, as well as any institutional policies that pertain to the in vivo use of radiopharmaceuticals, performance of imaging procedures and the safe handling of radioactive materials.
- Have knowledge of radiation safety and protection, handling of radiopharmaceuticals, all aspects of performing examinations, operation of equipment, handling of medical and radioactive waste, patient safety, and applicable rules and regulations.

Nuclear Medicine Medical Physicist

The qualified medical physicist is responsible for the conduct of all surveys of the nuclear medicine equipment. The medical physicist may be assisted by properly trained individuals in obtaining data. These individuals must be approved by the medical physicist in the techniques of performing tests, the function and limitations of the imaging equipment and test instruments, the reasons for the tests, and the importance of the test results. The medical physicist must be present or in general supervision of properly trained assistants (and accessible by phone) during the surveys; review, interpret, and approve all data; and provide a report of the conclusions with his/her signature. Effective **January 1, 2010**, all medical physicists providing these services must meet the following minimum criteria:

Qualifications	Medical Physicist
Initial	<p style="text-align: center;"><u>Board Certified</u></p> <p>Certified in Medical Nuclear Physics or Radiological Physics by the American Board of Radiology; in Nuclear Medicine Physics by the American Board of Medical Physics; in Nuclear Medicine Physics by the Canadian College of Physicists in Medicine; or in Nuclear Medicine Physics and Instrumentation by the American Board of Science in Nuclear Medicine</p> <p style="text-align: center;">OR</p> <p style="text-align: center;"><u>Not Board Certified in Required Subspecialty</u></p> <ul style="list-style-type: none"> • Graduate degree in medical physics, radiologic physics, physics, or other relevant physical science or engineering discipline from an accredited institution, and • Formal coursework in the biological sciences with at least <ul style="list-style-type: none"> – 1 course in biology or radiation biology, and – 1 course in anatomy, physiology, or similar topics related to the practice of medical physics • 3 years of documented experience in a clinical nuclear medicine environment <p style="text-align: center;">OR</p> <p style="text-align: center;"><u>Grandfathered</u></p> <p>Conducted surveys of at least 3 NM units between January 1, 2007 and January 1, 2010</p>
Continuing Experience	Upon renewal, 2 NM camera surveys in prior 24 months
Continuing Education	<p>Upon renewal, must meet one of the following:</p> <ol style="list-style-type: none"> 1. Currently meet the Maintenance of Certification (MOC) requirements for ABR (see ABR MOC for Medical Physics) <p style="text-align: center;">OR</p> <p>Completes 15 CEU/CME (1/2 Cat 1) in the prior 36 months (must include credits pertinent to the accredited modality)</p>

Quality Control

Acceptance Tests and Performance Tests

Acceptance tests must be performed on systems when they are installed. At least annually thereafter, the performance tests listed below must be performed on all units. ACR realizes that surveys cannot usually be scheduled exactly on the anniversary date of the previous survey. Therefore a period of up to 14 months between surveys is acceptable. These tests do not need to be as rigorous as acceptance tests but must be a comprehensive suite of individual measurements that ensure adequate sensitivity for detecting detrimental changes in performance. A qualified practicing medical physicist may perform these tests. Alternatively, the tests may be performed by properly trained individuals approved by the medical physicist using National Electrical Manufacturers Association (NEMA) protocols and/or other appropriate testing protocols developed and approved by the qualified practicing medical physicist. The test results must be reviewed by the qualified medical physicist and documented in the annual

survey report. As a part of this annual survey the qualified practicing medical physicist should meet with the supervising physician and the QC technologist to review the results of the survey and the effectiveness of the technologist QC program, and to recommend any corrective action or repairs that are needed. The supervising physician is responsible for assuring compliance with the recommendations of the medical physicist.

Nuclear Medicine Performance Tests – At Least Annually

1. **Intrinsic Uniformity** - Performed to ensure that the intrinsic detector integral and differential uniformity are sufficient to minimize the production of artifacts and ensure that patient abnormalities can be visualized without interference from the imaging system. These tests also monitor a scintillation unit for electronic problems and crystal deterioration (hydration).
2. **System Uniformity** - Performed to check all commonly used collimators for defects that might produce artifacts in planar and tomographic studies.
3. **Intrinsic or System Spatial Resolution** - Performed to ensure that the detector resolution is sufficient to provide satisfactory detection of lesions and delineate detail in clinical images.
4. **Relative Sensitivity** - Performed to verify that count rate per time between the two heads is within 5%.
5. **Energy Resolution** - Performed to verify that scatter rejection is sufficient to provide optimal contrast in clinical studies. *Note: On some systems, energy resolution is very difficult to measure precisely.*
6. **Count Rate Parameters** - Performed to measure the max count rate
7. **Monitor Evaluation**- Performed to ensure that systems used to produce hard copy and monitors that are used for interpretation of clinical studies provide satisfactory image quality in terms of uniformity and spatial resolution.
8. **Overall System Performance for SPECT Systems** - Performed to quantitatively verify that SPECT systems provide satisfactory tomographic uniformity, contrast, and spatial resolution.
9. **System Interlocks** - Performed to verify that all system interlocks are operating as designed and that the system is safe and reliable for the nuclear medicine technologist to operate and for imaging patients.
10. **Dose Calibrators** - Performed annually to verify that readings from this instrument are accurate (accuracy test). All basic measurements of performance must be done at the time of installation and repeated after major repair. This test must be done according to protocols accepted by the appropriate state regulatory agencies or the NRC.
 - “Test” measurement of battery voltage (if applicable)
 - Zero adjustment (if applicable)
 - Background adjustment
 - Accuracy with NIST traceable standard
 - Linearity
 - Constancy test
11. **Thyroid Uptake and Counting Systems** - Performed to verify energy calibration, energy linearity, energy resolution, sensitivity, and reliability (Chi-squared test) for the measurement of organ function and the assay of patient samples.

- I-123 capsule or long-lived standard calibration check
- Count of background
- High voltage/gain checks
- Energy resolution
- Chi-square test

The nuclear medicine technologist is responsible for verifying day-to-day operation of instruments and performing a few additional tests on a quarterly basis. These requirements represent the standard of practice and are in compliance with requirements and recommendations of the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) and state and federal agencies. Documentation of compliance with all quality control tests and corrective action is required as part of the application process.

Nuclear Medicine Technologist's Quality Control Tests

1. **Intrinsic or System Uniformity** (each day of use) - Performed to verify that components are properly functioning and provide a uniform image in response to a uniform flux of radiation.
2. **Intrinsic or System Spatial Resolution** (weekly) - Performed to quantitatively verify that detector spatial resolution is satisfactory for clinical imaging.*
3. **Center-of-Rotation** (monthly) - Performed to maintain ability to resolve details in clinical SPECT studies.
4. **High-Count Floods For Uniformity Correction** (frequency as recommended by a qualified medical physicist) - Performed to correct for residual detector and collimator non-uniformity and to minimize the production of artifacts in clinical studies.
5. **Overall System Performance for SPECT Systems** (semiannually, quarterly recommended) - Performed to qualitatively verify that the system has maintained its capabilities with respect to tomographic uniformity, contrast, and spatial resolution that maximize the benefit in clinical studies. Technetium must be done at least semiannually; other radionuclides may be tested on alternate quarters.
6. **Dose Calibrators** (daily, quarterly, and semiannual)
 - Daily - Tests are performed to verify that the calibrator is accurate and reliable for the assay of doses administered to patients.
 - Quarterly - A linearity test must be performed to document that accurate readings are provided through the entire range of activities used clinically. Other qualified personnel may do these tests.
 - Semiannual - All non-exempt radionuclide sources must be tested to verify that radioactivity is not leaking from the sources. Other qualified personnel may also do these tests.
7. **Thyroid Uptake and Counting Systems** (each day of use) - Standards are measured to verify energy calibration and sensitivity for the measurement of organ function and the assay of patient samples.

* *The weekly resolution phantom is not necessary on cameras with pixilated detectors but a resolution image using either the ACR SPECT phantom (preferred) or a 4-quadrant bar phantom must be done at least semi-annually and also submitted with the accreditation application.*

SPECT Phantom

Planar and SPECT (if appropriate) images must be obtained and submitted for review using the phantom that has been approved by the ACR Committee on Nuclear Medicine Accreditation. **NOTE: Some unit manufacturers provide this phantom with the purchase of nuclear medicine units. If you currently have a phantom that meets the specifications outlined below (with or without flange), we recommend that you contact the manufacturer to make sure all joints, O-rings, and seals are still intact. If the phantom has not been drained and allowed to dry before storage it may have deteriorated.**

The ACR-approved SPECT phantom is commonly used for quality control in nuclear medicine. For cameras that are used to perform **planar and SPECT imaging** studies, an ACR-approved phantom must be used for evaluating planar and tomographic image quality. The **ACR approved phantom** is a cylinder with an internal diameter of 20.4 cm. The lower portion of the cylinder contains 6 sets of acrylic rods arranged in a pie shaped pattern with the following diameters: 4.8, 6.4, 7.9, 9.5, 11.1, and 12.7 mm. The upper section contains six solid spheres with the following diameters: 9.5, 12.7, 15.9, 19.1, 25.4, and 31.8 mm. Effective August 1, 2011, the ACR approved a Data Spectrum small SPECT Phantom*. The phantom is a cylinder with an internal diameter of 14 cm (flangeless phantom). The lower portion of the phantom contains 6 sets of acrylic rods arranged pie shaped pattern with the following diameters: 4.8, 6.4, 7.9, 9.5, 11.1, and 12.7 mm. The upper section contains six solid spheres with the following diameters: 6.4, 9.5, 12.7, 15.9, 19.1, and 25.4mm. The spheres must be placed in order of increasing size and the rod and sphere diameters must be listed in the appropriate place on the worksheets. The reviewers will use this information to properly score the images.

Note: Effective July 1, 2010, the Standard inserts will no longer be accepted.

Data must be collected and processed according to the instructions provided in the testing package. The procedures may differ from those normally used by the applicant but were designed to minimize the variability in the images submitted by different facilities. Despite the use of a specific protocol, it is understood that there may still be some differences even if the data were collected on the same type and model scintillation unit.

The following are available directly from Data Spectrum of Durham, NC:

1. The Jaszczak Deluxe Flangeless ECT phantom and the PET faceplate (can be used for both SPECT and PET acquisitions) for \$2689.
2. The Jaszczak Deluxe Flangeless ECT phantom (for SPECT only) for \$1613.
3. Small SPECT Phantom (for SPECT only) for \$1392.
4. Flangeless PET phantom (for PET only) for \$2150.
5. The PET faceplate made to fit an existing flangeless or flanged Jaszczak Deluxe ECT phantom for \$1079.

The above are available following the submission of the initial application to the ACR. **You may contact Data Spectrum at (919) 732-6800. You may also consider contacting your unit manufacturer or other vendor to see if it will provide the ACR-approved phantom.**

Quality Assurance

Policies and procedures related to quality, patient education, infection control, and safety should be developed and implemented in accordance with the ACR Policy on Quality Control and Improvement, Safety, Infection Control and Patient Education Concerns. The site will have a quality assurance program that incorporates the following two elements:

Physician Peer-Review Requirements

Examinations should be systematically reviewed and evaluated as part of the overall quality improvement program at the facility. Monitoring should include evaluation of the accuracy of interpretation as well as the appropriateness of the examination. Complications and adverse events or activities that may have the potential for sentinel events must be monitored, analyzed and reported as required, and periodically reviewed in order to identify opportunities to improve patient care. These data should be collected in a manner that complies with statutory and regulatory peer-review procedures in order to ensure the confidentiality of the peer-review process.²

All sites initially applying for ACR accreditation and all sites renewing their accreditation must actively participate in a physician peer review program. There are several options available to meet this requirement. Sites may develop their own peer review program, use a vendor product or RADPEER, a peer review process developed by the ACR.

Sites not using RADPEER must use a program that performs the following functions:

- Includes a double reading (2 MDs interpreting the same study) assessment.
- Allows for random selection of studies to be reviewed on a regularly scheduled basis.
- Exams and procedures representative of the actual clinical practice of each physician.
- Reviewer assessment of the agreement of the original report with subsequent review (or with surgical or pathological findings).
- A classification of peer review findings with regard to level of quality concerns (One example is a 4-point scoring scale).
- Policies and procedures for action to be taken on significant discrepant peer review findings for the purpose of achieving quality outcomes improvement.
- Summary statistics and comparisons generated for each physician by imaging modality.
- Summary data for each facility/practice by modality.

For information about RADPEER please visit the ACR web site at: [RADPEER™ - American College of Radiology](#)

Accreditation Testing

If appropriate, planar and/or SPECT phantom images must be obtained and submitted for review using the phantom that has been approved by the ACR Committee on Nuclear Medicine Accreditation. Please see the section on quality control above for further information.

² 2005 ACR Guidelines and Technical Standards. ACR Position Statement on Quality Control and Improvement, Safety, Infection Control, and Patient Education Concerns. Page IV.

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Clinical Images

Clinical images are evaluated for each unit within each module. The facility must submit two different examination types for each module/sub module (see table below).

Required Nuclear Medicine Exams for Module 1, Module 2, and Module 3		
Module 1 - Planar	Module 2 – SPECT	Module 3 - Nuclear Cardiology
<ul style="list-style-type: none"> Whole body or spot bone (required). If unit does not perform bone scans, two exams must be selected from the list below. (If MUGA performed on unit and site not applying for Nuclear Cardiology module, you MUST select MUGA as one of the exams.) <p>Plus one of the following:</p> <ul style="list-style-type: none"> Whole body bone Spot bone Hepatobiliary Perfusion lung MUGA Thyroid I131 Whole Body I131 Spot Gallium Whole Body Gallium Spot Octreotide Whole Body Octreotide Spot <p><i>If performing breast scintigraphy, please contact the ACR</i></p>	<ul style="list-style-type: none"> Bone SPECT (required) If unit does not perform bone scans, two exams must be selected from the list below. *Only one myocardial perfusion scan may be selected, and if selected, site must also apply for the Nuclear Cardiology module. <p>Plus one of the following:</p> <ul style="list-style-type: none"> Bone SPECT Brain SPECT Hepatic blood pool Liver SPECT Myocardial perfusion Gallium SPECT Octreotide SPECT 	<ul style="list-style-type: none"> Myocardial perfusion (required) <p>Plus one of the following:</p> <ul style="list-style-type: none"> Myocardial Perfusion MUGA

The examinations submitted should be consistent with the ACR Guidelines and Technical Standards. A corresponding, dated physician report that clearly states the type of exam performed and the clinical history must accompany all exams. The parameters that will be scored on the clinical images include: radiopharmaceutical biodistribution, image acquisition, processing, and display, as well as film and report identification. **Sites may not submit images performed on models or volunteers.** Patient films will be returned with the final report.

As with all of the ACR accreditation programs, the primary assumption of the clinical image reviewers is that the images chosen by the facility represent examples of their best work. It is strongly recommended that the images submitted be normal studies.

Exam Identification and Labeling

All films are an important part of the medical record. The following should be permanently recorded on each image of the study: patient name, patient age (or date of birth), patient identification number, date of exam, and institution name. The technologist's name, initials, or other means of identifying the technologist who performed the study should also be indicated.

The Nuclear Medicine Accreditation Committee has determined that ALL images for ALL submitted studies must be labeled for laterality and orientation. This requirement is necessary to reduce the number of serious treatment errors resulting from the lack of appropriate labeling and to address quality patient care issues raised by the recent focus on patient safety in medicine. THIS IS A PASS/FAIL CRITERION.

Clinical Protocols

The typical scanning protocols for the submitted clinical images will be required for accreditation; the images should reflect use of those protocols. The facility should submit its protocols in the format that it normally uses on site, but they need to be readily understandable by a reviewer charged with correlating those protocols with the submitted images.

Please note that your accreditation submission contains HIPAA data, so we strongly recommend that you send your submission via a traceable method with a signature required for delivery.

Nuclear Medicine Accreditation Fees

Checks should be made payable to the American College of Radiology (include modality accreditation ID#, if available). American Express, MasterCard, and Visa are accepted.

Accreditation Fees	
Cycle	Fees
Accreditation (Initial cycle and renewal)	\$1300 facility fee Plus per unit (module 1, 2, or 3): One module \$700 Two modules \$1400 Three modules \$2100
Repeat	\$700 per module, if repeating clinical exams \$700 if repeating phantoms
Reinstate/Corrective Action Plan	\$700 for each module
Add Units (mid cycle)	Per unit (module 1, 2, or 3): One module \$700 Two modules \$1400 Three modules \$2100
Add New Modules (mid cycle)	\$700 per module
Replacement Certificate	\$50 per certificate
Phantom	\$2689 ECT phantom and the PET faceplate (can be used for both SPECT and PET acquisitions) \$1613 ECT phantom (for SPECT only) \$2150 PET phantom (for PET only) \$1079 PET faceplate made to fit an existing flangeless or flanged ECT phantom \$1392 Small SPECT phantom

Note: Fees subject to change without notice.

For Additional Information

For further information log on to the ACR Web site at www.acr.org, click on “Accreditation” and click on “Nuclear Medicine and PET”. A link to “Frequently Asked Questions” is available in the Nuclear Medicine and PET menu, along with other useful information about accreditation and many of the program’s forms. To contact the ACR Nuclear Medicine Accreditation Program office by phone, dial (800) 770-0145.

ACR Practice Parameters and Technical Standards

The following ACR Practice Parameters and Technical Standards are pertinent to achieving and maintaining Nuclear Medicine Accreditation. These guidelines and standards form the basis of the accreditation program.

[ACR –SPR Practice Parameter for Imaging Pregnant or Potentially Pregnant Adolescents and Women with Ionizing Radiation](#)

[ACR-SPR Practice Parameter for the Performance of Single Photon Emission Computed Tomography \(SPECT\) Brain Perfusion and Brain Death Studies](#)

[ACR-SPR Practice Parameter for the Performance of Skeletal Scintigraphy \(Bone Scan\)](#)

[ACR-NASCI-SPR-STR Practice Parameter for the Performance of Cardiac Scintigraphy](#)

[ACR-SPR-STR Practice Parameter for the Performance of Pulmonary Scintigraphy](#)

[ACR-SPR Practice Parameter for the Performance of Hepatobiliary Scintigraphy](#)

[ACR-SPR Practice Parameter for the Performance of Liver and Spleen Scintigraphy](#)

[ACR-SNM Technical Standard for Diagnostic Procedures Using Radiopharmaceuticals](#)

[ACR-AAPM Technical Standard for Medical Nuclear Physics Performance Monitoring of Nuclear Medicine Imaging Equipment](#)

[ACR-AAPM Technical Standard for Medical Physics Performance Monitoring of SPECT-CT Equipment](#)

[ACR Practice Parameter for Communication of Diagnostic Imaging Findings](#)

Attachment I

Level 2 Core Cardiology Training Symposium (COCATS) Training Program

Specialized Training - Level 2 (4 to 6 Months)

Fellows who wish to practice the specialty of clinical nuclear cardiology should be required to have at least 4 to 6 months of total training. In training institutions with a high volume of nuclear cardiology procedures, clinical experience may be acquired in a period of time as short as 4 months. In institutions with a lower volume of procedures, a total of 6 months of clinical experience will be necessary for level 2 competency. This additional training should be dedicated to enhancing clinical skills and qualifying for Nuclear Regulatory Commission (NRC) licensure.

Didactic program

Appropriate radiation safety training (currently 200 hours) should be provided to satisfy NRC licensure requirements. The training should provide fellows with a series of lectures and laboratories dealing with basic radiation physics, radiation protection, radiopharmaceutical chemistry, radiation biology and instrumentation according to NRC requirements. This program might be scheduled over a 12 to 24 month period concurrent with other fellowship assignments.

Clinical experience

The fellow should participate in interpretation of all nuclear cardiology imaging data for the 4 to 6 month training period. During the course of the 4 to 6 month training period, it is imperative that the fellow have experience in correlating catheterization/angiographic data with radionuclide-derived data in a minimum of 30 patients. A teaching conference in which the fellow presents the clinical material and scintigraphic results is an appropriate forum for such an experience. Another appropriate source of interpretative experience can consist of an established teaching file. For level 2 training, a total of 300 cases should be interpreted under supervision, either from direct patient studies or from the teaching file, consisting of diverse types of procedures. Minutes or a written logbook should be kept; cases and diagnoses should also be listed to provide documentation.

Hands-on experience

Fellows acquiring level 2 training should have additional hands-on experience with patient studies. Additional intensive experience should be acquired in a minimum of 50 patients; optimally 25 patients for myocardial (perfusion) imaging and 25 patients for radionuclide angiography (total 50 patients). Such supervised experience should include pretest patient evaluation, radiopharmaceutical preparation (including experience with relevant radionuclide generators), performance of the study (rest, exercise dipyridamole or adenosine or other pharmacologic stress), administration of the dosage, calibration and setup of the gamma camera, setup of the imaging computer and processing the data for display after acquisition.

Additional experience

In addition, the training program must provide experience in computer methods for analysis of perfusion imaging studies, including single-photon emission computed tomography (SPECT), and ejection fraction and regional wall motion measurements from radionuclide angiographic studies.

Evaluation

Both the person responsible for the nuclear cardiology training program and the program director should also be responsible for evaluating the competence of the trainee in nuclear cardiology at the completion of the program. This can be accomplished by observing the performance of the fellow during the daily reading sessions or by a formal testing procedure, or both.