

## Section 1. – U.S. Nuclear Regulatory Commission Training and Experience Requirements

To be eligible to take the ABNM certification examination, **all** physicians must meet the training and experience required by the NRC in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed byproduct material, and successfully complete residency training in a radiation therapy or nuclear medicine training program or a program in a related medical specialty approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education, the Royal College of Physicians and Surgeons of Canada, or the Council on Postdoctoral Training of the American Osteopathic Association. The training must include 700 hours of training and experience as described below.

### 10 CFR 35.390 Use of unsealed byproduct material for which a written directive is required

The training and experience must include a minimum of 700 hours, all of which are applicable to the medical use of unsealed byproduct material requiring a written directive, including:

A minimum of 200 hours of classroom and laboratory training\* in accordance with 10 CFR 35.390(b) in the following areas:

- Radiation physics and instrumentation
- Radiation protection
- Mathematics pertaining to the use and measurement of radioactivity
- Chemistry of byproduct material for medical use
- Radiation biology

*\*The classroom and laboratory training may be obtained using a variety of instructional methods (including on-line training) as long it meets the specific clock hour requirements, and the subject matter relates to radiation safety and safe handling of byproduct material for the uses for which authorization is being requested. Reviewing case histories or interpreting scans **should not be counted** toward the minimum 200 hours of required classroom and laboratory training in radiation safety and safe handling of byproduct material.*

AND

Supervised work experience\*\*, which must include:

Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys.

Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

Calculating, measuring, and safely preparing patient or human research subject dosages;

Using administrative controls to prevent a medical event involving the use of unsealed byproduct material;

Using procedures to contain spilled byproduct material safely and using proper decontamination procedures;

Administering dosages of radioactive drugs to patients or human research subjects involving a minimum of three cases in each of the following categories:

- Oral administration of less than or equal to 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131, for which a written directive is required
- Oral administration of greater than 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131
- Parenteral administration of any radioactive drug that contains a radionuclide that is primarily used for its electron emission, beta radiation characteristics, alpha radiation characteristics, or photon energy less than 150 keV, for which a written directive is required

*\*\*Physicians in training may not dedicate all of their supervised work experience time specifically to the subject areas listed in the regulatory requirements (i.e., 10 CFR 35.390(b)(1)(ii)) and will be attending to other clinical matters involving the medical use of the material under the supervision of an AU (e.g., reviewing case histories or interpreting scans). This type of supervised work experience may be counted toward the supervised work experience to obtain the required 700 total hours of training.*

Supervised work experience for use of unsealed byproduct material for which a written directive is required must be under the supervision of an authorized user who meets the requirements in 35.57, 35.390, or equivalent Agreement State requirements. A supervising authorized user, who meets the requirements in 35.390(b), must also have experience in administering dosages in the same dosage category or categories (i.e., 35.390(b)(1)(ii)(G)) as the individual requesting authorized user status.

### **10 CFR 35.290 Imaging and localization studies**

A 10 CFR 35.390 authorized user must have the following *additional* work experience applicable to imaging and localization studies.

#### **35.290(c)(1)(ii)(G)**

Eluting generator systems appropriate for preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radionuclidic purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs.

Supervised work experience for imaging and localization studies, including eluting generators, measuring and testing the eluate for radionuclidic purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs, must be under the supervision of an authorized user who meets the requirements in 35.57, 35.290, or 35.390 AND meets the requirements in 35.290(c)(1)(ii)(G), or equivalent Agreement State requirements. An authorized Nuclear Pharmacist in accordance with 10 CFR 35.55 may also provide the supervised work experience for 35.290(c)(1)(ii)(G).

### **10 CFR 35.190 Uptake, dilution, and excretion studies**

A 10 CFR 35.390 authorized user already has experience administering dosages requiring a written directive, which would meet the requirement to be an authorized user for uses under 10 CFR 35.100.

### **Preceptor Attestation**

Written attestation that the individual has satisfactorily completed the requirements and is able to independently fulfill the radiation safety-related duties as an authorized user must be obtained from either:

- (i.) A preceptor authorized user who meets the requirements in 35.57, or 35.390 AND 35.290(c)(1)(ii)(G), or equivalent Agreement State requirements and has experience in administering dosages in the same dosage category or categories as the individual requesting authorized user status; or
- (ii.) A residency program director who affirms in writing that the attestation represents the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in 35.57, 35.390 AND 35.290(c)(1)(ii)(G), or equivalent Agreement State requirements, has experience in administering dosages in the same dosage category or categories as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in 10 CFR 35.290(c)(1) and 35.390(b)(1).

### **Section 2 – Length of Nuclear Medicine Training**

In addition to the training and experience required by the NRC in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed byproduct material requiring a written directive described in Section 1, to be eligible to take the ABNM certification examination physicians must also successfully complete the education and training described in the ACGME Nuclear Medicine program requirements. Training must include:

#### **1. One year of preparatory clinical training**

Before starting Nuclear Medicine training, physicians must satisfactorily complete one year of clinical training that includes at least nine months in any specialty that provides direct patient care. Training must be completed in ACGME-accredited residency programs, AOA-approved residency programs, Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency programs located in Canada, or in residency programs with ACGME International (ACGME-I) Advanced Specialty Accreditation.

Physicians who receive their preparatory training outside the United States and Canada

- 1) must ask the ABNM to accept their foreign training as being equivalent to training in the United States (see Eligibility page, 2. Physicians trained outside the United States and Canada, for how to request credit for preparatory clinical training).

OR

- 2) may be accepted into Nuclear Medicine residency programs if they are an “exceptionally qualified applicant,” as defined in the ACGME Common Program Requirements. The designation of an “exceptionally qualified applicant” is made by the Nuclear Medicine Program Director, Training Program Selection Committee, and Graduate Medical Education Committee. ABMM will accept this designation for physicians beginning their training after June 30, 2016.

## 2. Thirty-six months of Nuclear Medicine training

The length of training must be 36 months at an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements. Physicians, however, may receive credit for prior training that counts towards this requirement, as indicated below:

- Physicians who are certified, or eligible to be certified, by the American Board of Radiology in Diagnostic Radiology *and* Nuclear Radiology, may receive up to three years of credit if the Nuclear Medicine training was obtained at an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements (see Section 3. Nuclear Medicine training requirements for Radiologists trained in the United States).
- Physicians who are certified or eligible to be certified by the American Board of Radiology, may receive up to two years of credit. The required amount of Nuclear Medicine training may not be less than one year (for a total of 16 months of Nuclear Medicine training, including 4 months of Nuclear Medicine training during Diagnostic Radiology training) in an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements (see Section 3. Nuclear Medicine training requirements for Radiologists trained in the United States).
  - a. Physicians with Nuclear Medicine training outside the United States and Canada may receive up to two years of credit provided that this training is judged to be equivalent to training in the United States or Canada. The required amount of Nuclear Medicine training may not be less than one year in an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements (see Eligibility page, 2. Physicians trained outside the United States and Canada, for how to request credit for Nuclear Medicine training).

- Physicians who are certified or eligible to be certified by another member board of the American Board of Medical Specialties, may receive up to one year of credit. The required amount of Nuclear Medicine training may not be less than two years in an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements (see Section 4. Combined Nuclear Medicine and Internal Medicine Training for special requirements).
- 3) Physicians with Diagnostic Radiology training outside the United States and Canada may receive up to one year of credit provided this training is judged to be equivalent to training in the United States or Canada. A maximum credit of 6 months may be given for training in Computerized Tomography (CT), and a maximum credit of 6 months may be given for training in other Diagnostic Radiology subspecialty areas, including Nuclear Medicine. The required amount of Nuclear Medicine training may not be less than two years in an institution with an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements (see Eligibility page, 2. Physicians trained outside the United States and Canada, for how to request credit for Radiology training)
- Physicians with certification in specialties other than Nuclear Medicine or Radiology in countries other than the United States and Canada may receive up to one year of credit provided that the training required for certification is judged to be equivalent to training in the United States or Canada. The required amount of Nuclear Medicine training may not be less than two years (see Eligibility page, 2. Physicians trained outside the United States and Canada, for how to request credit training in specialties other than Nuclear Medicine or Radiology).

### **Section 3. – Additional Nuclear Medicine training requirements for Radiologists trained in the United States**

In addition to the requirements specified in Sections 1 and Section 2, the following additional Nuclear Medicine training requirements apply to Radiologists trained in the United States.

- 1) Combined Nuclear Medicine and Diagnostic Radiology residency training totaling 5 years in separately ACGME accredited Nuclear Medicine and Diagnostic Radiology programs
  - a) 16-24 months of Nuclear Medicine training, during which time the physician may be designated as a Nuclear Medicine resident or a Diagnostic Radiology resident. Generally, physicians are designated as a Nuclear Medicine resident for at least 12 months.
- 2) Nuclear Medicine training during 4-years of Diagnostic Radiology residency training
  - a) 310 days of Nuclear Medicine training during 4 years of Diagnostic Radiology residency training. The 310 days of training may include up to 8 weeks (40 working

days) of elective time in any field (clinical or research) or any location approved by the Diagnostic Radiology Program Director.

17 days is equivalent to 16 rotations of 4 weeks including 10 days (2 weeks) of leave, or 17 rotations of 4 weeks including 30 days (6 weeks) of leave.

- 3) Nuclear Medicine training before or after 4-years of Diagnostic Radiology residency training
  - a) One year of Nuclear Medicine training, which may be combined with other specialty training or research time, as long as the total duration of Nuclear Medicine training equals one year. One additional year of Nuclear Medicine training may include up to 6 weeks (30 working days) of leave of absence for any reason, and up to 8 weeks (40 working days) of elective time in any field or any location approved by the Program Director.
- 4) Nuclear Medicine training during 4-years of the ABR Alternate Pathway.
  - a) 16 months of Nuclear Medicine training. Eligibility for ABR certification through the alternate pathway must be confirmed in writing by ABR.

#### **Section 4. – Additional Requirements for Combined Nuclear Medicine and Internal Medicine Training**

To be eligible for dual certification, a resident must have American Board of Internal Medicine (ABIM) and ABNM approval of the proposed training program before beginning the combined program. The combined program consists of a total of 4 years of training in an accredited internal medicine and an accredited nuclear medicine training program and leads to admissibility to certification in both specialties. To meet eligibility for dual certification, the resident must satisfactorily complete 48 months of combined training that is verified by the Program Directors of both training programs. It is strongly recommended that combined training occur in the same institution. Residents will be eligible for admission to the written certifying examination in Internal Medicine after successfully completing the third resident year of training and for the Nuclear Medicine examination after the fourth resident year. All training must be in ACGME, RCPSP or PCPQ accredited programs and approved by the Program Director of each program. More details about this combined training program can be found at ([www.abim.org/certification/policies/combinetim/comnuc.aspx](http://www.abim.org/certification/policies/combinetim/comnuc.aspx)).

#### **Section 5. – Nuclear Medicine Residency Training in Canada**

Requirements to be certified by ABNM for graduates of Nuclear Medicine training programs in Canada are equivalent to the requirements for graduates in the United States.

Diplomates who received their training in the Canada will have “Canada” printed under their certificate number, whereas diplomates who received their training in the United States will have “United States” printed under their certificate number. These designations allow the United States Nuclear Regulatory Commission to ascertain which diplomates have fulfilled NRC supervised training and work experience requirements to be an Authorized User, which can only be obtained in the United States under the supervision of an Authorized User listed on the facility radioactive materials license.

- 1) Physicians must be graduates of a medical school approved by the Liaison Committee on Medical Education, or the Committee on Accreditation of Canadian Medical Schools.

- 2) Physicians must pass the Medical College of Canada Qualifying Examination (MCCQE) Part I and Part II to be eligible for the ABNM certification exam.
- 3) Physicians must have successfully completed a Nuclear Medicine training program approved by the Royal College of Physicians and Surgeons of Canada (RCPSC). Nuclear medicine residents in Canada enrolled in a 5-year training program (one year of preparatory clinical training, three years of nuclear medicine training, plus 12 months of elective time) may apply for the exam during their fourth year of training and take the examination in October during their final year of training.

Physicians must be eligible for a medical license issued by one of the twelve provincial or territorial licensing authorities. Physicians still in training may take the exam with an educational or institutional license.

### **Section 6. – Alternate Pathway for physicians certified in Nuclear Medicine outside the United States and Canada**

Physicians certified in Nuclear Medicine in a country other than the United States or Canada may be eligible for certification by ABNM without additional training in an ACGME accredited Nuclear Medicine program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements, under the following circumstances:

- 1) Training and experience required by the NRC in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed byproduct material as described in Section 1.
- 2) Three years of full-time Nuclear Medicine experience, or equivalent, in a department with an ACGME accredited Nuclear Medicine training program, or other ACGME accredited program that provides the education and training specified in the ACGME Nuclear Medicine program requirements. The 3 years of Nuclear Medicine experience may be any combination of the following categories: resident, fellow, visiting scholar, or faculty. The 3 years may include up to 6 months of research and/or elective time.

### **Section 7. – Leave Policy**

When Nuclear Medicine training is 24 months or greater, leave for any reason, such as vacation, illness, or family leave, may be taken as permitted by the local institution's graduate medical education office or equivalent, and/or applicable rules of the ACGME. When Nuclear Medicine training is less than 24 months, the average length of leave should not exceed 0.5 weeks per month of training. If leave exceeds these limits, as permitted or required by State or Federal regulations, the program director must have a plan approved by the ABNM to compensate for the lost educational time.

For FAQ's on the ABNM Leave Policy, click [here](#).