Reconciling the NRC and ABR Requirements: Demystifying Authorized User Status in the New Boards Era

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Financial Disclosures

None: No author has any financial disclosure
Purpose

Strict regulations and training requirements are necessary to ensure the responsible practice of nuclear radiology. The Nuclear Regulatory Commission (NRC) outlines requirements for physicians to achieve Authorized User (AU) status.

The rules have changed in the American Board of Radiology's (ABR) new board certification era. We aim to demystify the new AU process.
NRC, ABR, and AU….What?

• While guidelines for achieving the status of AU are outlined by the NRC, actually certifying those requirements have been fulfilled is left to certain NRC-recognized medical specialty boards, the ABR among them.

• To radiologists, the ABR awards the **AU Certificate** only upon completion of all NRC requirements AND satisfactory performance on Core, Certifying, and RISE examinations. A candidate who has earned his/her ABR AU Certificate may then apply to the NRC to become an **Authorized User**.
Why Residents Should Care

Recent graduates have noted employers require AU qualification. In broad terms, AU status is required for the medical use of radioactive materials. More specifically, medical use is defined as the intentional internal or external administration of byproduct material or the radiation from byproduct material to patients or human research subjects under the supervision of an AU. Radiology disciplines utilize isotopes daily, to include Breast Imaging (sentinel node injection), General radiology (melanoma sentinel node injection and I-131 PO therapy), IR (Y-90 intra-arterial therapy).
**Then versus Now**

**Then**
- Board certification as PGY5 fit criteria
- Thereafter, radiologist could make application to NRC become AU

**Now**
- Board certification is not achieved until PGY7 following Core exam PGY4, Certifying exam/RISE as PGY7
- Thereafter, radiologist can apply to NRC become AU
Work Experience and Training Requirements

The NRC and ABR specific work experience and training requirements during residency are as follows:

- 700 hours training and experience in imaging and localization studies,
- 80 hours classroom and laboratory training in basic radionuclide handling techniques, and
- I\textsubscript{131} case log 6 case minimum requiring written directive for administration $\leq 33$ mCi and $> 33$ mCi dose, and parenteral isotope case log
Working with Nuclear faculty, an AU handbook was created to describe regulations and training requirements, source documents, online resources, forms, collated resident didactic conference and resident block schedules, isotope case log. Example excerpt shown on next slide.
During residency, the following must be documented in each resident’s AU Rubric:

Classroom and Training hours in:

- radiation physics and instrumentation,
- radiation protection,
- mathematics pertaining to the use and measurement of radioactivity
- chemistry of byproduct material for medical use, and
- radiation biology

Supervised Work Experience in:

- 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,
- Calculation, 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, and
- Using procedures to contain spilled byproduct material safely and using proper decontamination procedures.
UNC AU Rubric

Per radiology resident, a personalized spreadsheet was created to document didactic lectures and hot seats, applicable hours of offsite courses, self study modules including AAPM/RSNA physics, and dedicated laboratory training sessions. Each entry was categorized as to: radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, chemistry of byproduct material for medical use, and radiation biology. 2D spreadsheet was converted to 3D pivot tool.
# UNC AU Rubric

<table>
<thead>
<tr>
<th>Training and Experience</th>
<th>Sum of Hours</th>
<th>Radioisotope Administration</th>
<th># of Administrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Chemistry of byproduct for medical use</td>
<td>1</td>
<td>Work Experience</td>
<td>25</td>
</tr>
<tr>
<td>- Classroom Training</td>
<td>1</td>
<td>I-131, &gt; 33 mCi</td>
<td>6</td>
</tr>
<tr>
<td>- Mathematics pertaining to use and measurement of activity</td>
<td>1</td>
<td>I-131, ≤ 33 mCi</td>
<td>3</td>
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<tr>
<td>- Classroom Training</td>
<td>1</td>
<td>Breast Sentinel Node Inj</td>
<td>2</td>
</tr>
<tr>
<td>- Radiation Biology</td>
<td>6</td>
<td>Lymphoscintigraphy</td>
<td>14</td>
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<tr>
<td>- Didactic Lecture</td>
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<td></td>
<td></td>
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<tr>
<td>- Classroom Training</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>- Radiation Physics and Instrumentation</td>
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<tr>
<td>- Didactic Lecture</td>
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<td>Required Form Completion</td>
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<td>- Classroom Training</td>
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<td>Form Signed</td>
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<td>- Radiation Protection</td>
<td>17</td>
<td>ABR Authorized User Form A</td>
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<tr>
<td>- Didactic Lecture</td>
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<td>ABR Authorized User Form B</td>
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<td>- Classroom Training</td>
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<td>NRC 313A</td>
<td>Pending</td>
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<tr>
<td>- Other</td>
<td>797.5</td>
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<td></td>
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<tr>
<td><strong>Grand Total</strong></td>
<td><strong>846.5</strong></td>
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</tr>
</tbody>
</table>
Achieving AU Status

To receive an AU Certificate from the ABR, a radiologist must pass:
- ABR Core examination
- ABR Certifying examination
- RISE examination (these questions are included in all Certifying exams)

To become NRC Authorized User, the radiologist then makes application to the NRC. NRC Form 313A Authorized User Training and Experience and Preceptor Attestation must be completed, to include attestation by a preceptor authorized user in good standing.
References


• Baldwin J, Bag A et al. All You Need to Know as an Authorized User. AJR 2015; 205:251–258