

New Training Pathways to Dual Certification in Nuclear Medicine and Radiology

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A panel discussion on the subject of training pathways leading to dual certification in diagnostic radiology (DR) and nuclear medicine (NM) took place on April 15 at the annual meeting of the Association of University Radiologists (AUR) in New Orleans, LA. Included among the panelists were representatives from the American Board of Radiology (ABR), the American Board of Nuclear Medicine (ABNM), and the American College of Radiology. The following article summarizes the unanimous observations and conclusions of the panel discussants.

Residents who successfully complete a training pathway leading to dual certification in DR and NM would have excellent knowledge of both NM and cross-sectional imaging, essential in contemporary patient care. Such practitioners could also promote sound clinical/imaging research. Dual certification would improve the marketability of NM graduates, prompting a likely increase in the attractiveness of dual-pathway DR/NM residencies for prospective trainees. This would ensure a steady pipeline of graduates with in-depth training and expertise in these modalities.

This is especially important in view of a long-term reduction in the number of NM residency programs and training positions, the relative lack of competitiveness for most dedicated NM residency positions, and the more recent decrease in the number of graduates from NM residency programs. A sharp decrease in NM residency programs of 29.9% between the 2001/2002 and 2013/2014 academic years was noted, along with a decrease of 17.9% in numbers of residents in these programs. It has been suggested that if graduate medical education funding by the federal government decreases in the future more NM residencies might not accept graduates of DR residency programs. This is because radiologists who already completed 5 years of sponsored education would be eligible to receive only half the funding of a nonradiology NM resident. Substantial support for combined programs exists in the NM community, including from the ABNM and, more recently, the ABR. The Accreditation Council for Graduate Medical Education (ACGME) does not accredit new combined programs (each program is separately accredited), but options are available to accomplish dual training besides doing a fellowship in NM after a DR residency or doing a DR residency after an NM residency (1–5).

Combined training in DR and NM currently follows 1 of 2 models. One takes advantage of recent changes in the requirements of the ABR and the DR Residency Review Committee. In this pathway, the DR resident dedicates 16

months to NM during the 48 months of DR residency. Two months of the mandatory clinical internship year can be in NM. All 16 months must be in an institution that sponsors both a DR residency and either an NM residency or a nuclear radiology (NR) fellowship accredited by the ACGME. Forty-three programs in NM and 20 in NR meet the requirements for this option. In a survey conducted in late 2013 and early 2014, 9 DR programs offered this pathway for their residents, and 5 more were giving it serious consideration (5).

Some aspects of this model are challenging. For example, 10 of the 16 months must be consecutive to be eligible for the subspecialty examination in NR, and this presents a problem for some residencies relative to call coverage, breast imaging requirements, and other programmatic obligations. However, even if those 10 months were not consecutive, the resident would be eligible for the ABNM examination, provided certain ABNM requirements (not required for the NR examination) are met. These additional requirements include completing under supervision 100 nuclear cardiac stress examinations, completing Advanced Cardiovascular Life Support training, and participating in 30 ^{131}I treatment cases, at least 10 of which must be for benign thyroid disease and at least 10 of which must be for malignant thyroid disease. To meet Nuclear Regulatory Commission regulations, at least 3 of these ^{131}I treatments must specifically use ≤ 33 mCi and 3 must be > 33 mCi. (For the NR examination a minimum of 15 ^{131}I therapy cases is required, of which 10 must be ≤ 33 mCi and 5 must be > 33 mCi.)

Other criticisms of the 16-month pathway include the fact that little time may be available for research and/or to learn both NM and DR well. However, the resident may elect to undertake a subsequent fellowship in another complementary radiologic subspecialty after graduation, including but not limited to breast imaging, neuroradiology, musculoskeletal imaging, abdominal imaging, or oncology. Combining molecular imaging with these fellowships would be an added strength of this pathway (5–9).

A different pathway for combined certification has been adopted at Stanford University and Stanford Health Care (CA). In this model a second postgraduate year (PGY-2), including NM and research, follows the ACGME-accredited internship year. PGY-3, 4, and 5 each have 11 months of DR and 1 month of NM, and PGY-6 includes NM and research. This approach has several problems. One is funding. Another is that residents might choose to undertake a fellowship in areas other than NM in PGY-6. At

Stanford, every effort is made to make sure that trainees enjoy and find valuable their time in NM and choose to return to NM in PGY-6. However, no legal steps will be taken to require a resident to keep the commitment regarding the sixth year. A third issue is that residents are under the direction of the DR program director for PGY-3–6, although they are working with the NM program director. Only during PGY-2 are the residents under the direction of the NM program director (although plans are in place for the NM program director to become the associate director for the DR program). A fourth issue is that residents will not be in the NM program for PGY-3–6, which might lead to a citation from the NM Residency Review Committee. Because the plan is to fill residency slots through the match process, this means that it will be necessary to interest medical students in this combined program (6, 10).

The ABNM recognizes the benefits of combined programs and has recently made a number of changes in the eligibility criteria to support these. Six months of consecutive training in NM are no longer required, and allowance has been made for up to 2 months of elective time in any subspecialty of DR the residency director believes to be appropriate. Harmonization of training program requirements between NR and NM now means that residents may be eligible for the ABNM examination at sites with either NR or NM training programs, as long as the cumulative time spent in dedicated NM training is sufficient and other requirements are met. At its next meeting the ABR will consider a proposal to eliminate the requirement for 10 consecutive months in a 16-month concentration in NM during a DR residency program.

The ABR and ABNM are committed to work together as training pathways evolve to meet the demands of the workforce and to support growth in the field of NM/molecular imaging. Eventual standardization of these combined pathways would be optimal. In the meantime, we predict that in the near future increasing numbers of somewhat variable combined institution-specific pathways will evolve.

At the AUR session in New Orleans, the very engaged audience had numerous questions at the conclusion of the panel presentations. Members of the audience later provided positive comments on the friendly tenor of the panel discussions and the extent to which panelists were in agreement on certain positions. All were in agreement that dual certification was a worthy goal and that the time is now for a number of programs.

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