

Insuring the Future of Nuclear Medicine

For the last 20 years, the Academic Council of the Society of Nuclear Medicine (SNM) has conducted a survey of residency programs in nuclear medicine:

A questionnaire is distributed annually to all directors of approved nuclear medicine residency programs. The questionnaire was designed to solicit information on the number of programs and residency positions available and to profile the residents in training. The format of the questionnaire has remained relatively constant, with the exception of some minor additions and deletions over the last several years. Additional data have been abstracted from the annual Education Issue of the *Journal of the American Medical Association*, which also serves as a confirmatory source of the Academic Council data. This article summarizes the results of the annual survey and provides insight into developing trends in postgraduate medical education in nuclear medicine in the U.S.

The number of accredited programs has remained relatively constant over the last 18 years, averaging 87 active programs in the U.S. However, in the last decade, there has been a slight, though gradual, attrition to a current level of 81 programs. The discontinued programs have occurred primarily among those sponsored by the armed forces, and there is continuing pressure to close the remaining armed forces programs. The total number of residents increased in the early 1980s to slightly over 200 residents and has fluctuated as much as 10% since then, averaging 180 each year. There has been no overall drastic decline in the total number of residents. Interestingly, there are usually more first- than second-year residents, about 14 more on average, suggesting that some residents leave a training program after one year or only complete one full year of nuclear medicine training, presumably having received credit for prior training. The number of funded residency positions is a more difficult number to track because of the evanescence with which a funded position can be offered or withdrawn dependent on departmental or institutional budgetary constraints. The funded positions in two-year nuclear medicine programs have varied from 212 in 1992 to 266 in 1995. However, when compared to other programs, nuclear medicine has shown one of the lowest percentages of filled positions.

The profile of nuclear medicine residents since 1977 with respect to location of medical school training, i.e., U.S. or Canadian (not Canadian nuclear medicine training programs) graduates versus international medical graduates (IMG), shows there have been substantial changes in the relative percentage of those from U.S./Canadian schools versus IMG applicants. It might be noted that the percentage of IMGs in nuclear medicine training programs far exceeds that of most other residency programs. In 1977, the percentage of nuclear medicine residents graduating from U.S./Canadian medical schools and foreign medical schools was essentially the same. In the mid-

1980s, the percentage increased to more than twice that of the foreign medical school graduates, but in recent years the percentage of IMGs equals two-thirds that of the U.S./Canadian graduates.

Data unique to the Academic Council survey relate to the kind of medical training acquired prior to entering a nuclear medicine residency (Fig. 1). Until recently, the American Board of Nuclear Medicine and the American Council on Graduate Education required at least two years of prior training in another specialty. Common antecedent pathways were radiology, internal medicine and pathology. There have been significant changes in the varying percentages of residents with different types of prior training. Certainly, the greatest change can be seen with those of

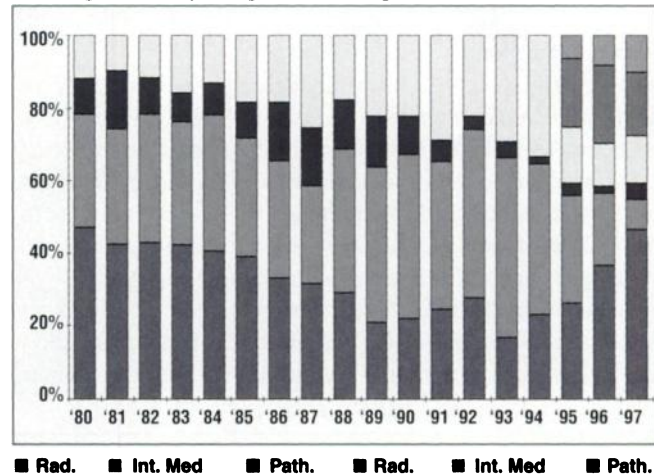


Figure 1. Prior residency training by specialty.

prior pathology training, now dwindling to only a few. The gradual decline of those with radiology training, which reached a nadir in 1989, has rebounded and has increased to levels above 40%. The large numbers of those with internal medicine training has decreased dramatically in recent years, to some extent compensated for by those with backgrounds in areas such as pediatrics and family practice and those with an internship only and the noted radiology residents increase. Because of the change in the requirement to one year of prior training, the questionnaire was modified to reflect this possibility. These data suggest that 20%-30% of residents either had no prior training or only an internship.

The alternate pathway for isotopic imaging practice is that of the Special Competence Examination in Nuclear Radiology given by the American Board of Radiology. Analysis of the data reveals that there have been marked changes over the last 15 years. The number of programs offering nuclear radiology has remained relatively constant with some slight declines in recent years to a current level of 33 programs. Interestingly, positions offered peaked in 1985 to a level almost 2.5 times the current number. Similarly, the number of nuclear radiology residents peaked in

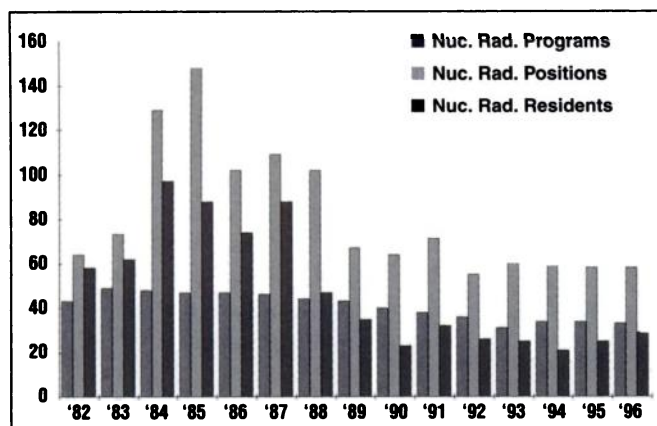


Figure 2. Summary of nuclear radiology programs, positions and residents from 1982-1996.

the mid-1980s and has slackened in recent years to approximately 25 per year (Fig. 2).

Future Indications

Essentially, there have been minor changes in the numbers of nuclear medicine programs and residents although there have been more marked fluctuations in the relative number of U.S./Canadian versus IMG medical school graduates and changes in the types of postgraduate training that residents had prior to their nuclear medicine residency. However, there has been no systematic analysis as to what produced these changes.

What is uncertain is to what extent ongoing changes in health care will affect the numbers and kinds of residents receiving nuclear medicine training. Recent analyses by the Manpower

Committee of the SNM suggest that the total number of full-time equivalent practitioners required to perform the expected number of isotopic procedures in the U.S. by the year 2000 would increase or at least remain the same. If the number of radiologists who are being trained in the U.S. also diminishes due to federally mandated reductions in the number of specialists and to a perceived oversupply of radiologists, the outcome does not bode well for nuclear medicine programs since radiology residents are increasing relative to other specialists in nuclear medicine training programs. Similarly, the resurrection of proposals to restrict the number of foreign postgraduate students (IMGs) might also adversely affect the supply of residents seeking training in nuclear medicine. Here is the conundrum: How do we insure that the manpower demands are satisfied by those who would best meet the health care needs of the 21st century, given current trends in nuclear medicine residency training?

Many SNM members would argue that it is the fully trained nuclear medicine specialist who possesses the resources for optimizing patient care, i.e., providing the best value for the health care dollar. While we have long recognized the importance of marketing our procedures, we must now also market ourselves. This means becoming more proactive as advocates for our current and future residents in the job market, deriving ways to reveal the value of the fully trained nuclear specialist, seeking out the best and the brightest residency candidates and having the SNM and program directors work synergistically to insure the future of nuclear medicine.

—James L. Littlefield, MD, is the director of the clinical imaging unit, nuclear medicine service at the VA Hospital, St. Louis, MO

Residency Cutbacks

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tives. The ABNM has renewed its efforts to create a joint training program with the American Board of Internal Medicine (ABIM).

With discussions still in the early stages, several rough plans are being considered. One plan could be to interweave a year of nuclear medicine training into, say, cardiology training. The dual four-year program would enable residents to take both board exams at the same time, according to James M. Woolfenden, MD, chairman of the ABNM and director of the division of nuclear medicine at Arizona Health Sciences Center in Tucson. “We have had preliminary discussions with representatives from the ABIM and plan to meet with them in the near future,” he said.

The SNM is also attempting to work around the Federal government by approaching managed care providers directly to educate them on the need to have trained nuclear physicians interpret nuclear medicine studies for their patients. The Society recently changed its mission statement adding the words “promoting the value of nuclear medicine.” To accomplish this mission, the SNM drafted a statement of purpose to identify

strategies for the near future. The hope is that managed care organizations will agree there is a need for more nuclear medicine residents.

Of course, there are those who feel that the worries concerning nuclear medicine residency programs have been somewhat unjustified. James L. Littlefield, MD, the director of the clinical imaging unit at the VA Hospital in St. Louis, MO has been collecting data on nuclear medicine residency programs for the past twenty years. He has found that over the past decade, residency positions have declined by about 10%, a decrease similar to other specialty training programs (see Commentary on page 17N). “We’re talking about a slight decrease, not a huge decline,” Littlefield said.

Littlefield admits he cannot predict whether the decline will become steeper in the upcoming years as government initiatives begin to take effect. On the whole, however, he does not think the nuclear medicine specialty is immediately threatened. “Let’s not say the sky is falling,” he said. “Let’s find ways to show that board-certified nuclear physicians provide the best value to customers—be they government regulators, providers or patients.”

—Deborah Kotz