

Regarding “Is 16 Months of Specialized Nuclear Medicine Training Enough for Best Patient Care?”

TO THE EDITOR: As the program director of the national nuclear medicine training program in Singapore (ex-British colony that just celebrated our 52nd anniversary of independence), I read with interest “Is 16 Months of Specialized Nuclear Medicine Training Enough for Best Patient Care?” I agree with the editor that my answer is also “No.”

In our institution, “Nuclear Medicine and Molecular Imaging” has just joined our cousin departments “Diagnostic Radiology” and “Vascular and Interventional Radiology” to form the division of “Radiologic Sciences.” In the Specialists Accreditation Board, nuclear medicine is an independent specialty with its own Residency Advisory Committee.

Let me comment on the key questions that the editor has raised. First, nuclear medicine is not a division of radiology in Singapore (I agree that cross-sectional imaging is an important part of nuclear medicine training). Second, the nuclear medicine practice will continue to grow in therapy, oncology, neurology, and cardiology in the next 5–10 y. Third, we have to increase our capacity to meet the needs of theranostic programs. And fourth, theranostics will subspecialize into systems to fit into the workflow of nuclear medicine.

I agree that nuclear medicine therapy (precision medicine) has different training demands. In Singapore, nuclear medicine is considered a senior residency program (2.5 y) where we accept applicants from medicine (after internal medicine residency) and radiology (after 4 y of diagnostic radiology residency as a dual accreditation program). Graduates of our program (previously called advanced specialist training) are highly skilled experts who have shaped the field in Singapore for more than a decade.

Image interpretation with cross-sectional imaging training is an important part of our program (more so for residents with a medicine background). We are also developing relationships with urology (prostate-specific membrane antigen–targeted theranostics), radiation oncology (theranostics), endocrinology, and oncology (somatostatin receptor–targeted theranostics, bone pain treatments), not to mention our close ties with cardiology, neurology, and medicine (infection/inflammation). We are also involved in the academic, translational, and clinical applications of imaging probe development, tracer kinetics, and molecular imaging in drug development.

The Journal of Nuclear Medicine has readership across the world and we are keen to be engaged in this discussion. In order for us to succeed, you must succeed as well.

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TO THE EDITOR: I am writing in support of the editorial written by Dr Czernin (1) and Dr Lam’s letter (2) published recently.

There are 2 questions raised by the statements. The first, should nuclear medicine (NM) be an independent specialty? And second, if not is 16 mo of training adequate to accomplish the best patient care?

My answer is yes to the first question and no to the second. I practiced NM in the United States for 30 y (the last 10 as Director of Nuclear Medicine in a large academic hospital) and assumed leadership positions within the Society of Nuclear Medicine and Molecular Imaging including president of the Nuclear Oncology council between 2009 and 2011. I have returned in 2013 to my native country Lebanon, where a large number of practitioners are duly certified after training in Europe. I have witnessed firsthand the superb quality of their care. Moreover, I have participated at the meetings sponsored by the European Association of Nuclear Medicine and have noticed the excellent educational quality of the talks.

It may be useful to remind the readership of the *Journal* that NM is an independent specialty in the overwhelming majority of world regions including Europe; the Far East, including China, Japan, and South Korea; and Latin America.

Indeed, there is no compelling reason why NM should be part of Radiology (DR). Although both specialties deal with images, the divergences are more important than the similarities. We look for metabolic or molecular disturbances with the help of tracers. Radiologists look for structural abnormalities (fracture, hemorrhage, edema, and masses) that are detected through changes in physical characteristics of the tissue interrogated. Progress in NM depends mostly on progress in finding more specific tracers. Progress in DR depends on progress in technology and bio-engineering. NM has emerged from Medicine everywhere, including the United States, and for this reason has successfully endeavored to quantify the image data and relate them to the patient outcome. NM tests provide not just a diagnosis but also prognostic information and help guide management. It is not surprising that PET is at the forefront of personalized medicine in cancer. I believe our perspective and success are related to our background in Medicine and our affinity with physicians from Medicine.

Finally, and most importantly, the field is moving forward toward therapeutic applications. My mentor, the late Henry Wagner, used to say: “NM is useful for Medicine people and will become increasingly so.” As is often the case, his comments were prophetic. We have emerged from Medicine and we are returning to Medical Therapy, an area far away from radiologist interests and expertise. Therapeutic Interventional Radiology is only an alternative to surgery.

The American pathway is a singular experiment with uncertain results. It is the exception that confirms the rule. It is not a coincidence that this rule has been adopted by the rest of the world. The rule and the correct way are to consider NM as a fully independent specialty. The future will validate this approach and the future is here, that is, Theranostics.

However, because the American NM pioneers have decided otherwise by striking a “marriage” deal with DR, let me answer the second question.

The 16-mo duration is barely adequate for today’s NM and will be inadequate when Theranostics enters practice, in the same way the 4-mo rule (which is still surprisingly valid) was barely adequate