The State of Nuclear Medicine, 2007

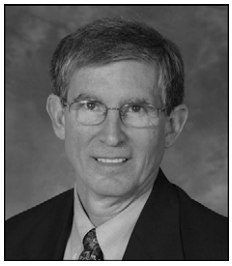
From the Newsline Editor

What's in a Name?

As I began to think about our annual retrospective issue of Newsline, I looked to other scientific publications to see what their editors considered the big news stories of 2006. What topped the list? Was it the astonishing range of genetic and genomic advancements? Discovery of new fossils that challenge our notions of prehistory and human development? New evidence of global warming? No, the story that all such lists included and that ranked near the top was: the August demotion of Pluto from a planet to a "dwarf planet." This was, in fact, not news about science but news about naming. It occurred to me that this story had such appeal precisely because it upended the kind of basic quantitative rule we learned as children: 7 continents, 4 oceans, 9 planets, 10 fingers, etc.

Change is difficult, even when that change involves only reclassification of the familiar to accommodate expanding scientific knowledge. Those of us who came of age when nuclear medicine included a fairly limited number of diagnostic and therapeutic procedures using an equally limited range of radionuclides are now facing a name change within our own discipline. The age of molecular imaging is upon us, and the techniques of nuclear medicine are clearly at the forefront of this new age.

SNM recognized this fact by launching the Molecular Imaging Initiative at its Annual Meeting in San Diego, CA, in June. Through multiple efforts, including the establishment of a Molecular Imaging Center of Excellence, a Bench to Bedside research initiative, and cooperative projects with other imaging disciplines, SNM is embracing the entire range of molecular imaging, including approaches once considered outside our purview: optical imaging, bioluminescence imaging, functional MR imaging, and others. This makes sense on many levels, not the least of which is that the future of molecular imaging seems dependent on hybridization of modalities across once separated disciplines. The value of a cooperative approach was reinforced by academic, industry, and government attendees at the SNM Molecular Imaging Summit held this summer. By working together, we can optimize our approaches. And if we sometimes struggle to precisely define the constituents and boundaries of molecular imaging, this is no doubt a part of the learning process as we adapt to change. In this issue of Newsline, SNM leaders address the promises and challenges of this evolution to a focus on molecular imaging.



Conrad Nagle, MD

Other notable events from 2006 follow more familiar themes and trends in nuclear medicine. News of pending cuts in imaging reimbursement by Congress cast a shadow, at the same time that efforts such as the opening of the National Oncologic PET Registry raised hopes for expansion of approved indications for PET and PET/CT. Each month brought published reports of research with new radiotracers and novel applications that promise to explore a range of functions in increasing detail. However, the implementation of Department of Energy (DOE) cuts to basic nuclear medicine science, once funded through the DOE Office of Science, led investigators to scramble and, in many cases, look overseas for their research isotope needs. This quest was hampered by increasing restrictions on international transport of radionuclides and, in some cases, by the refusal of carriers to accept such cargo and by a few national regulations prohibiting flyovers with such materials. Security was on the minds of both travelers and transportation officials, and SNM issued a helpful and widely noted set of travel tips for individuals who would be passing through radiation detectors after recently undergoing nuclear medicine procedures. And for the popular news media the "big radioisotope story" of the year was not a notable breakthrough in imaging or therapeutic science, but poisoning and a surprisingly wide range of related contamination by ^{210}Po, with the source of original generation not yet identified.

The changing focus on molecular imaging was reflected this year in National Institutes of Health (NIH) initiatives, including new programs supporting imaging in translational research, the development of a number of multi-institutional consortia and research data "clearinghouses," and the largest dollar amount ever devoted to imaging grants and training activities. Also at the federal level, we saw an increasing emphasis on voluntary quality assessment (QA) programs, particularly by the Centers for Medicare & Medicaid Services. All signs point to mandatory implementation of such programs within the next decade, with an almost certain subsequent step tying reimbursement rates to the results. It is clear that we must

work to define the metrics of excellence in performance at the same time that we redefine the boundaries of our field—a not insignificant challenge—because if we do not define these metrics it is almost certain that federal agencies will do so for us.

As the scope of our field has expanded, so has Newsline. Less than a decade ago, Newsline was seldom more than a few pages long. Not only have we added a number of features, but now we have the flexibility to include expanded issues, such as the complete proceedings of this year's Molecular Imaging Summit (December), the complete images and text of Dr. Henry Wagner's annual Highlights Lecture (August), and this annual roundup issue. Beginning this month, we are also adding a separate molecular imaging section to our popular monthly summaries of notable publications from the peer-reviewed literature. One immediate question raised as we categorize our selections is: Which research truly fits into the "molecular" category and which does not? The answer, I suspect, is as much a matter of naming as it is of clear distinctions.

I hope that 2007 brings productivity and prosperity to all Newsline readers, as we work together toward a world in which molecular imaging—or whatever new name it may take in the distant future—speeds a range of techniques and therapies to beneficial clinical applications.

Conrad Nagle, MD
Editor, Newsline

From the SNM President

A Year of Shaping the Future

Over the past year the leadership of SNM has worked diligently with the members of the society to reshape its future. Many actions have brought the society to its defining moment—of bridging nuclear medicine to a new future with molecular imaging and therapy.

The Rise of Molecular Medicine. Nuclear medicine is leading the way in this new field of molecular imaging as it is being joined by—and integrated with—other modalities. Research traditionally performed with nuclear medicine–based tracers is being expanded to involve any kind of tracer attached to a molecule that provides a detectable signal, offering a new generation of imaging tools that could improve patient care—especially when compared with today's conventional diagnostic imaging.

Planning for Tomorrow. For these reasons, SNM leaders developed a 5-year strategic plan and expanded mission: To improve health care by advancing molecular imaging and therapy. In addition, through collaboration with the members of our Molecular Imaging Center of Excellence, the society has also drafted a separate 5-year action plan utilizing a community approach to moving molecular imaging research from bench to bedside. This action plan is supported by the society's 5-year, $5 million "Bench to Bedside" campaign, which has raised nearly $3 million in its first year from corporate donors GE Healthcare, Bristol-Myers Squibb, Siemens Medical Solutions USA, IBA Molecular, Philips, and FluoroPharma.

Progress in Defining Molecular Imaging. SNM explored basic research, instrumentation, drug development, clinical issues, and educational needs at its 2006 "Shaping the Future" molecular imaging summit. In publishing the summit's conclusions and recommendations in the *Journal of Nuclear Medicine*, we reached a milestone in defining molecular imaging.

Martin P. Sandler, MD

Supporting MOC Reality. American Board of Medical Specialties recertification programs were expanded and replaced with maintenance of certification (MOC) programs. Nuclear medicine professionals can no longer simply take an exam to renew a certificate; lifelong learning activities must be documented. American Board of Nuclear Medicine (ABNM) MOC requirements take effect this year, requiring all diplomates with time-limited certificates to document necessary competencies in an ongoing process that includes assessing and improving practice performance.

In anticipation of MOC changes, SNM developed its Lifelong Learning and Self-Assessment Program. Nearly 2 dozen systems-based online modules can help nuclear medicine professionals measure their performance in practice. SNM also offers comprehensive educational programs to meet the Accreditation Council for Graduate Medical Education and ABNM requirements for CT training.

Emphasizing Practice Issues. SNM developed a task force to monitor and respond to issues related to practice standards, including pay for performance, and continues to work with the American Medical Association to influence a gradual pay-for-performance strategy that will improve health care. With the American College of Nuclear Physicians, SNM initiated minimum standards for the credentialing in nuclear medicine of those interpreting PET, PET or SPECT with CT, and cardiovascular CT images. And, the society published the first procedure guideline for tumor imaging with ^{18}F-FDG.

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