Increasing Nuclear Medicine Residency Training Requirements: For Better or Worse?

A proposal has recently been put forward to increase the duration of the nuclear medicine residency and implement a 3-tier residency training requirement beginning in 2005 or 2006. The proposal includes increasing the length of the nuclear medicine residency from 3 to 4 years (1 basic clinical year [PGY-1] plus 3 years of nuclear medicine) for medical graduates fresh out of medical school. Internal medicine physicians will be required to complete 2 years of additional training in nuclear medicine, and radiologists will be required to complete a fellowship year of nuclear medicine to be eligible to take the American Board of Nuclear Medicine (ABNM) examination.

The proposal has the greatest impact on the nuclear medicine residents who have not completed residency training in other specialties. Four of the main reasons cited for increasing the length of training are the perceived needs to: (a) train residents in new and changing modalities such as PET/CT, (b) raise the standards of nuclear medicine residents, (c) make nuclear medicine training more academically oriented, and (d) increase the respect for nuclear medicine physicians. Although these are honorable reasons, many issues must be addressed before these decisions are finalized.

First, simply increasing the length of residency training does not guarantee that residents will receive training in new techniques, in technologies such as PET and CT, or in innovative research. The requirements are not properly structured to mandate such training. Moreover, residency programs with only 1 or 2 residents might actually need to increase the number of residency slots, because the third-year resident may not be available to perform the same duties as a first- or second-year resident. The final-year resident might be in a research or CT rotation, leaving the clinic without coverage. This will eventually create tensions and problems within the department. In addition, the new recommendation does not address the case of a resident deciding to switch to nuclear medicine after 2 years of residency training in another specialty. What would be the requirements in such a situation—2 or 3 years of nuclear medicine residency?

Some have suggested that 2 years of training in nuclear medicine after internship are inadequate for nuclear medicine physicians. This does not seem rational—the majority of nuclear medicine scans in the United States are currently being read by general radiologists with only 4–6 months of training in nuclear medicine. Many nuclear medicine procedures that were commonly used in the past are no longer in use. The time spent learning these now outdated procedures can be diverted to other training, such as PET or PET/CT experience. Moreover, many nuclear medicine physicians who were never trained in PET during their own residencies are currently doing excellent work reading PET scans. This proves that once a reasonable level of training and experience is achieved, further knowledge can be built on previous training and experience.

Second, increasing the length of training with no added benefit may not increase the quality of the residents, because it does not make nuclear medicine residency graduates more marketable for jobs or more advanced training. After the proposed training requirement increase, a nuclear medicine residency would require 4 years and a radiology residency would require 5 years. Most medical students would prefer to do the radiology residency, because radiology offers more job opportunities for only slightly longer training. Those who opt for radiology would be able to read nuclear medicine scans, along with many other modalities, without additional training. If the purpose of the extended training requirement is to attract more and higher quality residents, the result of this change would not only be poor but would ultimately be detrimental to nuclear medicine.

Third, although the notion that extending residencies would provide extra time for research and better prepare physicians for academic positions is admirable, fellowships might provide a more practical and beneficial alternative. Higher professional social status and pay come after a fellowship year rather than after an additional year of residence. Young physicians today are confronted by many issues that were not as evident 5 years ago, such as stringent Medicare reimbursement rules for residency and the ever-increasing cost of medical school tuition. A year of fellowship training after residency, allotted exclusively for nuclear medicine residency graduates, would be a better option.

Fourth, improving the perception of nuclear medicine among other specialties might be accomplished more effectively if we try to increase the marketability of nuclear medicine physicians rather than simply increasing the length of their training. The reason for the low marketability of both nuclear medicine residencies and their graduates is not a lack of training or respect from the physician community but the limited availability of postresidency employment. The few jobs available are mostly in academic centers, where ABNM-certified physicians or radiologists with certification in nuclear radiology are preferred. The typical nuclear medicine resident graduating in June will not be able to sit for the
ABNM certification exam until later in the fall, with results unavailable until December. This keeps the nuclear medicine residency graduate out of work and training for a minimum of 6 months. The pass rate of the ABNM certification examination is lower than those in many other American Board of Medical Specialties certification examinations, including that of the American Board of Radiology. The ABNM also should be aware that general radiologists with nuclear medicine training of 4–6 months are eligible to read any nuclear medicine scan with no additional certification or training. Prospective employers prefer radiologists over nuclear medicine physicians, because the radiologists can read many other modalities in addition to nuclear medicine scans. The ABNM should take these factors into consideration and make the passing criteria of its certification examination less stringent.

The major limiting factor for the marketability of the nuclear medicine residency is the job market that confronts residency graduates. The big question is whether the increase in training requirements will be the solution it is expected to be or the beginning of the end of the existence of nuclear medicine as an independent specialty. If the job situation and the demand for nuclear medicine physicians remain the same, it will be very hard to recruit quality residents to 4-year nuclear medicine residency programs. Many residents recruited are likely to be medical graduates from other countries, some of whom are willing to accept any residency to satisfy visa requirements. Even this source of recruitment could dry up when these students realize that there is no future for nuclear medicine physicians in the United States. Many residency programs would eventually be forced to close. This will have a tremendous effect on the field of nuclear medicine and the development of molecular imaging. Nuclear medicine technologists, physicists, and scientists depend on nuclear medicine physicians for guidance in clinical matters. Subsequent development could be hindered in other sectors of nuclear medicine, including the basic sciences, leading the United States to fall behind other developed countries in the field—a situation that may already have occurred, as evidenced by increasing percentages of nuclear medicine–related articles in U.S. journals authored by individuals working outside the country.

Physicians trained in internal medicine have many other subspecialties from which to choose for additional fellowship training. Because most of these fellowships are for 2 years, many internists will prefer to be trained in another internal medicine subspecialty rather than in nuclear medicine. In the present situation, they will be more marketable after a fellowship in an internal medicine subspecialty. The number of internists deciding to do further training in nuclear medicine will be far fewer than the number of residency spots available.

One alternative to the proposed changes in residency training requirements is to have an integrated 3-year program for medical students straight out of medical school, similar to the residency programs offered in obstetrics and gynecology. The first year could be a PGY-1 year, with 9 months of basic clinical training integrated into a 2-year nuclear medicine residency. If all integrated nuclear medicine programs participated in the National Resident Matching Program or similar matching programs and if medical students were made aware of such an opportunity, recruitment would be easier. The feasibility of making nuclear medicine residency a training program with an integrated PGY-1 should be actively considered. It also carries the advantage of getting higher quality applicants, especially because radiology residencies have recently become extremely competitive in the match. Physicians trained in other specialties but wanting to pursue a career in nuclear medicine need not be required to do the integrated clinical year. They could do 1 or 2 years of additional nuclear medicine training, depending on their previous graduate medical education. The other alternative is to create fellowship positions designated exclusively for nuclear medicine residency graduates, with emphases on research, oncology, PET, and CT training.

The existence of nuclear medicine as an independent specialty is now at a crossroads. It is time to either revive its independence or become a subspecialty. The major challenge is to attract quality residents and produce excellent nuclear medicine physicians for the future. The SNM Young Professional Committee, representing residents and recent graduates, believes that simply increasing the length of training without a thorough consideration of the issues raised here will be detrimental to the future of nuclear medicine.

The SNM and other professional organizations should work closely with professional bodies such as the American Medical Association to increase awareness of nuclear medicine as a separate specialty among the medical fraternity and, most important, among referring physicians and the public. In most other specialties, the present trend is to hire and grant clinical privileges to board-certified or board-eligible physicians. It is surprising that this is not the case in nuclear medicine. Instead, it does not seem to matter who is better trained but who is most influential in getting these privileges. The ABNM, as the certifying body, should emphasize that physicians who are board eligible or board certified in nuclear medicine are the most competent professionals for reading nuclear medicine scans, including cardiac, PET, and PET/CT images. It will take a concerted effort and cooperation from many individuals, other specialties, many professional organizations, and involved committees to achieve this goal.

Aju Thomas, MD, Board Member
Kelly H. Pham, DO, Co-Chair
Gina Caravaglia, DO, Co-Chair
SNM Young Professionals Committee
In January, several hundred nuclear medicine specialists from around the world came together in Porto Alegre, Brazil, for the International Atomic Energy Agency (IAEA) International Symposium on Nuclear Oncology, for which the SNM was a cosponsor and contributor of expert resources and logistic support.

Held from January 19 through 23 in cooperation with the government of Brazil, the World Federation of Nuclear Medicine and Biology, the Asia & Oceania Federation of Nuclear Medicine and Biology, the Association of the Latin American Societies of Nuclear Medicine and Biology, the Brazilian Society of Nuclear Medicine and Biology, and the World Radiopharmaceutical Therapy Council, the symposium had its origins at an SNM meeting in 2002. Ken Maynard, SNM Associate Director of Public Affairs, met informally with Ajit K. Padhy, MD, from the IAEA Division of Human Health. “We met over coffee to talk about possible joint activities that could draw on the expertise of the international nuclear medicine community in ways that would have lasting benefits,” said Maynard. “Padhy suggested this regional symposium format as one that would be ideal in bringing together a mix of developed and developing countries that share a keen interest in the benefits of nuclear medicine, particularly oncologic applications.”

Within weeks of the initial meeting, plans for the symposium were already taking shape. “This was a global community effort,” said Maynard. “And the SNM was very much in on the ground floor, advising on topics for sessions and working with the IAEA staff to identify speakers.” Maynard credits Padhy with much of the success of the symposium. “He recognized that this is a crucial time for world nuclear medicine, when rapid developments in our technology are dovetailing with extraordinary discoveries about the genesis and treatment of a number of cancers,” said Maynard. “Padhy also worked to bring together the excellent coalition of cooperating organizations with which the SNM worked in supporting the symposium.”

When the symposium opened in Porto Alegre on January 19, the program featured 4 packed days of presentations, posters, special sessions, lectures, and social events. Representing the SNM were Henry D. Royal, MD, SNM president; Alexander MacEwan, MD; Stanley J. Goldsmith, MD; and Chaitanya R. Divgi, MD. Attendees from the United States also included Michael Goris, MD, PhD; Hussein M. Abdel-Dayem, MD; Salvador Borges-Neto, MD; Suresh C. Srivastava, PhD; Abass Alavi, MD; Greg Wiseman, MD; F.F. (Russ) Knapp, Jr., PhD; and Franklin C-L Wong, MD, PhD, JD.

“This symposium represents the kind of effort that the SNM is dedicated to encouraging as one of our most important missions,” said Virginia Pappas, SNM executive director. “Our attendees gave their time and expertise to an effort designed to foster an open exchange of scientific information across the broadest possible spectrum of international outreach.”

Attendees at the symposium from throughout South and Central America came to hear about topics as traditional as 131I therapy for thyroid cancer and as cutting edge as the latest in PET/CT technology and molecular imaging. “A great deal of interest was expressed in radionuclide therapy in general, including radioimmunotherapy regimens, palliation of bone pain, and treatment, for example, of hepatocellular cancer,” said Goldsmith. He added that the symposium provided an opportunity to assess the current state of PET worldwide. “It was remarkable to learn that FDG for PET imaging is flown in daily to Estonia from Finland,” he said. “At the same time, it’s clear—and saddening—to learn that the cost of PET scanners prohibits many areas from participating in this technological revolution.”

Several attendees who gave presentations noted the personal and professional gratification they felt in sharing expertise and knowledge. “That’s not meant to infer in any way that the attendees were uninformed,” cautioned Goldsmith. “What they seemed to benefit from most was a sense of reassurance about what they do. We in the more developed countries not only benefit from wealth (Continued on page 23N)
Mena Honored in Auvergne

In a ceremony on January 15 in Clermont-Ferrand, France, Ismael Mena, MD, Emeritus Professor of Radiological Sciences at the University of California at Los Angeles (UCLA) School of Medicine, was awarded the title of Doctor Honoris Causa by the Université d’Auvergne. Jean Maublant, MD, vice-president in charge of public relations policies for the university, presented the title and delivered the presentation address. In addition to reviewing the honoree’s life work, he noted the influence Mena has had both on training French physicians in nuclear medicine and on the development of the specialty in France. Maublant himself worked with Mena at UCLA in the 1980s and recalled both the high quality of his mentorship and the warm welcome he extended to visiting scholars and their families. According to sources at the Université d’Auvergne, the January ceremony marked the first time that a French university had bestowed an honorary doctorate on a nuclear medicine physician.

Mena told Newsline, “This doctorate is for me a crowning achievement after many years of teaching a large number of French nuclear physicians at the UCLA School of Medicine, a number of whom now occupy leading positions in important French universities and medical centers. This honor is a sign of their loyalty and friendship, which I treasure.” Mena lives in Santiago, Chile, and remains active in nuclear medicine and in international organizations. He serves as the editor-in-chief of the ALASBIMN Journal: Revista de Medicina Nuclear, published by the Latin American Association of Societies of Nuclear Medicine and Biology, of which Mena was a founding member.

(Continued from page 20N)

and resources, but we’re privileged to have excellent communication with each other through meetings, publications, and other venues—all of which are more difficult for people from developing countries to come by. Whether as teachers or students, we are constantly reinforced, whereas they are more isolated. Hopefully, many contacts established at the symposium will be maintained and the ties strengthened.”

Maynard agreed that the benefits of the symposium are likely to live on well into the future. “By being in at the beginning of planning for this meeting, we were true participants. We soon had companies coming to us asking what they could do to help,” he said, citing the support of MDS Nordion and Amersham as important elements in the SNM delegation’s participation. As ties among both individuals and international nuclear medicine organizations are strengthened, support from industry, academia, and government groups will be galvanized to expand the focus and range of similar meetings in the future.

“One of the delightful elements of the meeting was a true sense of fraternity—the world of nuclear medicine coming together to share expertise, experience, and problems—indeed of political and other differences among governments,” said Goldsmith. “In fact, in one stirring experience, international attendees were asked to bring CDs with music from their homelands to be played at one of the evening dinners. Each person first explained the background of the music and either sang along or demonstrated the steps of a dance. Then, on replay, everyone joined in.” Goldsmith also noted a memorable moment on the last evening when a band played John Lennon’s “Imagine,” and attendees sang as one about “No need for greed or hunger...a brotherhood of man.”

Publication of the proceedings of the International Symposium on Nuclear Oncology are planned for later this year. A full copy of the program can be accessed through the IAEA site at www-pub.iaea.org/MTCD/Meetings/PDFplus/2004/cn117prog.pdf.
Atoms for Peace (and Health)

This year’s 50th anniversary of the founding of the SNM coincides with the 50th anniversary of the Atoms for Peace speech, with which President Dwight D. Eisenhower persuasively introduced the notion of turning one of the most frightening products of the second World War into a force for the betterment of humankind. Eisenhower delivered the speech on December 8, 1953, before the General Assembly of the United Nations in New York, NY. At that time the future of nuclear research seemed grim. The Soviet Union had developed an atomic bomb in 1949 and by 1953 possessed hydrogen bombs with 1,000 times more potentially devastating effects than those dropped on Hiroshima and Nagasaki. Eisenhower outlined 3 goals to harness nuclear technology for good: (1) to work with the Soviet Union to transform military uses of atomic energy into peaceful applications; (2) to negotiate nonproliferation agreements with the Soviet Union; and (3) to involve nations throughout the world, large and small, in peaceful efforts to develop atomic energy for beneficial purposes. He said:

It is not enough to take this weapon out of the hands of soldiers. It must be put in the hands of those who know how… to adapt it to the arts of peace. This greatest of destructive forces can be developed into a great boon for the benefit of all mankind. If the entire body of the world’s scientists and engineers had adequate amounts of fissionable material with which to test and develop their ideas, this capability would be rapidly transformed into universal, efficient, and economic usage.

These proposals resulted in the establishment of the International Atomic Energy Agency (IAEA) in 1959 and in substantial efforts with the United States Atomic Energy Commission.

Those of us in nuclear medicine and our patients all over the world have benefited enormously from the efforts of Eisenhower and other political leaders and government officials who have followed in his footsteps. In countries all over the world, professionals in nuclear medicine have been encouraged, educated, and supported by the IAEA. In the United States, the Department of Energy (DOE) played a dominant role, including, for example, the establishment of the Office of Biology and Energy Research, dedicated to advancing nuclear medicine and biology. In a lecture more than 20 years ago at Oak Ridge, TN, I noted: “The field of nuclear medicine has been and will continue to benefit from the efforts of the DOE. No force in the country or in the world has done more to develop nuclear medicine than the DOE.” When we look at the enormous number of radioisotopes that we use today and the invention of instruments—including the rectilinear scanner, Anger camera, computer, and the human genome project—all developed largely through the National Laboratories and extramural research out of the DOE, who can deny that this statement is as true today as it was 20 years ago?

Yet, we must deal with both sides of the coin of atomic energy—the bad as well as the good. We in nuclear medicine can help make the public’s understanding of radiation more rational, pointing out warranted fears and reassuring them about its safety and beneficial uses. The public’s greatest fear of radiation began at 10:00 PM on August 9, 1945, when President Harry Truman, speaking from the White House, reported that atomic bombs had destroyed the cities of Hiroshima and Nagasaki. This fear was increased during the Cold War. The accidents at the Three Mile Island nuclear power plant in 1979 and at Chernobyl in 1986 kept the fires of fear burning. The attack on the World Trade Center in 2001 made it clear that terrorists present even greater threats. No one can deny that the fear of nuclear weapons is as great today as it was in 1953. Added to these now engrained fears is a new worry—that terrorists can cause panic with “dirty bombs” (officially called radiation dispersal devices).

As described in the accompanying article by Dr. Links, it behooves all nuclear medicine professionals to increase our efforts to educate the public and our political leaders about all aspects of radiation. We can be inspired by the optimism expressed by Eisenhower as we help the public and political leaders adopt a more sound view of issues related to nuclear energy and the efforts of international agencies such as the IAEA in their nonproliferation work.

How has the fear of radiation affected nuclear medicine, and what should we be doing about it? Over the years, people have become more and more concerned about the risk of radiation. Almost 80% of people surveyed believe they are subject to more risk today than 30 years ago. Perception of risk changes over time. Today there is more concern about the risks of genetic modification of food than about food irradiation. The fear of risks is imposed upon us at much higher levels than we would naturally accept ourselves. Fortunately, nuclear medicine procedures are at the lowest end of the risk spectrum. I personally have never had a patient who refused a nuclear medicine procedure because of fear of radiation.

Henry N. Wagner, Jr., MD
SNM Historian
The radiation team includes radiation experts from academia, the city’s Homeland Security Officer, and the hazmat leader for the Maryland Department of the Environment. The team is equipped with more advanced radiation detectors and will take environmental samples. These samples will be assayed either at the Department of the Environment’s analytical laboratory, which is located in downtown Baltimore, or, if the downtown area is too contaminated, at the Aberdeen Proving Grounds (a half-hour helicopter ride away). Once the radionuclide(s) is identified along with an estimate of total activity, we will use the public domain computer program HOTSPOT to model the dose distribution in space and time. Based on Maryland's understanding of radiation more rational,
The SNM Radiopharmaceutical Science Council (RPSC) represents a diverse group of scientists, physicians, pharmacists, and technologists who are interested in all aspects of development, formulation, dispensing, and administration of radiopharmaceuticals. As part of a revitalization of all councils within the Society, substantial changes are occurring within the RPSC. A subtle but significant change is renaming it the Radiopharmaceutical Sciences Council. This minor change was made to emphasize the multidisciplinary nature of council membership and to embrace the many fields involved in this subspecialty of nuclear medicine. A range of scientific disciplines, including radiochemistry, inorganic chemistry, organic chemistry, medicinal chemistry, analytical chemistry, radiopharmacy, radiobiology, molecular biology, medical/health physics, pharmacology, pharmaceutical sciences, engineering (automation), and medicine, are required to develop and bring radiopharmaceuticals to the point of patient care. A primary goal in the council revitalization process is to make sure that the activities of the RPSC are broad enough to ensure that these diverse disciplines are well represented. It is also our goal to work with the SNM Technologist Section to institute activities that would better serve the needs of technologists and attract more technologists to the RPSC.

The revitalization process is going on in all councils, and it is likely that significant changes will occur in most. One of the important changes that will likely occur is the institution of interim meetings for council boards of directors to address issues and plan for the future. To expedite planning for the RPSC, our board held an interim meeting in March and defined several short- and long-term goals for the revitalization process. Some goals will improve communication with RPSC members and offer more benefits to the RPSC membership. Other goals are directed at providing more recognition for professionals in the radiopharmaceutical sciences. Still other goals are directed at exploring opportunities to expand and strengthen the RPSC educational offerings, such as student poster sessions with social mixers at the SNM annual meeting and conducting workshops within other society meetings. The latter activity will be part of an expanded outreach program to attract new members to SNM and the RPSC. It is apparent that significant resources will be required to realize these goals. As part of the council revitalization, the SNM governance is supportive of the programs being developed and has set in place a mechanism for requesting resources. That mechanism requires each council to provide a business plan outlining proposed activities and an estimate of required resources. Such a business plan is being developed by the RPSC and will be presented to the SNM Board of Directors for consideration in the 2005 budget.

The most important part of the revitalization process is to identify how best to serve the current membership of the RPSC and add new benefits so that other interested professionals will want to join. The only way this will work is to have input from both RPSC and SNM members. In the coming months we will be adding material to our page on the SNM Web site at www.snm.org. (Click on “About SNM” then “Councils” to find the RPSC page). Take a look at what we are doing, and join us in the revitalization of this important council.

D. Scott Wilbur, PhD
President, RPSC

(Continued from page 25N) the output of HOTSPOT, Baltimore’s mayor and health commissioner will make a determination—perhaps block-by-block—of the need to evacuate or shelter in place.

A key element of the city’s preparedness activities is training professional staff in the health, fire, and police departments. As part of that training activity, which is supervised by the Health Department, I have given a 2-hour introductory radiation terror lecture to approximately 500 city employees, in groups of about 40. This lecture is supplemented with ongoing meetings with selected health department duty officers, fire department hazmat officers, and police department bomb squad officers. This formal educational activity has an efficient “multiplying effect,” because these officers can then train their peers.

Public education prior to a terrorist attack is critical. If you are only beginning to explain radiation to the public during and after an attack, it’s too late. As part of its up-front education effort, the Baltimore City Health Department has created a Web site to help in this preparatory effort: www.ci.baltimore.md.us/government/health/bio/index.html.

Jonathan Links, PhD
Past-President, SNM
SNM Leadership Update

Last year the SNM established a new type of organizational component, the center of excellence, to provide leadership in a specific area of practice that is of interest to many of our members. Centers of excellence focus on providing education for their members and on dealing with the practical aspects of a technology, such as procedure guidelines and government relations. Centers can also be a way to consolidate and centralize the resources needed to serve a specific type of practice.

The PET Center of Excellence (COE), the first such center to be established, is nearing the end of its first year. In this Leadership Update, I will inform the members of the Society about what we have accomplished so far and discuss our plans for the future.

The PET COE is education driven. Its goal is to meet the educational needs of the nuclear medicine and radiology specialists who are now engaging in PET and PET/CT. During our first year, the focus has been on expanding the PET Learning Center. The PET Learning Center, established in 2002 and now incorporated into the PET COE, has been providing programs for both physicians and technologists, and, this year, in addition to the weekend seminars in basic PET, we are adding 1-day seminars focusing on neurology, cardiology, radiopharmaceuticals, and physics and radiation safety. There is a tremendous need for radiologists who are expanding into PET/CT to become trained in PET and nuclear medicine techniques and for PET operators to obtain cross training in CT and cross-sectional anatomy. We will be addressing those needs in future PET Learning Center offerings.

We are going to be interfacing extensively with other groups within the Society. We’ll be tapping the councils for their scientific expertise to help us with training in the PET Learning Center and to address issues of common interest. For example, we are working with the Government Relations Committee and the Brain Imaging Council to encourage the Centers for Medicare & Medicaid Services to approve the reimbursement of PET for the diagnosis of Alzheimer’s disease. Lack of reimbursement is denying thousands of Americans access to the best, most accurate method of diagnosing early Alzheimer’s and therefore the opportunity to initiate a drug regimen that may slow disease progression.

We are also working closely with industry and the Radiopharmaceutical Council in our government relations efforts. We are lobbying for support of clinical trials of additional PET imaging agents to supplement FDG. Throughout this process we will need to have a pool of experts from this group available to advise the FDA and other regulatory agencies on how best to meet the needs of the community.

The PET COE has been extremely successful in attracting participation, with more than 1,400 members. Those members have recently received the first issue of our newsletter, edited by Dave Lilien, MD; Paul Christian, CNMT; and Gabriel Soudry, MD. We are fortunate to have an enthusiastic, visionary, and hard-working Board of Directors involved in the considerable effort of starting up such an enterprise. Serving with me on the board are: Alan Maurer, MD, Vice-Chair; Paul Shreve, MD, Secretary/Treasurer; Paul Christian, CNMT, BS; Michael Gelfand, MD; Paul Hanson, CNMT; Homer Macapinlac, MD; Henry Royal, MD; Heinrich Schelbert, MD, PhD; Jeffry Siegel, PhD; Annick Van Den Abbeele, MD; Henry Yeung, MD; Robert Bridwell, MD; David Eve, CNMT; and Susan Wallace, PhD.

(Continued on page 38N)

Peter Conti, MD, PhD
SNM Vice President-Elect
Chair, PET COE

New Clinical Trials Program

The SNM has signed a memorandum of agreement with the Nuclear Medicine Industry Association–North America (NMIA-NA) to establish a Nuclear Medicine Clinical Trials Cooperative Group (NMCTCG) to foster cooperative clinical trials of importance to the field of nuclear medicine. The NMCTCG will develop a program to increase the participation of nuclear medicine practitioners in clinical trials by reviewing their proposals with a goal of improving, when necessary, the design and statistical power of the proposed study. Funding from the NMIA-NA will be provided as the program is implemented over the next year.

The SNM’s role will be to develop the project’s standard operating procedures, to recruit institutions that are committed to participation, to circulate requests for proposals among participating institutions, and to encourage the development of multicenter grant applications to both federal and private funding agencies.

The SNM would like to thank the members of NMIA for their participation in this important program: AEA Technology QSA Inc.; Bracco Diagnostics, Inc.; Bristol-Myers Squibb Medical Imaging; Capintec, Inc.; Drax-image, Inc.; Fujisawa Healthcare, Inc., GE Healthcare; MDS Nordion; Philips Medical Systems; Siemens Medical Solutions USA, Inc.; Tyco Healthcare/Mallinckrodt, Inc.; and UNM Limited.
N
ews Flash: The Centers for Medicare & Medicaid Services (CMS) announced in April the elimination of the 90-day grace period for the use of retired medical codes as a result of the Health Insurance Portability and Accountability Act requirement that providers use only valid and current medical codes. This will be a big change for providers who have been accustomed to using this “cushion time” for implementation of new and revised codes. The change takes place July 1. New and revised nuclear medicine hospital revenue codes are effective this year on October 1.

Because failure to keep current will result in claims being returned as unprocessable, it is vital that providers stay current with all coding system changes as they occur throughout the year.

- ICD-9 codes, valid October 1, are published annually in the Federal Register in April or May.
- Alphanumeric Healthcare Common Procedure Coding System (HCPCS) codes, valid January 1, are published on the CMS Web site every October.
- The American Medical Association (AMA) CPT codes, valid January 1, are available in October or November from the AMA.

For details on the elimination of the 90-day grace period, see CMS transmittals 89 and 95 at www.cms.hhs.gov/manuals/pm_trans/r89cp.pdf and www.cms.hhs.gov/manuals/pm_trans/r95cp.pdf. As always, we will publish these changes on the SNM Web site in the Practice Management area at www.snm.org.

**Request for Revised Radiopharmaceutical Descriptions**

On April 1, 2004 the SNM Coding and Reimbursement Committee submitted an application to revise 57 radiopharmaceutical descriptions for the year 2005 cycle.

The committee had 2 primary goals in mind for this “nontraditional” request to the HCPCS panel. First, we wanted to improve consistency for common radiopharmaceutical abbreviations and terms used in both short and long HCPCS code descriptions. For short descriptors, we recommended a standard terminology for describing radioisotopes. For example, the word “technetium” may be eliminated by using “Tc99m.” This change also provides room for additional fields so that units of measure can be included. Second, we hoped to see more accurate reporting of the quantity that is typically administered to the patient, e.g. “per dose” or “per mCi” as opposed to “per vial.”

These recommendations were developed based on hundreds of calls, e-mails, and questions from the nuclear medicine community regarding specific HCPCS codes and coding issues. The SNM worked collaboratively with the nuclear medicine community, including the Academy of Molecular Imaging, the American College of Nuclear Physicians, the American Society of Nuclear Cardiology, the National Electrical Manufacturers Association, and the SNM Technologist Section. Although not specifically signing on to these recommendations, the Council on Radionuclides and Radiopharmaceuticals and the American College of Radiology provided valuable suggestions and assistance.

**Brand vs. Generic Radiopharmaceuticals**

CMS’s recently implemented Transmittal 112 describes changes for the brand name versus generic payment of drugs, biologicals, and radiopharmaceuticals under the Outpatient Prospective Payment System. CMS states that “the new codes . . . are required to enable differentiation between the payment amount required under the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA) for a brand name drug and the payment amount required under the MMA for its generic form.”

The new radiopharmaceutical codes have caused much confusion in the nuclear medicine community. The SNM has contacted CMS officials regarding these codes and their proper use. Currently, absent CMS clarification of which is considered the branded radiopharmaceutical and which is considered generic and considering that the payment rates are identical with the exception of a single code, the SNM does not recommend implementation of these codes without further clarification from the agency. We will post CMS’s response to our request for clarification on www.snm.org as soon as it is available.

**Local Coverage Determination**

Effective December 7, 2003, CMS switched from using local medical review policies (LMRPs) to local coverage decisions (LCDs). Although this might appear to be just a name change, there are differences between LMRPs and the new LCDs. Specifically, the new LCDs focus on “reasonable and necessary” information, whereas the old LMRPs also contained benefit categories, statutory exclusion provisions, and a host of other coding information not directly related to medical necessity. CMS has given instructions to contractors that LCDs should not address fraud and fraudulent activities and should refer only to issues that are “not reasonable and necessary.” Medicare contractors began issuing LCDs on or after December 7 and will transition all LMRPs to LCDs over the next 2 years.

Denise Merlino, CNMT
SNM Coding Advisor

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Because failure to keep current will result in claims being returned as unprocessable, it is vital that providers stay current with all coding system changes as they occur throughout the year.

- ICD-9 codes, valid October 1, are published annually in the Federal Register in April or May.
- Alphanumeric Healthcare Common Procedure Coding System (HCPCS) codes, valid January 1, are published on the CMS Web site every October.
- The American Medical Association (AMA) CPT codes, valid January 1, are available in October or November from the AMA.

For details on the elimination of the 90-day grace period, see CMS transmittals 89 and 95 at www.cms.hhs.gov/manuals/pm_trans/r89cp.pdf and www.cms.hhs.gov/manuals/pm_trans/r95cp.pdf. As always, we will publish these changes on the SNM Web site in the Practice Management area at www.snm.org.

**Request for Revised Radiopharmaceutical Descriptions**

On April 1, 2004 the SNM Coding and Reimbursement Committee submitted an application to revise 57 radiopharmaceutical descriptions for the year 2005 cycle.

The committee had 2 primary goals in mind for this “nontraditional” request to the HCPCS panel. First, we wanted to improve consistency for common radiopharmaceutical abbreviations and terms used in both short and long HCPCS code descriptions. For short descriptors, we recommended a standard terminology for describing radioisotopes. For example, the word “technetium” may be eliminated by using “Tc99m.” This change also provides room for additional fields so that units of measure can be included. Second, we hoped to see more accurate reporting of the quantity that is typically administered to the patient, e.g. “per dose” or “per mCi” as opposed to “per vial.”

These recommendations were developed based on hundreds of calls, e-mails, and questions from the nuclear medicine community regarding specific HCPCS codes and coding issues. The SNM worked collaboratively with the nuclear medicine community, including the Academy of Molecular Imaging, the American College of Nuclear Physicians, the American Society of Nuclear Cardiology, the National Electrical Manufacturers Association, and the SNM Technologist Section. Although not specifically signing on to these recommendations, the Council on Radionuclides and Radiopharmaceuticals and the American College of Radiology provided valuable suggestions and assistance.

**Brand vs. Generic Radiopharmaceuticals**

CMS’s recently implemented Transmittal 112 describes changes for the brand name versus generic payment of drugs, biologicals, and radiopharmaceuticals under the Outpatient Prospective Payment System. CMS states that “the new codes . . . are required to enable differentiation between the payment amount required under the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA) for a brand name drug and the payment amount required under the MMA for its generic form.”

The new radiopharmaceutical codes have caused much confusion in the nuclear medicine community. The SNM has contacted CMS officials regarding these codes and their proper use. Currently, absent CMS clarification of which is considered the branded radiopharmaceutical and which is considered generic and considering that the payment rates are identical with the exception of a single code, the SNM does not recommend implementation of these codes without further clarification from the agency. We will post CMS’s response to our request for clarification on www.snm.org as soon as it is available.

**Local Coverage Determination**

Effective December 7, 2003, CMS switched from using local medical review policies (LMRPs) to local coverage decisions (LCDs). Although this might appear to be just a name change, there are differences between LMRPs and the new LCDs. Specifically, the new LCDs focus on “reasonable and necessary” information, whereas the old LMRPs also contained benefit categories, statutory exclusion provisions, and a host of other coding information not directly related to medical necessity. CMS has given instructions to contractors that LCDs should not address fraud and fraudulent activities and should refer only to issues that are “not reasonable and necessary.” Medicare contractors began issuing LCDs on or after December 7 and will transition all LMRPs to LCDs over the next 2 years.

Denise Merlino, CNMT
SNM Coding Advisor
Interim Final Rule on Self-Referral

On March 25 the Centers for Medicare & Medicaid Services (CMS) issued the second phase of its final regulations addressing physician referrals to entities with which they have financial relationships. Nuclear medicine procedures were exempted from the original regulations, and this exemption was reaffirmed in the interim final regulations.

The physician self-referral law prohibits a physician from referring Medicare and Medicaid patients for certain designated health services to entities with which the physician (or a member of the physician’s immediate family) has a financial relationship, unless an exception applies. The law also prohibits an entity from billing for services provided as a result of a prohibited referral. There are 11 designated health services to which the prohibition applies. Among these are clinical laboratory services; radiology and certain other imaging services; radiation therapy services and supplies; inpatient and outpatient hospital services; and others. A financial relationship can be either a compensation arrangement or an ownership or investment interest, and it can be either direct or indirect.

The law was passed after studies conducted by the Department of Health and Human Services Office of the Inspector General and other agencies showed that excessive use of some services was encouraged when physicians had financial relationships with the entities to which they referred patients.

This second phase of regulations responds to comments CMS received on the first phase of the regulation, CMS protected legitimate arrangements involving certain specialty groups that primarily furnish oncology and radiology services, including a “consultation” exemption for diagnostic radiologists and radiation oncologists.

Although the statute requires entities that provide designated health services to report information concerning their financial relationships with physicians, the new regulations specify that such information need not be reported on a regular or periodic basis. Instead, the new regulations require providers to make the information available only upon CMS’s request.

Department of Health and Human Services

NIH Panel on Conflict of Interest Policies

The National Institutes of Health (NIH) Blue Ribbon Panel on Conflict of Interest Policies held its third meeting on the Bethesda, MD, campus of NIH on April 5 and 6. The charge of the panel is to review and make recommendations for improving existing rules and procedures under which NIH currently operates regarding real and apparent financial conflict of interest of NIH staff and requirements and policies for the reporting of NIH staff’s financial interests. The panel is a working group of the Advisory Committee to the Director (ACD), NIH. The panel will provide recommendations to the ACD for deliberation and final recommendations to the NIH director. The panel is cochaired by Bruce Alberts, PhD, President of the National Academy of Sciences, and Norman R. Augustine, Chair of the Executive Committee of the Lockheed Martin Corporation. The Conflict of Interest Information and Resources Web site is available online at www.nih.gov/about/ethics_COI.htm and in May will include minutes from the open portions of the meeting.

National Institutes of Health

New Human Gene Transfer Research Data System

On March 26 the FDA and the National Institutes of Health (NIH) announced the launch of the Genetic Modification Clinical Research Information System (GeMCRIS), a Web-accessible database designed to facilitate faster reporting of adverse events in human gene transfer trials. NIH Director Elias A. Zerhouni, MD, said, “GeMCRIS is an important achievement and a unique resource for scientists, patients, and the public. GeMCRIS will help advance gene therapy, while allowing NIH, FDA, and the research community to maintain appropriate oversight.”

GeMCRIS will enable patients, research participants, scientists, sponsors, and the public to access drop-down menus and preformatted reports that allow them to navigate the site and view information on specific characteristics of clinical gene transfer trials, including where trials are under way, which diseases or health conditions are being studied, what investigational approaches are being taken, and other topics.

Investigators and sponsors conducting human gene transfer trials will now be able to report adverse events immediately using a secure electronic interface on the GeMCRIS system. The public GeMCRIS site is available at www.gemcris.od.nih.gov. Investigators and sponsors who wish to have access to the system to report adverse events occurring in human gene transfer trials should send a written request on institutional letterhead by U.S. mail or fax to: GeMCRIS Systems Administrator, NIH Office of Biotechnology Activities, 6705 Rockledge Drive, Suite 750, Bethesda, Maryland 20892; fax: 301-496-9839.

National Institutes of Health

2DG in Phase 1 Clinical Trial

Threshold Pharmaceuticals (South San Francisco, CA) announced on
March 8 that it had initiated a phase 1 clinical trial for 2-deoxy-D-glucose (2DG) as an adjunct to chemotherapy in the treatment of several cancers. The announcement followed studies published earlier this year (Maschek et al., Cancer Res. 2004;64:31–34) indicating that administration of 2DG significantly increased the efficacy of adriamycin and paclitaxel in nude mouse xenograft models of osteosarcoma and non-small cell lung cancer and resulted in a significant reduction in solid tumor growth when compared with treatment with either chemotherapeutic agent alone.

“Promising preclinical results for 2DG facilitated an unusually rapid development cycle,” said George Tidmarsh, MD, PhD, president of Threshold. “We completed 5 animal studies, 4 toxicity studies, GMP-certiﬁed manufacturing, and an investigational new drug application in less than 1 year. Our hope is to continue that rapid progress as we move through the human clinical trials process.”

The phase 1 study, to be carried out at the University of Miami’s Sylvester Comprehensive Cancer Center, will evaluate daily oral doses of 2DG with and without weekly doses of taxotere docetaxel in up to 30 adult enrollees with previously treated, advanced solid malignancies. Tumor progression will be assessed by PET and CT.

Major Imaging Center Slated for London

The Imperial College of London and GlaxoSmithKline (GSK) announced on March 16 plans to build a £76-million clinical imaging center to focus on research into cancer, strokes, and neurological diseases such as Parkinson’s. The center will be built next to Hammersmith Hospital in west London. In what is one of the world’s largest industry-university collaborations, Imperial and GSK signed a 10-year research agreement for medical imaging.

Code of Ethics for Manufacturers, Companies

The Advanced Medical Technology Association (AdvaMed) announced in March that it has updated its ethical code to help medical technology companies and physicians identify appropriate hospitality, gifts, charitable contributions, and reimbursement practices. AdvaMed, which represents more than 1,100 medical technology firms and their subsidiaries that produce 90% of the medical products sold annually in the United States, has updated its “Code of Ethics on Interactions with Health Care Professionals.” The new code sets expectations for ethical interactions between health care providers and companies that produce medical devices, diagnostic products, and medical information systems.

The code was prompted, in part, by recent criminal and civil investigations and by allegations that grants and donations have been used as bribes and that the pharmaceutical industry has used improper means to promote off-label uses of drugs.

The AdvaMed code distinguishes legitimate interactions from potential abuses, recognizing a number of ways in which the medical technology industry and physicians routinely interact for the enhancement of training, growth of medical knowledge, and benefit of patient care.

The code provides guidance in 7 categories of typical company/health care professional interactions, including: member-sponsored product training and education, supporting third-party educational conferences, sales and promotional meetings, arrangements with consultants, gifts, provision of reimbursement and other economic information, and grants and other charitable donations.

Some of the key areas addressed in detail are hospitality, meals, receptions, travel and hospitality for spouses, and remuneration for attendance at or participation in conferences.

Telehealth Project Links NCI, Jordan, Ireland

U.S. Secretary of Health and Human Services (HHS) Tommy Thompson joined ofﬁcials from the King Hussein Cancer Center (KHCC; Amman, Jordan) on February 28 to launch a state-of-the-art, broadcast-quality telemedicine system. Secretary Thompson and Andrew C. von Eschenbach, MD, director of the National Cancer Institute (NCI), witnessed the demonstration of the new system, along with representatives of cancer services in Amman. The demonstration involved a link to St. Luke’s Hospital in Dublin, Ireland, for a consultation on a patient at KHCC. The system will promote collaboration between cancer specialists, facilitate professional education and training, and permit consultation in cancer research protocols and patient care throughout Jordan and the Middle East and at selected sites in the United States as well as in the Republic of Ireland and Northern Ireland. Other sites around the globe are planned.

NCI and the National Institutes of Health Center for Information Technology developed the telemedicine system, which is called TELESYN-ERGY. It combines cameras, microscopes, audio equipment, and a variety of peripheral devices to provide high-resolution display of images from multiple medical modalities, including nuclear medicine scans, in both real-time and store-and-forward modes. It enables scientists and clinicians at multiple laboratories and hospitals to interact simultaneously with one another.

National Cancer Institute

Literature Briefs

Each month the editor of Newsline selects articles on therapeutic, diagnostic, research, and practice issues in nuclear medicine from a range of international publi-
Newsbriefs/Literature

Durable Response to RIT in NHL

Evidence of durable responses among patients with non-Hodgkin’s lymphoma (NHL) who have undergone 90Y-ibritumomab tiuxetan radioimmunotherapy (RIT) continues to appear in the literature. In a study e-published ahead of print on March 11 in Blood, Gordon and a group of researchers from the Northwestern University Feinberg School of Medicine and the Robert H. Lurie Comprehensive Cancer Center (Chicago, IL) reported long-term follow-up data on a group of patients in treatment for more than 3 years. (See previous article, Wiseman et al. Blood. 2002;99:4336–4342). Responders were classified as complete (29%), complete unconfirmed (22%), and partial (22%), for an overall response rate of 73%. The mean time to progression and duration of response in responders were 12.6 and 11.7 months, respectively. Nine patients (24% of responders) had times to progression greater than 3 years. The authors noted that some individuals with durations of response greater than 5 years have been identified and concluded that “90Y-ibritumomab tiuxetan RIT produces durable responses in patients with indolent and diffuse large B-cell lymphoma.”

PET/CT-Guided IMRT

In the March issue of the International Journal of Radiation Oncology, Biology, Physics (2004;58:1289–1297), Esthappan et al. from the Mallinckrodt Institute of Radiology (St. Louis, MO) reported on experience-based treatment planning guidelines for PET/CT-guided intensity-modulated radiotherapy (IMRT) of the paraaortic lymph nodes in patients with cervical carcinoma and paraaortic metastases. The authors evaluated a number of treatment plans in each patient, using various beam geometries and planning parameters with goal doses of 50.4 Gy to the clinical target volume and 59.4 Gy to the gross tumor volume. They achieved these goal doses with acceptable sparing of the stomach, liver, and colon, regardless of the number of beams used (although sparing of the spinal cord was dependent on the number and angle of the beams). They concluded that PET/CT-guided IMRT provides advantages in its ability to locate precise anatomical features at the same time that metastases are clearly delineated.

Preclinical Breast Cancer RIT with Radiolabeled mAbs

In the March issue of Breast Cancer Research and Treatment (2004; 84:173–182), Govindan et al. from Immunomedics, Inc. (Morris Plains, NJ) reported on the potential of a humanized monoclonal antibody (mAb; hRS7) labeled with 131I-N-isopropyl-p-iodoamphetamine R-4 (IMP R-4) for preclinical radioimmuno-therapy (RIT) of breast cancer. 131I-IMP-R4 carries advantages over previous short tumor residence times with radiiodinated mAbs. The authors conducted experiments in mice bearing subcutaneous MDA-MB-468 human breast cancer xenografts, comparing the results of single injections of the 131I-IMP-R4-hRS7 with those from injections of 131I-hRS7 and with controls. Complete remissions were seen in 5 of 11 mice treated with 131I-IMP-R4-hRS7, with much greater decreases in tumor volumes seen in the remaining 6 mice. Complete remission was seen in only 1 of 11 mice...
treated with $^{131}$I-hRS7. The authors concluded that $^{131}$I-IMP-R4-hRS7 is a promising new agent for RIT, “providing significant therapeutic advantage in comparison to the conventionally $^{131}$I-labeled antibody.”

*Breast Cancer Research and Treatment*

### Novel Pretargeted RIT for B-Cell NHL

Forero et al. from the University of Alabama at Birmingham e-published a report on March 2, ahead of print in *Blood*, on a phase I trial to assess the pharmacokinetics and immunogenicity of a novel tetrameric single-chain anti-CD20/streptavidin fusion protein (B9E9FP) used as the targeting moiety in a multistep approach to pretargeted radioimmunotherapy (PRIT) in patients with non-Hodgkin’s lymphoma. A total of 15 patients were enrolled in the study, and all patients received B9E9FP, followed 48 or 72 hours later by injection of a synthetic clearing agent to remove circulating unbound B9E9FP, and 24 additional hours later by $^{90}$Y/$^{111}$In-dodecanetetraacetic acid (DOTA)-biotin. The radiolabeled infusion produced rapid tumor localization and >95% plasma clearance within 6 hours of injection of the clearing agent. Hematologic toxicities were observed in 3 patients, in 2 of whom the toxicities were related to progressive disease. No toxicities were observed in the remaining 12 patients, in whom 2 complete remissions and 1 partial response were seen. The authors concluded that, “B9E9FP performs well as the targeting component of PRIT with encouraging dosimetry, safety, and efficacy” and called for a dose escalation trial of $^{90}$Y-DOTA-biotin.

*Blood*

### Comparison of RIT Therapies in NHL

Silverman et al. from the University of California at Los Angeles undertook a rigorous comparison of findings on radiation protection, effectiveness, and quality of life issues reported in patients undergoing radiolabeled anti-CD20 antibody therapy with $^{131}$I-tositumomab (Bexxar) or $^{90}$Y-tositumomab tiuxetan (Zevalin). The review article appeared in the April issue of *Cancer Treatment Reviews* (2004;2:165–172). The authors discussed the relative merits of both regimens and addressed important practical considerations that may influence patient and physician choices regarding treatment plans with these agents.

*Cancer Treatment Reviews*

### Routine PET Before Surgery for Colorectal Liver Metastases

A study designed to assess the utility of routine whole-body $^{18}$F-FDG PET imaging in preoperative staging of patients with colorectal liver metastases was reported by Arulampalam et al., from the Royal Free and University College Medical School (London, UK) in the April issue of the *European Journal of Surgical Oncology* (2004;30:286–291). The study included 28 patients referred for hepatic resection for confirmed colorectal liver metastases. Patients underwent independent staging with spiral CT and $^{18}$F-FDG PET imaging. $^{18}$F-FDG PET detected all lesions (sensitivity 100%; specificity 91%), whereas CT incorrectly diag-
PET/CT in Ovarian Cancer Recurrence

Pannu et al. from the Johns Hopkins Hospital (Baltimore, MD) reported on March 18 ahead of print in *Abdominal Imaging* on the sensitivity, specificity, and accuracy of PET/CT in the diagnosis of recurrent ovarian cancer. The study included 16 women who had been treated previously for ovarian cancer and who were scheduled for surgery to assess for possible recurrent disease. All underwent PET/CT imaging before surgery. The results were compared with the surgical reports, where 11 of 16 patients were found to have recurrent disease. The average sensitivity, specificity, and accuracy of PET/CT for disease detection were 72.7%, 40%, and 62.5%, respectively. PET/CT detected all 7 cases of malignant adenopathy (100%), 13% of peritoneal lesions <1 cm, and 50% of lesions >1 cm. The authors concluded that the sensitivity of PET/CT for recurrent ovarian cancer is “moderate in patients with low volume disease” and noted that a larger trial involving patients with a spectrum of disease volumes is needed to determine the potential value of PET/CT in these applications.

*Abdominal Imaging*

**18F-FLT in Detection and Grading of Soft Tissue Sarcomas**

Also in the March 1 issue of *Clinical Cancer Research* (2004;10:1685–1690), Cobben et al. from Groningen University Hospital (The Netherlands) reported on a study designed to investigate the feasibility of 18F-3′-fluoro-3′-deoxy-L-thymidine (FLT) PET for the detection and grading of soft tissue sarcoma (STS) of the extremities. The study included 19 patients who were scanned using attenuation-corrected whole-body 18F-FLT PET. The authors found that standardized uptake values and tumor-to-nontumor ratios (TNTs) correlated well with histopathologic grading parameters. They concluded that 18F-FLT PET is able to visualize STS and differentiate between low- and high-grade STS and that the uptake of the tracer correlates well with STS proliferation.

*Clinical Cancer Research*

**Glucose Metabolism as a Biomarker in Ovarian Cancer**

In a report published in the May 10 issue of the *International Journal of Cancer* (2004;109:926–932), Kurakawa et al. from Fukui Medical University (Fukui-ken, Japan) evaluated whether 18F-FDG uptake by ovarian epithelial tumors as measured with PET correlates with clinical stage, tumor grade, cell proliferation, or glucose metabolism—each of which, the authors noted, is a biomarker for response to chemotherapy, prognosis, and overall survival in the disease. The study included 17 patients suspected of having ovarian cancer. All underwent whole-body 18F-FDG PET imaging 2 weeks before surgery. Imaging results were compared with histopathologic and immunohistochemistry results after surgery. Although no correlation between tracer uptake and clinical stage was observed, a positive correlation was observed between 18F-FDG uptake and glucose transfer (GLUT-1) expression, proliferation index marker, and histologic grading score. Of these, the GLUT-1 expression had the highest correlation. The authors concluded that glucose consumption, as determined by analysis of standard uptake values in 18F-FDG PET, may be a noninvasive biomarker for ovarian epithelial tumors.

*International Journal of Cancer*

**11C-MET PET in Carbon Ion Radiotherapy**

In a study published in the March 1 issue of *Clinical Cancer Research* (2004;10:1764–1772), Zhang et al. from the National Institute of Radiological Sciences (Chiba, Japan) reported on the use of 11C-methionine (MET) PET in predicting survival in patients with unresectable bone and soft tissue sarcomas undergoing treatment with novel carbon ion radiotherapy (CIRT). The study included 62 patients who underwent 11C-MET PET imaging before and 1 month after CIRT. Tracer uptake was quantified as tumor-to-nontumor ratios (T/Ns). Overall median survival time was 20 months. The authors found that a baseline (presurgical) T/N ≤ 6 predicted significantly better survival than a baseline T/N > 6 (2-year survival rates of 69.4% and 32.3%, respectively). Both baseline and post-CIRT T/Ns were statistically significant independent predictors of patient survival.

*Clinical Cancer Research*
PET in Axillary Staging in Breast Cancer

Fehr et al. from University Hospital (Zurich, Switzerland) and State Hospital (Winterthur, Switzerland) reported in the March/April issue of *Breast Journal* (2004;10:89–93) on a study evaluating the clinical usefulness of axillary lymph node (ALN) staging with 18F-FDG PET in breast cancer patients qualifying for sentinel lymph node (SLN) biopsy. The study included 24 clinically node-negative breast cancer patients who underwent 18F-FDG PET imaging before SLN biopsy. After biopsy, a conventional ALN dissection was performed and the results compared with imaging. PET was accurate in staging only 15 of 24 patients (62.5%) and produced false-negative findings in 8 of 10 node-positive patients and false-negative findings in 1 patient. The sensitivity, specificity, positive predictive value, and negative predictive value of 18F-FDG PET for nodal status were 20%, 93%, 67%, and 62%, respectively. The authors concluded that ALN staging using 18F-FDG PET is “not accurate enough in clinically node-negative patients with breast cancer qualifying for SLN biopsy and should not be used for this purpose.”

*Breast Journal*

New UICC TNM Edition Assessed in Thyroid Cancer Staging

In a study reported in the January edition of *Thyroid* (2004;14:65–70), Dobert et al. from the University of Frankfurt (Germany) compared staging of differentiated thyroid cancer according to the classifications of the new 6th edition of the International Union Against Cancer (UICC) TNM Classification of Malignant Tumours with the previous edition. New and old TNM classification systems for differentiated thyroid carcinoma were applied in a retrospective analysis of 169 patients who underwent 131I therapy. Differences were noted. Patients were classified and reclassified as follows: T1: 54 patients (32%) under the previous classification, 83 (49%) under the new; T2: 61 (36%) under the previous classification, 32 (19%) under the new. Forty-four patients formerly classified as T4 were changed in the new staging to T3. The authors concluded that although the new TNM classification caused a significant change in staging, the altered criteria have had only a minor impact on disease management.

*Thyroid*

Gated SPECT in Patients with Low EF

Bestetti et al. from the Universita degli Studi di Milano (Italy) reported in the February issue of *Acta Cardiologica* (2004;59:17–23) on a study assessing whether poststress and rest functional parameters as measured by 99mTc-tetrofosmin gated SPECT provide predictive value for long-term prognosis in patients with low left ventricular ejection fraction (LVEF). The study included 497 patients who underwent stress/rest gated SPECT and were followed for varying periods of up to 2 years. Of these patients, 84 had EF <40%, and 15 of these went on to experience cardiac events. The author found that poststress end-systolic volume was the only index significantly higher in patients with low EF and events than in patients with low EF and no events. Stress end-systolic volume was the only independent predictor of long-term outcome.

*Acta Cardiologica*

Stress MPI in End-Stage Renal Disease

In an article e-published ahead of print on February 19 in *Nephrology, Dialysis, Transplantation*, Hase et al. from Toho University Ohashi Hospital (Tokyo, Japan) reported on a prospective study to evaluate the ability of pharmacologic stress 201TI SPECT to predict cardiac events in patients with end-stage renal disease (ESRD). The study included 49 patients who underwent high-dose adenosine

*Clinical Oncology*
The PET COE is breaking ground, but it will not be unique. We envision other centers coming on board. For example, there is tremendous interest among our members in molecular imaging, so perhaps a molecular imaging center of excellence will be next. With our core of physicians and scientists experienced in molecular imaging, the Society is perfectly positioned to take a world leadership role in this rapidly growing new research and diagnostic specialty.

Nephrology, Dialysis, Transplantation

IN MEMORIAM

Steven M. Pinsky, MD 1941–2004

Steven M. Pinsky, MD, a nuclear medicine physician who had served as president of the medical staff at Michael Reese Hospital and Medical Center and as former head of radiology at Michael Reese, the University of Illinois Medical Center, and the University of Illinois at Chicago (UIC), died on April 1, in his Highland Park, IL, home.

Pinsky was born in 1941 in Milwaukee, WI, where his father was a practicing dentist and professor of dentistry. After attending the University of Wisconsin, Pinsky graduated from Loyola University’s Stritch School of Medicine. He served as chief resident in diagnostic radiology at the University of Chicago Hospitals. During military service in the early 1970s, he was stationed at Walter Reed Army Medical Center in Washington, DC.

He moved back to Chicago, where he became chief of nuclear medicine at Michael Reese and professor of radiology at the University of Chicago. In 1987, he was appointed chair of radiology at Michael Reese, where he was elected president of the medical staff in 1988. In 1989, he became chair of the radiology department at the UIC College of Medicine and chief of radiology at the University of Illinois Medical Center.

Pinsky served as president of the Central Chapter of the SNM and president of the Illinois Radiological Society and was a fellow of both the American College of Nuclear Physicians and the American College of Radiology. In 1999, the Chicago Radiological Society awarded Pinsky its gold medal. He retired from practice in 2000.

He was devoted to education in both radiology and nuclear medicine. He also was generous with his time and funds, donating a room at Michael Reese, a conference room at the University of Chicago Hospitals, and a children’s library at the Jewish Community Center in Northbrook.

Funeral services were held in Northfield, IL, on April 5. In addition to his wife, Sue, Pinsky is survived by 2 children and 4 grandchildren.

(Continued from page 28N)

The PET COE is breaking ground, but it will not be unique. We envision other centers coming on board. For example, there is tremendous interest among our members in molecular imaging, so perhaps a molecular imaging center of excellence will be next. With our core of physicians and scientists experienced in molecular imaging, the Society is perfectly positioned to take a world leadership role in this rapidly growing new research and diagnostic specialty.

(Continued from page 37N)


triphosphate (ATP) \(^{201}\text{Tl SPECT}\) within 1 month of beginning dialysis. The end-point was a cardiac event or follow-up at 1 year after imaging. Twenty-four patients were found to have myocardial perfusion defects at imaging. During the ensuing year, 15 of these patients experienced nonfatal cardiac events and underwent revascularization and 2 died of cardiac causes. The remaining 25 patients had normal perfusion images. At 1 year, 34% of patients with perfusion defects were cardiac event free, a percentage that rose to 96% among patients with no perfusion defects. The authors concluded that “normal myocardial perfusion imaging by stress \(^{201}\text{Tl SPECT}\) using high-dose ATP performed within 1 month after the beginning of hemodialysis treatment is a powerful predictor of cardiac event-free survival in patients with ESRD.”

Nephrology, Dialysis, Transplantation

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