The SNM 27th Annual Meeting: Highlights of the Technologist Program

Excellent continuing education offerings—in a meeting format flexible enough to allow ample time for viewing commercial and scientific exhibits—await technologists at the 27th Annual Meeting of the Society of Nuclear Medicine, June 24–27 in Detroit, America's "Renaissance City."

The Technologist Section's Scientific Program Committee has arranged the following tracks for Detroit—Computers, Cardiac, Educators, Low-Level Radiation, and Clinical. Additionally, a Mangement seminar, taking place over three days, and two days of scientific papers sessions will also be presented.

Here are highlights, including faculties and topics, of each of the five tracks:

Computers—a review of computer components, an introduction to a new system, and clinical applications of specific computer functions.

David E. Leiberman, private consultant, "Applications of the Apple II Computer to Nuclear Cardiology;"

Stephen L. Graham, PhD, VA Medical Center, Sepulveda, CA, "Computer Components and Terminology;"

John W. Keyes, MD, University of Michigan Medical Center, "Computed Tomography;" and

Jack C. Hill, Wm. Beaumont Hospital, "Applications of a Computer in an RIA Laboratory."

Cardiac—an overview of nuclear cardiology encompassing instrumentation, radiopharmaceuticals, and related cardiologic diagnostic procedures.

Kenneth A. McKusick, MD, Massachusetts, General Hospital, "Overview of Cardiac Imaging;"

Ernest G. Depuey, MD, Baylor College of Medicine, "Techniques and Physiology of Stress Testing;"

Charles Boucher, MD, Massachusetts General Hospital, "Role of Echocardiography in Cardiac Disorders;"

Robert E. Henkin, MD, Loyola University Medical Center, "Tomography of the Heart with Multisegmental Collimators;

Philip O. Alderson, MD, Johns Hopkins University Hospital, "Use of Radionuclides in Evaluation of LVF;" and

Ronald J. Callahan, RPh, Massachusetts General Hospital, "Radionuclides for Cardiac Imaging;"

Clinical—a review and update of major, advanced available procedures and procedures technically feasible for nuclear medicine today.

Dr. McKusick, "Radionuclide Detection of GI Hemorrhage;"

Elaine N. Dufresne, Sidney Farber Cancer Institute, "Lymphoscintigraphy;"

David L. Gilday, MD, The Hospital for Sick Children, "Pediatric Nuclear Cardiology and Its Prospectives;"

Heide S. Weissman, MD, Montefiore Hospital, "Correlative Imaging of Hepatobiliary Disorders;" and

Robert Chodos, MD, Albany Medical Center Hospital, and Bernard Shapiro, MD, Albert Einstein Medical Center, "Thyroid Imaging."

Low-Level Radiation—introduction to and update of all present aspects of low-level radiation and the impact of low-level radiation and its effect upon the worker in nuclear medicine and upon nuclear medicine as a whole.

Paul Numerof, PhD, ScD, private consultant, "Hazardous Materials Transportation Regulations Are for Hospitals, Too;"

William H. Briner, Duke University Medical Center, "Waste Disposal Management Requirements, Methods of Compliance, and Impact on the Clinical Environment;"

Thomas G. Mitchell, PhD, Johns Hopkins Hospital, "Biological Effects of Low-Level Radiation Exposure;"

William J. Walker, PhD, Nuclear Regulatory Commission, "Limitations of Low-Level Radiation Exposure as Conceived by NRC;" and

Edward M. Smith, ScD, private consultant, "How Will This Affect the Work Environment—From the Technologist Point of View."

Educators—presentation of teaching skills for clinical instructors.

This track will be taught by Charles W. Ford, PhD, School of Related Health Sciences, University of Health Sciences, Chicago Medical School. It will focus on demonstrating several specific skills of teaching, on stating outcomes, and on examining the teaching function in a systematic approach.

The Voice Box

Sheila Rosenfeld, Chairman
Continuing Education Committee

The changes in our VOICE system have been made in accordance with the latest appropriate guidelines from the National Council on the Continuing Education Unit. For your information, the specific objectives of this Council are to:

- "Promote the development, interpretation and dissemination of the best methods, standards and ideals for the use of the Continuing Education Unit.
- Ensure continuity in the development of the Continuing Education Unit and seek to achieve consistency in its application.
- Assist in strengthening educational and professional standards in the field of continuing education and training.
- Work cooperatively with educational organizations—including colleges, universities and other educational institutions, business organizations, professional societies, associations, agencies of government, and other pertinent organizations—to increase the value of continuing education and the CEU.
- Serve as a forum for policy development, act as a clearinghouse for developments and methods, and publish information relating to CEU and to continuing education and training.
- Engage in research and data gathering which will provide more reliable and valid information about the CEU or continuing education and training, or will strengthen their effectiveness and quality."

The role of the Society in the new VOICE system is to check program applications for completeness, process applications, and maintain every individual member's CEU records.

One significant change in the VOICE program application for CEU is the substitution of participant evaluation with proof of attendance. A program director's method for proving participant attendance is his choice; however, for CEU credit some method is mandatory. The Council on the CEU states, "If attendance is the only criterion for satisfactory completion, then high minimum attendance requirements must be established (e.g., attendance during not less than 80% of the instructional hours) and some method of verifying the attendance of individual participants must be verified."

New VOICE packets are now available in the National Office; let's use them! Attached to the packet is a new form that will enable a VOICE member to transfer CEU credits from programs not approved by VOICE to his or her VOICE credit documents.

Placement Service: Ready for Detroit

The Society of Nuclear Medicine will once again provide a Placement Service for attendees of its Annual Meeting. The SNM Placement Service is now accepting applications from employers and job seekers.

Applications from nuclear medicine physicians, technologists, and scientists will be accepted. Applications from employers with openings in these areas will also be accepted.

The SNM Placement Service is designed to bring prospective employers and employees together through personal interviews; it does not enter into employment negotiations, leaving all such matters to employers and employees.

It is expected that all employers using the SNM Placement Service will be equal opportunity employers and will wish to receive applications from qualified persons regardless of age, national origin, race, religion, sex, or handicap.

The Service is available to members for $5.00, nonmembers for $15.00 and employers for $25.00.

Applications may be obtained from the Service, which will be located in Cobo Hall, Room 3043, during the SNM 27th Annual Meeting or in advance by writing: Placement Service, SNM, 475 Park Ave. South, New York, NY 10016.

Tech Party

One of the social highlights of any SNM Annual Meeting is the Technologist Party—and this year's party promises to continue the tradition!

Plan to set aside the evening of Tuesday, June 24, for a moonlight cruise aboard the Bob-Lo, which will embark from the Renaissance Center for a four-hour trip along the Detroit river—featuring spectacular views of the Detroit and Windsor, Ontario, skylines.

A buffet dinner will be served aboard the Bob-Lo and there will be a cash bar and music for dancing.

Tickets ($20 apiece) should be purchased in advance; however, they will also be available on a first-come, first-serve basis in Detroit's Cobo Hall on June 24.

Message from the President

GEORGE W. ALEXANDER, JR.
President
Technologist Section

At this time of year, each president of the Technologist Section traditionally reflects upon the accomplishments that have occurred during his or her term. Our accomplishments during 1979–80 have been many. To name but a few—a VOICE system that works; a strong identity within the entire medical profession; cogent positions on pertinent proposed legislation; our own executive director; a national office staff that strongly reflects and supports our positions and desires through diligent work; our national council and leadership strengthened by the establishment of guidelines related to duties and performance; and our first "Future Plan!" to guide us is long-range planning. These are very positive steps and go a long way toward making our discipline one of excellence.

But what are our problems, our negative points, and what can we do about them? To begin, wouldn't it be a credit to our profession if *every* practicing nuclear medicine technologist were certified by NMTCB? Wouldn't we all gain if those of us who continually gripe about Section activities transformed complaints into positive action?

Additionally, have you recently submitted a scientific article for publication in the *JNMT*? When was the last time you participated in a continuing education effort? The last time you engaged in some public relations work for nuclear medicine?

There are some who say that there is never anything new at the scientific sessions at our meeting. Why not take advantage of the continuing education survey in this issue on page 80! We'd also like to hear your thoughts on how we should proceed in order to accomplish *continued* competency—that is, we are going beyond minimal competency as demonstrated by our certification board.

Our real strength lies in the fact that we consist of well-qualified physicians, physicists, radiopharmacists, technologists, and other interested parties all joined together in one professional society. Can you think of another medical profession that can attest to this? The answer is "no." Yet many of you just sit back and say: "All of our problems will work out okay;" or "Others will do the work."

I submit to you that "others" have done the job in the past—but why not you? It is not sufficient for you merely to belong and pay your dues. We need your help with innovative ideas, goals, and problem-solving. This year I have frequently heard such comments as "I don't think you would be interested in my opinions," or even "Who am I to comment?" Well, as a nuclear medicine technologist, you have gone to school, demonstrated competency through NMTCB, and are actively working in the field. Who else is better qualified!

Every Member's Participation

Many of you, additionally, prepare or assist in preparing budgets that are larger than the Society's, you write protocols, teach students in nuclear medicine technology, and address members of your community about nuclear medicine. Again, who else is better qualified to participate actively in the Section! If you can perform these duties on one level, why not do it for your professional society and your publications! Your leadership is geared towards your thoughts and desires—but without every member's participation, we become noneffective.

Nuclear medicine's future is indeed promising but without goals and innovative ideas, the "everyday" demands of our profession may consume us. Our profession and our organization are at a critical junction—we can either progress or falter. One has only to look at inflation, which has cost our Section dearly. Some of those items our dues paid for in the past are no longer affordable and without long-range planning the situation will become even more intense.

We must also think about our development in terms of unbroken continuity. By this I mean that the Section has always relied on a core group of technologists whose invaluable efforts made up our "nucleus." These people came up through the ranks—likewise, those of you now serving as chapter officers and national council delegates must continue your active participation. Our discipline needs enthusiastic support. Every member—from the technologist just beginning his or her career to the "old hand"—can and should be heard. But you must first take that all-important first step and get involved!

I urgently ask each of you to sit down and perform a self-appraisal of what you have done for the Section this year. If the result is negative, then how can you criticize? It takes but a moment to write a letter or pick up a telephone in order to let a thought be known. Your national council delegate is the person to contact and the name, address, and phone number of this individual can be supplied by any officer of your chapter. You may also call any of your national officers.

I now want to thank all of those persons who have been so supportive with their encouragement, thoughts, and deeds. Without your support, the difficult but rewarding job of Technologist Section President becomes an impossible one. I would, however, relive every moment of the past year were it possible! As I turn the gavel over to Michael Cianci, I wish him great success. But be assured that I will not sit idly by and let others "do their thing," for I firmly believe that I have something to offer to the Section and I will do my very best to support nuclear medicine technology.

NMTCB Report

James Kellner
Chairman, NMTCB

The Board held its most recent meeting in St. Louis March 20–23 in conjunction with our Advisory Council. At that time the 1980 examination was finalized. The exam contains 225 test items; 30% of these are either revised or new items. Critical to maintaining a current, clinically applicable examination is the congruency of examination emphasis and the frequency of procedures being performed. Current trends in procedure frequency and types of instrumentation must be reflected with emphasis in the examination subcategories. A goal of the Board is continued review of the examination to keep up with progress in nuclear medicine technology.

The NMTCB task analysis (June 1978 *JNMT:* pp 102–107) identifies the skills necessary for job performance. It is the crucial link in the process to assure a job-related, competency-based examination. The task analysis provided the content base upon which the examination was developed. There are numerous methodologies that can be used for a task analysis and we chose to use a general approach rather than a highly detailed one. Another goal of the Board is periodic validation of the task analysis. A mechanism for validation has been defined by the Board and is now in progress.

The 1980 NMTCB examination will be given on Sept. 13, 1980.

During the process of item development and finalization of the 1980 examination, the Board was joined by the Advisory Council, who had been invited to participate. The Advisory Council conducted its first meeting under the direction of Acting Chairman Stanley Goldsmith, MD. Dr. Goldsmith has been representing the American College of Nuclear Physicians (ACNP). At this meeting he submitted his resignation. Melvin Freundlich, MD, has been appointed to the Council by the ACNP to fill the position vacated by Dr. Goldsmith. Other members of the Advisory Council attending the meeting were: Howard Dworkin, MD (Society of Nuclear Medicine); Debbie Gryniewicz (Technologist Section, SNM); LeRoy Robbins (American Society of Medical Technologists); and Audrey Wegst (American Association of Physicists in Medicine). The Council elected Dr. Freundlich as Chairman of the Advisory Council and the Chairman of the Council is a voting member of the NMTCB.

Arrangements have been made to provide the Technologist Section membership with the opportunity to work and learn with the NMTCB. There will be an item writers workshop at the 27th Annual Meeting of the Society of Nuclear Medicine in Detroit—on Wednesday, June 25 from 1–5:00 p.m. in Cobo Hall, Room 3044. The workshop is open to anyone interested in learning how to write test items, and most specifically, the methodology used for the NMTCB examination. This will also provide an excellent opportunity for nuclear medicine technology educators to learn more about the NMTCB certification process. If interested, please contact the NMTCB office so that sufficient materials may be prepared.

For the past few years representatives from the Canadian Association of Medical Radiation Technologists and the Nuclear Medicine Technology Certification Board have been discussing the possibility of reciprocity between the two organizations. I am pleased to inform you that the CAMRT Board and the NMTCB have voted in favor of reciprocity; the agreement is in the process of finalization.

Nominations for election of NMTCB Directors are now being sought by the National Council Delegates of the Technologist Section. Anyone interested should contact the delegate representing his chapter for additional information. Delegates must receive nominations by Aug. 31, 1980. This is your opportunity to participate in the direction of the Board and the certification process!

Applications for recognition of previous certification are continuing to come in steadily; remember the cut-off date is Sept. 15, 1980.

Recognition of previous certification is available to those individuals who have successfully passed a written examination in nuclear medicine technology and have been granted a certificate by either of the other two examining boards in nuclear medicine technology prior to Dec. 31, 1978. Application forms are available from the NMTCB office. Certificates based on previous certification are issued quarterly.

At the National Council meeting held in Louisville, KY, on Feb. 7, 1980, the Council passed a resolution of continuing support of the NMTCB.

Finally, I once again remind you of the call for nominees to the NMTCB, the item writers workshop, and the deadline that is fast approaching for previous certification.

September 15, 1980, is the deadline for application for recognition of previous certification! After this date, certification will be granted *only* through examination.

Recognition of previous certification is open to any applicant who holds current certification in nuclear medicine technology with ARRT or ASCP, which was issued before Jan. 1, 1979.

Applications are available from your chapter officers or you may write or call the NMTCB at PO Box 1034, Stone Mountain, GA 30086; (404) 296-8444.

The fee for recognition of previous certification for 1980 is $30.00. You may use 1978 and 1979 application forms if the appropriate fee is enclosed.

SNM Testimony on S.500

On April 3, 1980, George W. Alexander, Jr., testified before the United States Senate on S.500—legislation that, if enacted, would mandate federal standards of licensure for all personnel administering radiation to consumer patients, including nuclear medicine technologists.

Mr. Alexander represented the Society of Nuclear Medicine and the Technologist Section before the Senate Subcommittee on Health and Scientific Research of the Committee on Labor and Human Resources. On that day, the Subcommittee was chaired by Sen. Jennings Randolph (D-WV), the sponsor of S.500. Mr. Alexander offered the following written testimony for the Congressional Record. *He also answered questions from the Subcommittee for more than two hours. The Subcommittee was receptive to his testimony; Sen. Randolph commended him at the end of the hearing for a thorough and professional presentation and for the added insight he gave the Subcommittee on nuclear medicine and nuclear medicine technology and their importance to health care. Specifically, the Subcommittee questioned Mr. Alexander on the number of nuclear medicine technologist now certified, the significance of current certification and accreditation mechanisms for NMT, the number of states in which NMTs are now licensed, and even why NMTs might be able to do without the federal licensure proposed by S.500.*

The SNM testimony is printed below in full:

Mr. Chairman and Members of the Subcommittee, my name is George W. Alexander, Jr. I am currently President of the Technologist Section of the Society of Nuclear Medicine, and I am employed as the Associate Director of Training Programs and Chief Technologist of the Eugene L. Saenger Radioisotope Laboratory of the University of Cincinnati Medical Center, Cincinnati, OH. I appear before the Subcommittee today representing the position of the Society of Nuclear Medicine and its 10,000 members.

The Society of Nuclear Medicine is pleased to have this opportunity to present its views on S.500, the "Consumer-Patient Radiation Health and Safety Act of 1979," regarding the adoption of federal standards of licensure for radiologic technologists. The Society commends the Subcomittee for its concerns and diligence in examining the question of how to properly protect patients from unnecessary exposure to medical radiation. We appreciate the Subcommittee's insights into the interrelationship between accreditation, certification, continuing education national standards development, and licensing. All of these factors must be carefully considered since they have an important impact on the competency of both radiologic and nuclear medicine technologists and the quality of health care they provide.

Society of Nuclear Medicine

The Society of Nuclear Medicine, founded in 1954, is the all-encompassing, interdisciplinary organization dedicated to all aspects of the field of nuclear medicine. As a whole, the Society's purpose is to provide scientific and educational opportunities for the members of the nuclear medicine community, with principal emphasis on transferring state-of-the-art technology to contemporary, high-quality health care. Among its 10,000 members are physicians, physicists, chemists, radiopharmacists, nuclear medicine technologists, and other with career interests in the diagnostic and therapeutic use of radiopharmaceuticals for medical application. This combination of disciplines within one professional organization is unique, and allows viewing of the full scope of nuclear medicine science and practice, together with its contribution to the totality of quality health care for the patients who are referred to us.

The Society's Technologist Section was formed in 1970, and currently represents approximately 40% of the total membership of the organization. The Section is the only professional organization dedicated to the totality of nuclear medicine technology. Its purposes are to enhance the professional development of nuclear medicine technology, to stimulate and conduct continuing educational activities, to develop a forum for the exchange of ideas and information, and to represent nuclear medicine technology in areas of socio-economic concern. It has at its foundation deep concern for assuring adequate education and competency of nuclear medicine technologists.

What is Nuclear Medicine Today?

Nuclear medicine is the use of radiopharmaceuticals in the diagnosis and, in some instances, the treatment of disease in humans. Studies within this field of medicine are of two basic types, i.e., in vivo and in vitro procedures. In vivo studies involve administering a small amount of a radiopharmaceutical to a patient by injection or orally. The radiopharmaceutical has an affinity for a certain type of cell or tissue which we call the organ of interest. Very sophisticated instrumentation is then used to record

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on film a permanent image of the radiopharmaceutical within the organ of interest. In some cases, the data derived from the examination are subjected to computer analysis and the image is then reconstructed by the computer, thus improving the overall clarity of the image and the diagnostic accuracy of the study. Most major organ and tissue systems of the body and their functions can be examined in this manner, including the brain, lungs, liver, kidneys, bone, thyroid, pancreas, and the cardiovascular system.

In vitro procedures encompass the field of radioimmunoassay. Blood samples are drawn from the patient, and serum or plasma is tagged with radioactive materials in order to be able to detect minute quantities of hormones and other substances in the blood. These assays are not detectable by chemical means. These are the procedures of choice in the detection of many disease makers, pollutants, and toxic materials in the human body. Special note should be made of the fact that patients for whom these examinations are being conducted receive no radioactive material.

One of the most dramatic examples of the rapid transfer of high technology nuclear medicine research into a major health problem area is in the study of coronary heart disease. During the past three years nuclear medicine has developed very sensitive procedures for identifying individuals with diseased coronary arteries. These procedures can assess the extent of damage when heart attack has occurred and are being used with increasing frequency in outpatient facilities for early detection of heart disease in men and women in certain high-risk categories. It should be noted that nuclear medicine in vivo diagnostic procedures are noninvasive, safe, and essentially painless for the patient. The only sensation the patient feels is the needle stick when the drug is administered. It will be useful to the Subcommittee to cite several examples of typical nuclear medicine procedures in order to understand this process.

Patient "A" has an annual physical examination by his family physician. On examination the physician feels the thyroid gland, and notes the presence of a rock-hard lump that should not be there. The physician suspects that the patient may have thyroid cancer. An appointment is made at a local Nuclear Medicine Department for a thyroid uptake (a thyroid function test to see if the gland is functioning normally) and a thyroid image (which maps distribution of the radiopharmaceutical within the thyroid gland). The patient comes to the Nuclear Medicine Department and is administered a radioactive iodine capsule to swallow. The capsule is tasteless and the patient feels no ill effects as a result of ingestion. The patient is asked to return to the Department 24 hours later (the time required for the miniscule radioactivity to concentrate in the thyroid gland). Upon returning, the patient is placed under a nuclear medicine instrument which measures the radiopharmaceutical present, and the thyroid uptake is performed by correlating the amount of radioiodine in the patient's neck with that of the original capsule. The result demonstrates that the patient's thyroid gland is functioning normally. Next, the patient is asked to lie down on a surface beneath a large detector (gamma camera) and is requested to remain quiet. "Pictures" of the distribution pattern of radioiodine in the patient's neck are then made. The patient has no ill effects during or following this procedure and is perfectly comfortable throughout.

". . .S. 500 does not adequately recognize the nature and scope of... nuclear medicine technology."

Upon completion of the procedure by the nuclear medicine technologist, the images are taken to a nuclear medicine physician for a preliminary review. Normally, the technologist takes views of the thyroid gland from three customary angles. When the physician reviews the patient's film, however, he discovers that he cannot adequately visualize the hard lump—so he requests additional views. Since the patient has an adequate quantity of radioiodine already present in his thyroid gland, no further radiopharmaceutical need be administered to obtain the additional images. Once completed, the nuclear medicine physician interprets the images and reports to the referring physician that the rock-hard lump did not take up the radioiodine, and therefore he suspects thyroid cancer. The patient is subsequently referred to a surgeon, the lump is removed, and the pathologic diagnosis of squamous cell cancer of the thyroid gland is made.

Patient "B" is a 3-year-old male who has been admitted to the hospital with a red, swollen leg which is very sore to the touch. The pediatrician on the case decides that the patient either has cellulitis (an inflammation of cellular tissue of the leg) or osteomyelitis (an infection in the bone of the leg). Both diseases produce similar clinical symptoms. An x-ray of the leg bones is normal. The pediatrician orders a nuclear medicine procedure termed a bone scan. In the Nuclear Medicine Department, a physician examines the patient and determines that pictures or images of the blood flow and blood pool to the legs should be obtained. For a bone scan a radiopharmaceutical is routinely injected into a vein in the patient's arm, with no pain or ill feelings except the needle stick.

Normally, a patient's nurse is told to return the patient to the Department in three hours (so that the ra-

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diopharmaceutical will deposit or accumulate in the patient's bones). However, in this patient's case, the physician can glean additional information by obtaining blood flow and blood pool images of the leg plus the routine three-hour postinjection images, so the patient remains in the Department for a series of films. Once again, it is important to note, all films are made as a result of the initial administration of a radiopharmaceutical.

Once completed, the images are interpreted by the nuclear medicine physician. Because the additional images were obtained, the differential diagnosis of osteomyelitis is made. To the referring pediatrician this differential diagnosis is extremely important and perhaps could save the patient's leg from being amputated. The patient subsequently is administered intravenous antibiotics for two weeks. This therapy heals the infection within the bone. Had the diagnosis been cellulitis, the entire treatment would have been quite different, and not nearly so extensive.

What is the Role of the Nuclear Medicine Technologist?

The nuclear medicine technologist performs or assists in the performance of both in vivo and in vitro nuclear medicine procedures. The technologist's many duties may include preparation and administration of radiopharmaceuticals to patients; operation of highly complex and specialized detection equipment that measures or portrays distribution of radioactivity in a patient's body; radioimmunoassay procedures; calculation of test data; and, of course, delivery of skillful patient care. The Society has prepared "Position Job Description for Nuclear Medicine Technologists," which is provided for the further information of the Subcommittee.

Accreditation is the process of formal approval of education institutions or programs, as contrasted with recognition of individuals.

The Society of Nuclear Medicine has sponsored the development of voluntary national standards described in "Essentials of Education and Accreditation of the Joint Review Committee on Educational Programs for Nuclear Medicine Technology" (JRCNMT "Essentials"). We continue to sponsor JRCNMT by periodic review and update of the "Essentials" (currently underway), and through support by representation of two nuclear medicine physicians and two nuclear medicine technologists on that committee. A copy of the "Essentials" accompanies this statement for the further information of the Subcommittee.

The JRCNMT functions in collaboration with the American Medical Association's Committee on Allied Health Education and Accreditation (CAHEA), which has responsibility for accreditation of all allied health educational programs. The JRCNMT, officially formed in 1970, is responsible for the evaluation of existing nuclear medicine technology educational programs, as well as recommending new programs to CAHEA for accreditation. CAHEA routinely conducts inspections and reviews each program, there currently being approximately 140 CAHEA-approved nuclear medicine technology training programs in the United States. Since the JRCNMT "Essentials" has evolved, it is interesting to note that there has been a definite trend toward formalization of technologist training programs, rather than on-the-job training as educational background for nuclear medicine technologists.

Another accrediting agency is the Joint Commission on Accreditation of Hospitals (JCAH). JCAH requires that an accredited hospital must provide nuclear medicine services for its patient population. JCAH conducts one- to three-year inspections of each accredited institution, and thus serves as a check on the safety and use of radiopharmaceuticals in the diagnosis and treatment of human diseases. JCAH requires that all nuclear medicine technologists are qualified for the duties performed, and that both formal training and on-the-job experience of each nuclear medicine technologist shall be documented. All nuclear medicine personnel should participate in in-service education programs according to JCAH, as well as outside workshops and professional society meetings. JCAH requires that the extent of participation in these activities of continued education shall be documented. For the last two JCAH inspections in my department, for example, copies of the certification diplomas and written evidence of continued education of each nuclear medicine technologist were required to be demonstrated. For the understanding of the Subcommittee, enclosed with this statement are the current JCAH standards for nuclear medicine.

Certification of Nuclear Medicine Technologists

Certification is often used interchangeably with the term registration. This is a process by which a non-governmental agency or association (usually a professional organization) grants recognition to an individual meeting certain special qualifications of competency. Certification is typically voluntary and conferred upon satisfactory completion of an approved training or educational program, or following accomplishment of a given amount of work experience—in addition to acceptable performance on a qualifying examination. One who is certified is then placed on a registry.

In 1976, the Society of Nuclear Medicine evaluated existing certification processes for nuclear medicine technologist (which at that time were "spin-offs" of medical technology and radiologic technology) and made the decision that the certi-

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fying processes then in existence did not adequately meet the needs of the profession of nuclear medicine technology. In 1977, the Society initiated the formation of national certification exclusively for nuclear medicine technology: the Nuclear Medicine Technology Certification Board (NMTCB). A task analysis development project was undertaken by the NMTCB that methodically examined all duties performed by nuclear medicine technologists. A copy of this task analysis is enclosed for the review of the Subcommittee.

The NMTCB is not only related to practice but reflects the full scope of practice, e.g., imaging and radioimmunoassay. Nuclear medicine technologists now have a strong professional identity, job descriptions for all career levels, the task analysis, and the designation "Certified Nuclear Medicine Technologist" (CNMT). Presently approximately 75% of all nuclear medicine technologists are professionally certified, i.e., 13,400 out of 18,000 currently employed nuclear medicine technologists. It is essential for the Subcommittee to recognize that performance standards for nuclear medicine technologists already exist, as a result of the efforts of the Society, JRCNMT, CAHEA, JCAH, NMTCB—and others, as well.

Non-Governmental Organizations Concerned with the Development of National Standards for Allied Health Fields

The Society has also made great strides in working with non-governmental organizations concerned with the development of national standards. Its representatives serve on all major organizations concerned with allied health and national standards, such as the National Commission for Health Certifying Agencies (NCHCA) and the American Society of Allied Health Professions (ASAHP). Both the Society of Nuclear Medicine (our professional organization) and NMTCB (our certifying body) have passed the formal application process and have been accepted into NCHCA as full members. NCHCA was mandated and funded by the Department of Health, Education and Welfare for the purpose of establishing national standards for certifying bodies that attest to the competency of idividuals who participate in the health care delivery system; to grant recognition to certifying bodies that voluntarily apply and meet the established standards; and to monitor the adherence of these standards by the certifying bodies which it has recognized. With the permission of the Chairman, we wish to submit for the hearing record additional information demonstrating the significance of accreditation and certification in determining competency, in cooperation with CAHEA, ASAHP, and NCHCA.

"There is no necessity to impose additional legislation on a profession that is already the most carefully regulated of the entire health care system."

Federal Regulatory Agencies That Affect Nuclear Medicine Technology

In addition to the above listed agencies and commissions, the Food and Drug Administration (FDA) now maintains strict control of the safety and efficacy of all radiopharmaceutical interstate commerce, which may be administered to a patient. Since radiation-absorbed dose to the patient is derived from the administered dose of a radiopharmaceutical, patient safety from radiation exposure is already being strictly controlled. The Nuclear Regulatory Commission (NRC), FDA, and JCAH all require that all patient doses of radiopharmaceuticals must be verified and recorded prior to administration to a patient, thus avoiding excessive radiation exposure. Retakes in nuclear medicine occur only by taking additional images of an organ without additional administration of the radiopharmaceutical.

NRC grants licenses to institutions and individuals to procure, possess, and use radioactive materials, and maintains strict control over the radiation safety aspects of the use and handling of these radioactive materials. NRC regulations govern the qualification and education of the individuals who are allowed to use such radioactive materials. The NRC inspects each nuclear medicine facility on a regular basis to ascertain whether there is compliance with these regulations. Noncompliance with existing regulations may mean forfeiture of the license to use radioactive materials.

Summary

Credentialing activities maintain the quality of practice of nuclear medicine technology. Without credentialing based upon the science of nuclear medicine, there are no standards for technologists to meet. Credentialed technologists demonstrate an acceptable level of performance as defined by the NMTCB. Whatever the mechanism, however, the ultimate goal of credentialing in nuclear medicine technology is to avoid unnecessary radiation exposure and to improve the quality of health care.

The Society of Nuclear Medicine is opposed to S.500 as presently written. Many of the provisions of the proposed legislation are duplications of existing standards and regulations. It is our firm opinion that there is no demonstrated need for duplication of currently existing regulations promulgated by the Nuclear Regulatory Commission and the Food and Drug Administration, as well as standards embodied by organizations such as the NCHCA and CAHEA.

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Further, there exists no scientific evidence that licensure itself has demonstrated significant changes in radiation protection practices or recruitment and availablity of radiologic technologists. This finding, the product of numerous professional studies, is clearly stated, for example, by a study conducted by the American Society of Radiologic Technologists/American College of Radiology Conjoint Committee on Technology Job Descriptions and Manpower Studies. There exist no published findings to demonstrate otherwise.

S.500 also does not adequately recognize the nature and scope of the medical specialty of nuclear medicine or that of nuclear medicine technology. Nuclear medicine technology has been confused in the legislative proposal with the equally significant practice of radiologic technology. It should be understood by the Subcommittee, however, that the distinction between these two technologic fields is clear to the *entire* health professional community. We feel certain that the Subcommittee has no intent to imply that one of these disciplines should co-opt the responsibilities of the other.

The bill might even be viewed by some as an infringement upon states' rights to license occupational groups. The activities of all of the federal and private sector agencies collectively serve to maintain strict control over all aspects of the practice of nuclear medicine, and thereby provide safeguards against undue radiation exposure to patients who benefit from nuclear medicine procedures. Nuclear medicine techniques are well established with absolute controls over radiation dosage to the patient and to technologists, as well.

If the Subcommittee deems it necessary to pursue the adoption of S.500, the Society recommends the following additional points for inclusion:

1. *Certification and/or proficiency examinations should be the central point of all licensure approaches.* S.500 should recognize and call for the adoption of the voluntary certification examinations which are available currently for nuclear medicine and radiologic technology, respectively. The Society has provided demonstrable in-depth activity and ongoing involvement in the development of voluntary certification examinations for nuclear medicine technologists, culminating in the formation of the NMTCB in June 1977, the first certification process exclusively for nuclear medicine technologists.

2. *Essentials of education, training, and accreditation of programs are necessary aspects for assuring professional competency and should be incorporated into a licensure approach.* The JRCNMT has developed essentials and accredits training programs. S.500 proposes to give to the Secretary of DHEW the authority to promulgate "voluntary" minimum standards as well as authorizing professional organizations to certify such accreditation of educational programs. The proposed legislation should assure recognition of the JRCNMT as the accrediting agency for educational programs in nuclear medicine technology.

3. *In any licensure approach, the practicing nuclear medicine technologist must be allowed to perform the nuclear medicine technology procedures for which he has been trained.* S.500 does not adequately recognize the scope of practice of nuclear medicine technology or its diversity from other professional disciplines.

4. *There should be uniformity and consistency of licensure, regulations, and reciprocity among all states.* Without the adoption of uniform national standards, reciprocity and career mobility would be severely curtailed. This would drastically hinder the practice of nuclear medicine technology and the delivery of services. There is already a shortage of nuclear medicine technologists.

5. *On-the-job training should be evaluated and included as an acceptable criterion for licensure eligibility.* A critical manpower shortage of nuclear medicine technologists already exists. Persons who meet national standards in all other respects should not be overlooked as qualified to continue to practice. To do otherwise would create an even more critical health manpower situation.

6. *S.500 states that administrative control is given to the Environmental Protection Agency, which has absolutely no experience with nuclear medicine applications.* The Society has gone on record as being opposed to one agency, such as EPA, writing regulations and standards applicable to the practice of nuclear medicine which other experienced agencies would be required to follow. The Society stated "...that diversity of responsibility in this area is not only desirable but necessary—on the basis that it is impossible to consider radiation in the generic sense." Moreover, at the present time nuclear medicine practice privileges are already governed by the NRC and participating agreement states. The types, doses, and radiation exposure due to radiopharmaceuticals are already controlled so that guidelines promulgated by the EPA would be redundant, superfluous, and probably poorly conceived.

7. *If the Subcommittee continues to believe that Federal minimum standards for licensure are necessary, the Society believes that the thrust of such a program must be through state licensure, based upon state acceptance and adoption of national certification.* States implementing licensure should be encouraged to adopt national certification granted by only those certifying organizations adhering to

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Reader Survey

Continuing Education Assessment

One of the primary functions of the Technologist Section is to offer continuing education to its members. To identify, justify, and verify continuing education needs, a needs assessment is being conducted. Your responses will be used by the Scientific Program Committee to plan annual meetings and by the Continuing Education Committee to plan continuing education projects. Please fill out the Reader Service Card at the back of this issue and answer the questions below by circling the appropriate number on the card for each topic of interest. Do it today! No postage is necessary! Circle only the subject areas that interest you most and no more than five responses within a category.

RADIOIMMUNOASSAY:

81. New and upcoming procedures
82. Workshops (hands-on)
83. Determination of normal range
84. Hepatitis testing: state-of-the-art
85. Thyroid profile
86. Drug monitoring (digoxin, methotrexate, gentamicin, etc.)
87. New automated instrumentation
88. Quality control

IMAGING:

89. Gamma camera update and related imaging instrumentation
90. Quality control protocols
91. QC workshops (hands-on)
92. Nuclear angiography
93. Gastrointestinal procedures
94. Genitourinary procedures
95. Pulmonary procedures
96. Central nervous system procedures
97. Nuclear medicine oncology
98. Pediatric procedures
99. Cardiac procedures
100. Equipment for cardiac procedures
101. Basic computer principles
102. Clinical applications of computers

EDUCATION:

103. Curriculum planning
104. Evaluation methods
105. Certification exam review sessions
106. Starting a school
107. Becoming a clinical affiliate
108. JRC and CAHEA

LEGISLATION:

109. Update on NMT licensure
110. NRC/FDA regulations
111. Preparing or amending institutional license
112. JCAH
113. ALARA
114. State laboratory license

MANAGEMENT:

115. Major equipment: buy versus lease
116. Short- and long-range planning
117. Cost accounting (procedures and staff)
118. Planning a new department
119. Staffing patterns
120. Department expansion
121. Management workshops

RADIOPHARMACEUTICALS:

122. In-house preparation
123. Generators (Tc, Kr, etc.)
124. Commercial radiopharmacies
125. Quality control workshops
126. New radiopharmaceuticals

MISCELLANEOUS:

127. Radiation biology
128. Management of low-level radiation
129. Options for in-service continuing education
130. Professional ethics
131. CPR

FINANCIAL SUPPORT/MEETINGS YOU ATTEND

132. No support received
133. Restricted to minimal travel radius from home
134. Attend local meetings
135. Attend chapter meetings
136. Attend SNM Annual (June) Meeting

MY CE NEEDS CAN BE BEST MET BY (Circle one response only):

137. Attendance at national meetings
138. Attendance at chapter meetings
139. Attendance at regional/local meetings
140. Self-assessment materials
141. Audiovisual learning packets
142. I would like to participate in a committee on the national level
143. I would like to review manuscripts for the *JNMT*.

SNM Testimony

(Continued from page 78)

the certification standards established by the National Commission for Health Certifying Agencies. This alternative incorporates use of national standards but still allows for state control and adaptation to fulfill local needs. National standards thusly adopted by the several states would maintain uniformity and consistency, and permit reciprocity and mobility between the states.

We appreciate the concerns of this Subcommittee, but feel strongly that these concerns are already addressed by both the profession and the federal sector, e.g. FDA, NRC, etc. The consumer public is already well protected with respect to nuclear medicine technology. The Society of Nuclear Medicine has supported the concept of a national (non-federal) certification system that would set national standards for both accreditation and certification through a collaborative effort of the federal government, professional associations and other interested parties. Establishment of the National Commission for Health Certifying Agencies has made the approach to the development of national standards a reality. The Society of Nuclear Medicine and the NMTCB are therefore actively engaged in the promulgation of national standards.

We appeal to the Subcommittee to examine the information regarding our discipline. There is no nesessity to impose additional legislation on a profession that is already the most carefully regulated of the entire health care delivery system. The Society of Nuclear Medicine greatly appreciates this opportunity to present its views, and hopes the Chairman and his colleagues will feel free to look upon the Society as interested in assisting further with the concerns addressed in today's hearing.

Copies of this testimony are also available from the SNM National Office.