1955

50 YEARS AGO IN NUCLEAR MEDICINE

A Proposal for Graduate Medical Training

At their first official annual meeting in 1954, the members of the Society of Nuclear Medicine presented a series of papers and panel discussions summarizing issues of interest to the fledgling field. With no official publication organ, presentations from that meeting were submitted to a range of journals that indicate the broad scope of early endeavors. Until recently, only the program from the original meeting was available to give a sense of the content presented at the first meeting. A search in the SNM archives for early scientific articles from Society members led to the discovery of summary abstracts and reports from the 1954 meeting and, subsequently, to the identification of expanded articles published the following year elsewhere in the literature.

As part of a continued celebration of the 50th anniversary of the SNM and in preparation for the 50th anniversary of *The Journal of Nuclear Medicine* in 2010, Newsline initiates a series of occasional articles that look back at seminal contributions first presented a half-century ago through the SNM.

Donald S. Childs, Jr., MD, was listed on the 1954 program as living in Rochester, MN. His father, Donald S. Childs, Sr., MD, was an influential radiologist who played a pivotal role in revitalizing the journal *Radiology* and would later become president of the Radiological Society of North America. The younger Childs' SNM talk was titled "Training of Residents in Radioisotope Techniques." Although individuals working for the Atomic Energy Commission at Oak Ridge, TN, had structured several standalone courses in university settings around the country, Childs' outline of a 3-month program of study was the first to propose integrating nuclear medicine training into routine graduate medical education. Not only was it well received by the SNM audience, but the editors of the *Journal of the American Medical Association* thought highly enough of the piece to publish an amplified version in their October 1955 issue.

Training of Residents in Radioisotope Techniques
D.S. Childs, Jr., MD, Rochester, Minn.

The production and availability of radioactive isotopes have presented to the medical profession many valuable agents for use in the fields of medical diagnosis, therapy and research. However, the basic knowledge and disciplines necessary for the proper use of these substances are not familiar to the average physician. Since radioactive isotopes are potentially dangerous both to the patient and to all engaged in their preparation and administration, the problem of providing the basic knowledge, training and experience for their safe use has been of grave concern to those charged with the responsibility of distributing the radioisotopes for medical use.

An ideal time for a physician to acquire the necessary training in medical radioisotope work would be in conjunction with his residency training. During this period he should be willing to spend the necessary time to receive the training and obtain the necessary fundamental knowledge and experience to serve as the basis for his later practice.

The outline of a three-month training period for Residents in Radiology is presented.

The objectives of this training are to present to the resident the fundamental material regarding radioactivity and the properties of radiation, to teach him how to handle radioactive materials safely, to give him practical experience with the various measuring instruments, to let him participate actively in the administration of beta and gamma ray-emitting isotopes to patients and care for these patients following administration, and to impart the philosophy regarding clinical radioisotope practice.

The curriculum may be divided into three main divisions:

I. Theoretical Principles
   1. Basic mathematics
   2. The units of matter
   3. Radioactivity
   4. Physical properties of radiation
   5. Biologic effects of radiation
   6. Radiologic safety
   7. Theory and use of measuring instruments
   8. Radiologic units; dosimetry
   9. Tracer methodology
   10. Training film series: The Radioisotopes

II. Practical Application of These Principles
   1. Identification of radioisotopes
   2. Calibration and use of measuring devices
   3. Preparation of radioactive material for assay
   4. In vivo and in vitro assay of material containing radioisotopes
   5. Autoradiographic procedures
   6. Safety procedures
   7. Survey for radiation hazards
   8. Decontamination, waste disposal
   9. Bookkeeping

III. Clinical Aspects of Radioisotopic Practice
   1. The patient
      a. Medical workup
      b. Indication for the use of the isotope
      c. Care following administration
      d. Evaluation of results
   2. The isotope
      a. Isotopes in general use; behavior in humans; effects on disease processes; limitations
      b. Methods of administration
      c. Survey of isotope distribution in patient
      d. Assay of isotope in excretia, and so forth

Here we reproduce Childs' original meeting abstract and his accompanying curriculum for resident training. It should be noted that nowhere did Childs (or any other presenter at the 1954 meeting) use the term "nuclear medicine" to describe the subject matter. This may have been the name the Society's founders chose, but it was slow to catch on in routine usage. Another reminder of the times can be found in the author's use of pronouns—although women were active in early nuclear medicine, Childs was probably accurate in that the overwhelming majority of early physicians working with radioisotopes were men.