

Accreditation and Nuclear Medicine Technology Training in Australia and New Zealand

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Editor's Note: *The education and certification of nuclear medicine technologists in the United States are extremely important issues. We therefore present for your interest and comparison the evolution of current standards used in Australia. Dr. Andrews is chairman of the Accreditation Subcommittee of the Australian and New Zealand Society of Nuclear Medicine and Miss Smith is a lecturer in nuclear medicine at the Royal Melbourne Institute of Technology.*

When nuclear medicine procedures first evolved in Australia they were performed by allied health professionals, who adopted the newly required skills from an in-house training program. At the Cancer Institute in Melbourne, for example, a series of lectures was developed in both technical and clinical aspects of radioisotopes. These lectures were incorporated into the therapeutic radiography course and students rotated through the "Radioisotope Laboratory," as it was then known. In the early 1960's the Cancer Institute realized that because of nuclear medicine's advancing technology, such training would soon become inadequate. For this reason the first course in nuclear medicine technology in Australia was established through the Cancer Institute and the Royal Melbourne Institute of Technology (RMIT). It began in 1964 as a 3-year certificate course aimed at achieving a standard of expertise in nuclear medicine technology at least equivalent to expertise required in the related fields of diagnostic and therapeutic radiography. Subsequently similar courses were set up in New South Wales at the Sydney Technical College (STC) and in South Australia at the South Australian Institute of Technology (SAIT).

The RMIT also developed an external studies course, available to trainee nuclear medicine technologists throughout Australasia, and some trainee technologists throughout Australia and New Zealand have used the external studies method.

In other cases trainees enter from diagnostic or therapeutic radiography and receive in-house training supplemented by lectures. At the Queensland Radium Institute for example, therapeutic radiographers rotate through the nuclear medicine department and attend lecture programs.

Each Australian state therefore varies somewhat in its training programs. Similarly in New Zealand there have

been variations in training—particularly for technologists who entered the field from other disciplines such as radiography. A technical college course was organized through the Central Institute of Technology but was abandoned after producing a relatively small number of graduates.

These wide variations in training schemes indicated the need for a series of standards—and thus formation of uniform accreditation was begun.

The role of the nuclear medicine technologist is usually associated with the expert use of gamma cameras, radio-nuclide generators, scanners, and nowadays acquisition and manipulation of data on dedicated computer systems. The nuclear medicine technologist must be competent in many other areas as well. A summary of these has been described by Andrews and Milne (1).

The idea of accreditation was first raised at the 1974 annual general meeting of the Australian and New Zealand Society of Nuclear Medicine. A motion was passed then stating that "the incoming committee gives first priority to the settling of the issue of technician training." At this society's next annual general meeting, an accreditation subcommittee was formed. This committee was to consist of the President or Vice President of the Society, a physician, a science graduate, and two technologists. Its aim was to define a standard of excellence for nuclear medicine technologists that would ensure their competence in either *in vivo* or *in vitro* procedures using unsealed radioactive sources.

Initially there was a provision in exceptional cases for technologists without any allied formal qualification but with long and wide-ranging experience to be accredited. This clause is no longer necessary and has been discontinued.

There remain two methods of accreditation and the main one is the successful completion of a recognized course in nuclear medicine technology. At present there are three courses in nuclear medicine technology in Australia.

The RMIT conducts a Diploma of Applied Science

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(medical nucleography) course that spans over three years. The first- and second-year students have a full-time lecture load integrated with clinical training while third-year students are expected to work full-time in a nuclear medicine department and attend four hours of lectures per week.

In Adelaide a three-year Associate Diploma in radiologic technology: nuclear medicine option is conducted by the SAIT. This course features full-time study (average of 26 hours per week) for the first two years integrated with clinical training on a roster basis. During the third year students work in a nuclear medicine department as interns, i.e., trainee nuclear medicine technologists.

The nuclear medicine technicians' certificates course, which is conducted by the School of Biological Sciences at the STC with the facilities and senior staff from hospital nuclear medicine departments, began in 1971. This was a three-year course; students worked in nuclear medicine departments while attending approximately ten hours of lectures per week. It is currently being reviewed and a new four-year course should commence in 1980.

An alternative method of accreditation for a suitably qualified applicant, such as a therapeutic radiographer, is to work for two continuous years in an appropriate department and display expertise in the following areas:

- patient handling,
- nuclear medicine instrumentation,
- organ imaging,
- laboratory practice,

- in vitro procedures,
- applied physics,
- radiation protection, and
- other special requirements that may be considered essential at the time by the accreditation subcommittee to bring the standard of training into compliance with recognized courses.

It was decided at the 1977 annual meeting that accreditation should not be partial, e.g., in vitro work only, but would instead be awarded for competence in all the areas listed above. Competence means the candidate is able to produce unaided, reliable work. He or she should be able to perform (minimally) the following: radioimmunoassay of a straightforward type; competitive protein binding; blood labeling; studies on gamma cameras and rectilinear scanners; and in vivo uptake probes. The nuclear medicine technologist should also be able to perform "hot laboratory" procedures and dispense therapeutic doses of radio-nuclides of an unsealed type. This ensures the value of the accreditation certificate for both technologists and prospective employers.

In conclusion the role of the nuclear medicine technologist in Australia and New Zealand has been clarified over the recent years and the requirements for accreditation have been formulated and agreed upon.

Reference

1. Andrews JT, Milne MJ: *Nuclear Medicine: Clinical and Technological Bases*. New York, John Wiley and Sons, 1977, pp 2-3