

The Nuclear Medicine Technologist in Europe — current status and future prospective

Wim J.M. van den Broek

Department of Nuclear Medicine, University Medical Center, Nijmegen,
The Netherlands

[Received 20 XI 2003; Accepted 04 XI 2003]

Introduction

The Nuclear Medicine Technologist (NMT) is a health care professional who is able to undertake the whole range of nuclear medicine procedures. He/She is a part of a team of health care specialists which may include doctors, physicists, radiochemists, radiopharmacists, other clinical scientists, technologists, nurses and others who support and care for the patient during diagnostic and therapeutic procedures, under the direction of a Nuclear Medicine Physician.

The responsibilities of the nuclear medicine technologist are:

- to maintain the highest possible standard of results in procedures carried out, which may include imaging, non imaging, labelling and therapeutic procedures;
- to maintain the highest standards of patient care;
- to deliver the lowest radiation dose to patients, staff and public that is compatible with valid results.

The tasks that are carried out by the technologist are clearly under the direction and in support of a medical practitioner. It is in the interest of high quality healthcare that the NMT should be well trained and able to take responsibility for the provision of a high quality service to their head of the department.

A well-designed set of competencies can assist in this by defining the tasks, standards and methods that are expected

of well-trained NMT, working under the ultimate authority of a Nuclear Medicine Physician.

Nuclear Medicine Technologists in Europe

The range of tasks permitted of NMT varies from country to country and there is considerable overlap with other professional groups. In fact, national laws may prevent NMT in one country from carrying out tasks that are required of a technologist in another. A broad range of tasks are carried out, under the direction of a physician, by technologists in many countries.

Education and training for these tasks appears also to vary widely from country to country.

Nuclear Medicine Technologist in the EANM

History:

- 1992 — Prof R. McCready suggested that technologist involvement in the EANM was needed. As a result the Technologist Committee (TC) of the EANM was founded in Düsseldorf in 1994 to work within the EANM on behalf of Technologists;
- “The Council of Representatives” (representatives of the national technologist societies) elect the Technologist committee;
- 1998 — competencies for NMT based on work of the BNMSTG;
- 1999 — new EANM bye-laws established a new class of membership, the “Technologist member” with full voting rights;
- 2001 — Advanced Performance and Responsibility guidelines for the Senior Nuclear Medicine Technologist;
- 2003 — setting up a PET course for NMT in Vienna (Austria).

Aims of the Technologist Committee within the EANM are:

- to represent European Nuclear Medicine Technologists from within the EANM;
- to assist in raising the standard of practice and professionalism of NMT, by setting standards and disseminating information via the EANM and our national contacts;
- to encourage technologists in all countries of Europe to join the EANM;
- to assist in the development of high quality national systems of education and training;

Correspondence to: W.J.M. van den Broek
Chairman EANM Technologist Committee
Chief Technologist
University Medical Centre Nijmegen
Department of Nuclear Medicine 565
P.O. Box 9101, 6500 HB Nijmegen, The Netherlands
Tel: (+31 24) 361 47 74, fax: (+31 34) 361 47 74
e-mail: W.vandenbroek@nucmed.umcn.nl

- to participate in wider EANM initiatives on education and continuing education;
 - to work with other committees and Task Groups of the EANM and other outside organisations to ensure that the Technologist's important role in Nuclear Medicine is recognised and developed;
- The EANM Technologist Committee is active for the European Nuclear Medicine Technologists:
- to promote high standards for the work of Nuclear Medicine Technologists in the different countries of Europe;
 - to provide a full technologists programme during each EANM Congress, working in collaboration with the local Technologists' organisations;
 - to run Continuing Education Sessions at each EANM Congress, with a programme of assessment via Multiple Choice Examination. This will eventually be expanded into a credit system;
 - to promote contacts and interchange of information with and between technologist organisations in the different countries of Europe;
 - to promote contacts and interchange of information with other Technologists organisations throughout the world;
 - to produce publications which promote good practice for Nuclear Medicine Technologists;
 - to assist in the establishment of a high standards of education and training of Nuclear Medicine technologists throughout Europe;
 - to encourage technologists to join the EANM, promoting the value of EANM membership by delivering benefits to EANM Technologist Members;
 - to provide information about the activities of the Technologist Committee and education Subcommittee via the EANM website.

Status of the competencies

The present Competencies (to be download on our website: www.EANM.org) can be integrated progressively into training programs and into the professional activity of technologists, partly or totally, according to the local conditions.

It can easily be adapted to the future development of our speciality.

Without questioning the authority of the nuclear medicine physician, the proposed list of competencies is aimed at promoting the qualification of the NMT and may thus contribute to an enhancement in the quality of nuclear medicine practice in Europe.

These competencies are divided into the following units: Patient Care and Welfare, Departmental Organisation, Instrumentation with QC, Performance of Imaging, Radiotherapeutic Procedures, Radiopharmacy, Radiation Protection and Occupational Health and Safety.

Education of the Nuclear Medicine Technologists

The education of NMT in Europe should be certified to ensure that the NMT meets the criteria for the basic competencies.

For 5 years the EANM Technologist Committee established an Education sub-commission with members from different

countries in Europe to get Educators in Europe on the same line of thinking. Communication between Educators should be encouraged.

The language and the laws in the different countries in Europe make it difficult to provide a uniform system of education. We feel that this problem will be solved in the next decade with a united Europe.

In new modalities the EANM can take the first step in education. This year the EANM has established the PET learning facility in order to provide the highest standard of education on PET and its relation to other imaging modalities in Europe. A renowned faculty was asked to prepare PowerPoint presentations and case studies to cover all pertinent areas of PET.

Currently, EANM offers PET courses for physicians. Now we also offer PET courses for technologists.

This course is a tailor made course for Nuclear Medicine Technologists.

The objectives of the technologist PET-course are:

- to develop competence in performing PET examinations;
- to understand the technical characteristics related to PET;
- to know and understand specific PET acquisition protocols;
- to review patient preparation for clinical applications;
- to understand patient relevant factors e.g. dose administration, period of tracer uptake and patient positioning;
- to obtain knowledge of basic physics and chemistry related to PET;
- to understand the production of commonly used PET tracers;
- to understand the radiation protection issues related and specific to PET.

This is an example of how to obtain a uniform education (concerning PET in this case) for NMT in Europe.

A register of certified NMT should be made. Initially in the separate countries and later on, one European Register of Certified NMT should be established.

Continuing education of the Nuclear Medicine Technologist

With all the technical innovations and new developments in nuclear medicine there is a huge need in continuing education. In some countries there is extensive experience of CE courses, while in other countries no CE courses are available. Therefore, at each EANM Congress CE sessions for NMT are running during the whole Congress in English, with a programme of assessment via multiple choice Examination.

The language barrier is still a problem and makes it difficult to provide a uniform system of continuing education. We feel that this problem will be solved in the next decade, as more and more young people in Europe will be educated the English language during their school years.

The CE course exam needs to be expanded into a Credit System. This credit system should be designed firstly in separate countries.

Credit points for example could be collected by passing the exam for the CE sessions in one's own country, or at international Congresses (EANM, SNM), performing a presentation (in one's own language or other) or writing an article in a Nuclear Medicine Journal (in one's own language or other).

This credit system should lead to a review of the registration of a certified Nuclear Medicine Technologist (e.g. every 5 years), which should guarantee the quality of the NMT.

Conclusion

In my opinion, we have done some very good work over the last few years within the Technologist Committee and if it will be possible to continue this work in the coming years, step by step, year by year, we will have come closer to our main goal: one "high" standard in the work of nuclear medicine technologists all over Europe.

There is still a lot of work to be done, but with the effort of many people from all the countries of Europe working in the field of nuclear medicine, we should achieve this goal within the next decade.

References

1. Performance and responsibility guidelines for the Nuclear Medicine Technologist. JNM Tech. 1994; 22: 255–260.
2. Role of the Medical Radiation Technologist (MRT) in Europe. AVF: ISRRT: Role 1995: September 1995.
3. Competencies for the European Nuclear Medicine Technologist April 1998, BNMS Technologist Section, modified by EANM Technologist Committee.
4. Advanced Performance and Responsibility guidelines for the Senior Nuclear Medicine Technologist. EANM Technologist Committee 2001.
5. Website of the EANM: <http://www.eanm.org>.