Nuclear Medicine Technology in Europe

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Europe:

47 countries
Population: 710,000,000
(11% of world population, 2% of world surface)

EU 2008:
27 countries
Population: 497,000,000
European Union: History

- **Roma, March 25, 1957**: European Economic Community
  - 6 member countries (BE, DE, FR, LU, NL, IT)
  - 4 official languages: Dutch, French, German, Italian
- **Maastricht, February 7, 1992**: European Union (EU)
  - 12 member countries
- **Since January 1, 2007**: 27 member countries
  - 23 official languages
  - > 497 millions inhabitants
  - 56% say they speak a foreign language
    - English (34%), German (13%), French (11%)
A hard European NMT context

- > 6500 Nuclear Medicine Technologists (NMTs)
- Wide variations in the education schemes
  - No established education system in a few countries (Cyprus, Estonia, Serbia...)
  - At a basic level, 2 models of training exist:
    - University-based model (CZ, GR, IE, IT, UK, NL, PT)
      - May be undertaken at undergraduate (3/4 years) or postgraduate level (2 years)
    - Professional school model following secondary school education
      - 2 years duration: ES, HU, PO
      - 3 years duration: AT, BA, BE, BG, DE, DK, FR, HR, NO, SI, SK
Education schemes in Europe

• Training course
  – May focus on NM only
  – May offer combined Radiography / NM / Radiotherapy training

• No harmonisation of curricula
  – Syllabus content varies
  – Associated hours of theory varies
  – Time devoted to practical training varies
Overview of Training in Europe

Models of Technologist Training

- University-based
  - undergraduate / postgraduate
  - BSc(3/4 yrs) / MSc(2 yrs)

- Professional School
  - 2 years
  - 3 years
Overview of Training in Europe

University-based Training
- Ireland
- United Kingdom
- The Netherlands
- Malta
- Slovenia
- Portugal
- Bulgaria

Professional School
- Austria
- Belgium
- France
- Germany
- Italy
- Norway
- Switzerland
- 3 Years

Professional School
- Czech Republic
- Hungary
- Poland
- Slovakia
- Spain
- 2 Years
Bridging the gap towards a common basic standard

Education

Degree / Diploma

Training

In-service & partly structured

In-service & unstructured

Competence

Standardized & assessed in-service training

Bridging course

Distance Assisted Training

high

common basic standard

low
In summary...

- European training schemes & qualifications are not comparable even with the models of training
- Technologist’s duties vary between countries as determined at national and local level
  - UK: the technologist’s role has developed to include reporting on Nuclear Medicine scans
- The varying duties of technologists are reflecting in the training offered to competently complete these tasks
- NMT’s qualifications in Europe are not internationally comparable
Harmonisation of Education

• **Bologna Accord (June 1999)**
  - Educational reform planned for full implementation by 2010
  - Clarifies the meaning of degrees by establishing a division between undergraduate (Bachelor’s degree) & graduate (Master degree) studies

• University-based training is increasingly undertaken in an attempt to unify the education system in Europe

• Education of technologists should be in accordance with European Directive 89/48/CEE (December 21, 1988)
  - Created and monitors conditions of exchange for professionals who « have received education of at least 3 year’s duration on a superior level »

• **HOWEVER**...

  Qualifications and competencies of people who are interested in working in another country may not be acknowledged!
Issues for consideration

• Not all NMTs can work freely throughout Europe
• Other obstacles
  – Funding remains a problem
    • Some countries have an extensive experience of Continuing Education (CE) others have none
  – Cultural differences
  – Language barrier: also makes it difficult to provide a uniform system
How can education be standardised for all NMTs in Europe?

- A 3-year university-based training scheme has been suggested to favour the mobility of technologists
- Accumulation of credit points attending CE sessions throughout Europe could also be a forward step to facilitate the standardisation of education

**Challenge for the EANM Technologist Committee:**
- Offer educational opportunities meeting the needs of such a mixed European Technologist Community
EANM : the basics

- Umbrella organization of NM in Europe representing the sector towards the European institutions
  - Founded in 1985
    - Professional non-profit medical association
    - Communication platform for clinical & research excellence in NM
  - 2 membership branches
    - 34 national societies (member states of the Council of Europe)
    - 3474 individual members (physicians, radiologists, chemists, radiopharmacists, physicists & technologists)
      - EANM membership was opened to technologists in 1999
        » 2008: 358 NMTs (7 from USA)
Statistics of EANM Technologist Members

Growth in membership ~ 100 % since 2003
Scientific strength

- **11 Committees** representing the most important sub-specialties of Nuclear Medicine
  - Cardiology, Dosimetry, Drug Development, Molecular Imaging
  - Neurology, Oncology, Paediatrics, Physics
  - Radionuclide Therapy, Radiopharmacy, Technologists

These committees are the scientific pillars of the EANM
Appointement of TG & C members

• TG & C members are selected from the membership according to:
  – their professional skills & areas of interest
  – their commitment to provide the time necessary to complete assigned tasks

• Chairs and Vice-Chairs are appointed by the EANM Executive Committee

• Each TG/C is composed of 5 - 8 members of different nationalities

• In each TG/C, members are appointed for 3 years

• Reappointment of TG/C members shall usually be limited to one but no more than 2 consecutive terms
EANM Technologist Committee 2008

- Chair: Wim van den Broek (NL)
- Vice-Chair: Suzanne Dennan (IE)
- Secretary: Randi Forfang (NO)
- Treasurer: Kate Pedersen (DK)
- Members:
  - Helena Medvedec (HR)
  - Samo Drazumeric (SI)
  - Hans Francois (BE)
  - Sabine Tielenius-Kruythoff (NL)
EANM Technologist Committee (TC)
Role in education

- The EANM TC plays an important role in the professional development of NMTs in Europe
  - Establishing and supporting mechanisms within the EANM to develop basic training, education & continuing education
  - Setting advisory standards for education & training
  - Cooperating with, supporting and endorsing National organisations providing education & training
Competencies of the NMT

- Defining competencies was an important step towards a common appreciation of the role of the technologist

- EANM NMT’s competencies (1998)
  - Available on the EANM website (www.eanm.org)*
  - Indicate the highest possible standard of competence for a NMT

- This document provides a helpful basis for the setting up of training programmes

- Specific activities undertaken by NMTs to be determined at national & local level

- Advanced performance and responsibility guidelines for the NMT (2002)*
EANM TC main activities

- Organisation of Technologist CE sessions at the Annual Congress
- Publication of Guidelines
- Endorsement of National Technologist courses
- European School of Nuclear Medicine (ESNM)
  - Technologist PET/CT courses at the EANM learning facility
  - 2-day Master course « Teach the teachers »
- Distance Assisted Training programme for NMTs (IAEA)
- Connections to NMTs throughout Europe
  - To facilitate exchanges
  - To disseminate good practice within the European NMTs Community
EANM annual congress
Technologist programme

EANM 2008
Munich, Germany

October, 11-15, 2008

• Continuing Education sessions
• Annual Technologist Abstract Book
• Selected oral presentations & posters
• Programme of assessment via an examination (MCQs)
• 8 prizes awarded every year
• 600 Technologist attendees
Series of Technologist’s guides

- **Myocardial Perfusion Imaging (2004)**
  - German version (April '05)
  - French version (November '05)
  - A request was also made by BMS for the use of this booklet as an educational tool in Asia in 2006
  - Hungarian version (2007)

- **Parathyroid Scintigraphy (2005)**
  - French version (2006)
  - Hungarian version (2007)

- **Best practice – Part 1 (2006)**
- **Best practice – Part 2 (2007)**
- **Radio pharmacy (2008)**
National Organisation’s initiatives

Endorsement of Tech courses

• A policy was validated in 2005
  - To assist in the establishment of a high standard of education and training of NMTs throughout Europe

• Concerns any Technologist short course wishing
  - to be endorsed by the EANM TC
  - to be allowed to use the name and logo of the EANM in its advertising and course documentation

• This endorsement confirms that the learning outcomes of the programme are broadly aligned with the aims of the EANM TC
EANM Educational Package

- The European School of Nuclear Medicine (1997)
  - Leadership (15 EANM members)
    - Dean: Pr Hoefnagel / Vice-Dean: Pr Szilvasi
    - Chairs of the Taskgroups and Committees of the EANM
- The EANM Educational Facility (2003 - Vienna, AT)
  - 2 lectures rooms
  - 4 computer rooms for interactive readings
  - 1 room for display of equipment for industry
  - Facilities for catering
ESNM Educational activities

- 13 CMEs & 7 CTEs at the EANM Annual Congress
- 3/4 Seminars per year in Central & Eastern Europe
- Learning courses at the EANM educational facility
  - PET/CT in Oncology
  - Paediatrics
  - Neuroimaging
  - Radionuclide Therapy / Dosimetry
  - Cardiology
ESNM Education activities

- The EANM TC has strived to develop education at the EANM learning facility by:
  - Setting up PET courses for NMTs (2003), PET/CT (2006), PET/CT advanced course (2009)
  - Organising a 2-day course «Teach the teachers » aimed at countries with no established education system for technologists (2007)
Technologist courses on PET/CT

- **Medium level course**
- **Location**: EANM Learning Facility
  Vienna (AT) - max 20 attendees
- **Courses 2008**:
  - English: 3 sessions
    - March 1/2
    - May 31/June 1 *
    - September 6/7
  - German: November 22/23
- **Registration fees**:
  260 euros (EANM Tech members)
- **Further information**:
  [www.eanm.org](http://www.eanm.org)

* IAEA recipient countries can ask for support to attend these courses
Education of NMTs in Central-Eastern Europe

• EANM Questionnaire to National Societies 2004
  – Main problems in Central and Eastern Europe
    • Funding for equipment & radiopharmaceuticals
    • Lack of qualified staff is mentioned

• Main goals of the EANM TC
  – Contribute to the development of an up-to-date training meeting the needs of NMTs in Central-Eastern Europe
  – Offer them opportunities to improve their competencies attending relevant sessions at low costs
Education of NMTs in Central-Eastern Europe

**Challenge**

- Investigate the variations in the current status & needs regarding the education of NMTs
- Give them the first chance
  - Setting up a curriculum fitting these needs
  - Raising funds for the payment of expenses
- Implement e-learning
Survey 2006 & Collaboration with the IAEA

- Questionnaire was sent to National Societies & representatives of NMTs associations in August
- 25 questionnaires were completed
  - 13 Northern-Western Europe: BE, DE, DK, ES, FI, FR, IE, IT, NL, NO, PT, SE, UK
  - 12 Central-Eastern Europe: AT, BA, BG, CZ, GR, EE, HR, HU, PL, Serbia, SK, SI
Technologist Survey 2006

In your country how many NMTs are able to follow a course in English?

- 30%
- 17%
- 9%
- 9%
- 35%

- < 10
- 11 to 25
- 26 to 50
- 51 to 75
- 76 to 100

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EANM educational activities for NMTs
Main obstacles to attendance

- Language: 52.9%
- Distance: 52.9%
- High fees: 70.6%
- Refund of expenses: 76.5%
- Not enough staff: 52.9%
EANM Educational activities for NMT

- **The idea:**
  - 2-day Master Course to be held in English at the EANM Facility in Vienna
  - for 2 representatives / country from Eastern-Central Europe
    - Would then be in charge of the organisation of similar sessions in their native language in their own country

- **Do you think this project could contribute to the development of an up-to-date training for NMTs in your country?**
  - Don’t know : AT
  - No : CZ, FI, NL, PT
  - **YES : 70.6 %** (even in Western Europe)
EANM Technologist Committee
New Educational Initiatives

- **2-day Master course „Teach the Teachers“**
  - Venue: EANM facility - September 15 & 16, 2007
  - Medium level course aimed at member countries with no established education system for NMTs
  - 2 participants / country (1 NMT & 1 physician/physicist)
    - participants must be able to follow a course in English
    - Goal: participants need to produce a course in their own country / language within 1 year (by August 2008)
    - Agreement to be signed with the EANM when registering
    - Free registration, flight & accommodation (2 nights)

**20 Attendees**:
- Bulgaria, Bosnia, Croatia, Cyprus, Estonia, Hungary, Latvia, Poland, Romania, Serbia
EANM Technologist Committee
New Educational Initiatives

- DAT – Distance Assisted Training Programme (IAEA)
  - Implementation budgeted in 2007 instead of 2009
  - DAT programme coordinators to be appointed by National Authorities
    - To oversee the implementation of the project in their own country
    - Pre-registrations (14) : BE, BG, BA, CY, EE, ES, GR, HR, IT, NO, PL, PT, Serbia, TK, UK, IL
  - In each country IAEA liaison officer to validate candidacies
  - 5-day course “Train the trainers” for coordinators (max 20)
    - Goal: give them instructions on “How the DAT programme should be used?”
    - Management & Financial support: IAEA
Links to National Associations

• **Main focus:**
  - Promote contacts and exchange of information within the speciality
  - Promote high standards in the daily work of NMTs
  - Disseminate innovative practice throughout Europe
  - Influence common needs
  - Widen the scope of educational activities
Further initiatives …

• Revise existing pages on the website
• Develop online educational activities
• Work with current national schemes to produce an integrated credit system for TCE
• Contribute to the standardisation of a European academic education in NM Technology
Other plans …

- Contribute to international comparability and recognition of qualifications
- Favour through harmonization of training the mobility of technologists
- Advanced practice and career tools
Nuclear Medicine Technologists: Earnings

* Countries not adhering to the Euro
Nuclear Medicine Technologists: Earnings

![Bar chart showing annual salary in Euro across different countries.]

- **A**: Countries adhering to the Euro
- **JAP**: Japan
- **B**: Belgium
- **CH**: Switzerland
- **DK**: Denmark
- **FIN**: Finland
- **F**: France
- **D**: Germany
- **GB**: United Kingdom
- **IRL**: Ireland
- **US**: United States

*Countries not adhering to the Euro*
Tank you for your attention

Annual Congress of the EANM 2008
MUNICH, GERMANY
October, 11-15, 2008