

How partnerships contribute to education and training for medical practitioners in Europe

The challenge

Member States in the Europe region have identified the education and training of medical professionals as a priority for achieving progress in the safe and effective use of new radiation medicine technology.

Many radiotherapy departments in Central and Eastern Europe have been upgraded in recent years, and complex radiotherapy techniques have become increasingly available. However, the introduction of advanced treatment modalities requires adequately trained staff, capable of delivering the correct doses. As radiotherapy procedures have become more complex, the role of radiation oncologists, medical physicists, and radiation therapy technologists have grown in importance, particularly where the clinical aspects of quality assurance are concerned.

Nuclear medicine and molecular imaging offer a safe, non-invasive approach for the detection of molecular and cellular processes, which allows the early identification of diseases. Although the technology has been available for more than a decade, it has not yet been deployed in many IAEA Member States in Central and Eastern Europe. In addition, the introduction of hybrid systems (single photon emission computed tomography–computed tomography (SPECT-CT) and positron emission

tomography–computed tomography (PET-CT)) has led to significant improvements in imaging and disease detection. Today, there is huge demand for capacity building programmes to guide staff in the proper use of these new imaging technologies.

Some countries do not have national programmes for the training of medical professionals in nuclear medicine and radiotherapy, and/or lack the opportunity for continuous professional education, in particular in the emerging technologies and applications of these medical fields.

The project

The IAEA's technical cooperation (TC) programme organizes training courses and other teaching events, aiming to provide both basic and state-of-the-art educational resources and training opportunities to meet the needs of Member States.

The IAEA has been collaborating with the European Society for Radiotherapy and Oncology (ESTRO) since 1997, and with the European Association of Nuclear Medicine (EANM) since 2005, to provide specialized training opportunities for medical practitioners working in radiotherapy and nuclear medicine.

ESTRO offers a broad spectrum of high-quality, internationally-recognized training courses related to radiotherapy. The IAEA sponsors about 20 participants (per course) in a range of specialized ESTRO courses every year. Typically, one course each year is aimed at Russian-speaking participants in the region, offering simultaneous English-Russian translation. Furthermore, ESTRO's train-the-trainers course for radiation therapy technologists (RTTs) is designed to improve the ability of RTTs to organize training events in their own country and in the local language. This responds to the crucial need among Central and Eastern European Member States that do not possess any formal training for RTTs.



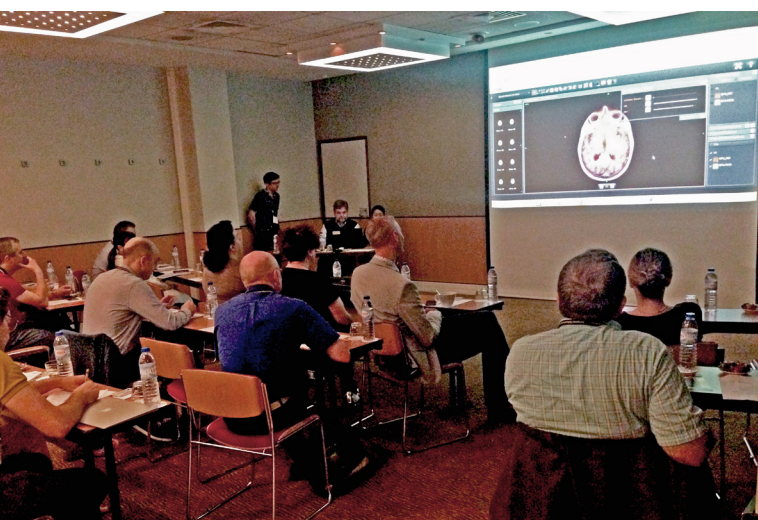
Participants at one of the many ESTRO training courses (photo: ESTRO).

In the area of nuclear medicine, the cooperation with EANM has allowed for the use of the educational infrastructure of the EANM's educational facilities in Vienna, as well as the training centres throughout Europe where IAEA-sponsored trainees have access to workstations and other educational media. The EANM training courses are selected based on the objectives of TC regional projects. They cover all nuclear medicine clinical applications, as well as quality management. Training is available for all professions involved in the nuclear medicine practice, including physicians, technologists, physicists and radiopharmacists.

The impact

The partnerships with ESTRO and EANM have been mutually beneficial, synergizing all available resources to reach as many medical practitioners as possible in the region, and to provide access to the most needed high quality training opportunities. The partnerships have helped to significantly improve radiotherapy practice and to grow nuclear medicine practice, leading to an overall improvement in radiation medicine services in the Europe region.

The courses have enabled participants to increase their knowledge and strengthen their skills in the application of enhanced radiotherapy and nuclear medicine technologies. This has contributed to an improvement in the quality of in-patient management in chronic diseases, such as cancer and cardiovascular diseases.



Participants at the EANM training course on molecular imaging and radiation oncology in Portugal (photo: EANM).

PROJECT INFORMATION

Project No: 17 regional projects

Duration: 1997–ongoing

Budget: Approx. €15 million

Contributing to:



Partnerships and counterparts

The European Society for Radiotherapy and Oncology (ESTRO) has served as a partner to TC Europe regional projects since 1997, offering training opportunities to radiation oncologists, medical physicists, and radiation therapy technologists.

The European Association of Nuclear Medicine (EANM) has served as a partner to TC Europe regional projects since 2005, offering a variety of training courses on nuclear medicine.

Facts and figures

- Since 1997, a total of 2202 medical practitioners have been trained through 108 ESTRO courses, under 12 regional TC projects on radiotherapy;
- With the support and collaboration of EANM, the IAEA has trained more than 496 medical practitioners since 2005 through 56 EANM training courses, which took place under five regional TC projects on nuclear medicine.

The science

Radiotherapy in cancer management: Radiation therapy is one of three major treatment modalities for cancer management, which cannot be replaced by non-nuclear or other techniques. In general, about 60-65% of cancer patients require radiotherapy as part of combined treatment.

Nuclear Medicine: Nuclear medicine/molecular imaging, SPECT-CT and PET-CT are new imaging technologies which couple the metabolic information provided by SPECT and PET with the exquisite anatomical resolution of X-ray CT. Both procedures have already found a number of clinical applications in oncologic imaging, particularly PET-CT, and in cardiac disease management. Widespread introduction into clinical practice started approximately 10 years ago and is increasing steadily, achieving more accuracy of primary staging and the detection of recurrent disease, with the realistic potential to change patient management in up to 40% of cases.

www.iaea.org/technicalcooperation