Strengthening Medical Physics through Education and Training (RAS/6/038)

Objectives: The objectives of this project are to improve medical physics capability and capacity in the region through the establishment of regional approaches on education and training of medical physicists; and to improve and upgrade safe operating practices and technical standards in the region through the establishment of a common quality assurance/quality control (QA/QC) programme.

Background: Medical physicists collaborate with clinicians in practically all fields of medicine. In some countries, medical physicists cover extensive areas in non-ionizing medical applications (ultrasound, lasers, etc.). With medical physicists playing an increasingly important part in the scientific and technical aspects of prevention, diagnosis, and treatment of many diseases, high standards for medical physics must be developed and maintained.

In the Asia and Pacific region, medical physics support for the healthcare sector is limited by insufficient numbers of trained medical physicists. An RCA survey shows that additional physicists are required in radiation oncology for existing facilities.

In addition to the education requirements for qualification as a medical physicist, there is a growing need for medical physicists to be trained to certain minimum standards, and then to become a "qualified expert". National recognition for medical physicists in this category would be highly desirable as would be a general regional definition of "medical physicist" and their professional standards.

In some countries of the Asia and Pacific region, there are no formal requirements for QA in hospitals. In these countries, the development and implementation of QC protocols are done on a voluntary basis and depend only on the commitment of the radiation oncologists, radiologists, nuclear medicine specialist, or medical physicist. In this case, the situation may change dramatically with staff changes and is often subject to budgetary limitations.

Further expansion and development of quality health services and the introduction of modern technology throughout the region has necessitated a regional approach to solving common problems like training and education of medical physicists, recognition of the medical physics profession, and harmonization of methods used by these professionals in all fields of radiation medicine.

It is important that development of education and training programmes as well as professional standards are done in co-operation with the professional organizations representing medical physicists. Medical physicists in the region are represented by the Asia Federation of Medical Physics (AFOMP), a chapter of the International Organization of Medical Physics (IOMP).

National Commitment: The Member States will provide educators and trainers to support the trainees. Trainee assessment will also be undertaken locally. The country hosting meetings, workshops, and training courses will provide cost-free premises, facilities, administrative arrangements related to internal travel and accommodation, and local lecturers, if necessary. In addition, the project will be conducted in close co-operation with AFOMP.

Member States are committed to meet the International Basic Safety Standards on meeting Milestone 3 (medical exposure), and this project will contribute towards achieving that commitment. Several countries in the region, e.g., India, Malaysia, Pakistan, Philippines, and Thailand, have ongoing or planned advanced courses in medical physics and would benefit from having a common regional approach to training and education in this field.

Agency Input: The Agency will provide technical and administrative support including organizing regional events, recruitment of experts, and provision of supplies.

Performance Indicators

- Report on needs and resources required for training medical physicists.
- Report on a proposed education and training programme for medical physicists.
- Developed training materials.
- Harmonized technical standards in medical physics.
- Pilot programme established in three-to-four countries.

Expected Results: A recommended education and training programme for medical physicists will be produced. This includes a range of teaching resources, which will include self-study materials, materials to formalize in-service training and assessment, as well as general teaching aids. The programme will be tested in three-to-four selected places. A recommended QA/QC programme related to technical and physical aspects of radiation oncology, diagnostic radiology, and nuclear medicine. The project will assist in training medical physicists and a developing sustainable group of institutes in the region to provide education and training for medical physicists to the required standards using the recommended programme.

Project Impact: An improvement in the quality of education and training for medical physicists will not only improve the quality of service available but it will also enhance their professional status. This is important if healthcare providers are to attract and maintain a competent workforce. The project will provide teaching resources that can be used for development of further education and training programmes. The medical physicists trained within the project will have the potential to provide improved in-house capabilities to enhance services and provide valuable resources for future development.