Cancer: An Emerging Epidemic

Cancer is an enormous — and growing — global public health problem. In 2010, cancer killed nearly eight million people worldwide, while over 13 million new patients were diagnosed with the disease. Formerly considered more pervasive in affluent countries, cancer now places its heaviest burden on poor and disadvantaged populations. According to the WHO, more than two thirds of new cases and cancer deaths occur in LMI countries, where such numbers are increasing at alarming rates. In some low income countries, fewer than 15% of breast and cervical cancer patients survive longer than five years following diagnosis, despite both being highly curable diseases elsewhere in the world.

Comprehensive Cancer Control: Fighting Cancer in the Developing World

For over thirty years, the IAEA has worked in some 115 low and middle income (LMI) Member States to deploy robust radiotherapy and nuclear medicine programmes, expending over US $250 million on cancer related assistance under its Technical Cooperation Programme, with technical support provided by the Division of Human Health. This has enabled many Member States to establish safe and effective diagnostic imaging and radiation therapy capacity to provide treatment and higher quality care to many of their cancer patients. The IAEA also helps establish new nuclear medicine facilities and encourages their integration with diagnostic radiology procedures by facilitating appropriate human resources capacity building. This helps Member States to achieve and maintain high standards of professional practice. The IAEA addresses quality management though services such as the Quality Assurance in Nuclear Medicine (QUANUM), Quality Assurance Team in Radiation Oncology (QUATRO) and Quality Assurance in Diagnostic Radiology (QUADRIL), which allow the IAEA to provide tools for improving the practice of radiation medicine around the world.

In 2004, the IAEA established the Programme of Action for Cancer Therapy (PACT) in support of the World Health Assembly’s call to action against cancer. It stands as the IAEA’s umbrella programme for combating cancer and builds upon the above experience in radiation medicine expertise and technology. PACT works closely with the World Health Organization (WHO), its regional offices and other key players through the WHO-IAEA Joint Programme on Cancer Control. The WHO-IAEA Joint Programme was established in 2009 to enable LMI Member States to introduce, expand and improve their cancer treatment capacities and therapeutic effectiveness by integrating radiotherapy into a comprehensive national cancer control programme.

Cancer deaths in LMI countries are expected to increase at double the rate of high income countries over the next 20 years.
Radiation Medicine in Brief

Radiation medicine includes radiotherapy, diagnostic radiology, nuclear medicine and medical physics.

Radiotherapy or radiation oncology involves treating cancer by radiation through external beam or brachytherapy (internal radiation where the radioactive source is placed directly into the tumour or close to it).

Nuclear medicine uses techniques that employ unsealed radioactive material in the diagnosis or treatment of cancer.

Medical physics ensures the safe and effective diagnosis and treatment through comprehensive quality assurance.

Dosimetry, which refers to the accurate measurement of radiation doses, is essential to enable patients to receive proper medical treatment. By providing dosimetry calibration and audit services to Member States, the IAEA has improved the quality and consistency of radiation dosimetry in national laboratories and medical institutions worldwide.

PACT activities are focused in the following areas:

- The imPACT Review is a service offered to Member States by the IAEA with support from PACT partners to assess a country’s readiness to develop and implement a long term radiation medicine capacity building plan within the framework of a national cancer control programme. Additionally, these reviews determine a country’s cancer related needs and advise on immediate actions. An imPACT Review may be followed by a WHO-IAEA Joint Cancer Control Assessment Mission, which is a complete review of a country’s cancer burden and cancer control strategies and plans. During such a mission, a team of international experts evaluates the burden of cancer in the State, assesses its existing capacity for cancer control and uncovers any deficiencies in cancer care, in order to support national authorities in developing targeted responses to the cancer crisis. The recommendations of the mission help a Member State to develop the appropriate strategies, action plans, programmes, policies, capacities and infrastructure necessary for the expansion of national cancer capacity.

- PACT Model Demonstration Sites (PMDS) are the focus of comprehensive, integrated and multidisciplinary efforts to address all facets of cancer control. These sites are designed to showcase the synergies that international partners can achieve by working together with national counterparts to advance comprehensive cancer capacity building in LMI nations. The strategic objective of each model is to create infrastructure and comprehensive capacity within their national health care systems.

- The Advisory Group on increasing access to Radiation Therapy (AGaRT) is a multi-stakeholder consortium to address the needs in, and shortage of, radiotherapy services in developing countries. It promotes increased access to radiation based diagnostic and therapeutic technologies in developing countries by encouraging the industry to offer complete and integrated solutions that are safe, affordable, highly reliable and effective for low resource settings.

- Virtual University for Cancer Control (VUCCnet) is a pilot project that aims to contribute to ongoing efforts by Member States to address the shortage of cancer control professionals by using modern pedagogical IT assisted methodologies and e-learning in conjunction with traditional teaching approaches. The pilot phase of the project is financed by the Roche African Research Foundation and the US Government. To ensure the effectiveness and sustainability of the pilot project outcomes, the IAEA is working in collaboration with its international partners in cancer control as well as the Member States.

The IAEA also aims at facilitating donor interest and working at the United Nations level in order to place cancer treatment and care on the global development agenda.

* Donor countries to PACT includes countries that have contributed $10,000 or more to PACT Programme, excluding the cash contributions given by the 58 Member States from the 2004 cash surplus, and other donors, such as OPEC Fund for International Development, F. Hoffmann-La Roche Ltd, UN Women’s Guild and UN Federal Credit Union.