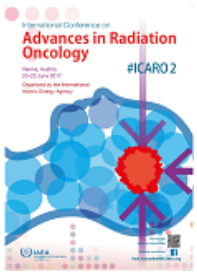

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Accreditation of medical physics clinical training programmes in Africa: survey by the Federation of African Medical Physics Organizations (FAMPO) and the International Atomic Energy Agency (IAEA)

Friday 23 June 2017 10:35 (5 minutes)

Introduction:
Accreditation of clinical medical physics training programmes is necessary to promote consistent quality training and to ensure conformance to a defined standard. The Federation of African Medical Physics Organizations (FAMPO), as the Africa Chapter of the International Organization for Medical Physics (IOMP), plays an essential role in the recognition and promotion of medical physics practice, education and training in the continent. Through Task Force Meetings organized by the International Atomic Energy Agency (IAEA) through the African Regional Agreement (AFRA), four publications on Education and Training of Medical Physicists in Africa were produced and endorsed by FAMPO. The publications were intended to harmonize the standard of academic education and clinical training of medical physicists in the region. A self assessment questionnaire prepared by FAMPO and the IAEA, was distributed in the region to assess the willingness of centres to provide accredited clinical training of radiation oncology medical physicists.

Methodology:
A questionnaire was developed which focussed on the ability of a radiation oncology centre to competently undertake clinical medical physics training. The questionnaire contained eighty questions pertaining to as staffing levels, availability of equipment, levels of technology and medical physics procedures. The questionnaire was prepared using Google Forms in the English and French languages and distributed online to clinical medical physicists across Africa. Responses received were analyzed statistically. Centres which were identified to meet a set requirement by the Education and Training Committee (ETC) of FAMPO, were recommended to the Professional Development Committee (PDC) for full or partial accreditation.

Results:
Twenty-six responses to the questionnaire were received, of which two failed the inclusion criteria and were rejected in the subsequent analysis. The twenty-four qualified entries were received from Algeria, Egypt, Ethiopia, Ghana, Mauritania, Morocco, Nigeria, Sudan, Tunisia and Zimbabwe. Fifty-eight percent (58%) of these countries are Anglophone and 42% are Francophone. Egypt had the most number of entries with responses from six radiation oncology medical physics centres. Ninety-two percent (92%) of the qualified entries had practicing clinically qualified medical physicists (CQMP) with a minimum of 5 years hospital-based independent practice experience. Eighty-eight percent (88%) of the radiation oncology centres analyzed in the study had a license to treat patients, with 83% having a comprehensive programme of quality assurance for medical exposures in all aspects of radiotherapy. Most of the entries had non-IAEA reference materials available to medical physics residents in their centres.

Varying responses were received on the availability and functionality of facilities such as immobilization devices, mould room equipment, conventional and fluoroscopic radiotherapy simulation, Computed Tomography (CT)-based 3D treatment planning systems, cobalt-60 teletherapy units, linear accelerators, kilovoltage therapy units, and low and high dose rate brachytherapy units, for the clinical training of medical physics residents. CT and MRI were identified to be the equipment predominantly used for pre-treatment imaging in the centres. The centres were identified to have a varying number of resident radiation oncologists, medical physicists and radiotherapists. More than 85% of the centres were found to have ion chambers, electrometers, thermometers, barometers, survey meters and water phantoms for dosimetry measurements. Forty-

two percent (42%) of the centres have access to a CIRS phantom and 75% have diodes or a TLD system for in-vivo dosimetry. All respondents have radiation protection systems in place at their radiation oncology centres, with 96% indicating availability of a national regulatory framework in radiation protection. Varying responses were provided to the availability of procedures for fetal dose evaluation, I-131 therapy, personnel dose monitoring, reporting of incidents and near accidents, risk assessment, and internal and external audits. Seventy-five percent (75%) of the centres have written procedures to ensure patient confidentiality, practice regular multidisciplinary meetings and hold regular QA meetings.

All of the twenty-four centres declared an interest in being either fully or partially accredited by FAMPO to undertake clinical training of medical physics residents. Full accreditation implied that all radiotherapy modalities (i.e. cobalt-60 teletherapy, linear accelerator, kilovoltage therapy, and low and high dose rate brachytherapy) were available. Seventeen percent (17%) of the respondents were interested in being offered full accreditation. In addition, sets of questions centering on the available equipment, clinical procedures and medical physics procedures were also fielded. The medical physics procedures covered performance of acceptance testing, commissioning, quality assurance, calibration, treatment recording and reporting, dose verification, radiation safety, emergency procedures, etc. Responses provided to the sets of questions were analyzed by the ETC and approximately 50% of the entries were forwarded to the PDC of FAMPO for further processing.

Conclusion:
Instituting accredited medical physics clinical training programmes in Africa by FAMPO would go a long way to improve the quantity and quality of trained personnel who would readily be in position to practice competently and independently, and contribute to improved radiation oncology treatment delivery.

Country

Ghana

Institution

(1) Ghana Atomic Energy Commission; (2) Federation of African Medical Physics Organizations

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