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Present status of medical physics education in Bangladesh

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Title-Present Status of Medical Physics Education in Bangladesh

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The population of Bangladesh is estimated about 160 million living on an area of 143,998 km², the number of cancer patients equals 2000 out of 1,000,000 inhabitants per year. According to WHO, we need total 160 Centers, 320 LINACS, 640 Medical Physicists and even more considering diagnostic radiology and nuclear medicine centers. Medical physics study in Bangladesh is gaining importance day by day as cancer treatment is entering a new era from conventional to conformal therapy technique.

In Bangladesh, all Nuclear Medicine Centers are under Bangladesh Atomic Energy Commission (BAEC), so they recruit physicists in the position of scientific officer and undergone training in these fields under IAEA. In this way medical physicists in the nuclear medicine area are developed but medical physics in radiotherapy and x-ray diagnosis is poorly developed.

Germany play the pioneer role in the development of medical physics in Bangladesh. The commencement of Medical Physics education in Bangladesh has started mid 90s by Bangladeshi German professor through different seminars, workshops organized by "Medical Physics in the Developing Countries" of the German Society for Medical Physics (DGMP).

As a consequence, medical physics study established in 2000 in the department of Medical Physics and Biomedical Engineering (MPBME), Gono Bishwabidyalay (GB) with collaboration of Heidelberg University, Germany. The purpose of this study is to produce medical physicists and biomedical engineers especially for the radiotherapy hospitals, diagnostics center, universities. Later, two more universities started this study at MSc level in 2014.

The syllabus of MPBME have been prepared based on the documents of DGMP, AAPM and IAEA. The M.Sc syllabus is adapted toward IAEA handbook of Radiation Oncology, Nuclear Medicine and Diagnostic Radiology. The main obstacle of the department is to find the faculty member in this field. So, from the beginning this department had a fruitful cooperation through teacher student exchange program with Heidelberg University and German Cancer Research Center, Heidelberg, Germany for 2003-2006 and this collaboration is extended further for 2014-2017 with the financial help of German Academic Exchange Service (DAAD). MPBME has a long standing collaboration with different institutions nationally and internationally. MPBME had a fruitful cooperation India, China other than Germany. Department has own laboratories for physics, IT, electronics, medical physics and biomedical engineering. Practical classes are held in different government, private hospitals and nuclear medicine centers. B.Sc and M.Sc students are placed for 3-6 months in different areas of medical physics in different hospitals of Bangladesh, India and china for internship, training and practical part of project/thesis.

In 2008, University of Dhaka established Department of Biomedical Physics and Technology but M.Sc program in Biomedical Physics and Technology started from 2014. Khwaja Yunus Ali University also started M.Sc program from 2014.

A total number of 76 and 24 students have been successfully completed their B.Sc and M.Sc program from MPBME in Medical Physics respectively. Under the collaboration from 2003 to 2006, 19 manpower has been developed and 40 manpower are in developing phase through the collaboration from 2014 to 2017. From 2011 to till now, 18 B.Sc students visited in Saroj Gupta Cancer Center and Research Institute, Thakurpukur, Kolkata and North Bengal Oncology Center, Siliguri, India for internship.

10 students completed their M.Sc from the Department of Biomedical Physics and Technology, University of Dhaka. Khwaja Yunus Ali University is no more in continuation of medical physics education.

After having B.Sc and M.Sc degree medical physicists are working in almost all public and private hospitals. MPBME has taken a significant step to produce 200 medical physicists by 2021 in Bangladesh and to start qualified medical physicist training/ residency program (from 2017 for existing MPs) through national & international collaboration in all area of medical physics according to International Medical Physics Certification Board (IMPCB). Government, private hospitals and institutes should take necessary initiatives for the development of medical physics. In present situation, the other universities should follow the example to build up more man power.

Keywords: Medical physics, education, collaboration, training, position, certification, accreditation, manpower development

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