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Issues & challenges of medical physicists in Nepal

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Nepal, one of the least developed countries with population of 26.6 million people is one of the biggest populated countries among countries without a regulatory body. In Nepal, use of radiation is almost confined to medical field for diagnostic and therapeutic purposes. In the absence of regulatory body and regulation for radiation used in medical field, hospitals as well as medical physicist have been facing problems in quality assurance, purchase, transportation, safety and security of radioactive material and its management. A medical physicist is an important member of the team in department of radiology, nuclear medicine and radiotherapy. These entire departments must have a qualified medical physicist. In radiation therapy, it is the responsibility of the physicists to use maximum physics data and instruments to improve the accuracy of the treatment. In order to achieve this goal, physicists must have sophisticated costly instruments and also strict regulatory system in place. In a developing country like Nepal, we still do not have regulatory body and radiation regulations. The availability of modern equipment is very much limited. With fewer instruments, it is the challenge and responsibility of the physicist to use his intelligence to reach a better quality of treatment of a patient. It is also the duty of medical physicists to do regular quality assurance to maintain a machine in good working condition to meet international standards. Medical physicists are also required to act as a Radiation Safety Officer due to lack of manpower. Though the history of radiation practice is long, we still don't have any radiation act, nor any legal standards for radiation. There are no official records on radiological facilities in operation. The number and types of units, radiation workers and their qualifications, safety measures and conditions of workplace remain virtually unknown. No governmental or private organization has the authentic statistics. Nepal is a member country of International Atomic Energy Agency (IAEA) since 8th July, 2008, and this will certainly support and speed up the creation of appropriate conditions. And the Ministry of Science & Technology (MOST) is the line agency responsible for official contact with the IAEA. Now is the time for the establishment of a radiation regulatory body for developing and monitoring of essential nuclear safety and radiation control infrastructure in the country. The most essential introduction of radiation Safety and radiation control act is long overdue, not to mention its subsequent enforcement for providing licenses, establishment of other concomitant radiation rules and regulations, code of radiological practice, supervision of quality assurance and radiation protection program, training of manpower and conducting required research to sustain and maintain quality assurance and radiation protection, establishment of personnel radiation monitoring system along with proper management and disposal of radioactive waste.
In view of the above mentioned issues and challenges, we remain optimistic on the eventual promulgation of the Nuclear Law and formation of the Regulatory Board. From 2012 onwards, we have also been involved in various projects associated with the IAEA including the establishment of radiation regulatory framework, medical physicist's education and training etc.

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