

## Current Status of Education, Training and Professional Role of Medical Physicists in South-Asia Region

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**Introduction:** For quality cancer treatment, a multidisciplinary team is required where medical Physicists play an essential role in imaging, radiation protection, treatment planning and quality assurance (QA). Medical physics is often subdivided into radiology, nuclear medicine, and radiation oncology medical physics due to the large variety of tasks and interests. However, the role of radiation oncology medical physicists (ROMPs) varies between countries. The study aimed to analyze the education, role, and status of ROMPs in the South-Asia region consists of eight countries- Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

**Materials and Methods:** A questionnaire was sent to medical physicists in all countries except the Maldives to determine their education, role, and status. Answers were received from all seven countries. However, only five countries' data are comparable.

**Results:** About 2500 ROMPs are working in the region. An MSc in medical physics is typically required to work as a medical physicist. It is noted that no formal training is available in South Asia except in India. The study revealed that the workload of physicists was high (36 hours/week), with less than one ROMP per two oncologists and, on average, one megavoltage treatment unit per Medical Physicist. In treatment planning, ROMPs spent about 75% of their time; however, radiation protection, QA, and maintenance tasks were also standard. It is also reported that the radiotherapy facilities in the region have been upgraded with complex technology, including Tomotherapy, Gamma-knife, Cyber-knife, and Proton therapy.

**Conclusions:** All countries are still experiencing a significant shortage of qualified medical physicists (QMPs) due to the lack of education and structured clinical training. The workload from complex technology and brachytherapy will require growing expertise and numbers in the medical physics workforce. Addressing these requirements will be challenging in the future.

**Keywords:** Education, Training, Profession, Role, Medical Physics, South-Asia