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## National training program for radiation oncology with the technical support of IAEA: encouraging experience of Bangladesh

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### Introduction:

In the year 2012 total 14.1 million new cases were reported worldwide and 8.2 million death cancer death were recorded. The global incidence of cancer has increased by 20% in the past decade, where the majority of cases were in low-income and middle-income countries (LMIC). Adequate access to radiation therapy is a crucial component of modern multidisciplinary cancer care. Estimates show that by 2020, 84 LMICs will need 9169 tele-therapy units, 12,149 radiation oncologists, 9915 medical physicists, and 29,140 radiation therapy technologists. Scarcity of trained manpower poses a major challenge for these countries.

As per Lancet Oncology commission report, Bangladesh having 166 million population had 13 linear accelerators and 12 Cobalt60 machines in 2015 against the need of 166 machines. It also reported that there was only 130 radiation oncologists, 14 medical physicists and 40 radiation therapy technologists. This inadequate manpower are unable to provide quality services due to insufficient training owing to lack of facilities.

National Training Program (NTP) for Radiation Oncology is a project initiated by Bangladesh with the technical support of International Atomic Energy Agency (IAEA) to meet the demand of trained manpower in the field of Radiation oncology.

### Method:

Record review of the NTP for Radiation Oncology program from 2013 to 2016 was done.

### Result:

NTP for Radiation Oncology was designed with the following objectives:

To meet the demand of trained manpower in the field of Radiation Oncology.

To train Radiation Oncologist(RO), Medical Physicist(MP)and Radiation therapy Technologists( RTT) the basic about the 3DCRT with preliminary idea about about IMRT.

To ensure optimum utilisation of the resource and also to train more people at a time in home environment rather sending them abroad.

To create a team who will act as trainer for future trainees.

To create collaboration between different organisations (both local and foreign).

IAEA provided the experts under their TC project and Oncology Club , Bangladesh an NGO forum for Oncologists made the local arrangement and Bangladesh Atomic Energy Commission acted as the liaison between these two organisations. Trainees from both government and private organisation were selected.

Till now, total thirteen one week- long NTPs were arranged since 2013 under the support of IAEA from their Technical Cooperation (TC) project no: BGD 6024, BGD 6026.

Among these thirteen programs, two were for RTT, two were only for MP and the remaining nine where for both RO and MP .

The program for RO and MP is always designed for five working days, Usually two RO and one MP experts were identified by IAEA. Total 25-30 participants attended each program. Among the participants around 70 percent were RO. Of the five days training period, three days were class room teaching with the use of training Eclipse and two days were hands on training in well equipped cancer centre.

Topics for the nine combined training for RO and MP were, Basic of 3DCRT, Transition from 2D to 3DCRT and IMRT, Lung, Head and Neck, GI, GU, Paediatric,CNS and Brachytherapy.

Two dedicated program was arranged for MP where two experts for one program and one expert for another program attended to train twenty MP each times.

For the MP the topics were TRS 398 and QA/QC in radiotherapy ( both EBRT and Brachytherapy).

Two dedicated training program for RTT was arranged in 2014 and 2015 .Two senior RTT and one RO expert were engaged in the training for the RTT training program.

Most of the experts were from India. However, experts from USA, Australia, Italy, Turkey, Egypt, Ireland, Austria, Pakistan and Thailand also attended.

These training program had following unique features:

First initiative under IAEA support for this type NTP for Radiation Oncology.

Dedicated classroom training with use training Eclipse.

Dedicated training program for Medical Physicists and RTT.

Radiation therapy training on Pediatric Oncology.

All attendees received a certificate of attendance .

Achievement of the training program:

Overall treatment quality has improved in both government and private sector .

Young oncologist could interact with renowned resource persons.

Networking with overseas faculty created opportunities for future communications.

Four young oncologists and one MP went for overseas training using this linkage.

Practice of Evidence based Medicine was initiated.

Conclusion:

National Training Program for Radiation Oncology has proven as a very effective program. Following this, IAEA continued it's support of funding for future program. This program created immense enthusiasm among the participants. It will continue with an aim to adapt topics of higher level in future program. Other limited resource country could follow this model for their manpower development.

## Country

Bangladesh

## Institution

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