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## Implementation of the Brazil's National Training Program for Radiotherapy Technicians - Preliminary results

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### INTRODUCTION

In Brazil, there is a shortage of radiotherapy machine in relation to the number of cancer cases to be treated. To reduce patient waiting time, the Brazilian Ministry of Health has decided to buy eighty linear accelerators to be installed throughout the country. As consequence it became urgent to train professionals to work in these Health Facilities, such as radiological oncologists, medical physicists, radiotherapy technicians, nurses. In this way, the National Radiotherapy Training was conceived by the Cancer Foundation and developed in partnership with National Cancer Institute and Universidade Estadual do Rio de Janeiro in order to supplement the training and updating courses for radiotherapy area professional.

### OBJECTIVE

The goal is to prepare professionals qualified to work in radiotherapy. Particularly, the Professional Qualification Course for Radiotherapy Technicians (PQCRT) will train 80 radiotherapy technicians, divided in four classes.

### METHODOLOGY

The Program's PQCRT has the characteristics:

- 1040 hours of activities, divided into 3 Modules:
  - Basic (345 h): theoretical-practical
  - Intermediate (350 h): internship in teletherapy
  - Advanced (345 h): internship in advanced teletherapy and brachytherapy
- Target audience: radiology technicians
- Duration: four group of 20 students are distributed in two years with each course lasting six months

After the Basic Module, the students were sent to several institutions to have the clinical experience under the supervision of a local preceptor. The coordinator and tutor of the course follows the students' performance through detailed weekly reports on the practices. The main objective is to reinforce all concepts, treatment techniques, in-depth safety barriers, information transfer, etc. The emphasis has been on detailing the processes in teletherapy and brachytherapy: Simulation, Planning, Treatment and patient care.

In addition, they need to follow and describe the local Quality Assurance program with special attention safety barriers implemented during the treatment of the patient.

The Intermediate and Advanced Modules are focused in the different phases of the radiotherapy routine process and reported weekly to the Coordinator. Local visits to the training site were conducted when needed.

### RESULTS

The PQCRT finalized the first course 19 radiotherapy technicians.

Evaluating the internship with weekly reports, many students became aware to the fact that what they learned in classes were not observed the health services where they trained. They began to describe, within each topic studied, what they had learned in the Basic Module comparing with what they were following in patients' treatments.

What was perceived is that many Brazilian radiotherapy services did not follow the national norms some of them presented below:

- Fail to reproduce the simulation and treatment

- Extremely short time scheduled to attend each patient.
- Lack of information about simulation data in the Treatment Chart
- The patient is not assisted when entering or leaving treatment.
- Treatments with IMRT and RAPID ARC, sometimes are performed even with doubts about the procedure, endangering the quality of the treatment and the patient safety.
- Generally, there is one technician per turn on each machine.
- The technologist is the one who performs double check, not the second physicist.
- In brachytherapy, when X-ray equipment was under maintenance, individual planning has not been performed, and only some templates recorded in the source to release system was being used.
- Two scans are performed on computed tomography because the displacement is done with a ruler and re-done for treatment area visualization.

#### CONCLUSION

The students finished the course with sufficient technical and physical background and can already work in the Radiotherapy Services. With the routine reports they presented, one may conclude that, there is an urgent need to implement a continuous education program to professionals already working in the radiotherapy centers. The results clearly show the lack of a comprehensive Quality Assurance Program in the services resulting in the expected positive clinical outcome and the patient safety. However, students who have successfully gone through the program, have shown sufficient proficiency to treat the patients with the working knowledge as required by the recommended quality standards of practice.

## Country

ALFIM

## Institution

Brazilian Cancer Foundation

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