



PROSPECTUS

ADVANCED 1-YEAR
FELLOWSHIP TRAINING PROGRAMME
FOR
RADIATION TECHNOLOGISTS
CLASS OF 2018-2019



IN PARTNERSHIP WITH

varian

World Leaders in Radiation Oncology Solutions

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Chairperson's Message



Impelled by the need to bring world-class healthcare with a uniquely Indian ethic to the country and empower patients to make informed choices, we launched the Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute (KDAH) in Mumbai in 2009.

India's newest, most advanced tertiary care facility with full-time doctors and an emphasis on excellence in clinical services, diagnostic facilities and research. It has already generated tremendous goodwill and performed path-breaking surgeries with outstanding outcomes, in the process filling existing gaps in the healthcare system.

We understand only too well that cancer is one of our biggest public health challenges and our Centre for Cancer provides comprehensive and coordinated care for patients with all types of cancers.

At KDAH, we offer the broadest scope of cancer services, from screening and diagnosis to treatment and pain management. Provided by a team comprising all subspecialties with best-in-class equipment, much of which is the first in the region.

That said, we must recognise that even the most state-of-the-art equipment is ineffective without the requisite skill sets to understand and operate it. Indeed, skill is the key to success and the lack of training is a lacuna that needs to be addressed urgently.

Thus, to bridge this gap in the field of radiation, which is an integral aspect of cancer treatment, KDAH has launched an Advanced 1-Year Fellowship Training Programme for Radiation Technologists, in partnership with Varian (USA) Medical Systems. The first of its kind in India, this programme will power the creation of the next generation of radiation technologists who will drive the new-age technologies that have revolutionised the field of radiation therapy.

I wish prospective candidates every success in their professional endeavours.

Tina Ambani
Chairperson

Introduction

With over a billion people in India, cancer management has become a difficult task in the nation due to the associated social, economic, cultural, and political diversity. GLOBOCAN 2012, a project that provides cancer-related estimates, predicts that the annual prevalence of cancer in India will double to 1.7 million cases by 2035 as the population ages. Cancer-related mortality will also rise to approximately 1.2 million, which indicates the need to properly allocate resources and appropriately intervene to diagnose and treat cancers in the earlier stages.

The Indian Council of Medical Research (ICMR), one of the oldest medical research bodies in the world, formulated and started with three population-based and three hospital-based registries under the National Cancer Registry Program (NCRP) in 1981. However, since 2011 the National Centre of Disease Informatics and Research (NCDIR) under NCRP has been active and is now collecting more complete data from around 500 centres across the country. Under the ongoing 12th five-year economic plan (2012-2017), the government of India has allocated approximately \$20 million USD to develop 50 tertiary care cancer centres. With the huge burden of cancer cases, it is difficult to cater to the patient population using government sectors alone. Meanwhile, corporate sectors have been doing a decent job in treating cancer patients with shorter waiting times.

With significant technical advancements, newer technologies are now available in India and many corporate institutions have assumed the mission of cancer care management. As newer technology and complex machinery becomes accessible there is responsibility to safely and effectively operate modern treating units. There lies the need for high-end training programmes for those who are involved in these complex treatment procedures.

Unfortunately, a vast number of the current technical staff come from government hospitals where they are trained to use Cobalt-60 machines, which represent an older generation technology not adequate for modern treatment. Radiotherapy is now delivered using linear accelerators that have modern 3D-conformal radiotherapy (CRT), intensity-modulate radiotherapy (IMRT), volumetric Arc Therapy (VMAT), stereotactic radiosurgery (SRS), and stereotactic body radiotherapy (SBRT) techniques. Our goal is to make these novel treatment techniques available at facilities throughout the country, and safe operations of modern equipment needs specific training programs.

The present program is designed to fortify the abilities of already trained candidates who are familiar with radiotherapy, but not competent with state-of-the-art technologies. This program aims to train professionals on the newest technology available in the field of radiation oncology. The candidates under this fellowship program will be exposed to high-end treatment modalities making them able to work in independent radiation oncology departments on modern equipment. Candidates who want to learn new skills will get an edge in the field of radiation oncology medical practice, medical physics, and technology through this fellowship program.

The training programme specifically caters to graduated radiation therapists or radiation therapy technologists (RTTs). RTTs are integral members of radiation therapy teams. They work closely with radiation oncologists and medical physicists to deliver prescribed courses of radiation therapy. It is the responsibility of the radiation therapist to ensure correct, stable, reproducible and comfortable patient positioning, localisation of tumour volumes (simulation), and the safe and efficient delivery of the prescribed radiation treatments. Additionally, radiation therapists are one of the main contacts for individual cancer patients and need all competencies necessary to look after patients in a safe and caring way.

Course Objectives

The aim of this advanced fellowship course is to:

- Skill upgradation in high-precision radiation oncology
- Offer hands-on training on most advanced technologies in radiation oncology
- Allow RTTs to independently and safely practise high-precision radiation therapy and efficiently perform accurate techniques
- Provide adequate knowledge on radiation safety features associated with precision techniques

Course Eligibility

- Graduates of BSc Physics + 2 year PG Diploma in radiation therapy or BSc Radiotherapy graduates
- Intermediate computer skills
- Adequate English proficiency
- Completed all locally required radiation protection courses

Please Note: The maximum number of students per course is limited to 10 students. In case more candidates apply they will be chosen on a first-come, first-served basis.

Course Overview

The advanced fellowship training programme is ideal for graduated RTTs who desire to specialise and pursue a career in radiation therapy. The course consists of academic courses in which theoretical content is taught, in addition to clinical practice at Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute. In this manner, theory is transferred into clinical practice, while skills and competencies are developed and improved.

The course consists of seven modules covering the following areas:

- 1) Clinical Workflow in Radiation Therapy
- 2) Oncology Information System (OIS) & Electronic Medical Record (EMR)
- 3) Treatment Simulation
- 4) Treatment Setup & Delivery
- 5) Patient & Treatment Safety Awareness
- 6) Project Thesis
- 7) Internship

A blended learning approach is used to learn academic content and upgrade candidates' abilities through:

- Lectures and workshops (face-to-face)
- LaraNara RTT distance learning modules
- Private study, textbooks
- Labs (VERT system)
- Hands- on experience in the clinical setting

Unless cleared by the course Director, all procedures, which are performed by the student in labs and clinics, should be under the direct supervision of a delegated, appropriately qualified professional.

Mentoring

During the course, students are supervised by their individual mentors. Mentors will evaluate their students' performance and skill during the course and will initiate necessary measures to improve their competencies.

Course Evaluation

Each training course will be evaluated by all involved experts and modifications will be made if required. At the end of the course, students have to pass a final assessment.

Faculty

Course Advisors

Dr Rajesh Mistry (Chief Advisor)
Director – Oncology & Consultant Surgical Oncology (Thoracic & Head/Neck Oncology)

Dr Sanjay Mehta
Director – Accident & Emergency, Consultant – Emergency Medicine & Internal Medicine

Course Director

Dr Kaustav Talapatra
National Head – Radiation Oncology

Course Coordinators

Dr Pranav Chadha
Consultant – Department of Radiation Oncology and Stereotactic Radiotherapy/Radiosurgery

Mr Vaibhav Mhatre
Senior Medical Physicist

Course Supervisors

Mr Sushant Pawar
Mr Sebin George
Ms Melanie Budin (Varian)
Mr Taposunder Majumdar (Varian)

Eminent international and national faculty will also take classes.

Course Duration

1 year—consists of 6 months theory classes + 6 months practical training

Course Commencement

September, 2018

Course Fees

₹ 50,000 /-

Course Modules

1) Clinical Workflow in Radiation Therapy

| | |
|-------------------|--------|
| Theory – 1 week: | |
| • 1 day | KDAH |
| • 4 days | Varian |
| Practice – 1 week | KDAH |

2) Oncology Information System (OIS) & Electronic Medical Records (EMR)

| | |
|-------------------|--|
| Theory – 1 week | Varian |
| Practice – 1 week | KDAH Varian (Product Re-training for 2 days) |

3) Treatment Simulation

| | |
|--------------------|------|
| Theory – 1 week | KDAH |
| Practice – 5 weeks | KDAH |

4) Treatment Setup and Delivery

| | |
|--------------------|------|
| Theory – 1 week | KDAH |
| Practice – 5 weeks | KDAH |

5) Patient & Treatment Safety Awareness

| | |
|--------------------|------|
| Theory – 1 week | KDAH |
| Practice – 3 weeks | KDAH |

6) Project Thesis

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|--------------------------|------|
| Supervision & Evaluation | KDAH |
|--------------------------|------|

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|------------------------------------|------|
| 7) Internship | |
| Supervision & Mentoring - 6 months | KDAH |

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|---|--------|
| Miscellaneous: | |
| LaraNara RTT distance learning modules | Varian |
| Administration and course organisation | KDAH |
| Resourcing and maintenance of training room | KDAH |
| Final assessment at the end of training | KDAH |

Course Curriculum

All lectures, workshops, labs and hands-on of this advanced RTT training course should focus on modern radiation therapy simulation and treatment techniques like IMRT, VMAT and SRS and on processes and tasks relevant for RTTs.

Clinical Workflow in Radiation Therapy

Students will learn the clinical workflow in a radiation therapy department in detail, i.e. from patient referral to treatment delivery to post-treatment follow-up.

Focus areas of this module are:

- Virtual System Familiarisation
- Clinical Workflow Introduction
- Varian Systems Overview with clinical cases
- Overview of Linac Operation
- Overview of Imaging – OBI/CBCT
- Overview of treatment QA

Oncology Information Systems (OIS) & Electronic Medical Record (EMR)

Students are familiarised with Oncology Information Systems and Electronic Medical Records. They will operate the IT systems, register patients, log treatment schedules and continuously maintain patient records.

Focus areas of the module are:

- System Administration
- Patient Data Entry
- Diagnosis and Vital Signs
- Clinical Workflow Templates
- Imaging Sequences
- Dose Prescription
- Treatment Scheduling
- Treatment Review
- Imaging Review and QA
- Treatment Summary

Treatment Simulation

Students perform CT simulation, mould room preparation and import images from different sources. They explain the different steps of treatment simulation process.

Focus areas of this module are:

- Mould Room Preparation
- Patient Positioning
- Patient Immobilisation and Verification for Different Sites
- CT Virtual Simulation

Treatment Setup & Delivery

Students immobilise and position patients accurately, reproducibly, comfortably and safely. They certify the setup, take images and use motion tracking systems and other auxiliaries. They verify treatment plans and treatment delivery, and deliver treatment in a safe and accurate way.

Focus areas of this module are:

- Patient Immobilisation

- Patient Setup Verification
- Imaging
- Motion Tracking
- Treatment Plan Verification
- Treatment Delivery
- Use of Accessories

Patient & Treatment Safety Awareness

Students have to explain the impact of national as well as local regulations and procedures, the clinical workflow in radiation therapy, daily activities of a RT team and importance of patient care. They care for the patients, treat them in an ethical and respectful way and apply all safety procedures prior, during and after treatment delivery including patient follow-up and daily QA. They act proactively and report unexpected changes and incidents on time.

Focus areas of this module are:

- Emergency Handling Procedures
- Study of Radiation Therapy Technologists Practice Standards
- Patient Monitoring during Treatment
- Patient Treatment Records
- Machine Daily QA
- Treatment Plan QA

Project Thesis

All students are expected to complete a project thesis which will be a part of their final assessment.

Internship

The goal of this six-month internship is to get more practical experience, to overcome identified weaknesses and to extend professionalism. In this internship, students should strengthen competencies they acquired in the previous training modules. Students should perform all the routine tasks a RTT has to do in daily work with special focus on modern treatment techniques and more complex cases.

Final Assessment

At the end of the course, students have to pass a final assessment based on:

- | | |
|--|----------|
| • Practical Assessment Including Viva Voce | 60 marks |
| • Written Test | 20 marks |
| • Presentation of the project thesis | 20 marks |

Students who successfully pass the final examination will receive a certificate of fellowship completion issued by KDAH and Varian Medical Systems.



Kokilaben Dhirubhai Ambani
hospital & medical research institute

Every Life Matters

ADVANCED FELLOWSHIP TRAINING PROGRAMME FOR RADIATION TECHNOLOGISTS

Application No.

Application Form

Name: _____

Age: _____ Yrs Date of Birth: ____/ ____/ ____

Marital Status: _____ Nationality: _____

Address for Correspondence: _____

Phone (R): _____ Mobile: _____

Email: _____

Please Affix A
Recent Passport
Size Color Photo
Here.

Educational Qualifications

| Degree | Year | Institution / University | % Marks Obtained / Merits |
|--------|------|--------------------------|---------------------------|
| | | | |
| | | | |
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Basic Radiation Therapy Technologist (RTT) Course Experience

| Degree | Year | Institution / University | % Marks Obtained / Merits |
|--------|------|--------------------------|---------------------------|
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Clinical Experience

| Period | Institution | Remark |
|--------|-------------|--------|
| | | |
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| | | |

Application Fee

DD of Rs 50,000/- payable at Mumbai, to be drawn in favour of 'Mandke Foundation'

Application Fee: DD of ₹ 50,000/- payable at Mumbai, to be drawn in favour of 'Mandke Foundation'

DD No. _____ Drawn On _____

Amount _____ Dated ____ / ____ / _____

Testimonials To Be Attached

- 1. RTT Course Certificate (Diploma certificate for year 1 & 2)
- 2. Degree Passing Certificate
- 3. One Recommendation Letter

MEDICAL FITNESS:

Please state if you have any different ability of any kind:

- ☐ Physical
- ☐ Psycho-social
- ☐ Any other

DECLARATION BY THE APPLICANT

I (Name)_____ here by declare that the particulars furnished above are complete and correct to the best of my knowledge and belief. I also understand that I will be disqualified if any of the information is found to be wrong at any level.

Place: _____ Signature: _____

For Hospital Use Only: