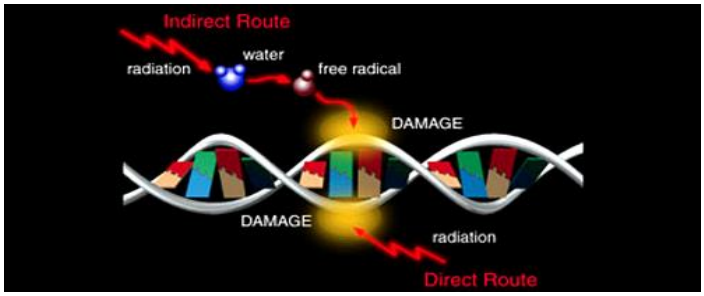
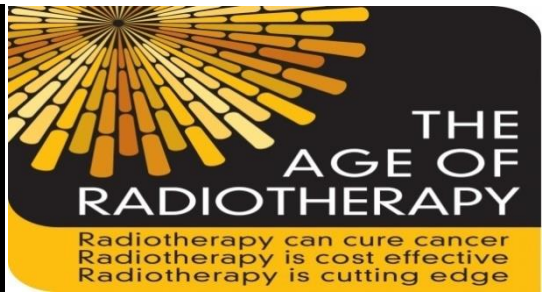
Dr.N.G.P Arts and Science College

Kalapatti Road, Coimbatore-641048

RIFF

Department of Medical Physics





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Department of Medical Physics

Objective

“Visualizing solutions for accurate diagnosis and treatment”

The Department was established during the year 2012. This is a basic science department in Dr.N.G.P Arts and Science College. The faculty provides comprehensive graduate education in Medical Physics, and the research strives to improve health by developing and implementing radiation treatment for cancer.

Vision

"To offer diverse Medical Physics programme to establish and maintain the standards of the students of Medical Physics in the disciplines of Diagnostic Imaging, Radiation Oncology and Nuclear Medicine.

Mission

The goal of the Department is to cultivate an educational environment which provides the full spectrum of learning opportunities in clinical medical physics**,** radiation oncology and radiobiology. The curriculum is flexible and designed to enable a student to optimize their learning experience throughout their two years programme. It is an expectation that upon the completion of the programme a student will be an outstanding “Radiation Oncology Physicist” capable of making an immediate impact in either an academic or community practice setting.

TEACHING METHODOLOGY

Teaching is carried out through didactic lectures, clinics and numerous teaching conferences, with emphasis on patient care, under the supervision of full-time staff. The department enjoys state-of-the-art equipment and operates several sites both on and off- campus, which include a main facility in the KOVAI MEDICAL CENTER AND HOSPITAL (KMCH)

Attending conference is essential to the success of teaching program. In such an aspect the students attend all Medical Physics conferences. Students are expected to present on physics related procedures and the assigned projects to the group. Handouts (paper or electronic) are mandatory for presentations. A few highlights of the Department of Medical Physics teaching format includes the following,

- Clinical Talks (Topic-based)
- Physics/Radiobiology Talks
- Case Presentations -- focused on background/workup
- Journal Club
- Guest attending lectures
- Visiting professors
- Training and project to other cancer centers

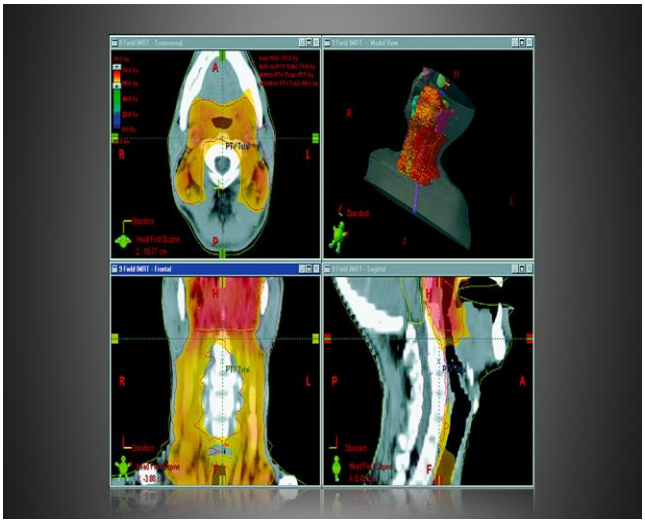
Training components given by department at KMCH

Linear Accelerator – Rapid Arc

Brachytherapy- GammaMed

Computed Tomography –Siemens

Treatment Planning System- Eclipse



List of Guest Lectures:

Date	Topic	Guest
07.03.14 to 08.03.14	NEUTRON DOSIMETER	Dr.Kaliyappan Chief Medical Physicist Aringar Anna Memorial Cancer center, Kanchipuram.
13.03.14 to 14.03.14	MAGNETIC RESONANCE IMAGING	Dr.Thirunavukarasu Associate Professor Rajah Muthiah Medical College Kanchipuram.
02.08.2014	TREATMENT PLANNING SYSTEM	Mr.Muthukumar Senior Medical Physicist, Apollo Hospital, Chennai.
26.02.2015 To 28.02.2015	PRINCIPLES OF DIAGNOSTIC RADIOLOGY	Mr.S.Panneer Selvam, Assistant Professor, Sri Ramachandra Medical college, Porur, Chennai.
26.03.2015 to 28.03.2015	COMPUTED TOMOGRAPHY AND MRI	Mr.S.Panneer Selvam, Assistant Professor, Sri Ramachandra Medical college, Porur, Chennai.
03.04.2015	RADIATION PROTECTION AND STANDARDS	Dr.M.Nehru Scientific Officer, Atomic energy Regulatory Board, Anushakthi Nagar, Mumbai.

Guest Lecture in the topic of MRI on 13.03.2014 at KMCH Conference Hall

Guest lecturer in the topic of Principles of Diagnostic Radiology on 26.02.2015 at KMCH Conference Hall

Guest lecturer in the topic of Principles of Diagnostic Radiology on 26.03.2015 at KMCH Conference Hall

Guest Lecturer in the topic of Radiation Protection Standards on 03.04.2015 at KMCH Tumor Board

ACHIVEMENTS OF STUDENTS

- II M.Sc Medical Physics students won third prize in Quiz competition held in the35th Annual conference of Association of Medical Physicist of India -2014 at Pravara Institute Of Medical Science – Pune

- I &II M.Sc Medical Physics students participated in the 35th AMPICON 2014 on 20th -22nd Nov 2014 in the topic of "Advanced Technologies in Radiotherapy" conducted by Pravara Institute Of Medical Science – Pune.

- I &II M.Sc Medical Physics students participated in the19th Association of Medical Physicist of India TN & PY- 2014 on 20th and 21st Dec 2014 on the topic "Meeting challenges with Technology "conducted by JIPMER Puducherry.

- II M.Sc Medical Physics students won second prize in Quiz competition held in the19th Association of Medical Physicist of India TN & PY at JIPMER Puducherry.

- II M.Sc Medical Physics students Mr. Vignesh and Mr. Sankar presented a paper in the topic of "**Evaluating Dosimetry of a Novel Phantom for Irradiating Blood Components using Photons and High Energy Electrons"** in the 19th Association of Medical Physicist of India TN & PY at JIPMER Puducherry

I &II M.Sc. Medical Physics students participated in the 35th AMPICON 2014 on 20th-22nd Nov 2014

I &II M.S.c Medical Physics students participated in Quiz Competition at AMPICON- Pune

II M.Sc. Medical Physics Students won second prize in Quiz competition at JIPMER Puducherry

STAFF PARTICIPATION

- Mrs.Jayanthi.S and Ms.Navitha.M have participated in the 35th AMPICON 2014 on 20th-22nd Nov 2014 in the topic of "Advanced Technologies in Radiotherapy" conducted by Pravara Institute Of Medical Science – Pune.

- Mrs.Jayanthi.S and Ms. Navitha.M have participated in the19th Association of Medical Physicist of India TN & PY- 2014 on 20th and 21st Dec 2014 in the topic "Meeting challenges with Technology "conducted by JIPMER Puducherry.

- Mrs.Jayanthi.S and Ms. Navitha.M with M.Sc. Medical Physics students made a one- day visit to Government General Hospital Coimbatore.

Our department staff and students went for G.H Coimbatore for Co60 Source installation

CLINICAL TRAINING UNDERGONE BY THE STUDENTS

II M.Sc. students underwent a one month (May2014- June 2014) training programme and a one month project programme (March 2015- April 2015) to familiarize themselves about the Radiotherapy department to various cancer centers all over India .The facilities in which students training and project include, but are not limited to the following:

- Intensity Modulated Radiation Therapy (IMRT)
- Intensity Modulated Arc Therapy (IMAT; Rapid Arc)
- Image Guided Radiation Therapy (IGRT - CBCT, kV, others)
- Stereotactic Body Radiation Therapy (SBRT)
- Gamma Knife Treatment
- Respiratory Gated Radiation Therapy
- PET-CT or MRI-CT fusion for target delineation
- Remote afterloading HDR brachytherapy.

Training at American Institute oncology Hyderabad

Training at Manipal Hospital Bangalore

Lung Cancer

Lung cancer is a cancer starts in the lungs. It is the uncontrolled growth of abnormal cells that start off in one or both lungs; usually in the cells that allows the air passages. The abnormal cells do not develop into healthy lung tissue; they divide rapidly and form tumors. Lung cancer is the leading cause of cancer death for men and women. It is also the most preventable form of cancer. Tobacco use accounts for 87% of lung cancers.

Who is at risk?

- *Cigarette smoking is by far the greatest risk factor for lung cancer.*
  - *Nonsmokers who breathe in secondhand smoke.*
  - *Occupational or environmental exposure to radon, asbestos, certain metals, radiation or air pollution. If people are exposed to the above carcinogens & also smoke, their risk is greatly increased.*

Reduce your risk

- *Quitting tobacco use, or not starting at all, is by far the best way to prevent lung cancer.*
  - *Avoid secondhand tobacco smoke*
  - *Eat a healthy, balanced diet with at least five servings of fruits and vegetables every day*
  - *Take protective measures against cancer-causing chemicals at work*

Symptoms of Lung cancer

Detection

Because symptoms often do not appear until the disease has spread, early detection is difficult.

When lung cancer is diagnosed early, it is usually a result of tests for unrelated conditions. If lung cancer is suspected, tests such as a chest x-ray and a biopsy may be done.

You are not alone

In recent years, the quality of life for those who are living with cancer has received increased attention. No one has to make the cancer journey alone.