A CAREER IN MEDICAL PHYSICS

Academic requirements

1. A BSc degree majoring in Physics
2. A BSc (Hons) degree in Medical Physics
3. A two year internship in order to register as a medical physicist at the HPCSA

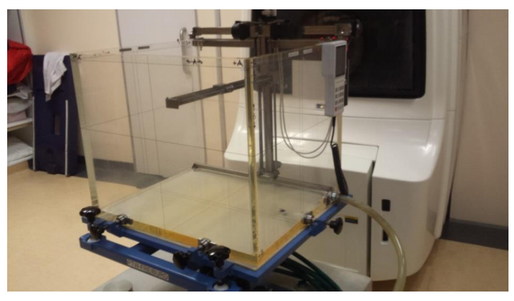
1. Radiotherapy

- The acceptance, testing and measuring of the radiation parameters of new therapy equipment

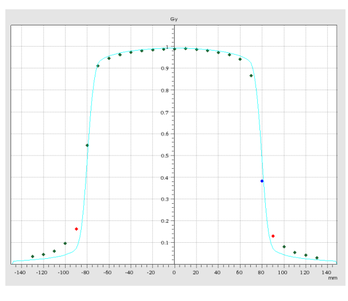
Linear accelerator

^{60}Co unit

- The assay, calibration and leak testing of brachytherapy radioactive sources
- The calculation of radiation dose distributions and the monitoring of doses administered to patients



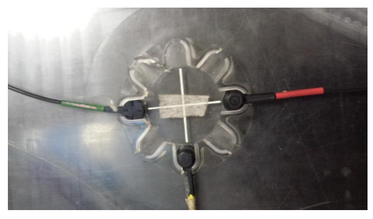
Water tank



Dose profiles

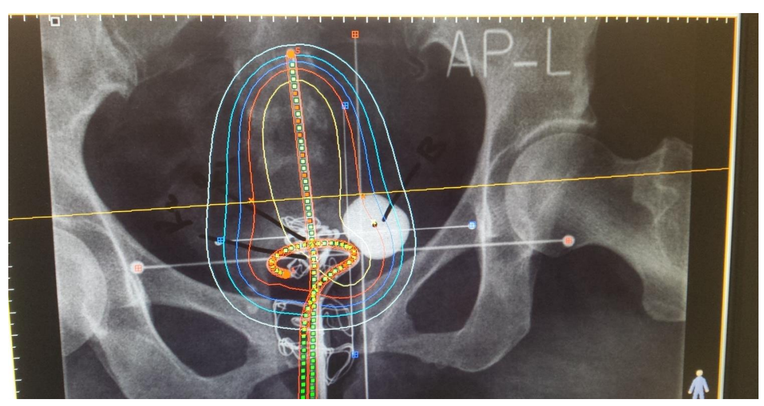
- The quality control of equipment and procedures
- The design of radiation therapy installations and the calculation and verification of shielding requirements
- The commissioning of treatment planning systems

Anthropomorphic phantom



Diodes

- The evaluation of eye doses
- Patient dose verification



Brachytherapy equipment and isodose curves

- In-vivo dosimetry
- Specifications and acquisition of new equipment
- Research and development
- Teaching

2. Diagnostic radiology

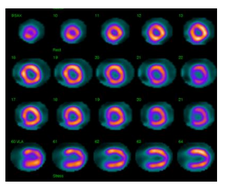
- The acceptance, testing and measuring of the radiation parameters of x-ray equipment
- Technical assistance in the evaluation of diagnostic procedures
- Quality control of x-ray equipment and procedures
- The design of diagnostic x-ray installations, the calculation and verification of shielding requirements
- Responsible for dosimetry
- Carry out physical measurements related to the evaluation of the dose delivered to the patient

CT scanner

- Advise on the improvement of conditions that will lead to a reduction in unnecessary patient dose
- Surveillance of installations with regard to radiological protection
- Quality control of non-ionising radiation equipment and procedures

3. Nuclear Medicine

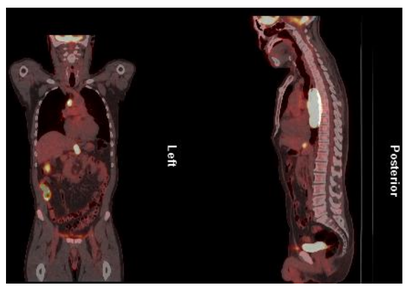
- The calibration of radionuclide assaying equipment
- The assaying of radionuclides administered
- The intercomparison and maintenance of radionuclide assaying or counting standards
- The quality control of radionuclide counting, scanning and imaging equipment and procedures



Heart study

- The design, development and evaluation of computing techniques to calculate physiological parameters from radionuclide measurements

Gamma camera



PET study

4. Radiation Protection

- Evaluate staff occupational radiation exposures
- Determine radiation levels
- Lay down and maintain safety procedures

TLD

- Administrative control of the acquisition, distribution, storage and disposal of radioactive sources
- Investigate radiation accidents
- Ensure a safe working environment for pregnant radiation workers

Dosimeter

Patient overdose

For more information, please contact Radiation Dosimetry and Protection, 021-919 2156, Radiation@telkomsa.net