



MEDICAL DOSIMETRIST JOB DESCRIPTION

Job Summary:

The Medical Dosimetrist is a member of the radiation oncology team who has knowledge of the overall characteristics and clinical relevance of radiation oncology treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the medical physicist and radiation oncologist.

Qualifications:

Education:

- Graduation from an approved educational program. Formal educational programs are listed on the Joint Review Committee on Education in Radiologic Technology (JRCERT) website at <http://www.jrcert.org/cert/Search.jsp>. OR
- On-the-job training is a position offered within a radiation oncology department therefore requiring supervision by a certified medical physicist or certified medical dosimetrist.

Experience: One year full time experience as a Medical Dosimetrist

Duties and Responsibilities

- Design a treatment plan by means of computer and/or manual computation that will deliver a prescribed radiation dose and field placement technique in accordance with the Radiation Oncologist's prescription to a defined tumor volume.
- Consider dose-limiting structures in the design of treatment plans and document dose in accordance with the Radiation Oncologist's prescription.
- Coordinate treatment simulations and tumor localization on dedicated devices, including CT, MRI, and PET when indicated, for radiation oncology treatment planning.
- Supervise, perform, or assist in the planning of the fabrication of compensation filters, custom shields, wedges, and other beam modifying devices.
- Supervise, perform, or assist in the planning of the production of moulds, casts, and other immobilization devices.
- Supervise the therapist staff in the implementation of the treatment plan including: the correct use of immobilization devices, compensators, wedges, field arrangement, and other treatment variables.
- Perform calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, document all pertinent information in the patient record, and verify the mathematical accuracy of all calculations using a system established by the Medical Physicist.

- Provide physics and technical support to the Medical Physicist, in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment.
- Supervise, perform, or assist in the application of specific methods of dosimetry including ion chamber, TLD, or film measurement as directed by the Medical Physicist.
- Assist in intracavitary and interstitial brachytherapy procedures and in the subsequent manual and/or computer calculation of the dose distributions of these treatments.
- Teach applied aspects of medical dosimetry to students and residents, as assigned.
- Participate in clinical research for the development and implementation of new techniques.
- Participate in continuing education in the area of current treatment planning techniques, and advances in medical dosimetry.

Essential Skills

- Must be able to understand the technical aspects of radiation oncology and medical physics to derive computerized treatment plans, and communicate these aspects to the Radiation Oncologist for plan approval, and to the Radiation Therapist for plan implementation.
- Performs routine duties independent of supervision, but consults with the Radiation Oncologist and Medical Physicist as required.
- Operates and performs quality assurance, under the direction of the Medical Physicist, on the treatment planning computer.
- Has working knowledge of radiation safety and current rules and regulations of the Nuclear Regulatory Commission.
- Has the ability to interpret and execute treatment plans as defined in relevant treatment protocols.
- Must possess mathematical skills including algebra, trigonometry, and introductory calculus and be able to visualize objects in three-dimensional concepts to facilitate the treatment planning process

Working Conditions:

The Medical Dosimetrist must understand and accept the possibility of exposure to inside environmental conditions, such as noise, infectious/communicable diseases, radiation, chemicals and/or chemical fumes, odors, gases and dusts
