



What Is a Medical Dosimetrist?

Who We Are

A Medical Dosimetrist is a key 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 a Medical Physicist and Radiation Oncologist.

What We Do

After the Radiation Oncologist has consulted with the patient on a plan of treatment, he/she will write a prescription of radiation dose to a defined tumor volume. The Medical Dosimetrist designs a treatment plan by means of computer and/or manual computation to determine a treatment field technique that will deliver the prescribed radiation dose while taking into consideration the dose-limiting structures. The Medical Dosimetrist maintains a delicate balance between delivering the prescription that the physician has written while ensuring the patient will not lose important healthy organ function.

Using imaging modalities such as CT scans, alone or in combination with MRI or PET scans, planning is completed with 3-D computer software that enable us to give higher doses of radiation to a tumor while lowering the doses to the sensitive structures around it. In some environments, we play a part in cutting-edge clinical research for the development and implementation of new techniques in cancer treatment.

The Medical Dosimetrist performs calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, documents pertinent information in the patient record, and verifies the mathematical accuracy of all calculations using a system established by the Medical Physicist. We perform, or assist in, the application of specific methods of radiation measurement as directed by the Medical Physicist. We may provide technical and physics support to the Medical Physicist; this support could be in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment. Also, we often take on the role of educator in facilities that have radiation oncology residents, radiation therapy students or medical dosimetry students.

Medical Dosimetry is an exciting and amazing profession to work in. We are members of a team that contributes toward cancer survivorship on a daily basis.

What Skills Do We Have?

As Medical Dosimetrists, we have these skills:

- An understanding of the technical aspects of radiation oncology and medical physics to meticulously derive computerized treatment plans, communicate these aspects to the radiation oncologist for approval, and relay that information to the radiation therapists for plan implementation
- Good oral and written communication skills
- Working knowledge of radiation safety and regulations
- Ability to interpret and execute treatment plans as defined in relevant treatment protocols
- Good math and anatomy skills, with ability to visualize the three-dimensional concepts needed for the planning process
- Experience and confidence with computer operations and functions
- Excellent analytical skills and an ability to critically evaluate data

Learn More About Medical Dosimetry

For more information about Medical Dosimetry, please visit www.medicaldosimetry.org, the official website of the American Association of Medical Dosimetrists (AAMD). If you are interested in becoming a Medical Dosimetrist, visit the Joint Review Committee on Education in Radiologic Technology (JRCERT) website at www.jrcert.org. There are currently 17 JRCERT approved Medical Dosimetry programs in the United States. The Medical Dosimetrist Certification Board (MDCB) sets the standards for eligibility for the certification exam. The eligibility requirements are listed on the MDCB website at www.mdcb.org.

For those interested in Medical Dosimetry as a profession the future job market is strong. The many advances in treatment planning increases the demand for qualified Medical Dosimetrists and wages are comparable with other health care professions.