

Place of work: The First Children's National Hospital for Cancer, Serious Illnesses and Trauma built entirely from donations within Marie Curie Emergency Children's Hospital

Location: Romania, Bucharest

Duration: permanent, full-time

Requirement: Romanian, wanting to come back home

Radiotherapy Medical Physicist Expert

Position description

Conducts all aspects of the Radiation Oncology physics including teaching and research in medical physics that is consistent with the mission and goals of the Department of Radiation Oncology, equipment calibration and commissioning, clinical support, maintenance of appropriate quality assurance for equipment and treatment delivery, compliance with radiation safety and licensing issues.

The Radiotherapy Medical Physicist Expert will perform the responsibilities of the radiotherapy medical physicist. Additionally, one of the Medical Physicist Experts will be responsible for managing the activities of the physics section of the Radiation Oncology Department and overseeing the activities of other medical physicists.

Essential Accountabilities / Functions

1. Responsible for the systematic measurement, documentation, and assurance of the physical aspects of all radiation sources/devices used in Radiation Oncology. Performs acceptance testing and commissioning of all treatment-related equipment. This includes calibration of all radiation producing sources and maintenance of all information for their appropriate use. Develops and documents performance specifications, testing, tolerances, and frequency of testing for all therapy equipment.
2. Performs and maintains a comprehensive quality assurance (QA) program that ensures patients are provided tumor localization, radiation

- treatment, and dose distributions as prescribed. This includes assurance of the accuracy of treatment unit parameters. This also includes all machine specific QA and patient specific QA.
3. Generates clinically optimal treatment plans utilizing the treatment planning system, knowledge of anatomy and physiology, radiation biology and oncology, radiation safety and protection, mathematics, radiation therapy techniques, physics, and technology.
 4. Communicates with the radiation oncologist during the treatment planning process and participate in communicating the plan to the radiation therapy technologists for plan implementation.
 5. Maintains a commitment to a high degree of accuracy, attention to detail, and safety.
 6. Utilizes critical thinking skills when performing radiation treatment planning, plan evaluation, recognizing and resolving equipment problems and treatment discrepancies.
 7. Ensures accurate data transfer of patient and treatment plan information to clinical systems including but not limited to record and verify systems, imaging guidance systems, treatment delivery systems, and electronic medical record systems.
 8. Participates in acquisition of patient data via computer generated data sets from medical imaging devices such as CT, PET, MR, etc., or manual methods such as physical measurements, and incorporation of these data into radiation treatment plans, calculations, and treatment devices.
 9. Assists the radiation technologists in the treatment simulation process including the use or necessity of ancillary treatment devices, patient immobilization techniques, and other patient positioning techniques as needed for simulation and treatment. Assists in fabrication of these ancillary treatment devices. Provides support from patient simulation to treatment delivery.
 10. Contours and delineates clearly discernable normal critical structures and expanded planning structures using different imaging modalities.
 11. Performs rigid and deformable image registration for multi-modality image sets.
 12. Applies the principles and concepts of radiation physics in radiation treatment planning, which includes, but is not limited to: 2D treatment planning, 3D conformal treatment planning, intensity modulated radiation therapy (IMRT) treatment planning, 4D treatment planning, volumetric modulated arc therapy (VMAT) planning, stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT) planning.

13. Applies knowledge of radiobiology with respect to dose tolerances, time dose fractionation calculations, hypofractionation, BED and EQD2 calculations and other applications of radiobiology to the radiation therapy treatment process.
14. Accurately performs radiation dose calculations, both manual and computer generated, for treatment delivery including the effects of beam modifying devices, irregular fields, gaps for adjacent fields, and off-axis calculations.
15. Provides consultation to the Radiation Oncologist on the physical and radiobiological aspect of treatment. Translates the desired treatment plan into a set of instructions for radiation therapists to execute.
16. Responsible for the in-vivo dose measurement and use of measuring devices for verification of dose delivery to patients. Provides interpretation/consultation to the Radiation Oncologist on basis of in-vivo dosimetry.
17. Develop and implement new treatment procedures as appropriate for the treatment of patients.
18. Responsible for development of quality management program that will ensure a safety culture within the radiation oncology department.
19. Provide consultation related to all shielding considerations. Ensure that the treatment vaults as well as other radiation producing vaults are safe from shielding considerations.
20. Directs the design, fabrication, and measurement of treatment beam modifiers and treatment aids.
21. Responsible to obtain and disseminate information pertaining to current practices within the field of Radiation Oncology Physics.
22. Responsible for initiating and performing research in areas of medical physics that are consistent with the missions and goals of the Department of Radiation Oncology. Such research should be performed in close collaboration with other medical physicists, research scientists, radiation oncologists and others as appropriate.
23. Advises in the clinical practice of Radiation Oncology Physics and dosimetry. This includes equipment usage/selection of new technologies and new products/replacement, physics and dosimetry staff requirements/assignments/recruitment, program operation, budget preparation, and continuing review of program's policies and procedures.
24. Provides support for clinical trials as appropriate.
25. Develops special treatment procedures such as total body irradiation (TBI) and maintains clinical operations of this program.
26. Performs routine chart checks per departmental policy.

27. If appropriate, participates in charge capture and generates documentation for billing in accordance with departmental policies.
28. Participates in educational activities such as providing instruction and training to new staff members, physician residents, physicist residents, radiation therapists (or trainees), and others as appropriate.
29. Maintains an atmosphere of caring, concern, and support for patients, visitors, medical staff, and colleagues.
30. Performs miscellaneous job-related duties as directed by supervisor.
31. Adheres to high ethical standards in relation to patients, students, trainees, and colleagues.

Educational and Knowledge Requirements

- Bachelor degree in Physics (majoring in Medical Physics, Physics) or equivalent
- Master's degree in Medical Physics/Physics
- CNCAN level 3 certification in radiotherapy medical physics
- Free practice license from the Ministry of Health
- At least 5 years' clinical experience in radiotherapy
- Experience with various treatment planning techniques such as 3DCRT, IMRT, RapidArc/VMAT, SRS, SBRT (using Varian TrueBeam, familiarity with Halcyon or Ethos equipment is preferable and the Eclipse treatment planning system)
- Extensive experience with Aria 15.6 or higher
- Experience with setting quality assurance (QA) programs and performing daily QA, monthly QA, annual QA of linear accelerators, CT simulator, treatment planning systems, multileaf collimators (MLCs), electronic portal imaging device (EPID), OBI and CBCT systems following protocols recommended by AAPM or other international organizations
- Experience in using dosimetric equipment produced by various vendors such as IBA/PTW/SUN NUCLEAR
- Experience in CNCAN certifications for radiotherapy – linear accelerators
- At least mid-level proficiency in English language.

Licenses and Certifications

Board certification in therapy medical physics by an appropriate certification board from any country or by the International Medical Physics Certification Board (IMPCB) is desirable but not required.

Details about benefits (Romanian): www.daruiesteviata.ro

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Applications at: recrutare@daruiesteviata.ro

Deadline: 15 March 2021
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About the Children's First National Hospital

Dăruiește Viață (Give Life Association) in partnership with Marie Curie Hospital in Bucharest is looking for a team of Romanian Medical Physicists willing to come back home and lay the foundation and set the vision for the First Children Radiotherapy Department in the country.

The hospital will be a state-of-the-art facility that will offer cutting edge radiotherapy services to children from around the country, as well as adults. It will be the first Department to ensure radiotherapy services to children, including under 12 via their state medical insurance (Romania is estimated to have around 500 new children diagnosed with cancer annually).

The center will be equipped with the most advanced state-of-the-art technologies. You will work with Varian Ethos and TrueBeam HD MLC linear accelerators, Eclipse treatment planning systems; 4DCT simulator; a citrix based IT infrastructure; Varian Identify surface guidance systems, Velocity software, IMRT, stereotactic radiosurgery, stereotactic body radiotherapy, respiratory managed treatments, adaptive radiotherapy.

Personalized training and development program. The entire team will receive at least six-months of prior training (with expenses covered by the Association) in two of Europe's top reference centers in radiotherapy. After the Department is functional, we will work close by to ensure a continuous learning program for scientific and professional growth through attendance in various national and international meetings, collaboration with reference centers around the world for clinical studies, experience sharing, tumor boards, etc.