

PMH Genito-Urinary Radiation Oncology Fellowship Objectives

Faculty Supervisors

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Core Objectives

On completion of his/her training, the Fellow will be able to apply an integrated interdisciplinary approach to the management of patients with genito-urinary (GU) malignancies, with an emphasis on the management of prostate cancer. Additional experience in testis cancer and bladder cancer is also available with specific supervisors. The Fellow will have developed competence in the application of advanced radiotherapeutic techniques for the management of GU malignancies. The Fellow will have an in-depth understanding of clinical research methodology, including protocol development and implementation, patient accrual (if appropriate), data collection and analysis, and data reporting.

Specific Objectives

External Beam Radiotherapy

1. The Fellow will be able to discuss the indications for radical prostate radiotherapy and post-prostatectomy radiotherapy.
2. The Fellow will be able to discuss the role of MRI and other imaging modalities in GU treatment planning, perform appropriate simulation and contouring and be able to supervise and approve IMRT treatment plans.
3. The Fellow will understand and be able to apply solutions to the limitations imposed by organ positional uncertainty, including fiducial marker insertion and X-ray volume imaging (cone beam CT)
4. The Fellow will have a detailed knowledge of treatment outcomes, including dose-response relationships, toxicity, and how to manage treatment failure and toxicity.
5. The Fellow will be able to discuss and deliver palliative radiotherapy.

Brachytherapy

1. The Fellow will be able to discuss the indications for both permanent seed and temporary high dose-rate prostate brachytherapy, including outcomes and toxicities.
2. The Fellow will be competent to perform permanent seed prostate implants including patient selection, pre-implant TRUS volume study, implant planning, seed insertion and post-implant CT/MRI evaluation.

3. The Fellow will be competent to perform temporary high dose-rate (HDR) prostate implants including patient selection, HDR catheter insertion, planning, Quality Assurance and treatment delivery.
4. The Fellow will be competent to manage the immediate post-operative complications of brachytherapy, and understand how to manage the longer term side effects.
5. The Fellow will understand challenges and opportunities in image-guidance for brachytherapy, and participate in novel developments to address technical uncertainties.

Translational Fellowships

1. The Fellow will understand the importance of biomarker development in clinical research, and learn the underlying rationale for candidate imaging and biofluid markers of response to radiotherapy.
2. The Fellow will be able to discuss the evidence for hypoxia in prostate cancer, and understand potential therapeutic strategies in this regard.