



Radiation Therapy – Q&A for Health Care providers

Who makes up the Radiation Therapy team?

Radiation Oncologists

- Prescribe treatment and monitor patients throughout their course, as well as post-treatment follow-ups.

Radiation Therapists (RTTs)

- Responsible for the fabrication of immobilization & treatment accessories, simulation, treatment planning, and treatment delivery of patients, and provision of ongoing assessment and education.

Triage RTTs ensure the RT process from ready to treat to treatment is efficient to have patient care delivered within accepted standards.

RT Nurses

- Support and management of radiation-related side effects; liaison between patient, clinic nurses and clinicians.

Support Staff

- Includes clerks and unit assistants; responsible for all scheduling and patient transport.

Medical Physicists

- Ensure the quality assurance of the equipment and software, as well as performing quality checks on treatment plans.

What is Radiation Therapy and how does it work?

Radiation therapy, sometimes called radiotherapy or irradiation, uses various forms of radiation to safely and effectively treat cancer and other diseases. It is used to eradicate tumours, control tumour growth or to relieve symptoms. It is a local treatment and is planned to damage a target volume, while minimizing effects to adjacent structures.

What are the different types of radiation treatments?

The treatments differ in the way radiation is produced and in the way it is delivered. Linear accelerators utilize **electronically produced** high-energy x-rays to deliver external beam radiation therapy. Lower energy x-rays are used in the treatment of superficial lesions, such as for skin cancer. Specialized techniques such as intensity modulated radiation therapy (**IMRT**), stereotactic body radiation therapy (**SBRT**) and deep inspiration breath hold (**DIBH**) are all forms of external beam radiation therapy and differ in the way the treatment is delivered. The choice of technique is based on the stage, type and location of the target volume.

Radiation may also originate from **live sources** that emit radiation as they decay; this is the type of radiation used in internal radiation treatments. At CCMB this includes high dose rate (**HDR**) brachytherapy for cervical and endometrial cancers and low dose rate (**LDR**) brachytherapy for prostate cancers.

How does the treatment process work?

The process begins with the initial consultation with the Radiation Oncologist, where treatment options are discussed and if radiation therapy is indicated, informed consent is obtained. From there the following events take place:

- **CT Simulation:** The patient is immobilized –which may include a plastic mould or other motion limiting accessories - and scanned in the treatment position, reference marks are placed (tattoos or temporary markers may be used), and dataset is sent to planning system.

- **Planning:** If palliative short course is indicated, a basic plan is created within 3 days of scan and treatment can begin. Long course /all other circumstances are sent to the planning area where more elaborate plans are created and then verified by physics associates this all occurs within 3 weeks of the scan. The plan information is then sent to the treatment unit.

- **Treatment Delivery:** The patient is positioned according to CT Simulation and lined up to reference marks. Images are taken to verify and adjust position accordingly prior to delivery of radiation. On average, a treatment takes about 15 minutes, although most of time is spent setting the patient up on the bed. Patient education and assessment is part of the simulation and treatment processes and may include radiation therapists, nurses and others.

- **Follow-up:** Usually takes place about 4-8 weeks after the completion of all radiation treatments, allowing for healing time.

RT Quick facts:

- The department is equipped with **6 Linear Accelerators** and **2 CT Simulators** at the **CCMB McDermot** site in Winnipeg and **1 Linear Accelerator** and **1 CT Simulator** at the **Western Manitoba Cancer Centre (WMCC)** in Brandon.

Also in Winnipeg:

1 Orthovoltage/skin unit,
1 HDR Brachytherapy suite,
and **1 LDR Prostate Brachytherapy suite** in the **Prostate Centre-3rd floor** of **CCMB McDermot**.

- Each treatment unit will treat a variety of disease sites. In Winnipeg patients may be treated on different units from day to day.

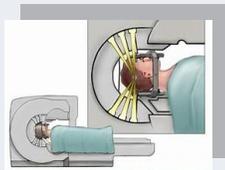
- On average over 200 patients are treated each day. The total number of treatments a patient receives will vary depending on the site and intent, and range from 1-39 days of treatment.

- During a typical 15 minute treatment period one or more treatment fields may be used. Treatments are usually once a day, 5 days a week (Mon-Fri).

- Specialized TSI (total skin irradiation) and TBI (total body irradiation) treatments are also offered in Winnipeg.

- Other specialized treatments performed include:

- Stereotactic Radiosurgery (SRT) for cranial lesions on the Gamma Knife in the HSC Neurosurgery Department.



- Stereotactic Body Radiation Therapy (SBRT) on other sites including lung and spine may be treated on the EDGE Linear Accelerator located at the Kleyson Institute of Advanced Medicine (KIAM) at HSC.



What are the common side effects?

Side effects are localized to the area being treated and tend to begin 1-2 weeks into treatment, and extending up to 6-8 weeks following treatment. The most common side effects are fatigue and a progressive skin reaction. Other notable effects may include, but are not limited to:

Thorax: Dysphagia, a productive cough, shortness of breath, esophagitis

Abdomen: Nausea, vomiting, bloating, gas or cramping, loss of appetite, bowel upset

Pelvis: Bladder irritation, loose stools, rectal irritation

H&N: Mucositis, xerostomia, taste changes, mouth sores, difficulty swallowing, compromised food intake, weight loss

Brain: Hair loss, headaches, nausea

What can patients do to help minimize these effects?

It is important that patients take care of themselves while they are having treatment. Some general tips provided to the patients to help them cope with the effects include:

- Resting when required and eating a well-balanced diet
- Drinking 8-10 glasses of fluids per day; limiting caffeine
- Beginning the recommended skin care guidelines on the first day of treatment and continuing until the skin reaction has fully healed

Skin care guidelines

There are many guidelines provided to patients, all stemming around keeping the area clean and dry, and using unscented, gentle products. During radiation therapy at CCMB the two lotions recommended are **Glaxal Base** and **LubriDerm** unscented, and can be applied multiple times a day.

In the event that skin reactions progress, different lotions may be recommended such as Polysporin cream to any open areas, or Hydrocortisone for itchy regions.

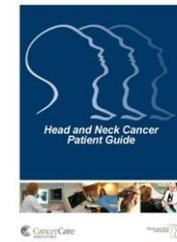
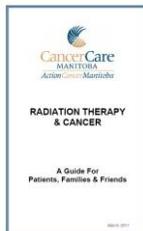
Dressings may also be applied by a nurse to prevent infection in any open areas; these are typically applied in skin folds as they are the most likely regions to open up.

All information for patients is located on the CCMB Internet site at:

http://www.cancercare.mb.ca/home/patients_and_family/treatment_services/radiation_therapy/

Who should be contacted for patient concerns?

If relaying information about a patient being ill or not coming for treatment, or treatments being cancelled, the Unit that the patient is being treated on may be contacted directly or call our central reception in Winnipeg at **204-787-2252** or in Brandon at **204-578-2222**.



Some materials are available on the CCMB network:

J:\Patient & Family Education

If requesting softcover RT Booklets, Site-Specific Information Sheets, or Head & Neck Cancer Patient Guide Binders, contact:
RT Administration at **204-787-4843**