(1) INTRODUCTION

Radiation oncologists are medical specialists with unique knowledge, understanding and expertise in the diagnosis and care of patients with malignant disease. They are integrally involved in the formulation and execution of the management plan of cancer patients. Using an evidence-based approach, they are responsible for the appropriate recommendation, prescription and supervision of therapeutic ionizing radiation. The competent and ethical discharge of these responsibilities results in improved quality of life and/or survival for cancer patients, which in turn benefits families, society and future care.

The specialist in radiation oncology must possess clinical competence in oncology and technical proficiency in therapeutic uses of radiation. The radiation oncologist must have a sound background in the sciences basic to the understanding of malignant diseases and its treatment by radiation therapy and other modalities. The acquisition of clinical skills, inpatient assessment and management, developed by undertaking responsibility for the care of both hospitalized and ambulatory patients, must be accompanied by proficiency in planning and executing radiation treatments utilizing external beams, intracavitary and interstitial radioactive sources and radionuclides.

Specialty Training Requirements

Five years of approved training. This period must include:

1) One year of approved basic clinical training. The purpose of this period of training is to introduce and expose the trainee to independent responsibility for decisions involving clinical judgment skills, the further development of an effective and mature physician patient relationship, and the achievement of competence in primary technical skills across a broad range of medical practice. The first year of an approved family medicine program is acceptable in fulfillment of this requirement.

2) a) Three years of approved residency training in radiation oncology.
   b) One year which will include:
      i) six months of approved residency training in internal medicine, which may include up to three months of hematology/oncology, and
      ii) six months of approved training in clinical training, basic science or research training, relevant to the objectives of the specialty, and acceptable to the director of the residency program and to the Royal College.

(2) RADIATION ONCOLOGY PROGRAMS ACROSS CANADA

<table>
<thead>
<tr>
<th>Dalhousie University</th>
<th>University of Toronto</th>
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<tbody>
<tr>
<td>Universite Laval</td>
<td>McMaster University</td>
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<td>Universite de Montreal</td>
<td>University of Western Ontario</td>
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<td>McGill University</td>
<td>University of Manitoba</td>
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<td>University of Ottawa/ Universite d'Ottawa</td>
<td>University of Alberta</td>
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<td>Queen's University</td>
<td>University of Calgary</td>
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<td>University of British Columbia</td>
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PROGRAM CONTACT

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PROGRAM INFORMATION

Quota Overview - Radiation Oncology

Number of applicants 2005/2006: 24
Number of interviews 2005/2006: 12
Average out-of-town applicants matched 2004-2006: 67%

Resources

- CancerCare Manitoba
- Health Sciences Centre
- St. Boniface General Hospital

Residents have PCs with internet connection, e-mail, OpTx (electronic chart information), U of M Library, CancerCare Manitoba Library and Radiation Oncology Residents' office library and computers.

Quick Facts

- Up to three (3) months of electives may be arranged at a mutually agreed upon institution(s) with full salary during elective
- Residents will have minimal in-patient load, with call 1 week in 4 max
Curriculum

CancerCare Manitoba is a Provincial Agency responsible for the tertiary provision of cancer services to residents of Manitoba and Northwestern Ontario. The catchment population is approximately 1.3 million people. Over 3,200 new consultations were seen in radiation oncology in 2005. CancerCare Manitoba is located in central Winnipeg adjacent to the Health Sciences Centre Complex. This 800 bed facility includes an adult centre, Children’s Hospital, Women’s Centre, Rehabilitation Hospital, and Psych Health Centre. The large core services rehabilitation project will be complete in fall 2006 providing new emergency room resources, intensive care units, and operating theatres for the entire complex. The University of Manitoba Medical Campus is adjacent to the Health Sciences Centre providing basic medical science, research, clinical, and administrative support for the Faculties of Medicine, Dentistry, and Pharmacy. All radiation treatment is provided at CancerCare Manitoba (Health Sciences Campus) with combined clinics also taking place at St. Boniface General Hospital. CancerCare Manitoba is in the final planning stages of a satellite facility in Brandon, Manitoba. Opening is targeted for spring 2009. This facility will provide radiation oncology services to western Manitoba approximately 300 kms from Winnipeg. This may provide an opportunity for a rural training experience for a senior resident.

The Department of Radiation Oncology at CancerCare Manitoba consists of thirteen (13) radiation oncologists. There are presently (12) residents and 1 clinical fellow in the Postgraduate Medical Education Training Program. There are seven (7) linear accelerators (all equipped with multi-leaf collimators and on-line portal imaging devices). One (1) conventional cone beam simulator and one (1) CT simulator. Other resources include Gamma Knife stereotactic radiosurgery, an orthovoltage machine, high dose rate (HDR) brachytherapy, low dose rate (LDR) brachytherapy, and modern treatment planning resources. The Department has access to a dedicated PET/CT scanner at Health Sciences Centre. The Siemens Centre for Biotechnology will incorporate a medical cyclotron and other cutting edge imaging and treatment modalities.

The Postgraduate Medical Education Program in Radiation Oncology at CancerCare Manitoba/University of Manitoba is fully accredited by the Royal College of Physicians and Surgeons of Canada. Over 20 residents and fellows participate in accredited training programs including: radiation oncology, medical oncology, hematology, pediatric oncology and gynecology oncology. CancerCare Manitoba has an active Medical Physics Department including an accredited graduate and medical physics resident training program. Other clinical resources include an epidemiology and cancer registry department, and a clinical investigations office. CancerCare Manitoba actively participates in cooperative clinical trials including RTOG, NCIC, COG, and NSABP.

PGY-1

This is a basic clinical training year. It consists of one month each of radiation oncology, diagnostic imaging, gynecology, oncology/bone marrow transplant unit, palliative care medicine, two months of internal medicine and two months of surgery (ENT and surgical oncology), as well as three months consisting of rotations in pediatrics, obstetrics, emergency medicine, or pathology. This year may or may not be designed to meet the requirements for a general license.

PGY-2

This year is spent at CancerCare Manitoba in three-month rotations. During each block, the resident is attached to a preceptor who is responsible for treating two or three disease sites. At the conclusion of this year, the resident will have had an overview of all common disease site groups as well as have fundamental knowledge of the specialty gained by didactic lectures in basic science, treatment planning, radiobiology and various clinical subjects.

PGY-3

Six months of this year are spent in oncology related specialties including three (3) months of medical oncology and three (3) months of other oncology related specialties including: internal medicine, gynecology oncology, pediatric oncology, nuclear medicine, etc. The remaining six (6) month block is spent either completing a research project or in clinical radiation oncology.
PGY-4 and 5

These years are spent in three-month rotations in radiation oncology. During each rotation, there is time set aside for gaining treatment-planning experience. Additional time may be spent in pediatric oncology, gynecology oncology, and elective time in another radiation oncology centre pursuing an area of interest. Electives may be granted at the discretion of the Program Director and the organization is the responsibility of the resident.

Research

The residents are strongly encouraged to participate in clinical and/or basic research during their training. It is expected that one small project and one large project will be completed during their training. It is also expected that residents will gain experience by presenting their work both at the annual CancerCare Manitoba Resident's Research Day and at national or international conferences. Opportunities for research exist, both, within the Department of Radiation Oncology, Department of Medical Physics, as well as, through the Manitoba Institute of Cell Biology and through the National Research Council Institute for Biodiagnostics. Other opportunities exist through the Health Sciences Centre or St. Boniface General Hospital Research Centres.

Teaching

There is a well established didactic teaching program. Residents have protected time every Wednesday afternoon for lectures in: treatment planning, medical physics, epidemiology and biostatistics, radiation biology, pathology, radiology, and clinical radiation oncology. There is a bi-weekly molecular oncology course and residents are expected to attend the monthly Journal Club and the weekly Oncology Grand Rounds. Residents are also expected to attend all disease site group conferences with their current attending. PGY-2 residents are funded to attend the Northwestern Radiation Biology Course. Residents in their PGY3-5 year are presently funded to attend one (1) radiation oncology conference of their choice. PGY-5 residents are funded to attend the annual Radiation Oncology Refresher Course. PGY2-5 residents sit the annual American Board of Radiology In-Training exam. During their PGY1 & PGY2 year, the University of Manitoba offers several teaching courses including medical ethics, consultation skills, time management, setting up a practice, etc.

(4) RADIATION ONCOLOGY - PHYSICIAN'S SURVEY

There are 10 Radiation Oncology specialists in Manitoba. All 10 were sent surveys, of which 3 replied

BACKGROUND

How many years have you been practicing?

<table>
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<tr>
<th>Years</th>
<th>Count</th>
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<tr>
<td>1 to 5 y</td>
<td>1</td>
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<tr>
<td>6 to 10</td>
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<td>11 to 15</td>
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<td>21 to 25</td>
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<td>26 to 30</td>
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<tr>
<td>Above 30</td>
<td>0</td>
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</table>
How much do you interact professionally with other physicians?
(1-on my own most of the time, 10- as a part of a team most of the time)

Are you in a solo practice or group practice?
Solo 0  Group 2

If group, how many doctors do you share a practice with?
1 to 5 0 7 to 10 2

AVERAGE DAY

How many patients do you see on an average per day?

How many hours per week - not including call time?
(I.e. including CME, clinical work, administration, teaching)

What sort of schedule do you have in your work?
(1- irregular/unpredictable, 10-regular/predictable)
Are you ever on remunerated call?
Yes  1  No  2

How many days are you on call? #days/month
5 days  1

How many hours per shift? #hours/shift
1 week straight  1

How much routine (similar work) or diversity (different tasks, activities) do you have in your work? (1-great deal of routine, 10- great deal of diversity)

What type of intellectual approach to problem solving do you need to have to perform your work duties? (1-specific problem approach 10-theoretical)

Do you have a sharply defined area of expertise or general expertise?
(1-General expertise, 10 - Sharply defined expertise)

How much do you need to use manual/mechanical activities for highly skilled tasks? I.e. doing procedures, performing operations (1-never  10- most of the time)
Overall, how satisfied are you with your career?  
(1- dissatisfied, 10- very satisfied)

[Bar graph showing satisfaction levels]

What is the most appealing aspect of your job?

- Team approach to treatment delivery
- Variety of patients and problems
- Patients are almost always the best feedback
- Healing the sick person

What is the least appealing aspect of your job?

- Dealing with administration 2
- Waiting lists

PATIENT CHARACTERISTICS

Presenting complaints most often seen?

- Pain 2
- Lump/ mass 2
- Weight loss
- Dehydration
- Nausea/ vomiting
- Side effects of treatment

Age group most often treated?

- Infants 0
- Children 0
- Adults 3
- Elderly 2
- All groups 0

General Health Status of Patient Population

- Generally Healthy 0
- Chronically ill 0
- Terminally ill 2
- Acutely ill 2
- All groups 1
Do you have short-term or long-term relationships with patients?
(1- short term, 10-long-term)

How much time do you spend in direct contact with patients?
(No time at all – 0, most of my time - 10)

How much opportunity to see end results do you have in your work?
(1- little opportunity, 10- great deal of opportunity)

FINANCIAL

What is your income bracket after taxes and overhead, etc?
What income level do you feel you have in comparison to other specialties?
(1-lower, 10- higher)

Are you satisfied with your income?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
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<tbody>
<tr>
<td>Very satisfied</td>
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</tr>
<tr>
<td>Satisfied</td>
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</tr>
<tr>
<td>Somewhat satisfied</td>
<td>1</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>1</td>
</tr>
<tr>
<td>Extremely dissatisfied</td>
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Comments:
- There is ongoing contract negotiation that should increase salary significantly when settled

Do you feel your current income compensates your workload?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tr>
<td>2</td>
<td>1</td>
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What is the Basis of your current income?

<table>
<thead>
<tr>
<th>Basis</th>
<th>Count</th>
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<tbody>
<tr>
<td>Fee-for-service</td>
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<tr>
<td>Salary</td>
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<tr>
<td>Independent contract</td>
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</tr>
<tr>
<td>Sessional</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
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FAMILY LIFE - FREE TIME

How much time does work allow for family/leisure activities?
(1- little free time, 10- ample free time)
Are you satisfied with the amount of free time you have?

Very satisfied 0
Satisfied 1
Somewhat satisfied 2
Dissatisfied 0
Extremely dissatisfied 0

Do you have the ability to limit your workload should you need more free time?

Yes 2 No 1

Do you take vacations?

Yes 3 No 0

How much time do you take for vacations annually?

![Bar chart showing vacation time distribution]

How much time do you take away from work for CME related conferences?

![Bar chart showing conference time distribution]

What is the maximum amount of consecutive days away from work annually?

![Bar chart showing maximum days off distribution]

PERSONAL

What were your main reasons for choosing your specialty?

- Technical interest 2
- Variety of diseases and patients
- Ability to cure patients
- Serious and meaningful work
• Tremendous patient feedback
• Reasonable lifestyle tradeoff
• Like research
• Love of cancer patients

Are your reasons for being in this specialty now different?
Yes 0 No 3

What were the major factors that guided your decision to choose this specialty?
Friend/family 1
Clerkship experience 0
Medical school experience 2
Doctor’s example 3
Type of patient 2
Lifestyle 1
Residency 0
Others 0

Would you choose the same specialty again?
Yes 3 No 0

What professional status (in comparison to others) do you feel you have?
(1- lower, 10- higher)

Do you feel colleagues in other specialties respect your specialty?
Yes 2 No 1

Do you feel the community at large respects your specialty?
Yes 3 No 0

Comments:
• The individual must earn respect

PRESSURE

How much pressure do you have in your work?
What aspect of your job do you find the most stressful?

- Dealing with administrators/paramedical managers
- Waiting lists

Have you ever considered taking a leave of absence due to stress?

Yes 2
No 1

Have you ever taken a leave of absence due to stress?

Yes 0
No 3

GENDER ISSUES

Do you feel discrimination in your job based on your gender?

Yes 0
No 3

What qualities do you think a student needs for this specialty or area of practice?

- Very, very, very caring
- Technical interest
- Research oriented 2
- Good communication skills
- Empathy
- Ability to work as a team with other physicians and paramedical staff
- Interest in physics/math/computers
- Be serious and committed
- Have long term relationships
- Undergraduate sciences - physics and chemistry very important

What advice would you have for a student considering this specialty or area of practice?

- Take oncology (radiation) or related electives during medical school
- There is a national demand for this specialty and the compensation and lifestyle are now excellent
- Consider resource issues and government restraints as they impact treatments daily
- Spend some time in this specialty before making a decision

Planning your future as a doctor in Manitoba