Community Medicine & Nuclear Medicine

Planning your future as a doctor in Manitoba
Table of Contents

Community Medicine

Quota Overview – Entry through CaRMs
Community Medicine at the University of Manitoba
Program Overview
Resources
Curriculum
Program Contact

Nuclear Medicine

The Residency
Specialty Training Requirements
Quota Overview – Entry through CaRMS
Nuclear Medicine at the University of Manitoba
Curriculum
Program Contact
Physician Survey - Nuclear Medicine
Community Medicine

What is a Community Medicine Specialist?

The community medicine specialist focuses on the health of *populations*, i.e. whole communities, rather than an individual patient. The CM specialist uses the skills and knowledge acquired in training to play important roles in the *prevention* of disease and improvement of health and well-being of communities.

What does a Community Medicine Specialist do?

The CM specialist works with other disciplines to measure the health needs of populations (using epidemiological and other skills), and to develop strategies to improve health through health promotion, disease prevention and health protection.

What career paths can a Community Medicine Specialist take?

CM specialists are in demand to apply their special skills to a variety of interesting and challenging careers. Examples include:

- Medical Officer of Health: public health consultant to a region, city, province, or country
- Clinical practice in community-oriented settings, e.g. community health centre
- Epidemiologist
- Occupational/Environmental Health practitioner
- Academic career as teacher and researcher
- Leader in health administration, e.g. hospital, regional health authority, private sector

What does the Residency in Community Medicine and U of Manitoba entail?

The Manitoba CM Residency is small (approx. 5 residents), meaning that we can provide considerable flexibility in training, direct teaching and supervision by Faculty, and personal support. It is a five-year program consisting of:

- Clinical training
- Academic training in the basic sciences of community health (residents will enroll in a Masters program in Community Health Sciences)
- Core training consisting of 1-6 month rotations through various public health agencies.
Quota Overview – Entry through CaRMs

Memorial University -
Dalhousie University -
Université Laval 1
Université de Sherbrooke 1
Université de Montréal 2
McGill University 1
University of Ottawa / Université d'Ottawa -
Queen's University 1
University of Toronto 3
McMaster University 2
The University of Western Ontario -
University of Manitoba 1
University of Saskatchewan -
University of Alberta 1
University of Calgary 1
University of British Columbia 2
Total 16

Community Medicine at the University of Manitoba

Program Overview

The University of Manitoba program is a small one (currently six residents), allowing considerable flexibility in scheduling and modification of training based on residents' interests and needs. Strengths of the program and the Department of Community Health Sciences in which it is based include considerable opportunities for exposure to and involvement with: communicable disease epidemiology and control; Northern and Aboriginal health issues; health services research and evaluation, and; well-established educational rotations with experienced regional medical officers of health and the Chief Medical Officer of Health.
Resources

The clinical training component utilizes the resources of the Winnipeg Regional Health Authority, the Faculty of Medicine clinical units (including the Family Medicine teaching centres) and several community facilities. Opportunities exist through the Department of Family Medicine and the J.A. Hildes Northern Medical Unit to gain clinical experiences in rural and/or northern settings. The academic component draws on the resources of the Department of Community Health Sciences, where residents join a diverse community of MSc, MPH and PhD graduate students and Faculty. The applied training components utilize the resources of the WRHA and several rural regional health authorities (RHAs), the Office of the Chief Medical Officer of Health of Manitoba, the Public Health Branch of Manitoba Health, the Chief Occupational Medical Officer (Manitoba Labour), Manitoba), the First Nations and Inuit Health Branch, Health Canada, and the Public Health Agency of Canada. In addition, residents in the Manitoba program may spend selected rotations at the University of Saskatchewan, under the direction of Dr. Bruce Reeder, Professor, Department of Community Health and Epidemiology. A variety of electives are available both in Canada and abroad.

Curriculum

The program is designed to fulfill the Royal College of Physicians and Surgeons of Canada General and Specific Training Objectives for Community Medicine. There are three main components to the curriculum: clinical, academic, and applied field training.

Clinical component: Residents entering the program at the PGY-1 level have the option of doing either one year of basic clinical training (BCT) supplemented by elective clinical experiences in subsequent years, OR doing two years of clinical training under the auspices of the Family Medicine Residency Program, leading to eligibility for certification in family medicine (CCFP). Supplementary clinical experience is available in a variety of areas, depending on interests and career plans.

Academic component: One year full-time and approximately six months part-time is spent on academic preparation for community medicine. All residents take courses towards a Master of Science in Community Health Sciences. Core courses include: principles of epidemiology, applied epidemiology, biostatistics, research methods, health care system organization and financing, principles of occupational and environmental health, program planning and evaluation, and the epidemiology of cancer, chronic disease, and communicable disease. A broad range of elective courses is available. The M.Sc. is a thesis-based degree, and some residents go on to complete a thesis before or soon after completion of the residency program. A new practicum-based Master of Public Health (MPH) degree will be available for residents beginning in September 2006.
**Applied field training:** The remaining training time (minimum 18 months) is spent in field rotations in community medicine, under the supervision of the program’s preceptors. Residents take on a gradually greater degree of responsibility over this period, assuming a high level of responsibility by their senior year.

**Core rotations include:** Urban Regional Medical Officer of Health; Rural Regional Medical Officer of Health; Provincial Public Health Branch (includes Chief Medical Officer of Health, Communicable Disease Control, Diabetes and Chronic Disease Control, Epidemiology, Environmental Health and Public Health Laboratory); Occupational and Environmental Health; Health Administration.

**Elective rotations include:** Cancer Epidemiology and Control; Injury Prevention; Community Mental Health; Services and Care for the Elderly; Services to Aboriginal People and Policy Development; Medical Services Branch, Health Canada; Tuberculosis Control; Child Protection Centre (Child Abuse Assessment and Policy); Manitoba Centre for Health Policy and Evaluation.

**Research**

In addition to coursework and thesis, there are frequent opportunities for residents to collaborate on research projects, outbreak investigation publications, etcetera. There is a Department of Community Health Sciences Research Colloquium Series, and a Winnipeg Regional Health Authority Journal Club which residents participate in to enhance skills in critical appraisal and presentation.

**Seminars**

In addition to the above colloquia and journal club, there are weekly resident rounds aimed at covering material not otherwise covered in the curriculum.

**Program Contact**

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**Nuclear Medicine**

Nuclear Medicine is a branch of Diagnostic Imaging that uses radioactive substances to image and treat diseases. Whereas Radiology transmits a beam of radiation through the patient to generate an image of the organ(s) of interest, Nuclear medicine administers a small radioactively labeled “tracer” intravenously, or orally to the patient, then uses a gamma camera to image the distribution of these “tracers” in the body. This allows a unique opportunity to look at both physiology (functioning) and anatomy of an organ system in the diagnosis and treatment of diseases.

A new and exciting area in Nuclear medicine is the introduction of PET or Positron Emission Tomography. This modality utilizes a radiolabelled form of glucose to image increased metabolic activity in tumors at a cellular level – allowing the diagnosis of cancer at an earlier stage – before it is visible on CT or MRI.

Nuclear medicine also uses radiopharmaceuticals to treat a select number of diseases. Radioiodine is used in the treatment of hyperthyroidism and thyroid cancer. Radiolabelled monoclonal antibodies can be directed against specific tumor antigens in the treatment of certain malignancies.

Exposure to Nuclear medicine is limited during the early years of medical school, but increases during the clerkship when you begin to use these diagnostic tools in the clinical management of your patients. Lung scans to diagnose pulmonary emboli; bone scans to diagnose fractures, infection or metastases, MIBI scans to diagnosis coronary artery disease are a few Nuclear medicine procedures you will use in the workup and management of your patients.

The role of the Nuclear medicine physician is to supervise, interpret and report the procedures to the referring physician, to act as a consultant to the clinician, and to diagnose, treat and follow therapy patients.

**The Residency**

The goal of the residency is to train the physician to function as a consultant – to supervise, perform and interpret Nuclear medicine diagnostic procedures. During the program, the resident will obtain the competence to function independently as a medical specialist with the ability to advise on, supervise, perform and interpret imaging and non-imaging diagnostic procedures, and to perform therapy with radioactive sources. The resident must acquire communication skills, knowledge, technical skills and professional attitudes appropriate to a lifetime career in nuclear medicine.
Specialty Training Requirements

Five years of approved residency to include:

1. One year of basic clinical training.
2. Three years of comprehensive residency in nuclear medicine.
3. One year of approved residency that may consist of 3-12 months of the following:*  
   a. subspeciality training in nuclear medicine  
   b. related research  
   c. diagnostic radiology  
   d. internal medicine  
   e. other relevant clinical training subject to local residency training program and Credentials Committee approval.

* University of Manitoba Training program requires 1 full year of Radiology to fulfill Section 3 requirement.

Note: Options are available to do a dual fellowship in both Radiology and Nuclear medicine.

Quota Overview – Entry through CaRMS

- Memorial University
- Dalhousie University
- Université Laval
- Université de Sherbrooke 1
- Université de Montréal 2
- McGill University 1
- University of Ottawa / Université d'Ottawa -
- Queen's University -
- University of Toronto -
- McMaster University -
- The University of Western Ontario 1
- University of Manitoba 1*
- University of Saskatchewan -
University of Alberta  1
University of Calgary  -
University of British Columbia  -
Total  6
* University of Manitoba has funding to offer 1 position every two years.

Nuclear Medicine at the University of Manitoba

Quick Facts

- High ratio of Faculty to residents (4:1) affords personal attention and flexibility
- All aspects of training, including PET are available within Winnipeg.
- Elective rotations outside the province can be arranged and are encouraged. There are no mandatory rural rotations.
- The program is geared to the education of the resident. Didactic lectures covering all aspects of Nuclear medicine are scheduled biweekly. The service component is minimal.
- Weekend daytime call only. No overnight call
- University of Manitoba access to on-line medical resources, with PCs in the resident office, and reporting areas.
- Financial support to attend at least one conference yearly.

Curriculum

PGY-1
This year consists of multi-disciplinary basic clinical training with core rotations in internal medicine, surgery, pediatrics, obstetrics & gynecology, emergency, and psychiatry. There are eight weeks of elective, one month of which is spent in Nuclear Medicine. The objective of this year is to consolidate basic clinical skills, to provide the foundation for understanding the utility of Nuclear Medicine in patient management. This year allows the resident to prepare for the MCCQE (Part II).

PGY-2 to PGY-5
There are three "core" years of nuclear medicine training, with rotations in general imaging, therapy, Cardiology and Cardiac Nuclear Medicine, Endocrinology, PET, Radiopharmacy, Instrumentation and 4 months of elective.

One year is spent in Radiology with emphasis on cross sectional imaging.
Research

Research projects are required in the Cardiac Nuclear Medicine and Radiopharmacy rotations. Residents are encouraged to develop and pursue research projects, with the intention of presentation at regional or national Nuclear Medicine meetings, and publication.

Seminars

Biweekly didactic sessions: small group (or individual) tutorials on clinical Nuclear Medicine and basic sciences.
Weekly Nuclear Medicine rounds: case presentations, literature review, journal club and other topics of interest. Residents participate, present, and review articles.
Thyroid Cancer Conference: Monthly disciplinary meeting with treatment planning for thyroid cancer patients.
Radiology, Medical, Surgical, Pediatric and other rounds are available to the residents.

Selection Criteria

All applications are reviewed. Interviews are offered to some or all applicants. Selection for interviews and acceptance into the program is based on:

- Academic record
- Medical Student Performance Record
- Demonstrated interest in nuclear medicine (e.g. BSc Med, elective, related training or employment)
- Supporting Documents
- Interview: Emphasis on communication skills, motivation, maturity.

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There are 8 nuclear medicine specialists in Manitoba. Although only 2 physicians were surveyed, their results reflect the experiences of the other physicians in the field and therefore are included here for your interest.

Physician Survey - Nuclear Medicine

Physician Survey - BACKGROUND

How many years practicing?

1 to 5 years 0
6 to 10 0
11 to 15 0
16 to 20 2
21 to 25 0
26 to 30 0
above 30 0

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 you work in a group, how many doctors do you share a practice with?
1 to 3 2
Physician Survey - AVERAGE DAY

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

![Patient Frequency Chart]

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

![Work Hours Chart]

What sort of schedule do you have in your work?
(1- irregular/unpredictable 10-regular/predictable)

![Schedule Score Chart]

Are you ever on remunerated call?

yes 2 no 0
How many days are you on call?

#days/month:

How many hours per shift?

#hours/shift

0 to 7  
8 to 12  
13 to 16  
17 to 23  
24 hours  2

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)

I don’t see patients 1

Physician Survey - JOB SATISFACTION

Overall, how satisfied are you with your career? (1-dissatisfied 10-very satisfied)

What is the most appealing aspect of your job?

• interesting work, regular hours
• I like it - I like coming to work

What is the least appealing aspect of your job?

• rounds presentation
• budget deficits
Physician Survey - PATIENT CHARACTERISTICS

Presenting complaints most often seen?

- cardiac risk assessment
- cancer staging
- none - I don’t see patients

Age group most often treated?

![Age Group Bar Chart]

General Health Status of Patient Population

![General Health Status Bar Chart]
Do you have short-term or long-term relationships with patient?
(1 - short term 10 - long-term)

I don't see patients

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)

Physician Survey - 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?

Do you feel your current income compensates your workload?
Yes  2  No  0

What is the Basis of your current income?
- fee-for-service  2
- salary  1
- indep contract  0
- sessional  0
- other  0

Physician Survey - 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?

![Satisfaction Scale](image)

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

Yes 1  No 1

Do you take vacations?

Yes 2  No 0

How much time for vacations annually?

![Vacation Duration Chart](image)
How much time away from work for CME related conferences?

Maximum amount of consecutive days away from work annually?
Physician Survey – PERSONAL

What were your main reasons for choosing your specialty?

- liked patient contact
- interesting
- I was originally more interested in the application of science/physics/instrumentation than in a specialty based in patient contact

Are your reasons for being in this specialty now different?

Yes 0 No 2

What were the major factors that guided your decision to choose this specialty?

- friend/family 0
- clerk exp. 1
- med.sch.exp 1
- dr. example 2
- type of pt. 0
- lifestyle 2
- residency 0
- others 0

Single most important reason why I chose my specialty?

- positive physician example

Would you choose the same specialty again?

Yes 2 No 0

What professional status (in comparison to others) do you feel you have? (1- lower 10- higher)
Do you feel your specialty is respected by colleagues in other specialties?
Yes 2 No 0

Do you feel your specialty is respected by the community at large?
Yes 2 No 0

Physician Survey – PRESSURE

How much pressure do you have in your work?

What aspect of your job do you find the most stressful?
- hospital: inadequate families
- administration

Have you ever considered taking a leave of absence due to stress?
Yes 0 No 2

Have you ever taken a leave of absence due to stress?
Yes 0 No 2
Physician Survey - GENDER ISSUES

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

Yes 0  No 2

Comments:

not now [discrimination]. Initially on completion of early training there was clearly employment discrimination by the radiology groups against females (mostly with medicine physicians).

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

• interest in basic sciences
• high scientific skill level, computer skills, keeping up-to-date

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

• I highly recommend this field
• Be prepared to work hard, lots of reading material and basic sciences. If this your talent, nuclear medicine is a good choice