



Health Sciences Centre
Winnipeg

Ultrasound Training Program
NA547- 700 McDermot Avenue
Winnipeg, MB
R3E 0T2

Fax: 204 787-1811

www.hsc.mb.ca/ultrasound
ultrasound@exchange.hsc.mb.ca

Ultrasound Training Program

PROGRAM INFORMATION

*SECTION OF DIAGNOSTIC ULTRASOUND
DIAGNOSTIC IMAGING DEPARTMENT*

Clifford S. Levi, MD, FRCP Medical Director

Chris Harrington, RDMS, RDCS, RVT Program Co-ordinator



PROGRAM OUTLINE

The goal of the sonographer training program is to train diagnostic medical sonographers for the province of Manitoba. The current program is a one-year hospital-based post-diploma program based at the Health Sciences Centre (HSC). The program started in 1973. It was one of the first sonographer training programs in North America. The entire program is hospital-based, including program administration, classroom and clinical instruction. Clinical training is provided at HSC, St. Boniface General Hospital (SBGH), and Seven Oaks General Hospital (SOGH). Clinical training is tightly integrated with classroom instruction to provide a well-balanced program. Clinical days alternate with classroom days: Mondays, Wednesdays and Fridays are spent in clinical, Tuesdays and Thursdays are in the classroom.

The training program is 12 months long and is divided into three terms. Approximately 35% of the program time is spent in the classroom. The ratio of classroom to clinical time changes during the year. In Terms 1 and 2 60% of the time is clinical and 40% didactic. In Term 3 approximately 75% is clinical and 25% didactic.

Note: The program is currently developing a restructuring plan with the goal of increasing the number of students and including echocardiography (ultrasound of the heart). The tentative goal for the restructure is a two year program based at Red River College to start in September 2011. The restructured program would run concurrently with the existing program during a transition year (2011-2012). More details will be forthcoming as they become available.

PROGRAM OBJECTIVES

- 1) The goal of this training program is to produce competent sonographers for the province of Manitoba who will be able to perform abdominal and superficial structure scans, as well as obstetrical and gynecological sonograms.
- 2) Students will also learn the fundamentals of vascular ultrasound with an emphasis on carotid ultrasound and peripheral venous ultrasound, as well as be introduced to musculoskeletal ultrasound and interventional procedures..
- 3) Graduates are given a diploma when their training is completed. Currently, certification in diagnostic sonography is achieved by passing the [American Registry for Diagnostic Medical Sonography](#) (ARDMS) exams. This is the certification credential most widely recognized by the Canadian and American medical communities. This program prepares students to write the ARDMS Ultrasound Physics & Instrumentation, Obstetrics & Gynecology, and Abdominal examinations. Since 1984, the pass rate for these three examinations by our graduates is approximately 98%.

A Canadian credential has also been established. The [Canadian Association of Registered Diagnostic Ultrasound Professionals](#) (CARDUP) has developed a clinical skills assessment process (CSAP) and is developing a certification exam. It is anticipated that the CARDUP exam will be in place for mid 2010. The program will prepare the student to challenge the CSAP and the Canadian exam (when available).

DIDACTIC PROGRAM

The course of studies consists of ultrasound physics, abdominal sonography, obstetrics and gynecology sonography, and an introduction to vascular ultrasound. These courses are instructed by qualified and experienced sonographers in a structured classroom format.

Course evaluation consists of mid-term and end-term examinations in Term 1, end-term examinations in Term 2, and final examinations at the end of Term 3. The passing grade for each course is 80%.

Student learning is supplemented by an extensive video and text library, guest speakers, a variety of rounds, and educational in-services conducted by the medical staff in the department.

CLINICAL PROGRAM

The three clinical training sites are HSC, St. B., and SOGH. Students will spend the majority of their time at HSC, but will also rotate through St. B., and SOGH. HSC is a large tertiary care facility, as is St. B. SOGH is a smaller community hospital. Students are organized into small groups and rotate between the clinical sites every two to three weeks.

Dedicated clinical instructors at each site are responsible for the day-to-day scheduling and supervision of clinical training. In Term 1 clinical instructors organize scanning modules on various organ systems with emphasis on proper technique and recognition of normal anatomy. Students start scanning within the first clinical week. At the outset in Term I students will scan each other's abdomens in order to learn basic scan technique. Midway in Term 1, once the basic scan techniques have been mastered, students begin to scan patients under the direct supervision of the clinical instructors. The focus in Term 1 is on abdominal and gynecological scanning.

In Term 2, patient scanning continues with the supervision, guidance, and bedside instruction from clinical instructors. Emphasis is on establishing good scanning technique and protocols, mastering recognition of normal anatomy and common variants, and recognizing basic pathology. Carotid scanning and peripheral venous examinations will also be introduced.

In Term 3, students are able to perform routine abdomen and ob/gyne scans independently. Emphasis in this term is placed on optimizing the image, improving scanning speed, recognition of more complex pathology, and application of more independent judgement.

Clinical progress is monitored by regular clinical evaluations which include assessment of skill level and professional conduct.

ENTRANCE REQUIREMENTS

The current ultrasound training program is a **post-diploma** program. To qualify for admission to this program, applicants must meet at least one of the two following prerequisites:

Prerequisite A

Graduation from a Canadian two-year (24 calendar months) allied health education program that is patient-care related. Examples of allied health occupations which qualify are: X-ray technologist, nuclear medicine technologist, laboratory technologist, respiratory therapist, registered nurse, or paramedic. Academically, a minimum "B" average is desirable.

Prerequisite B

A relevant Bachelor's degree and a minimum of six months of patient-care clinical experience. Successful completion of a course in human anatomy/physiology and a course in medical terminology is strongly recommended. Academically, a minimum 3.0 GPA is desirable.

Note: physicians educated in countries other than the US or Canada may apply under Prerequisite B. All foreign diplomas and documents must include a notarized translation in English and be evaluated by a foreign Transcript Evaluation Agency. (See page 5) Equivalent education to a North American Bachelor's Degree is required.

Communication skills

Excellent communication skills, both oral and written, are required. For applicants whose first language is not English, a minimum of level 8 in all four areas (speaking, listening, reading, writing) on the [Canadian Language Benchmark](#) is required.

First Aid / CPR

If the student does not have current certification in CPR, it is recommended that all students in the program complete "[Family and Friends](#)" CPR prior to the start of the program at the end of August.

Criminal Record Check

After notice of acceptance, a current [Criminal Record Search Certificate](#) is required prior to the start of the program at the end of August.

CREDENTIALING EXAMS

The [ARDMS](#) is currently the certification agency most widely recognized by the Canadian and American medical communities. Registration with the ARDMS is a requirement for employment as a diagnostic medical sonographer in Manitoba and most regions in Canada. ARDMS registration is obtained by submitting proof of clinical ultrasound experience and by passing the ARDMS Registry exams. This course prepares the student to challenge up to a maximum of three ARDMS exams (Physics, Abdomen, and OB/Gyne). The ARDMS requires that students wait until graduation before applying to write these exams. The application process takes approximately 4 weeks. Graduates typically write their ARDMS exams in late September or early October. The application fee for these exams is the responsibility of the student and is payable to the ARDMS. The fee for each exam is \$200.00 US. Exams can be written at a test centre in downtown Winnipeg, or at test centres in major Canadian and US cities.

A Canadian Registry, the [Canadian Association of Registered Diagnostic Ultrasound Professionals](#) (CARDUP), has been established. Graduates of the program are eligible to apply for registration with CARDUP. This requires successful completion of both a clinical and a didactic exam. The fee for the clinical exam is \$250 CDN. The didactic exam fee has not yet been determined. The application fees for both the clinical and the didactic CARDUP exams are the responsibility of the student. These fees are in addition to the program fees, and are payable to CARDUP. The CARDUP didactic exam is expected to be launched in the spring of 2010.

FREQUENTLY ASKED QUESTIONS AND ANSWERS ABOUT THE PROGRAM

What does a diagnostic medical sonographer do?

A diagnostic medical sonographer is a skilled professional who uses specialized equipment to create images of structures inside the human body that are used by physicians to make a medical diagnosis. The process involves placing a small hand-held device called a transducer against the patient's skin near the body area to be imaged. The transducer sends pulses of inaudible high frequency sound into the body then receives streams of echoes from reflecting structures inside the body. These echoes are processed by a computer to create images that can be displayed on a viewing monitor. A typical scan takes 20 - 40 minutes. During that time, the sonographer manipulates the transducer to obtain the necessary images for the physician's interpretation. Typically, 20 - 30 images are recorded.

Sonographers have extensive, direct patient contact that may include performing some invasive procedures. They must be able to interact compassionately and effectively with people who range from healthy to critically ill.

The sonographer's responsibilities include, but are not limited, to:

- obtaining and recording an accurate patient history
- performing diagnostic procedures and obtaining diagnostic images
- analyzing technical information
- using independent judgement in recognizing the need to extend the scope of the procedure according to the diagnostic findings
- providing an oral or written summary of the technical findings to the physician for medical diagnosis
- providing quality patient care
- collaborating with physicians and other members of the health care team.

Sonographers must also be knowledgeable about and limit the risk from possible exposure to blood and body fluids. They should also be aware of the potential for repetitive strain injury and take steps to limit their risk. Many sonographers also assist in electronic and clerical scheduling, record keeping, and computerized image archiving. Sonographers may also have managerial or supervisory responsibilities.

What are some of the technical standards required of a sonographer?

Sonographers should be able to:

- Lift more than 50 pounds routinely
- Push and pull routinely
- Bend and stoop routinely
- Have full use of both hands, wrists and shoulders
- Distinguish audible sounds
- Adequately view sonograms, including colour distinctions
- Work standing on their feet 80% of the time
- Interact compassionately and effectively with the sick or injured
- Assist patients on and off examining tables
- Communicate effectively with patients and other health care professionals
- Organize and accurately perform the individual steps in a sonographic procedure in the proper sequence

How do I know if I'm suited for a career in ultrasound?

Sonography places significant responsibility in the hands of the sonographer. Good sonographers tend to be intelligent, inquisitive individuals with an eye for detail. They also tend to have excellent analytical and critical thinking skills. Good sonographers also possess superior spatial reasoning and excellent hand-eye coordination. Sonographers are also people-oriented, have excellent communication skills, and understand the responsibility of their role within the diagnostic medical team.

What is the starting salary of a sonographer?

In Manitoba, the salary will be equivalent to that of a special procedures radiographer or registered nurse. The salary range for a sonographer at this hospital is approximately \$27.00 - \$37.00 per hour.

Where can I expect to work as a sonographer?

Ultrasound is practised in major urban and rural hospitals in Manitoba. In some areas of the province there is also mobile ultrasound in which the sonographer travels with a portable ultrasound machine to service smaller rural communities. In other provinces there are also private clinics.

What career opportunities are there for the general duty sonographer?

There are several career development areas. A sonographer may specialize in an area such as vascular ultrasound, echocardiography, or pediatrics. There are opportunities in department management, and clinical and didactic teaching. A sonographer may also find opportunities with commercial companies as an application specialist, product specialist or in sales.

How many students are accepted into the program each year?

The current enrolment is 13 students.

How many applicants are there each year?

The average number of qualifying applicants is approximately forty to fifty.

Can I apply for training if I live outside Manitoba?

One of the program's objectives is to train sonographers to work within the province of Manitoba. Preference is given to qualified Manitoba applicants. However, the program does accept applications from out-of-province (OP) candidates.

Does the program offer part-time classes, night classes, weekend classes, or online classes?

No. Due to the close integration of the didactic and clinical components of the course, the program can only offer classes during the normal business week. Full time attendance is required.

Will I be interviewed?

Applications are accepted between **January 1 and February 15**. Members of the Selection Committee review each application independently and rate the applications on a scale of 1 to 10. The four primary areas that are considered are: (1) the questionnaire, (2) knowledge of, and preparation for, a career in ultrasound and the year of training, (3) academics, and (4) references. Application review is usually completed by mid-April. Once complete, the scores are tabulated and approximately twenty two candidates with the highest scores are scheduled for an interview. The interviews are usually held in May.

How is the final selection made?

Shortly after the interviews, the selection committee meets to choose the final candidates. The final decisions are based on the strength of the interview and the individual merits of each candidate. References may be contacted for information about the candidates. The final selections are usually made within 7 - 10 days of the interview. All applicants are notified in writing as to their status.

How can I make myself more competitive in the applicant pool?

Maximize your academic performance, especially in anatomy, physiology, and cross sectional anatomy. Strengthen your patient care and communication skills. Provide strong references. Update your knowledge and understanding of diagnostic sonography. While applicants are not required to perform observations in order to apply, observation and direct knowledge of diagnostic ultrasound in the patient care setting will help you in the interview process. Have a strong understanding of the program year and the challenges it presents.

Is there a waiting list?

No. The program does not maintain a waiting list. If interested, individuals not accepted for training one year must re-apply.

If I get interviewed one year but am not accepted, do I automatically receive an interview the following year?

No. You must re-apply and score high enough in the review process to receive an interview.

Are there many jobs available in ultrasound?

The job market in Manitoba is fairly good at present. There are approximately 75 sonographers working within the province. Sonography is a growing diagnostic modality and good medical sonographers are in demand. Graduates will have an advantage securing a position if they are mobile and willing to relocate.

What are the tuition fees?

The current program fees are \$2000.

What about the cost of books and supplies?

The program maintains a set of textbooks for each student. These texts are loaned to the student at the start of the year, but must be returned to the program before graduation. There is no cost for this service. In addition the program will distribute comprehensive notes and images covering all topic areas. A lab coat is also loaned to the student by the program. Students may also wear a uniform if they have one.

Is student housing available?

No. The hospital does not operate a residency for non-medical students. Students are responsible for their living accommodations. The cost of a one bedroom apartment in Winnipeg is approximately \$650-\$750 per month plus parking and utilities.

Is student parking available?

Parking is in high demand at HSC. In recent years no parking lots have been available for students. If an HSC lot does become available, the current cost for a monthly parking space is \$78.00. There is no additional charge for reciprocal parking at St. B. Private parking spots in the vicinity of HSC may be available at a lower rate. Street parking is very limited. HSC is well serviced by [Winnipeg Transit](#). Post -secondary monthly bus passes may be available.

Is student aid available?

Once accepted into the program students may apply to their local Employment Manitoba office for financial assistance. **Admission to this program does not guarantee financial assistance.** You must be eligible for EI benefits or receiving EI benefits to apply. Manitoba residents may also apply to the Manitoba Department of Education and Training, Student Aid Program, 401-1181 Portage Avenue, Winnipeg, Manitoba, R3G 0T3; phone (204) 945-6321 in Winnipeg; (204) 726-6592 in Brandon; or toll-free in Manitoba 1-800-204-1685. Website: www.studentaid.gov.mb.ca

PROGRAM TIMETABLE

The applications are accepted from January 1 - February 15. The interviews are held in May and final selections are made by the end of May. The program starts at the end of August and ends in mid August of the following year. There is a two week break at Christmas, a one week spring break, and a one week break in July.

January 1 - February 15	Applications accepted
February 15 - mid April	Applications reviewed by Selection Committee
mid April	All applicants notified of application status. Selected applicants are scheduled for interview in May
mid May	Applicant interviews are held
end of May	Interviewees notified of the status of their application.
end of August	Program starts
mid December	End of Term 1
December	2 week December break
January	Term 2 starts
end of March	March break (1 week break coincides with Winnipeg Schools break)
end of April	Term 3 starts
July	1 week July break
mid August	Program ends

Foreign Transcript Evaluation Agencies

1. Academic Credentials Report

Manitoba Department of Labour and Immigration

Immigration and Multiculturalism Division

5th Floor, 213 Notre Dame Avenue

Winnipeg, MB

R3B 1N3

(204) 945-6300

(204) 948-2148 (fax)

immigratemanitoba@gov.mb.ca

[ACAS website](#)

Note: this service is for residents of Manitoba

2. International Credential Assessment Service of Canada (ICAS)

35 Harvard Road, P.O. Box 21001

Guelph, Ontario

N1G 4T3

(519) 763-7282

www.icascanada.ca

To obtain an application contact the ultrasound program office:

(204) 787-7846 ultrasound@exchange.hsc.mb.ca

The application form and required documents are also available [here](#).
