



Canadian Society of Diagnostic Medical Sonography

# **PROFESSIONAL PRACTICE GUIDELINES AND POLICY STATEMENTS FOR CANADIAN SONOGRAPHY**



# Table of Contents

Mission Statement . . . . .	2	Gender Determination and Disclosure . . . . .	6
Vision Statement . . . . .	2	Safety and Bioeffects . . . . .	7
Definition of the Profession . . . . .	2	AIUM Statement of In Vitro Bioeffects . . . . .	7
Definition of the Canadian Society of Diagnostic Medical Sonographers (CSDMS) . . . . .	2	AIUM Statement on Clinical Safety . . . . .	7
Sonographer Qualifications . . . . .	3	AIUM Statement of Safety in Training and Research . . . . .	7
CARDUP Registry Options . . . . .	3	Ultrasound Gel Bottle Recommendations . . . . .	8
ARDMS Registry Options . . . . .	3	Reprocessing Policy . . . . .	9
Professional Practice Guidelines . . . . .	3	Reference . . . . .	10
Professional Liability Insurance Coverage Statement . . . . .	4	Universal Precautions . . . . .	11
Protocol Guidelines for Ultrasound Examinations . . . . .	4	Workplace Hazardous Materials Information Systems (WHMIS) . . . . .	11
Consent for Ultrasound Procedures . . . . .	4	Latex Allergies . . . . .	11
Use of Ultrasound for Entertainment or Non-diagnostic Purposes . . . . .	5	Quality Control . . . . .	11
Role of the Sonographer and the Initial Report . . . . .	6	Guidelines for Ultrasound Examination Scheduling and Time Allotments . . . . .	12
Supervision . . . . .	6	General Information and Recording Instructions for Ultrasound . . . . .	12
Sonographer's Observations . . . . .	6		
Picture Archiving and Communication System (PACS) . . . . .	6		

## MISSION STATEMENT

The Canadian Society of Diagnostic Medical Sonography (CSDMS) is the unifying national voice of sonography, advancing the profession and the practice of diagnostic ultrasound to improve patient care by:

- providing professional practice guidelines and policies;
- providing leadership which will foster, inspire and support continuing professional development;
- furthering the profession by recognizing excellence in professional practice and achievements in research;
- promoting the profession through communication with the public, government agencies and other health care organizations; and
- acting in the public interest by providing national and international leadership on health issues.

## VISION STATEMENT

CSDMS will be internationally renowned for its dedication to promoting professional practice standards, providing innovative professional development and implementing strategies to further inform government, regulators and the wider community about the role of diagnostic medical sonographers.

### DEFINITION OF THE PROFESSION:

Diagnostic medical sonography in Canada is a diverse and dynamic profession. Sonographers are active in many areas of healthcare, with credentials available in general, cardiac and vascular sonography. Credentialing in Canada is based on clinical competency and knowledge-based exams.

Sonographers are an integral part of the healthcare team, playing a critical role by providing key information that facilitates diagnosis and patient management. The quality of an ultrasound study is highly dependent on the skill of the sonographer. In order to perform a thorough ultrasound, the sonographer must adapt their study in response to their sonographic findings.

Sonographers bring together an important combination of skills, including technical competency, decision-making and critical thinking. The sonographer must have an educational background that is strong in ultrasound physics, anatomy, physiology and pathology. They must analyze data, make judgements and differentiate normal from abnormal based on real-time physiologic information as well as effectively communicate with patients and other members of the

healthcare team. The final diagnostic report relies on information compiled by the sonographer concerning patient history, clinical symptoms and sonographic findings.

Professional certification is considered the standard of practice in Canadian ultrasound. Individuals who are not yet certified should reference the **Scope of Practice** as a professional model and strive to become certified.

### DEFINITION OF THE CANADIAN SOCIETY OF DIAGNOSTIC MEDICAL SONOGRAPHERS (CSDMS)

The CSDMS is the national voice for diagnostic medical sonographers in Canada. A coalition of sonographers, physicians and students, the CSDMS strives to advance the profession and further define the role of sonographers in the Canadian healthcare system.

CSDMS gives sonography a powerful, unified voice representing the profession to other organizations, government and the wider community.

## SONOGRAPHER QUALIFICATIONS

The CSDMS recommends the following:

- Successful completion of a Canadian accredited ultrasound educational program. The recognized Canadian practice standards are described in the National Competency Profiles (NCP). This document provides the foundation for curriculum development in Canada's accredited sonography programs.
- Registration with the Canadian Association of Registered Diagnostic Ultrasound Professionals (CARDUP) and/or the American Registry of Diagnostic Medical Sonographers (ARDMS), which the CSDMS recognizes as the accrediting bodies for Diagnostic Sonographers.

It is strongly recommended that sonographers only perform examinations in the specialties for which they have received academic and clinical training and in which they are registered or eligible for registration.

## CARDUP REGISTRY OPTIONS:

1. **CRGST™ – Canadian Registered General Sonographer**  
The holders of this credential would be registered in general duty sonography and be proficient in one or all of the following categories: neurosonology, abdominal sonography, obstetrics and gynecology.
2. **CRCST™ – Canadian Registered Cardiac Sonographer**  
The holders of this credential would be registered in echocardiography – adult and/or pediatric.
3. **CRVST™ – Canadian Registered Vascular Sonographer**  
The holders of this credential would be registered and proficient in vascular sonography.

## ARDMS REGISTRY OPTIONS:

1. **RDMS (Registered Diagnostic Medical Sonographer)**  
Ultrasound Physics and Instrumentation and one or more of the following specialties: Obstetrics and Gynecology, Abdomen, Neurosonology, Ophthalmology
2. **RDCS (Registered Diagnostic Cardiac Sonographer)**  
Cardiovascular Principles and Instrumentation and Pediatric Echocardiography and/or Adult Echocardiography
3. **RVT (Registered Vascular Technologist)**  
Vascular Physical Principles and Instrumentation and Vascular Technology

## PROFESSIONAL PRACTICE GUIDELINES

These standards are designed to reflect behaviour and performance levels expected in clinical practice for the Diagnostic Ultrasound Professional and are based on the National Competency Profiles (NCP's) for Diagnostic Medical Sonography as developed by the CARDUP and the CSDMS. The core competencies describe the principles and skills that are common to all ultrasound specialties within the diagnostic medical sonography profession. Individual specialties or subspecialties may adopt competencies that extend or refine these core competencies and better reflect the day-to-day practice of these specialties. Certification is considered the national standard of practice in Canadian medical sonography.

The national practice standards for Canadian medical sonography are detailed in the *National Competency Profiles (NCP) Version 4.2, November 2008*. The NCP's are available online at both the CSDMS and CARDUP websites and form the foundation of both the Standards of Practice and the certification processes in Canada.

## PROFESSIONAL LIABILITY INSURANCE COVERAGE STATEMENT

It is strongly recommended that sonographers maintain membership in a professional organization that provides individual professional liability insurance. The liability insurance available to sonographers through CSDMS provides coverage for all professional activities described within the *Scope of Practice* for Canadian sonography.

Any CSDMS member performing ultrasound for non-diagnostic purposes and/or entertainment should be aware that **liability insurance does not cover these activities**.

## PROTOCOL GUIDELINES FOR ULTRASOUND EXAMINATIONS

One of the important mandates of the CSDMS is to work closely with other national and international healthcare organizations to develop and promote best practices in all specialty areas of diagnostic medical sonography.

It is the recommendation of the CSDMS that each ultrasound department should compile a complete set of examination protocols for procedures carried out in their facility. The following guidelines published by the international diagnostic medical ultrasound community and endorsed by the CSDMS can be used in the development of this resource.

### The Society of Obstetricians and Gynaecologists of Canada (SOGC)

[http://www.sogc.org/guidelines/index\\_e.asp#Diagnostic](http://www.sogc.org/guidelines/index_e.asp#Diagnostic)

### The American Institute of Ultrasound in Medicine (AIUM)

<http://www.aium.org/publications/guidelines.aspx>

### The Intersocietal Commission of the Accreditation of Vascular Laboratories (ICAVL)

[http://www.icavl.org/icavl/main/icavl\\_standards.htm](http://www.icavl.org/icavl/main/icavl_standards.htm)

### The Intersocietal Commission for the Accreditation of Echocardiography Laboratories (ICAEL)

[http://www.icael.org/icael/main/icael\\_standards.htm](http://www.icael.org/icael/main/icael_standards.htm)

## CONSENT FOR ULTRASOUND PROCEDURES

Obtaining informed consent prior to beginning any ultrasound procedure is part of the CARDUP/CSDMS National Competency Profile and Scope of Practice of Sonographers. The elements of informed consent are defined in the Health Care Consent Act, written in 1996 and amended in 2004:

### Elements of Consent:

- Person must have capacity to give consent.
- Consent must relate to procedure.
- Consent must be informed.
- Consent must be given voluntarily.
- Consent must not be obtained through misrepresentation or fraud.

### Informed Consent

Consent is informed if:

- Patient understood information on elements of consent
- A reasonable person would consider they had enough information
- The patient received responses to requests for additional information

Consent can be given verbally. The need for written consent is dependent upon the type of procedure and the policies of the facility.

## USE OF ULTRASOUND FOR ENTERTAINMENT OR NON-DIAGNOSTIC PURPOSES

The CSDMS defines diagnostic medical ultrasound as a medical diagnostic investigation procedure that uses high frequency sound waves (ultrasound) to interrogate organs, tissues or blood flow inside the body and produce dynamic visual images. The interrogation and interpretation of the images are used to formulate a diagnosis. Diagnostic medical ultrasound is a procedure that is requested by a physician, performed by a sonographer and interpreted and reported by a physician with expertise in the field. The areas and structures of the body that can be examined using ultrasound are vast and include the heart, many of the abdominal, pelvic and reproductive organs, arteries and veins, muscles and tendons as well as developing fetuses.

When performed on a fetus, diagnostic ultrasound is used to determine fetal well-being through the acquisition of a series of specific images which document and evaluate the internal and external anatomy of the fetus and provide detailed measurements of certain structures. When performed by a registered sonographer, it is a valuable tool for dating a pregnancy, ensuring fetal health and appropriate growth, and assessing fetal development. It is central in assisting healthcare professionals provide optimal care for the mother and her fetus.

Ultrasound has been found to be relatively safe when performed by a qualified sonographer under the directive of a physician and with consideration to prudent use and limited exposure. The Canadian Society of Diagnostic Medical Sonographers endorses Health Canada's position statement which recommends that diagnostic fetal ultrasound be done only when the expected medical benefits outweigh any foreseeable risks. According to Health Canada the ALARA (as low as reasonably achievable) principle should be used to reduce unnecessary, potentially hazardous exposure to individuals.

In contrast to this justified form of assessment, ultrasound for entertainment is simply an elaborate version of a portrait. For a variable fee, the surface of the fetus is skimmed over and clients are provided with keepsake images or a

DVD of their fetus. There are no measurements taken during this exam, no morphological assessment performed and no dictated diagnostic report of findings. Essentially there are no diagnostic benefits to the exam and uninformed parents may be falsely reassured that the beautiful portrait indicates a normal fetus. Entertainment ultrasound facilities may operate outside of medical guidelines and without any controls, which may result in a lack of technical safeguards, operator expertise or governance of technical competency. These facilities do not comply with the ALARA principle which could result in increased fetal exposures.

The CSDMS does not support persons or facilities that participate in ultrasound for entertainment activities. Liability insurance purchased through the CSDMS group insurance plan does not cover any activities carried out for entertainment ultrasound purposes. CSDMS is seeking legal opinion on the development of a policy to exclude practitioners who participate in entertainment ultrasound from the CSDMS membership.

### **Other leaders in Canadian medicine support our statement:**

In 2005, the SOGC (Society of Obstetrics and Gynaecologists of Canada) published an article entitled "Obstetrical Ultrasound Biological Effects and Safety", and their conclusion was that "the theoretical risk of adverse bio-effects even from standard 2D obstetrical ultrasound makes it hard to justify its use for non-medical reasons such as sex-determination, making non-medical photos or video, or for commercial purpose." The SOGC recommends that ultrasound be used prudently and that energy exposure be limited to the minimum that is medically necessary. The SOGC further recommends a complete ban on the non-medical use of fetal ultrasound and encourages government to join with society to find appropriate means to deal with this public health issue.

The CAR (Canadian Association of Radiologists) makes a similar statement: "The CAR strongly opposes the use of diagnostic ultrasound equipment for non-medical purposes and considers the use of medical ultrasound for entertainment to be a misuse of the technology especially if fetal subjects are involved."

The CSDMS Board of Directors officially endorses the AIUM, SDMS and CAR statements on the use of ultrasound for non-diagnostic purposes.

## ROLE OF THE SONOGRAPHER AND TECHNICAL IMPRESSIONS

The role of the sonographer is to perform the ultrasound scan and to document observations. The sonographer's written technical impressions are intended as a form of communication between the sonographer and the reporting physician. These observations must be reviewed and subsequently reported by the reporting physician. Issuing of a final report/diagnosis represents the practice of medicine and is therefore the domain of the reporting physician.

## SUPERVISION

The reporting physician must be available for consultation, via telephone or through the Picture Archiving and Communication System (PACS). Sonographers should not be left in a position where their technical impressions are likely to be taken as a diagnosis in the absence of a timely response by a reporting physician.

## SONOGRAPHER'S OBSERVATIONS

Written technical impressions should follow a detailed format appropriate for the examination, with a clearly visible disclaimer stating that the technical impressions are preliminary and that a final report by the reporting physician will follow. The technical impressions should not include interpretations or differential diagnoses.

## PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS)

Sonographer's technical impressions that are stored electronically through PACS must not be changed. Any conclusions, comments or diagnoses of the reporting physician may be appended to the sonographer's technical impressions provided that these additional comments are dated and clearly attributed to the reporting physician.

It is highly desirable that PACS systems be installed in such a manner as to ensure that sonographer's technical impressions are recorded as committal data entries. In addition, it is highly desirable that PACS installations be configured such that the sonographer's technical impressions are available only to the reporting physician.

## GENDER DETERMINATION AND DISCLOSURE

The CSDMS supports the Society of Obstetricians and Gynaecologists of Canada's (SOGC's) clinical practice guideline, *Content of a Complete Routine Second Trimester Obstetrical Ultrasound Examination and Report*.

<http://www.sogc.org/guidelines/documents/gui223CPG0903.pdf>

Please see the following SOGC policy statements for guidance concerning gender determination and disclosure.

### Fetal Sex Determination and Disclosure:

<http://www.sogc.org/guidelines/documents/192E-PS-April2007.pdf>

### Ultrasound for the Sole Purpose of Gender Determination:

<http://www.sogc.org/guidelines/documents/guiJOGC198PS0711.pdf>

### CSDMS Professional Liability Insurance Coverage in Gender Determination:

If there is documented proof of the fetal sex (image of genitalia) recorded and presented in the preliminary findings, then the sonographer is covered under the CSDMS Professional Liability Insurance Policy.

It remains the responsibility of the reporting physician to diagnose fetal gender based on direct observation or by assessment of diagnostic images, and to report it to the referring physician.



## SAFETY AND BIOEFFECTS

While ultrasound exposure has not been proven to be cumulative in the adult or fetus to this date, the CSDMS recommends that sonographers adhere to the general principle of ALARA as a practice standard. This is the use of minimum acoustic power output and minimum exposure time to obtain the necessary clinical information.

The following statements have been provided by AIUM and are endorsed by the CSDMS. Please reference <http://www.aium.org/publications/statements.aspx> for additional resources.

### AIUM STATEMENT OF IN VITRO BIOEFFECTS

It is often difficult to evaluate reports of ultrasonically induced in vitro biological effects with respect to their clinical significance. The predominate physical and biological interactions and mechanisms involved in an in vitro effect may not pertain to an in vivo situation. Nevertheless, in vitro effect must be regarded as a real biological effect.

Results from the in vitro experiments suggest new endpoints and serve as a basis for design of in vivo experiments. In vitro studies provide the capability to control experimental variables and thus offer a means to explore and evaluate specific mechanisms. Although they may have limited applicability to in vivo biological effects, such studies can disclose fundamental intercellular or intracellular interactions.

While it is valid for authors to place their results in context and to suggest further relevant investigations, reports which do more than that should be viewed with caution.

## AIUM STATEMENT ON CLINICAL SAFETY

*Diagnostic ultrasound has been in use since the late 1950s. Given its known benefits and recognized efficacy for medical diagnosis, including use during human pregnancy, the American Institute of Ultrasound in Medicine herein addresses the clinical safety of such use:*

No confirmed biological effects on patients or instrument operators caused by exposure at intensities typical of present diagnostic ultrasound instruments have ever been reported. Although the possibility exists that such biological effects may be identified in the future, current data indicate that the benefits to patients of the prudent use of diagnostic ultrasound outweigh any risks that may be present.

### AIUM STATEMENT OF SAFETY IN TRAINING AND RESEARCH

Diagnostic ultrasound has been in use since the late 1950s. There are no confirmed adverse biological effects on patients resulting from this usage. Although no hazard has been identified that would preclude the prudent and conservative use of diagnostic ultrasound in education and research, experience from normal diagnostic practice may or may not be relevant to extended exposure times and altered exposure conditions. It is therefore considered appropriate to make the following recommendation:

In those special situations in which examinations are to be carried out for purposes other than direct medical benefit to the individual being examined, the subject should be informed of the anticipated exposure conditions, and of how these compare with conditions for normal diagnostic practice.

## ULTRASOUND GEL BOTTLE RECOMMENDATIONS

These recommendations have been provided by Health Canada, Health Products and Food Branch Inspectorate:

### Sterile Gels

- Sterile gels must be used for all invasive procedures that pass a device through tissue (e.g., needle aspiration, needle localization, and tissue biopsy) for all procedures involving sterile environment or non-intact skin, and on neonates.
- Sterile gels should be used for procedures performed on intact mucous membranes (e.g., oesophageal, gastric, rectal or vaginal) and in patients with immunodeficiencies or on immunosuppressive therapy.
- Aseptic technique should be followed when using sterile gels.

### Non-sterile Gels

- Single use containers are recommended for non-sterile gels.
- If reusable containers are used, they must be emptied, washed in hot soapy water or hospital-grade disinfectant rinsed thoroughly and dried prior to refilling. Bottles should not be “topped up”. Cracked reusable bottles should be discarded.
- When filling a reusable container, ensure that the large bulk container has not passed the expiration date.
- Bottles should be filled using a dispensing device on the large bulk container; not by inserting the tip of the refillable bottle into the bulk container to aspirate the contents.
- Bottles should be refilled as close as possible to the time of use.
- When opening a new gel bottle or a newly refilled bottle, date the bottle and discard unused gel after one month.

- Tips of containers or dispensing nozzles must not come in direct contact with a patient, staff, instrumentation or the environment. Gel should be dispensed into a medicine cup or on a clean disposable cloth and then to the patient's skin.
- If a medicine cup or a disposable cloth is not used, wipe the dispensing nozzle clean with an alcohol swab and wipe the outside of the container with a disinfectant between patients.
- If a gel is being used on a patient who is in droplet or contact isolation, use a single-use gel container; or leave the reusable container in the room if repeat procedures are necessary and discard the gel when isolation of the patient is discontinued.
- For infrequent procedures, use small or single-use containers.

### Warming of Gel

- Warmed gel should only be used when required.
- Bottles should be removed from the warmer as soon as possible and dried immediately.
- Gel warmers must be cleaned weekly with low level hospital-approved disinfectant, and immediately if the warmer becomes soiled.

### Storage of Ultrasound and Medical Gels

- Products must be stored in areas that are dry and protected from potential sources of contamination, such as dust, moisture, insects, rodents, etc.
- If evidence of contamination is present or package integrity has been breached, the product must be discarded.
- Products should be rotated when restocking takes place.

Click on the following link for additional resources, references and Health Canada Guidelines.

[http://www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/\\_2004/ultrasound\\_nth-ah-eng.php](http://www.hc-sc.gc.ca/dhp-mps/medeff/advisories-avis/prof/_2004/ultrasound_nth-ah-eng.php)

## REPROCESSING POLICY

### Endocavity Transducers

#### Preparation and Cleaning

- Sonographers and sonologists should wear gloves and protective eyewear as per MSDS guidelines and CSA (Figure 1; CSA, 2008). Probe covers should be used on all endocavity probes. Non-latex condoms/gloves should be available for latex sensitive patients.
- Sterile gel or bacteriostatic gels should be used to lubricate the exterior of the probe covers. (Health Canada, 2004)
- Probe covers should be removed using gloves and disposed of immediately. Care must be taken not to contaminate the probe with the patient's secretions.
- Following each exam, the transducer should be disconnected from the system and the gel should be wiped off the transducer and cable with a soft, dry wipe.
- Avoid cross contamination within the transducer cleaning area, reprocessing room or station; keep flow one way, from dirty to clean (Figure 3; CSA, 2008). Probes should be soaked in an enzymatic detergent prior to the high-level disinfection process. If necessary, a medical instrument brush should be used to remove any debris or blood products. (Figure 4; CSA, 2008)
- The entire cord should be wiped thoroughly with a manufacturer-approved disinfectant. (Figure 5; CSA, 2008)
- The probe must be soaked in a high-level disinfectant solution as per the manufacturer's guidelines. (Figure 6; CSA, 2008) Care must be taken to ensure that the solution does not enter the device or connector.
- The probe must be thoroughly rinsed with potable water after the use of a high-level disinfection solution. Do not allow any solutions to air dry on the transducer. (Figure 7; CSA, 2008)
- The highly disinfected probe should have a "HIGH LEVEL DISINFECTION" label placed on it and be kept in an area labelled as a high-level disinfection area. (CSA, 2008)
- Perform hand hygiene. (Figure 8; CSA, 2008)
- After high-level disinfecting of the probe, the sonographer should document the reprocessing procedure with the patient's ID number; probe serial number; soaking time, date, and the name of the person who cleaned the probe. (Figure 9; CSA, 2008)
- All high-level disinfection solutions should be tested on a daily basis using test strips. (Figure 10; CSA, 2008)
- A neutralizing substance may be used to neutralize the disinfectant before it is poured down the drain.
- There should be a log book to record all high-level disinfection solution changes (Figure 11; CSA, 2008)
- Some type of fume hood should be available for venting/absorbing the high-level disinfection gases. (Figure 12; CSA, 2008)
- Protective equipment should be used as per MSDS and manufacturer guidelines. (Figure 13; CSA, 2008)
- A spill kit should be available for department use. (Figure 14; CSA, 2008)
- Endocavity probes should be examined regularly for any damage, and leak testing should be performed annually. If damage is evident, discontinue use of the probe and contact the manufacturer. (Figure 15; CSA, 2008)
- A review and update of the reprocessing techniques should be done on an annual basis. (Figure 16; CSA, 2008)
- **Do not** use any alcohol, bleach, ammonium chloride or hydrogen peroxide on TEE probes.
- All other transducers and cords should be wiped clean of gel with a dry wipe and then a disinfecting wipe after each examination.
- All other transducers performing biopsies should use a disposable sterile transducer cover; and aseptic technique should be used.

## REFERENCE

**Canadian Standards Association (CSA)** Z3314.8-08  
[Online] <http://www.csaintl.org>, 2008. <http://www.csaintl.org/onlinestore/GetCatalogItemDetails.asp?mat=2419528>

- Figure 1: Page 17 – 6.7.1
  - Figure 3: Page 5, page 14, 6.3.3 (c) (iv), page 19 – 7.1
  - Figure 4: Page 30 – 10.3, page 31, 10.4, page 52 – 13.4
  - Figure 5: Page 51 – 13.4
  - Figure 6: Page 36 – 10.6, page 37 – 10.7, page 38 – 10.8, page 42 – 10.8.5
  - Figure 7: Page 26 – 7.6.7, 7.6.8, 7.6.9, page 43 – 10.8.5.4
  - Figure 8: Page 15 – 6.6.3
  - Figure 9: Page 43 – 10.8.5.6, page 57 – 13.5, page 60 – 13.9.3
  - Figure 10: Page 41 – 10.8.3, page 60 – 13.9.3
  - Figure 11: Page 43 – 10.8.5.6, page 60 – 13.9.3
  - Figure 12: Page 21 – 7.3, page 51 – 13.3
  - Figure 13: Page 15 – 6.6.1, page 16 – 6.7.1
  - Figure 14: Page 18 – 6.8
  - Figure 15: Page 44 – 10.11, page 52 – 13.4.4
  - Figure 16: Page 9 – 4.5.7, page 49 – 13, page 50 – 13.2
- **Health Canada:** Risk of serious infection from ultrasound and medical gels [Online] Health Canada. December 04, 2004. – [http://www.hc-sc.gc.ca/dhpmpps/medeff/advisories-avis/prof/\\_2004/ultrasound\\_2\\_nth-ah-eng.php](http://www.hc-sc.gc.ca/dhpmpps/medeff/advisories-avis/prof/_2004/ultrasound_2_nth-ah-eng.php)
  - **Health Canada:** [http://www.hc-sc.gc.ca/dhp-mpps/md-im/activit/sci-consult/reprocretraite/saprmmd\\_gcsrmm\\_recom\\_2005-02-10-eng.php](http://www.hc-sc.gc.ca/dhp-mpps/md-im/activit/sci-consult/reprocretraite/saprmmd_gcsrmm_recom_2005-02-10-eng.php), Scientific Advisory Panel on Reprocessing of Medical Devices (SAP-RMD) (February 10–11, 2005) – Panel Recommendations, Recommendation 3: To follow established national standards and guidelines. These shall include the CSA Healthcare Technology series of standards (e.g., Z314.1 ETO, Z314.3 Steam, Z314.8 Decontamination, etc.), HC Infection Control Guidelines, and other consensus guidelines and standards of practice. ISO sterilization series should also be used as a guide.

## UNIVERSAL PRECAUTIONS

All sonographers should practice Universal Precautions. Universal Precautions apply to blood, all body fluids, secretions and excretions regardless of whether or not they contain visible blood, non-intact skin and mucous membranes. Proper and appropriate cleaning and/or disinfections of transducers, cords, work surfaces and patient surfaces are important. Hand washing between cases or after contamination is imperative.

## WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEMS (WHMIS)

WHMIS is a national program that identifies how to safely handle any chemicals and products used in your immediate workplace. All sonographers should participate in comprehensive WHMIS training.

## LATEX ALLERGIES

Patients should always be asked if they have a latex allergy/sensitivity prior to exposing them to a latex-containing product.

## QUALITY CONTROL

The use of regular audits is recommended to ensure ongoing quality management within an ultrasound department. Audits can be an invaluable tool in assessing the functionality of a department and in helping to achieve/maintain the highest level of patient care. Possible types of audits include, but are not limited to:

### 1. Personnel

Show active registry status and current professional liability insurance coverage.

### 2. Procedures and Protocols

Review the Policy and Protocols manual to update or clarify information to enhance efficiency, productivity and level of care.

### 3. Quality of Patient Care

Examine patient waiting times, reporting mechanisms and review processes used to address patient communication concerning overall facility performance.

### 4. Safety and Bioeffects

Review equipment service records to ensure regular ongoing maintenance of equipment and timely identification of potential problems.

### 5. Image quality

Peer review of studies performed within the department to evaluate image quality and adherence to departmental requirements.

## GUIDELINES FOR ULTRASOUND EXAMINATION SCHEDULING AND TIME ALLOTMENTS

The following is an excerpt from the Management Information Systems (MIS) Standards 2011, with copyright permission from the Canadian Institute for Health Information (CIHI) 2011.

The Ultrasound Schedule of Unit Values provides the exam count and workload units for ultrasound exams/activities using Average Time methodology which is the national average amount of time it takes to do these exams/activities. To properly understand and correctly implement the schedule and for additional information on the MIS Standards, medical imaging and the Ultrasound schedule please refer to the MIS Standards 2011.

A copy of the MIS Standards CD was widely distributed and included the provincial and territorial ministries of health, most health service organizations funded by provincial ministries of health as well as Regional Health Authorities and Local Health Integration Networks. You can purchase a copy of the MIS Standards CD through the order desk at CIHI at [orderdesk@cihl.ca](mailto:orderdesk@cihl.ca) or 613-241-8120.

The exam/activity times below, unless specified differently, include the following service recipient activities for diagnostic/therapeutic interventions of the medical imaging Workload Measurement System Conceptual Model.

Initial Handling/Set-Up

Service Recipient Preparation/Instructions

Diagnostic/Therapeutic Activities

- Assessment (Pre & Post Exam Monitoring)
- Administration of Radiopharmaceuticals, Contrast Media and Medications
- Service Recipient Care Activities
- MRSA/VRE/Latex Activities
- Catheterization
- Image Acquisition
- Image Processing/ Post Processing
- Image Quality Assessment

Service Recipient Assistance

Clean Up

Clinical Documentation

## GENERAL INFORMATION AND RECORDING INSTRUCTION FOR ULTRASOUND

The workload units assigned may include 3D and/or 4D qualitative Doppler (colour), however, they do not include quantitative Doppler (measurements) unless specifically indicated. If quantitative Doppler is performed in addition to the described exam, add the appropriate unit value as described in activity US110.

The schedule is anticipated to be revised for the MIS Standards 2013. To participate or for additional information on this revision project, you can contact [dimis@cihl.ca](mailto:dimis@cihl.ca)

For any additional information on the MIS Standards, including the ultrasound Workload Measurement System and the Schedule of Unit Values, please contact [mis@cihl.ca](mailto:mis@cihl.ca)

## GUIDELINES FOR ULTRASOUND EXAMINATION SCHEDULING AND TIME ALLOTMENTS

CODE	EXAM/ACTIVITY	UNIT VALUE	EXAM COUNT
GENERAL			
US105	Contrast - additional units for the administration of contrast and the additional exam time (add to the above exams where applicable) Includes the use of any contrast media, including microbubbles (agitated saline) or manufactured contrast media.	30	0
US110	Quantitative Doppler; abdominal/pelvic, obstetrical, one anatomical group of blood vessels (e.g. hepatic, renal, uterine & ovarian, etc.)  Use if Quantitative Doppler is not included in the description.	30	0
ABDOMINAL ULTRASOUND (INCLUDES NON-OBSTETRICAL PELVIS)			
US205	Abdomen, complete	35	1
US210	Abdomen, limited (may include a follow-up, single quadrant or a limited number of organs)	25	1
US215	Abdomen and pelvis	50	1
US220	Transabdominal pelvis	30	1
US225	Pelvis, translabial, female	25	1
US230	Pelvis, or endovaginal or transrectal, or translabial female	30	1
US235	Pelvis, transabdominal and endovaginal, and/or transrectal, female	45	1
US240	Sonohysterography - Includes contrast	60	1
US245	Prostate/transrectal, male	30	1
US250	Renal Artery Quantitative Doppler (may be used for post-stents or for renal transplants)	35	1
US255	Transplant Ultrasound  Includes quantitative Doppler  When performing abdominal ultrasound with quantitative Doppler for non-transplant purposes, refer to code US110	80	1
US260	Liver transplant with quantitative Doppler; pediatric	60	1

*continued on next page*

CODE	EXAM/ACTIVITY	UNIT VALUE	EXAM COUNT
ABDOMINAL ULTRASOUND (INCLUDES NON-OBSTETRICAL PELVIS)			
US305	Cardiac, Complete	55	1
US310	Cardiac, Limited	30	1
US315	Cardiac, Fetal	50	1
US320	Cardiac, Transesophageal	60	1
US325	Stress echo (exercise)	60	1
US330	Stress echo (pharmacological with persantine)	60	1
US335	Stress echo (pharmacological with dobutamine)	80	1
OBSTETRICAL ULTRASOUND			
US405	First trimester May include endovaginal/translabial	30	1
US410	Nuchal Translucency	35	1
	* Second/third trimester routine scan		
US415	May include Doppler; endovaginal/translabial For maternal kidney scan, use code US210.	30	1
US425	Amniocentesis	45	1
US430	Ultrasound guidance for needle biopsy, one or more sites (includes FNA, CVS and Core or abscess drainage).	50	1
US435	High risk pregnancy (To be used for highly suspicious or known abnormalities). May include biophysical profile. All imaging in routine scan US405 and US415 plus further detailed measurements and cardiac imaging.	55	1
US440	Biophysical profile only (scoring only)	30	1
US441	Biophysical profile and measurements Includes scanning and fetal measurements (head, abdomen, femur) resistive index and fetal heartbeat	50	1
US445	First Trimester - Multiple gestation, additional units per fetus	25	0

*continued on next page*

\* Please note that the Canadian Society of Diagnostic Medical Sonographers recommends 45 to 60 minutes for a full comprehensive second/third trimester obstetrical scan (guidelines published by the Society of Obstetrics and Gynecologist of Canada).



CODE	EXAM/ACTIVITY	UNIT VALUE	EXAM COUNT
US450	Second/Third Trimester – Multiple gestation, additional units per fetus	35	0
US455	Limited Obstetric for monitoring of fetal position	15	1
US460	U/S Intrauterine fetal transfusion Includes cordocentesis	70	1
OPHTHALMIC ULTRASOUND			
US505	Ophthalmic, imaging study, unilateral	30	1
US506	Ophthalmic, imaging study, bilateral	35	1
US510	Globe B-scan and Standardized A-scan unilateral	30	1
US511	Orbital B-scan and Standardized A-scan bilateral	60	1
US515	Globe immersion B-scan and Standardized A-scan unilateral	30	1
US520	2D High Frequency biomicroscopy immersion anterior segment examination unilateral	30	1
NEUROLOGICAL ULTRASOUND, INCLUDES 2D, DOPPLER (PULSED AND/OR COLOUR AND/OR POWER)			
	Carotid Arteries Bilateral		
US605	- Includes subclavian and vertebral circulation. - Occasionally ophthalmic arteries.	50	1
US610	Carotid artery, limited	30	1
US615	Intraoperative U/S	90	1
US620	Transcranial May include MCA and/or vertebra-basilar circulation.	35	1
US625	Pediatric Transcranial Doppler	40	1
US630	Neonatal brain	30	1
US635	Pediatric brain	TBD	1
VASCULAR ULTRASOUND, INCLUDES 2D, DOPPLER (PULSED AND/OR COLOUR AND/OR POWER)			
	Carotid arteries bilateral		
US705	-Includes subclavian and vertebral circulation. -Occasionally ophthalmic arteries.	50	1
US710	Carotid artery, limited	30	1

*continued on next page*

CODE	EXAM/ACTIVITY	UNIT VALUE	EXAM COUNT
US715	Extremities arteries (per limb)	40	1
US720	Extremities veins (per limb)	30	1
US725	Any other blood vessel (e.g. grafts, arm vein etc)	30	1
US730	Superior vena cava and neck vessels (e.g. includes jugular veins)	35	1
SMALL PARTS ULTRASOUND (INCLUDES MUSCULOSKELETAL)			
US805	Neck (thyroid, parathyroid, lymph nodes)	30	1
US810	Shoulders, unilateral	25	1
US811	Shoulders, bilateral	40	1
US820	Other Joints, unilateral	25	1
US821	Other Joints, bilateral	35	1
US830	Hips, pediatric bilateral	30	1
US840	Breast, unilateral	25	1
US841	Breast, bilateral	40	1
US850	Ultrasound guided fine wire localization	45	1
US851	Ultrasound guided fine wire localization (breast) - units for second site	20	0
US855	Soft tissue or other small part May include superficial mass, hernia, tendon and/or ligament	25	1
US860	Scrotum/testes with Doppler; quantitative	30	1
US865	Local area/penile frequency analysis penis with Doppler; quantitative	30	1
MISCELLANEOUS			
US870	Chest	25	1
US875	Spine	25	1
US880	Ultrasound guided catheter or central line placement	50	1
US885	Surgical specimen	20	1