COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA

Diagnostic Accreditation Program

ACCREDITATION STANDARDS

Ultrasound

Diagnostic Accreditation Program
College of Physicians and Surgeons of British Columbia
300–669 Howe Street
Vancouver BC V6C 0B4

Introduction

In addition to the general standards, the discipline-specific standards for ultrasound provides additional mandatory requirements and best practices for accreditation.

Imaging procedures

No.		Description	Risk	Reference	Change
					Revised
US3.0		**ULTRASOUND IMAGING STANDARD OPERATING PROCEDURES/PROTOCOLS** *Guidance: See also global modality GM3.0 for additional requirements.*			
US3.1		**There is a comprehensive process in place for protocol adoption and development.** *Guidance: See also global modality GM3.1.*			
US3.1.1	**M**	Protocols are reviewed every one to three years by qualified individuals.	M	US/EC-AC-24	
US3.2		**Protocols contain all the information necessary to perform the examination.**			
US3.2.1	**M**	Protocol information includes but is not limited to clearly specified measurements and imaging views.	M	US/EC-AC-24	
US3.3		**Examinations are performed following established protocols.**			
US3.3.1	**M**	Protocols are readily available to staff performing the examination.	H	US/EC-AC-24	
US3.3.2	**M**	Probes are cleaned and disinfected between patients. *Guidance: Probes that only contact intact skin require cleaning and low-level disinfection. The activities associated with reprocessing endocavity probes are addressed in the infection prevention and control accreditation standards DIPC6.2.3 and DIPC7.0.*	C		
US3.3.3	**M**	Probes are covered, whenever appropriate. *Guidance: Probes are covered during sterile interventional procedures and for cases with a risk of infection.*	H		
US3.3.4	**M**	Any endocavity probe, when in use, is protected by a single-use disposable cover or a commercially available probe cover.	H		
US3.3.5	**M**	If there is evidence of contamination, probe cleaning/disinfection is performed according to endocavity reprocessing requirements (high-level disinfection).	H		

No.		Description	Risk	Reference	Change
US3.3.6	**M**	There is an established protocol for the use of gel in the performance of the ultrasound examination that minimizes the transmission of pathogens. *Guidance: The protocol must include clear directions on the use and storage of both sterile and non-sterile gels. IPAC Canada has published gel recommendations that should be used to develop the facility's protocol. The IPAC Canada guidelines are available at https://ipac-canada.org/photos/custom/Members/pdf/21May_Medical_Gels_Position%20Statement_Final.pdf.*	M		Revised
US3.3.7	**B**	Sonographers adhere to the as low as reasonably achievable (ALARA) principle.		US/EC-AC-24	

Interpretation and reports

No.		Description	Risk	Reference	Change
					Revised
US8.0		**ULTRASOUND INTERPRETATION AND REPORTS** *Guidance: See also global modality GM8.0 for additional requirements.*			
US8.1		**Reports are comprehensive and include appropriate clinical information.** *Guidance: See also global modality GM8.0 for additional requirements.*			Revised
US8.1.3	**M**	There is a process to clearly identify the sonographer's technical impressions (e.g. paper or electronic worksheet) from the physician's diagnostic report. *Guidance: Processes to clearly identify the sonographer's technical impressions from the physician's diagnostic report may include, but are not limited to:* • *visible disclaimers, stating that it is a sonographer observation only and is not a diagnostic report* • *access control restrictions for electronic worksheets*	M	US/EC-AC-24	Revised
US8.1.4	**B**	Reports include an indication of the study quality (e.g. good, fair, poor).			New
US8.1.5	**B**	Standardized measurements and structures not well visualized are noted.			New
US8.8		**Standardized reporting is used for obstetrical ultrasound examinations.**			
US8.8.1	**M**	First trimester ultrasound reports meet Perinatal Services BC (PSBC) standards. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-Ob	Revised
US8.8.2	**M**	Second trimester ultrasound reports meet Perinatal Services BC (PSBC) standards. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-Ob	Revised
US8.8.3	**M**	Fetal anatomy assessment reports meet Perinatal Services BC (PSBC) standards. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-Ob	Revised
US8.8.4	**M**	Third trimester ultrasound reports meet Perinatal Services BC (PSBC) standards. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-Ob	Revised

No.		Description	Risk	Reference	Change
US8.8.5	**M**	Nuchal translucency ultrasound reports meet Perinatal Services BC (PSBC) standards. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-NT	New
US8.8.6	**M**	Obstetrical ultrasound reports include a gestational age determination, as per Perinatal Services BC (PSBC) guidelines. *Guidance: Refer to Perinatal Services BC (PSBC) Obstetrical Ultrasound Assessment Standards, available at https://www.psbchealthhub.ca/.*	M	PSBC-Ob	New
US8.9		**Standardized reporting is used for breast ultrasound examinations.**			New
US8.9.1	**B**	Breast ultrasound reports include a description and location of findings using ACR BI-RADS® descriptors. *Guidance: for a list of ACR BI-RADS® descriptors review the ACR BIRADS Atlas 5th edition, https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/Bi-Rads. It is recommended that technologists document both the clock position and the centimeters from the nipple (CFN) on all images when lesions are observed (e.g. 4 o'clock, 5 CFN).*		ACR-BIRADS	New
US8.9.2	**B**	Breast ultrasound reports include an impression statement with an ACR BI-RADS® assessment category or equivalent (e.g. "Category 4a: low suspicion for malignancy"). *Guidance: for a list of ACR BI-RADS® assessment categories review the ACR BIRADS Atlas 5th edition (https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/Bi-Rads).*		ACR-BIRADS	New
US8.9.3	**B**	Breast ultrasound reports indicating abnormal findings include an impression statement with a recommendation for clinical management (e.g. "short-interval follow-up", "tissue diagnosis", etc.).		ACR-BIRADS	New

Equipment

No.		Description	Risk	Reference	Change
					Revised
US11.0		**ULTRASOUND IMAGING EQUIPMENT AND ANCILLARY SUPPLIES**			
US11.1		**The imaging service ensures that equipment is capable of achieving the desired image quality and complies with the requirements of the examination.**			
US11.1.1	**M**	Ultrasound systems are equipped with a range of imaging modes appropriate for the examinations performed.	H		Revised
US11.1.6	**M**	Ultrasound systems are equipped with a range of transducer probes and probe frequencies appropriate for the examinations performed.	H		Revised
US11.1.10	**M**	When dynamic elastography is performed, ultrasound systems are equipped with shear wave propagation software for ultrasound induced dynamic elastography.	H		New

Acceptance testing

No.		Description	Risk	Reference	Change
					Revised
US12.0		**ACCEPTANCE TESTING OF ULTRASOUND SYSTEMS** *Guidance: See also equipment and supplies DES2.0 for additional requirements*			
US12.1		**Acceptance testing is performed after purchase and prior to clinical use of equipment.**			
US12.1.1	**M**	Acceptance testing of ultrasound systems includes a physical and mechanical inspection of the system and probes.	H	ACR-APPM-US	Revised
US12.1.2	**M**	Acceptance testing of ultrasound systems includes electrical leakage current testing of probes. *Guidance: Results can be documented as pass/fail or a value.*	H	US/EC-AC-24	Revised
US12.1.3	**M**	Acceptance testing of ultrasound systems includes a uniformity assessment of the system and probes. *Guidance: Uniformity is assessed by scanning a homogenous region of a tissue-mimicking phantom.*	H	ACR-APPM-US	Revised
US12.1.4	**M**	Acceptance testing of ultrasound systems includes evaluation of geometric accuracy. *Guidance: Geometric accuracy is the comparison of a measured distance to a known distance. This evaluation requires a phantom with test targets (typically filament targets) measured along the vertical and horizontal axis.*	H	ACR-APPM-US	Revised
US12.1.5	**M**	Acceptance testing of ultrasound systems includes evaluation of system sensitivity. *Guidance: System sensitivity is the determination of the weakest echo signal detected and clearly displayed. Sensitivity can be expressed as a maximum visualization depth or a quantitative measure of signal-to-noise ratio (SNR). The assessment requires a phantom with test targets of known depths.*	H	ACR-APPM-US	Revised

No.		Description	Risk	Reference	Change
US12.1.6	**B**	Acceptance testing of ultrasound systems includes evaluation of spatial and contrast resolution of the system. *Guidance: Spatial and contrast resolution can be assessed using a phantom with targets of differing size and echogenic properties. At a minimum, lateral and axial resolution must be assessed using phantom and filament targets distributed axially and laterally. To assess contrast resolution, targets with differing echogenic properties must be used.*		ACR-APPM-US	Revised
US12.1.7	**M**	Acceptance testing of ultrasound systems includes a quantitative assessment of each probe for lens delamination, element damage and cable integrity. *Guidance: Quantitative assessment of the transducer's lens, matching layer, acoustic array, cable and connector can be performed using a commercially available computerized test device that measures element sensitivity (volts p-p), capacitance (pF), pulse width (ns), center frequency (MHz), and fractional bandwidth (%). The device is used to acceptance test new or recently repaired transducers and also aids in transducer repair or replacement decision making by differentiating between system problems and transducer problems. Identifying transducer defects early helps ensure clinical image quality is optimized and may significantly reduce repair costs.*	H	US/EC-AC-24	Revised
US12.1.8	**B**	For systems with harmonic imaging, acceptance testing of ultrasound systems is repeated in both modes.		US/EC-AC-24	Revised
US12.1.9	**B**	For systems with color, pulsed or doppler imaging, acceptance testing of ultrasound systems includes a qualitative evaluation of these imaging modes.		US/EC-AC-24	Revised

Quality Assurance

No.		Description	Risk	Reference	Change
					Revised
US13.0		**QUALITY CONTROL TESTING OF ULTRASOUND SYSTEMS** *Guidance: See also equipment and supplies DES3.0 for additional requirements.*			
US13.1		**Daily quality control procedures are established and used to monitor performance of ultrasound systems.**			
US13.1.1	**M**	Daily quality control testing of ultrasound systems includes a documented visual inspection of the ultrasound system and transducers. *Guidance: A visual inspection includes an assessment of:* *I. surface smoothness* *II. wear and tear of the coating* *III. burrs or cracks* *IV. sharp edges* *V. holes or other degradation* *VI. cable integrity/strain relief* *VII. alignment and functionality, if applicable*	M	ACR-APPM-US	Revised
US13.3		**Annual quality control procedures are established and used to monitor performance of ultrasound systems.**			
US13.3.1	**M**	Annual quality control testing of ultrasound systems includes a physical and mechanical inspection of the system and probes.	M	ACR-APPM-US	Revised
US13.3.2	**M**	Annual quality control testing of ultrasound systems includes electrical leakage current testing of all probes. *Guidance: Results can be documented as pass/fail or a value.*	M	US/EC-AC-24	Revised
US13.3.3	**M**	Annual quality control testing of ultrasound systems includes an assessment of each probe for lens delamination, probe element damage and cable integrity. *Guidance: An assessment is also performed after probe repair.*	M	US/EC-AC-24	Revised
US13.3.4	**M**	Annual quality control testing of ultrasound systems includes a uniformity assessment of the system and each probe.	M	ACR-APPM-US	Revised

No.		Description	Risk	Reference	Change
US13.3.5	**B**	Annual quality control testing of ultrasound systems includes evaluation of geometric accuracy.		ACR-APPM-US	Revised
US13.3.6	**B**	Annual quality control testing of ultrasound systems includes evaluation of system sensitivity.		ACR-APPM-US	Revised
US13.3.7	**B**	Annual quality control testing of ultrasound systems includes evaluation of contrast resolution.		ACR-APPM-US	Revised
US13.3.8	**B**	Annual quality control testing of ultrasound systems includes evaluation of spatial resolution.		ACR-APPM-US	Revised
US13.3.9	**B**	For systems with colour, pulsed or Doppler imaging, annual quality control testing of ultrasound systems includes a qualitative evaluation of these imaging mode capabilities.		US/EC-AC-24	Revised

References

Abbreviation	Reference
ACR-APPM-US	American College of Radiology. ACR–AAPM–SIIM Technical Standard for Diagnostic Medical Physics Performance Monitoring Of Real Time Ultrasound Equipment [Internet]. [Virginia]: American College of Radiology; 1999 [rev 2021, amend 2022]. Available from: https://www.acr.org/-/media/ACR/Files/Practice-Parameters/US-Equip.pdf
PSBC-NT	Perinatal Services of BC. Nuchal Translucency Ultrasound Reporting [Internet]. British Columbia: Perinatal Services of BC; 2019. Available from: https://www.psbchealthhub.ca/
PSBC-Ob	Perinatal Services of BC. Perinatal Services BC Standards for Obstetrical Ultrasound Assessments [Internet]. British Columbia: Perinatal Services of BC; Available from: https://www.psbchealthhub.ca/
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