COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA

DIAGNOSTIC ACCREDITATION PROGRAM

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ACCREDITATION STANDARDS REVISION RECORD

Diagnostic Imaging Version 1.8

Human resources

No.	Version 1.7	Version 1.8
DHR2.1.22	**M** Nuclear medicine technologists that use SPECT/CT hybrid systems have completed computed tomography continuing education courses or an equivalent combination of education and training in physics, instrumentation and CT clinical applications.	**M** **REVISED** Nuclear medicine technologists that use SPECT/CT hybrid systems have completed computed tomography continuing education courses or an equivalent combination of education and training in physics, instrumentation, and CT clinical applications. *Intent: For technologists performing CT examinations for interpretation, DHR2.1.13 also applies.*

DHR2.1.25	**M**	Bone densitometry technologists have obtained 12 CME/CE Category 1/A credits in bone densitometry or have current or previous CBDT or CDT certification with International Society for Clinical Densitometry (ISCD).	**M**	**REVISED** Bone densitometry technologists have current or previous CBDT or CDT certification with International Society for Clinical Densitometry (ISCD) or have obtained 12 (or equivalent) CME/CE Category 1/A credits in bone densitometry. *Guidance: Any discrepancy or determination in credit equivalency awarded for bone densitometry education and/or training should be reviewed and approved by the medical director prior to registration and completion.* *Intent: Refer also to BD3.4.5 – precision assessments are also required on each technologist after completing approximately 100 patient examinations.*

Patient safety

No.	Version 1.7		Version 1.8	
DPS1.1.6	**M**	There is a procedure for reporting of examination results that may indicate non-accidental injuries, sexual abuse or exploitation of a child.	**M**	**REVISED** There is a procedure for reporting of examination results that may indicate non-accidental injuries, sexual abuse, or exploitation of a child. *Intent: DPS1.1.6 applies to both adult and pediatric patients.*

Equipment and supplies

No.	Version 1.7		Version 1.8	
DES2.1.3		Results from the acceptance testing are used to establish baseline values of operational performance.	**M**	**REVISED** Results from the acceptance testing are used to establish baseline values of operational performance.

Ultrasound

No.	Version 1.7		Version 1.8	
US12.1.2	**M**	Acceptance testing is performed after purchase and prior to clinical use of equipment that includes electrical leakage current testing of probes.	**M**	**REVISED** Acceptance testing is performed after purchase and prior to clinical use of equipment that includes electrical leakage current testing of probes. *Guidance: Results are documented in accordance with manufacturer's recommendations. Please see DES2.1.3 for additional information – measured results are required for the establishment and ongoing monitoring of operational performance.*

Echocardiography

No.	Version 1.7		Version 1.8	
EC12.1.2	**M**	Acceptance testing of the echocardiography equipment includes electrical leakage current testing of probes.	**M**	**REVISED** Acceptance testing of the echocardiography equipment includes electrical leakage current testing of probes. *Guidance: Results are documented in accordance with manufacturer's recommendations. Please see DES2.1.3 for additional information – measured results are required for the establishment and ongoing monitoring of operational performance.*

Computed tomography

No.	Version 1.7		Version 1.8	
CT13.6			**M**	**NEW** **Additional quality control procedures are established for CT systems used for lung cancer screening. At least annually, a medical physicist performs the following assessments and provides the imaging service a report:**

CT13.6.1	**M**	**NEW** At least annually, a medical physicist is available to ensure patient size-specific protocols are used, and that the (computed tomography dose index) CTDI for a standard sized patient is equal to or less than 3.0 mGy, on CT systems used for lung cancer screening. *Guidance: The medical physicist performs a survey of patient doses and is available to assist in protocol optimization initiatives.*
CT13.6.2	**M**	**NEW** At least annually, an evaluation of 3D spatial resolution, 3D reconstruction slice thickness, and spatial warping is performed for the lung cancer screening protocol using the CT scanner's median dose for a standard sized patient. *Guidance: Scan protocol needs QIBA Conformance Certification Mark by using the CTLX1 phantom. BC Cancer Lung Cancer Screening Program facilitates analysis through Accumetra.*
CT13.7	**M**	**NEW** **A lung cancer screening protocol optimization committee is established to oversee the implementation of quality assurance recommendations. The committee will meet annually to:** *Intent: The committee should be comprised of, at a minimum, a radiologist, technologist, and medical physicist.*
CT13.7.1	**M**	**NEW** Review the medical physicist patient dose report along with each CT scanner's protocol acquisition and reconstruction parameters.

CT13.7.2	**M**	**NEW** Review CT scanning practices such as limits of anatomic region length exposed, number of series, patient centering, noise on the image, etc.
CT13.7.3	**M**	**NEW** Ensure standardization of lung cancer screening CT scanning protocol nomenclature to simplify PACS and RIS management.
CT13.8	**M**	**NEW** **CT systems used for lung cancer screening require full patient demographics in order to create clinically useful dose reports.**
CT13.8.1	**M**	**NEW** Patient height and weight must be recorded at the CT console for all lung cancer screening CT scanning. *Guidance: For a screening program, patients are ambulatory. If patient height and weight information are not easily available on incoming paperwork, they can be requested from the patient as opposed to measured.*

Nuclear medicine

No.	Version 1.7		Version 1.8
NM3.3.3		**M**	**NEW** Protocols are in place for V/Q scintigraphy which include the use of 99m Tc Technegas™. *Guidance: Administration of radio-aerosols (99mTc DTPA, MDP) for ventilation studies should be limited to select patients who are unable to cooperate with 99mTc Technegas™, or in cases where temporary equipment issues limit access to 99mTc Technegas™.*

NM3.5.4	**M**	A nuclear medicine physician or delegated physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the authorized treating physician.*	**M**	**REVISED** A nuclear medicine physician or delegated physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the most responsible physician.*
NM3.5.5	**M**	The supervising physician is immediately available by phone and can respond promptly to an adverse event.	**M**	**REVISED** The most responsible physician is immediately available by phone and can respond promptly to an adverse event.
NM3.5.6	**M**	The supervising physician is able to attend the patient within three minutes.		**DELETED**
NM3.6.3	**M**	The authorized treating physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the authorized treating physician.*	**M**	**REVISED** The authorized treating physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the most responsible physician.*
NM3.6.4	**M**	The treating physician, or a physician delegate, is immediately available by phone, and can respond promptly to an adverse event.	**M**	**REVISED** The treating physician, or most responsible physician, is immediately available by phone, and can respond promptly to an adverse event.
NM3.6.5	**M**	The treating physician, or a physician delegate, is able to attend the patient within three minutes.		**DELETED**

NM3.6.8	**M**	Radiotherapy treatment procedures include ongoing patient monitoring. *Guidance: When a patient requires hospitalization as part of receiving radiotherapy, nuclear medicine staff are involved in monitoring the dose rate from the patient.*	**M**	**REVISED** Radiotherapy treatment procedures include ongoing patient monitoring when a patient requires hospitalization. *Guidance: When a patient requires hospitalization as part of receiving radiotherapy, nuclear medicine staff are involved in monitoring the dose rate from the patient.*
NM6.1.3	**M**	There are appropriate "hot" and "cold" patient washrooms.	**M**	**REVISED** There are appropriate "hot" patient washrooms.
NM6.2.1	**M**	An authorized physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the authorized physician.*	**M**	**REVISED** An authorized physician is responsible for direct supervision to treat any potential reactions or complications that may arise. *Guidance: Direct supervision means that the physician is immediately available to provide assistance and direction throughout the performance of the procedures. It does not mean the physician must be present in the room where the procedure is performed. The medical leader is responsible for determining the most responsible physician.*
NM7.2.3	**M**	Comprehensive examination details are recorded in the medical record that includes radiopharmaceutical agent being identified including the dosage, time, route of administration and the individual administering.	**M**	**REVISED** Comprehensive examination details are recorded in the medical record that includes radiopharmaceutical agent being identified including the administered activity, time, route of administration and the individual administering.
NM12.1		**Acceptance testing is performed by a medical physicist after purchase and prior to clinical use of gamma camera systems.**		**REVISED** **Acceptance testing is performed by a medical physicist after installation and prior to clinical use of gamma camera systems.** *Guidance: NM12.1 refers to single and multiple detectors, planar and tomographic, and discrete pixelated detector camera types.*

NM12.1.9	**M**	Acceptance testing includes an assessment of tomographic uniformity reconstruction.		**DELETED**
NM12.1.10	**M**	Acceptance testing includes an assessment of extrinsic uniformity. *Guidance: An extrinsic (with collimators) uniformity flood is to be acquired for 30 million counts on all collimators routinely used to verify collimator integrity.*	**M**	**REVISED** Acceptance testing includes an assessment of extrinsic flood field uniformity. *Guidance: An extrinsic (with collimators) uniformity flood is to be acquired for 30 million counts on all collimators routinely used to verify collimator integrity.*
NM12.1.13	**M**	Acceptance testing includes an assessment of a Jaszczak or equivalent phantom reconstruction. *Guidance: An equivalent phantom is defined as a phantom recommended by the manufacturer, recognized by a national or international body (e.g. ACR, IAEA), or fabricated specifically for the gamma camera system and validated by a medical physicist.*	**M**	**REVISED** Acceptance testing includes an assessment of a Jaszczak or equivalent phantom reconstruction. *Guidance: An equivalent phantom is defined as a phantom recommended by the manufacturer, recognized by a national or international body (e.g. ACR, IAEA), or fabricated specifically for the gamma camera system and validated by a medical physicist.* *Intent: The phantom reconstruction is to be used to assess the overall tomographic performance of the system, including tomographic uniformity, image contrast and spatial resolution. For systems with a CT component, the reconstruction can also be used to assess the attenuation correction and the SPECT/CT co-registration accuracy.*
NM12.1.15	**M**	Acceptance testing includes an assessment of energy resolution. *Guidance: Use the manufacturer's algorithm.*	**M**	**REVISED** Acceptance testing includes an assessment of intrinsic energy resolution. *Guidance: Use the manufacturer's algorithm.*
NM12.1.16			**M**	**NEW** Acceptance testing includes an assessment of whole-body system spatial resolution without scatter.

NM12.1.17			**M**	**NEW** Acceptance testing includes an assessment of intrinsic flood field uniformity through asymmetric (off-centered) energy windows. *Intent: To determine if hydration (water condensation) exists on the crystals.*
NM12.2.4	**M**	Acceptance testing of well counter systems includes an assessment of counting efficiency.	**M**	**REVISED** Acceptance testing of well counter systems includes an assessment of counting efficiency for each isotope, where appropriate. *Intent: Counting efficiency should be performed on each isotope that is subject to assessments of contamination/spill over.*
NM12.5.3			**M**	**NEW** Acceptance testing includes an assessment of SPECT/CT co-registration accuracy.
NM13.1.1	**M**	A room background measurement (for intrinsic floods) is performed daily.		**DELETED**
NM13.2		**Monthly quality control procedures are established and used to monitor gamma camera systems.**		**REVISED** **Routine quality control procedures are established and used to monitor gamma camera systems.**
NM13.2.2			**M**	**NEW** An intrinsic high count uniformity evaluation is performed at least quarterly.

NM13.2.3	**M**		**NEW** A Jaszczak or equivalent phantom reconstruction is performed at least quarterly. *Guidance: An equivalent phantom is defined as a phantom recommended by the manufacturer, recognized by a national or international body (e.g. ACR, IAEA), or fabricated specifically for the gamma camera system and validated by a medical physicist.* *Intent: The phantom reconstruction is to be used to assess the overall tomographic performance of the system, including tomographic uniformity, image contrast and spatial resolution.*
NM13.2.4	**M**		**NEW** An extrinsic high count uniformity evaluation is performed at least semiannually. *Guidance: An extrinsic (with collimators) uniformity flood is to be acquired for 30 million counts on all collimators routinely used to verify collimator integrity.*
NM13.2.5	**M**		**NEW** For cameras operating in planar mode only (with no tomographic capabilities), the spatial resolution and linearity is evaluated at least quarterly. *Guidance: Using a bar phantom or equivalent, perform a planar acquisition with at least 10 million counts or as recommended by manufacturer. An equivalent phantom is defined as a phantom recommended by the manufacturer, recognized by a national or international body (e.g. ACR, IAEA), or fabricated specifically for the gamma camera system and validated by a medical physicist.*
NM13.3		**Quarterly quality control procedures are established and used to monitor gamma camera systems.**	**DELETED** NM13.3 replaced by NM13.2
NM13.3.1	**M**	A tomographic uniformity reconstruction assessment is performed quarterly.	**DELETED**

NM13.3.2	**M**	An extrinsic uniformity evaluation is performed quarterly.		**DELETED**
NM13.4.1	**M**	Annual testing includes a high-count intrinsic uniformity flood evaluation, according to manufacturer's recommendations. *Guidance: Using a point source of 99mTc, acquire a 30 million count flood; compare values to acceptance testing values.*		**DELETED**
NM13.4.2	**M**	Annual testing includes a uniformity flood evaluation for radionuclides other than 99mTc, according to manufacturer's recommendations. *Guidance: An intrinsic (without collimators) uniformity flood is to be acquired for 5- 10 million counts for other radionuclides routinely used. This procedure may be performed more frequently depending on how often radionuclides other than 99mTc are used.*	**M**	**REVISED** Annual testing includes a uniformity flood evaluation for radionuclides other than 99mTc. *Guidance: An intrinsic (without collimators) uniformity flood is to be acquired for 5- 10 million counts for other radionuclides routinely used. This procedure may be performed more frequently depending on how often radionuclides other than 99mTc are used. Radionuclides can be rotated each year.* *Intent: An annual evaluation is to be performed for non-Tc99m radionuclides unless it is required by the manufacturer to assess more frequently. In that case, the manufacturer's frequency should be used (for example, at the same time as 99mTc recalibrations).*
NM13.4.3	**M**	M Annual testing includes a Jaszczak or equivalent phantom reconstruction. *Guidance: An equivalent phantom is defined as a phantom recommended by the manufacturer, recognized by a national or international body (e.g. ACR, IAEA), or fabricated specifically for the gamma camera system and validated by a medical physicist.*		**DELETED**
NM13.4.4	**M**	Annual testing includes a tomographic resolution assessment. *Guidance: Perform a SPECT of capillary tubes to assess tomographic resolution.*	**M**	**REVISED** Annual testing includes a tomographic resolution assessment. *Guidance: Perform a SPECT of capillary tubes to assess tomographic resolution in air.*

NM13.4.6		Annual testing includes an extrinsic spatial resolution assessment. *Guidance: If the assessment fails, an intrinsic spatial resolution assessment must be performed.*		**DELETED**
NM13.4.7			**M**	**NEW** For pixelated detector cameras, annual testing includes an assessment of system sensitivity.
NM13.4.8			**M**	**NEW** Annual testing includes an assessment of intrinsic flood field uniformity through asymmetric (off-centered) energy windows. *Intent: To determine if hydration (water condensation) exists on the crystals.*
NM13.5.2	**M**	For SPECT/CT hybrid systems, CT component quality control is performed according to the manufacturer's recommendations and using the CT phantom supplied with the system. *Guidance: The frequency of testing is dependent on the manufacturer's recommendations and must include an image co-registration assessment.*	**M**	**REVISED** For SPECT/CT hybrid systems, CT component quality control is performed according to the manufacturer's recommendations and using the CT phantom supplied with the system. *Guidance: The frequency of testing is dependent on the manufacturer's recommendations.*
NM13.5.3			**M**	**NEW** For SPECT/CT hybrid systems, an assessment of SPECT/CT co-registration accuracy is performed at least annually or as recommended by the manufacturer.
NM13.6.1	**M**	Daily quality control testing of well counter systems includes a background activity measurement each time the well counter is used.	**M**	**REVISED** Daily quality control testing of well counter systems includes a background activity measurement each time the well counter is used. *Guidance: To be performed daily or each day the well counter system is in use.*
NM13.16.4	**M**	The pH of preparations is checked when recommended by the manufacturer (e.g. sulfur colloid).	**M**	**REVISED** The pH of preparations is checked when recommended by the manufacturer.

NM14.0	**The radiopharmacy is maintained in a manner that minimizes contamination.**	**M**	**REVISED** **The radiopharmacy is maintained in a manner that minimizes contamination.** *Intent: All effort should be made to refer and adhere to industry best practice in the design and construction of a new radiopharmacy.*
NM14.1.4	Fume hoods, laminar flow hoods and biological safety cabinets contain only items necessary for the task completed within them. *Guidance: Minimizing the number of items within hoods and safety cabinets will improve air flow and reduce air turbulence.*	**M**	**REVISED** Fume hoods, laminar flow hoods and biological safety cabinets contain only items necessary for the task completed within them. *Guidance: Minimizing the number of items within hoods and safety cabinets will improve air flow and reduce air turbulence.*

Nuclear medicine radiation safety

No.	Version 1.7		Version 1.8	
NMRS1.1.3	**M**	Policies and procedures are in place to protect pregnant staff.	**M**	**REVISED** Policies and procedures are in place to protect pregnant and/or breastfeeding staff.
NMRS1.2.1	**M**	All nuclear medicine staff, together with personnel (e.g. nurses) who routinely participate in radiation procedures, and others, likely to receive a radiation dose in excess of the action level specified by radiation protection guidelines are declared radiation workers and their radiation exposures are monitored with the use of a personal dosimeter.	**M**	**REVISED** All nuclear medicine staff, together with personnel (e.g. nurses) who routinely participate in radiation procedures, and others, likely to receive an effective radiation dose in excess of 1 mSv per year, and in accordance with CNSC guidelines, are declared nuclear energy workers and their occupational radiation exposures are monitored with the use of a personal dosimeter. *Guidance: The current action level set by WorkSafe BC for monitoring ionizing radiation exposure is 1 mSv per year. https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-07-noise-vibration-radiation-and-temperature#SectionNumber:7.19*

NMRS1.2.2	**M**	If extremities are likely to be exposed to significantly higher doses; additional dosimeters are worn at those locations on the body. *Guidance: Monitoring programs for external exposure to nuclear substances are designed according to the radiological hazards specific to each facility (e.g. extremity dosimeters may be required when handling beta emitters).*	**M**	**REVISED** If extremities are likely to be exposed to significantly higher doses then additional dosimeters are to be worn at those locations on the body or in accordance with CNSC guidelines. *Guidance: Monitoring programs for external exposure to nuclear substances are designed according to the radiological hazards specific to each facility (e.g. extremity dosimeters may be required when handling beta emitters).*
NMRS2.2.3			**M**	**NEW** Policies and procedures are in place to protect breastfeeding patients and infants.
NMRS3.1.1	**M**	The nuclear medicine service operates in compliance with the Canadian Nuclear Safety Commission (CNSC) regulations for medical diagnostic and/or therapeutic use of radioisotopes. *Guidance: Compliance includes but is not limited to a current CNSC license and the storage, handling, disposal of radioactive material, etc.*	**M**	**REVISED** The nuclear medicine service operates in accordance with the Canadian Nuclear Safety Commission (CNSC) regulations for medical diagnostic and/or therapeutic use of radioisotopes. Current CNSC license(s) must be made available to the DAP for review upon request.
NMRS3.2.4	**M**	There is a protocol for reporting the theft or loss of radioactive materials based on types and amounts of materials and any risk to the public.		**DELETED**
NMRS3.3.1	**M**	A nuclear medicine service that ships or receives biohazardous or radioactive materials has staff certified in the Transportation of Dangerous Goods (TDG).	**M**	**REVISED** A nuclear medicine service that ships or receives biohazardous or radioactive materials has staff certified in the Transportation of Dangerous Goods (TDG). All shipping and receiving of radioactive materials are performed in accordance with TDG regulations.
NMRS3.3.2	**M**	The shipping and receiving of radioactive materials is performed in accordance with TDG regulations.		**DELETED**
NMRS3.3.3	**M**	Staff is knowledgeable about classification, shipping names, and the use of schedules 1, 2, and 3.		**DELETED**

NMRS3.3.4	**M**	Staff is knowledgeable about documentation, safety marks, certification safety marks and safety standards.		**DELETED**
NMRS3.3.5	**M**	Staff is knowledgeable about emergency response assistance plan and reporting requirements.		**DELETED**
NMRS3.3.6	**M**	Staff is knowledgeable about safe handling, nature, and characteristics.		**DELETED**
NMRS3.3.7	**M**	Staff is knowledgeable about proper equipment use.		**DELETED**
NMRS3.3.8	**M**	Staff is knowledgeable about emergency measures.		**DELETED**
NMRS3.3.9	**M**	Radioactive shipments are delivered directly to the Nuclear Medicine department in a locked designated area.		**DELETED**
NMRS3.3.10	**M**	If any radioactive material is transferred to any other hospital or clinic, that institution shall have an appropriate Canadian Nuclear Safety Commission license for use of that material.		**DELETED**
NMRS3.4.1	**M**	Staff routinely monitor their hands for possible contamination; at a minimum, hands are monitored prior to leaving the radiopharmacy lab.	**M**	**REVISED** Staff adhere to monitoring and decontamination procedures that have been approved by Canadian Nuclear Safety Commission (CNSC). *Intent: Procedures approved by CNSC include procedures for hand monitoring, performing area surveys and wipe tests, performing leak tests for sealed sources, reporting excessive radiation exposures, and performing thyroid screening for staff who handle volatile radioiodine.*
NMRS3.4.2	**M**	Area surveys and wipe tests are performed, that include tolerance limits and response to trigger levels.		**DELETED**
NMRS3.4.3	**M**	There is a sealed source wipe/leak testing protocol for semi-annual testing.		**DELETED**
NMRS3.4.4	**M**	There is a protocol for reporting excessive radiation exposures (e.g. spills, to staff or public) including trigger levels and reporting requirements.		**DELETED**

NMRS3.4.6	**M**	A thyroid screening program is in place for staff who handle volatile radioiodine		**DELETED**
NMRS4.2.1	**M**	Radioactive materials are disposed of in accordance with Canadian Nuclear Safety Commission (CNSC) regulations.	**M**	**REVISED** Radioactive materials are disposed of in accordance with Canadian Nuclear Safety Commission (CNSC) regulations and CNSC license.
NMRS4.2.2	**M**	Records of radioactive waste disposal are maintained in accordance with Canadian Nuclear Safety Commission (CNSC) regulations.	**M**	**REVISED** Records of radioactive waste disposal are maintained in accordance with Canadian Nuclear Safety Commission (CNSC) regulations and CNSC license.

Bone densitometry

No.	Version 1.7	Version 1.8	
BD3.2.4	**M**	**M**	**NEW** Protocol information includes but is not limited to a description of the application of male and female normative database T-score and Z-score for Transgender and Gender Non-conforming (TGNC) Individuals and gender non-binary individuals. *Guidance: Transgender and Gender Non-conforming (TGNC) Individuals T-scores are calculated using uniform Caucasian (non-race adjusted) female normative database for all transgender individuals of all ethnic groups. Z-scores should be calculated using the normative database that matches the gender identity of the individual. If requested by the provider, Z-scores may also be calculated using the normative database that matches the sex recorded at birth. In gender-non-binary individuals, the normative database that matches the sex recorded at birth should be used. See The International Society for Clinical Densitometry 2019 Official Positions - Adult. Retrievable from: https://iscd.org/learn/official-positions/adult-positions/*

BD3.3.3	**M**	Pediatric protocols are documented and available to staff.	**M**	**REVISED** Pediatric protocols are documented and available to staff. *Guidance: BD3.3.3 is applicable only to pediatric facilities or bone densitometry services offering pediatric studies.*
BD3.3.5			**M**	**NEW** Protocols are in place for when trabecular bone scores are obtained.
BD3.3.6			**M**	**NEW** Protocols are in place for when vertebral fracture assessment is performed.
BD3.3.7			**M**	**NEW** Protocols are in place for assessing fracture risk.
BD3.3.8			**M**	**NEW** Protocols are in place for when whole body composition is performed
BD3.4.2		The reproducibility of BMD measurements is assessed after each serial examination. *Guidance: The measured area of sequential examinations should be 2% or less, 90% of the time.*		**REVISED** The reproducibility of BMD measurements is assessed after each serial examination.
BD3.4.7	**M**	Precision assessments are performed for each technologist once every three years.		**REVISED** Precision assessments are performed for each technologist once every three years or if a technologist's skill level has changed.
BD8.2.4	**M**	The body of a first-time and/or serial (follow-up) report includes adult or pediatric diagnostic category (e.g. normal, reduced, low bone mass, osteoporosis, etc.). *Guidance: Adult diagnostic categorization by the World Health Organization (WHO) criteria is relevant to postmenopausal females and men over the age of 50. In this instance T scores are to be used. For pediatrics, men under the age of 50, and premenopausal women: Z scores are used to determine the diagnostic category.*	**M**	**REVISED** The body of a first-time and/or serial (follow-up) report includes adult or pediatric diagnostic category (e.g. normal, low bone mass, osteoporosis, etc.).

BD8.2.6	**M**	The body of a first-time and/or serial (follow-up) report includes BMD data. *Guidance: BMD is reported as grams per centimeter squared. T scores should only be used in men over the age 50 and postmenopausal women. In all other instances, Z-scores are used and WHO diagnostic criteria do not apply.*	**M**	**REVISED** The body of a first-time and/or serial (follow-up) report includes BMD data reported in g/cm2 on all measured skeletal sites along with T- and Z- scores, where appropriate. *Guidance: BMD is reported as grams per centimeter squared. T scores should only be used in men over the age 50 and postmenopausal women. In all other instances, Z-scores are used and WHO diagnostic criteria do not apply.*
BD8.2.8	**M**	The body of a first-time and/or serial (follow-up) report includes the impression and/or comment section of the report. *Guidance: A narrative section on interpretation and implications of BMD results is provided. This is not meant to be a restatement of data.*	**M**	**REVISED** The body of a first-time and/or serial (follow-up) report includes the impression and/or comment section of the report. *Guidance: A narrative section on interpretation and implications of BMD results is provided. A recommendation for the necessity and timing of the next BMD study should be commented on.*
BD8.2.10	**M**	The body of a serial (follow-up) report also includes changes in density. *Guidance: The description of density change is to include the absolute density change in g/cm2. The percentage change may be included for clarity.*	**M**	**REVISED** The body of a serial (follow-up) report also includes changes in density in both g/cm2 and percentage.

BD8.2.11	**M**	The body of a serial (follow-up) report also includes least significant change (LSC) and statistical significance. *Guidance: Each facility must determine precision error using the LSC methodology and use this value when determining statistical significance. Statistical significance is to be reported for each BMD skeletal site comparison, indicating whether the difference is considered significant at a 95% level of confidence. The LSC is stated in absolute values (g/cm2) for each skeletal site for which change is reported*	**M**	**REVISED** The body of a serial (follow-up) report also includes least significant change (LSC) and statistical significance for each measured BMD skeletal site comparison. *Guidance: Each facility must determine precision error using the ISCD methodology and use this value when determining the significance of change in serial DXA determinations. Statistical significance is to be reported for each BMD skeletal site comparison, indicating whether the difference is considered significant at a 95% level of confidence. The LSC is stated in absolute values (g/cm2) for each skeletal site for which change is reported. See The International Society for Clinical Densitometry 2019 Official Positions - Adult. Retrievable from: https://iscd.org/learn/official-positions/adult-positions/* *The minimum acceptable least significant change for a facility is:* *Lumbar Spine: LSC =5.3%* *Total Hip: LSC = 5.0%* *Femoral Neck: LSC = 6.9%* *If a facility has more than one technologist, an average precision error combining data from all technologists should be used to establish precision error and LSC for the facility, provided the precision error for each technologist is within a pre-established range of acceptable performance. Please see BD3.4.8.*

BD8.2.12			**M**	**NEW** The body of a serial (follow-up) report also includes a statement regarding which previous or baseline study and ROI is being used for comparison, including the date of the previous or baseline study.
BD11.1.1	**M**	The service has a height measuring device to accurately measure patient height. *Guidance: It is strongly recommended that the imaging service use a stadiometer for obtaining height measurements.*	**M**	**REVISED** The service has a height measuring device to accurately measure patient height to the nearest 0.5 cm. *Guidance: It is strongly recommended that the imaging service use a stadiometer for obtaining height measurements.*
BD11.2.1	**M**	A cross-calibration of the DXA system is performed when changing hardware, but not the entire system.	**M**	**REVISED** A protocol is in place for when a cross-calibration of the DXA system is required (e.g. when significant changes to hardware, technology and system(s) occur.) The protocol should include procedures for performing cross-calibration and appropriately calculating LSC. *Guidance: Significant changes include, but are not limited to:* • *Changes in hardware* • *System replacement* • *Changes in technology*
BD11.2.2	**M**	A cross-calibration of the DXA system is performed when replacing the DXA system with the same manufacturer and model using the same technology.		**DELETED**
BD11.2.3	**M**	A cross-calibration of the DXA system is performed when replacing the DXA system with one from the same manufacturer using a different technology.		**DELETED**
BD11.2.4	**M**	A cross-calibration of the DXA system is performed when replacing the DXA system with one from a different manufacturer.		**DELETED**

BD11.2.5	**M**	If a cross-calibration assessment is not performed; quantitative comparisons to the prior DXA system are not made. *Intent: Inter-system quantitative comparisons can only be made if a cross-calibration is performed for each skeletal site measured.*	**M**	**REVISED** Comparisons to a prior DXA system cannot be made if a cross-calibration assessment is not performed when required. *Intent: Inter-system quantitative and qualitative comparisons can only be made if a cross-calibration is performed for each skeletal site measured.*
BD13.1.4	**M**	The height and weight measuring devices are tested monthly, where applicable.	**M**	**REVISED** The height and weight measuring devices are tested monthly.