

October 20, 2017

Regarding the College of Physicians and Surgeons of Ontario “INDEPENDENT HEALTH FACILITIES Clinical Practice Parameters and Facility Standards, Diagnostic Imaging – 5th Edition, August 2017”, which is out for consultation.

Thank you for the opportunity to provide comments on the above-noted document – Specifically those sections pertaining to Bone Mineral Densitometry (BMD) services in Ontario. These comments are from the OAR’s Canadian Bone Mineral Densitometry (CBMD) Facility Accreditation Advisory Committee Executive.

Section 1.9.1 MRTs (Medical Radiation Technologists) Performing Bone Mineral Densitometry

On behalf the OAR CBMD Facility Accreditation Program and its continuing education program, we would like to commend you for Section 1.9.1 MRTs Performing Bone Mineral Densitometry, ***which now requires that MRTs responsible for performing BMD must complete specific courses, which fulfil the requirements of the OAR CBMD Facility Accreditation Program.***

The OAR CBMD Program adheres to the premise that there can be no accreditation without on-going education and that education to be effective and current, must continually evolve. Close to 400 MRTs across Canada, the vast majority of who are in Ontario, have earned their five-year ADT designation, at least once since the program began in 2010. The OAR CBMD ADT course is accredited by Canadian Association of Medical Radiation Technologists (CAMRT). The CBMD course offers technologists the opportunity to work with/learn from radiologists, medical physicists and expert BMD MRTs in a formal continuing medical education setting. It also provides the opportunity for participants to ask questions of these experts, whether they are in the room or participating by live webcast.

There are no other continuing education courses of this calibre anywhere in Canada. Large numbers of MRTs register for every CBMD CME course. More than 1500 MRTs have participated in 10 OAR CBMD course since the program first began in 2007. With the introduction of live webcasting of these programs in late 2012, participation continued to increase and included MRTs from coast to coast. A copy of a typical CBMD CME course outline is attached.

No other program, but the OAR CBMD Facility Accreditation Program also provides technologists with such an extensive cadre of resource materials, manuals, training videos and quality tools including:

- Sample Policies and Procedures Manual
- Positioning Manual
- Positioning Training Videos

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- Bone Density Precision Calculator
- BMD Shewhart Test Tool
- NHANES III Male to Female Conversion Tool
- Tips on Passing the ADT Practical Exam Booklet

Many technologists are also excited to take the new Advanced CBMD program to be launched in 2018. This new program is for those MRTs who have already earned their ADT designation.

The ADT is not a certification designation. This five-year designation is for Accredited Densitometry Technologist. The designation is important because it signifies that technologists who have earned the designation, meet the high standards set by the CBMD Program for positioning and scanning, working with medical physicists to ensure development of, and adherence to, QA/QC standards and policies and procedures for BMD services provided by their BMD facility/department. ADT is a requirement for technologists working in OAR CBMD accredited clinics, however, a number of technologists outside of Ontario have also earned their ADT designation, demonstrating a growing commitment amongst technologists across Canada to providing the highest standards of BMD services.

Certification programs do not address technologists' QA/QC knowledge, practices and application. The CBMD program goes beyond certification and requires the highest standards for scanning, recording patient history and all aspects of QA/QC including precision studies, QA/QC policies and procedures, equipment maintenance, ongoing CME etc., which is validated by the medical physicist and a CBMD technologist reviewer. Medical physicist validation is done during the physicist visit, an integral part of the OAR CBMD Facility Accreditation Program. CBMD technologist reviewer validation is done during the accreditation process with a rigorous review of submitted patient studies, patient questionnaires and other relevant materials and is also addressed by a diagnostic radiologist reviewer as part of the overall approval process.

The ADT program, much like the OAR CBMD Facility Accreditation Program was developed out of necessity. In 2010, the Canadian Society of Clinical Densitometry (CSCD) announced that it would no longer offer its BMD educational certification program. The only other BMD certification being offered was by the International Society of Clinical Densitometry (ISCD), however, much of its content was not relevant to Canadian health care and continued to digress from Canadian standards over time.

The OAR felt the termination of the CSCD created a concerning gap for technologists interested in maintaining their BMD credentials and created the OAR CBMD Accredited Densitometry Technologists course and designation. Since this time, other programs have emerged offering certification – specifically the Ontario Association of Medical Radiation Sciences (OAMRS) Bone Mineral Densitometry online programs and a modified ISCD program. It should be noted, however, that the OAMRS supports ISCD. It has been the experience of the OAR CBMD Facility Accreditation Program Review Team that technologists who have not earned the ADT designation do not do as well in the accreditation program positioning and scanning requirements as those MRTs who have earned the designation. This experience is documented in examination performance and the quality of practical work submitted and is tracked accordingly by the CBMD as part of our management overview for continuous quality improvements.

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It is a **mandatory** requirement of the OAR CBMD Facility Accreditation Program that MRTs providing BMD services in an accredited facility have their ADT designation. We recognize, however, that it is not reasonable/possible for sites to have all of their technologists performing BMD to take OAR CBMD training at the same time. To this end, we require that at least one MRT have their ADT and that this technologist supervise the work of the other MRTs until they earn their ADT designation.

Since the CPSO is requiring facilities providing BMD services be accredited by 2020, we would recommend that OAMRS and ISCD certified technologists trained prior to 2018 be “grandfathered” into the ADT program with the understanding that they earn, or be in the process of earning their CBMD ADT designation by 2020. Since the CBMD ADT Course, as well as the OAR CBMD Advanced ADT courses will be offered in 2018, technologists should have no difficulty in obtaining the appropriate training required for facility accreditation.

Technologists play a vital role in the accreditation process and deserve the opportunity to validate their competency. The ADT exam and practical assignment provide this assessment. The CBMD team recognizes that MRTs need to maintain BMD continuing education courses to maintain their designation and accepts a broad spectrum of courses in osteoporosis and is developing a series of online courses, in consultation with CAMRT, to ensure that appropriate Canadian training is available.

The value of the CBMD Facility Accreditation Program and CBMD courses for technologists was validated by an evaluation of the OAR CBMD Facility Accreditation Pilot Project, which was completed in 2011 with the involvement of University of Toronto Osteoporosis researchers, and which concluded that the program has had a ***profound influence on improving the quality of scanning services provided by the participating sites between 2008 and 2010.*** Quality scanning is needed for better diagnosis and on-going patient management and care. The widespread adherence to a national reporting standard was also noted as a major change in quality improvement.

The ADT designation has become widely recognized and is actively sought by technologists and those technologists who do not pass the ADT exam are quick to sign up for future courses to ensure that they ultimately earn the designation. Continued improvement in the quality of BMD services and QA/QC provided by MRTs who have participated in OAR CBMD continuing education programs is repeatedly seen in the quality of site applications submitted for accreditation.

It is important to note that the CBMD Continuing Medical Education Program also provides significant training for radiologists and nuclear medicine physicians reporting BMD. To date, 1500 doctors have participated in 14 CBMD courses. Each year course content evolved and in 2015 the first workstation course simulating a PACS/RIS working environment was held for radiologists and nuclear medicine physicians wanting to learn to apply the OAR’s Canadian Bone Mineral Densitometry Reporting Standard to produce consistent reports. The course was also designed to demonstrate implementing the Canadian Association of Radiologists’ Technical Standards for Bone Mineral Densitometry Reporting 2013 to achieve standardization in reporting of examination results and using the guidelines in the reporting of diagnostic category and 10-year absolute fracture risk.

A number of significant tools have also been developed for course participants, including APPs for I-Phone and Androids of a T-score converter and an interactive curve for fracture risk and the CBMD Report Builder tool

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identifying important parameters that should be considered in the BMD Report. A training video on how to use the Report Builder Tool was also prepared and made available on the OAR website.

In 2017, the educational bar was raised yet again, with the introduction of an optional CBMD Reporting Proficiency Exam. Participants who chose to write the exam and achieved a minimum passing grade of 90% received a proficiency certificate. A copy of a typical CBMD CME physician workstation course outline is attached.

It is also important to note that the CBMD Program also provides training for medical physicists who are interested in joining the Facility Accreditation Program. Specialized workshops are held in conjunction with ADT CME events and those who enter the program are mentored/supervised in the field, by a senior medical physicists working in the program. This includes senior medical physicists supervising new recruits at site visits. Once the senior medical physicist is satisfied that the new recruit meets the highest standards set by the CBMD program, the new recruit joins the medical physicists' team. In addition, on-going spot checks of all medical physicists reports are conducted by senior members of the team, once they have actively joined the program. The program's Chief Medical Physicist has prepared a comprehensive policies and procedures manual for all members of the medical physicist team, in keeping with the highest standards set by the CBMD program.

Section 1.11 Medical Physicists

We would also like to comment on the sections pertaining to medical physicists and their involvement with BMD services in Ontario.

Let us first preface our comments with a brief summary of the mandate of this program and role of the medical physicist in the OAR CBMD Facility Accreditation. Medical physicists are the specialists who helped to pioneer this program since its inception as a "pilot project" in 2007. They are well-versed in the tremendous impact it has had on improving the quality of BMD services in Ontario and by extension, ensuring the highest standards of patient care. These medical physicists have also had a great deal of experience in mammography accreditation and have applied that expertise and the related quality principles to the CBMD program.

This program evolved out of necessity and a commitment to ensure the highest standard of BMD examinations for Ontarians. It developed as a two-pronged program – a facility quality control and quality assurance program and a continuing medical education component for medical specialists and technologists providing BMD services.

The goal was to establish an Ontario BMD Quality Assurance Program conceptually similar to the Ontario Breast Screening Program (OBSP), which integrates the best of imaging modality accreditation programs with the on-going QA of services like the OBSP once accreditation has been achieved.

Medical Physicists Play Critical Role in Facility Accreditation

The role of the medical physicist is seen by the OAR as an integral role, not only in the quality assurance and quality control programs as they apply to technologists and equipment factors, but also for the role of independently validating the technical results for both machine and staff precision.

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Good precision is an essential component for quality bone densitometry. Lower precision error allows earlier and more reliable detection of the changes in bone density that occurs in patients with osteoporosis, or at risk of becoming osteoporotic.

It is important for reporting physicians to have confidence in the technical information on precision for both the spine and femur to monitor BMD in patients. Medical physicists play a critical role in ensuring that the highest levels of technical precision are maintained for BMD testing facilities.

Prior to the OAR CBMD program, medical physicists were not involved in any aspect of BMD equipment QC/QA. Prior to the creation of the program, facilities performing precision studies were virtually non-existent in Ontario.

The physicist component of the OAR CBMD Facility Accreditation Program is patterned after the models currently in use by both the CAR's mammography accreditation process and OBSP. It is the feature that makes the CBMD Facility Accreditation Program unique and sets it apart from other programs, such as the International Society of Clinical Densitometry (ISCD). ISCD programs are web-based with no on-site physicist validation, a key determinant of quality assurance and quality control.

All OAR CBMD accredited sites must undergo regular quality control/assurance testing to ensure the highest precision standards for both technologists and equipment. The physicist also plays an important role teaching and mentoring site technologists about precision and supervising their precision performance for the accreditation process in consultation with local diagnostic radiologists.

After a thorough review of the aforementioned document, we have several concerns:

Regarding Section 1.11 Medical Physicists

1. The proposed definition of a Qualified Medical Physicist is too restrictive and would prohibit physicists with relevant sub-specialty training from working in this area. We strongly recommend that the definition **must be broadened** to include those certified in either Medical Physics or Radiation Oncology Physics.

Regarding Section 2.3.5 Bone Mineral Densitometry

1. Equipment and Quality Control activities must meet Canadian BMD Accreditation (CBMD) requirements and be accredited by ISCD or CBMD by January 1, 2020.

We commend the CPSO for requiring mandatory accreditation, but are gravely concerned that ISCD accreditation is listed as an option along with CBMD accreditation, particularly when this section states that equipment and quality control activities must meet CBMD requirements. The reference to ISCD must be removed for the following reasons:

- **It is important to note that the CBMD program was developed and managed by radiologists and nuclear medicine physicians and that these doctors report about 98% of all BMD exams.**

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- ISCD accreditation does not require the use of medical physicists
- ISCD accreditation requirements for technologists request scan submissions that are contrary to Canadian standards – for example, the forearm scan and there is no medical physicist validation of precision and LSC
- ISCD does not follow the “*Canadian Association of Radiologists Technical Standards for Bone Mineral Densitometry Reporting*”, *Siminoski et al, CARJ 64 (2013) 281-294-6-*
- **To ensure the highest standards of QA/QC and quality patient care, there can be only one standard for reporting BMD in Ontario – the Canadian Standard**
- ISCD does offer facility accreditation outside the United States

Regarding bone mineral density in section 2.3.5 the statement, “**The Qualified Medical Physicist may assist with this**” and this seems to refer to the technologist precision study only, indicates a serious minimalist/optional approach to physicist involvement in BMD program accreditation.

This runs completely counter to the content of section 2.3.4, which states that a qualified physicist must be involved in mammography accreditation. We believe that alignment between mammography and BMD needs to be consistent.

Note that the accreditation in BMD programs requires as much quality input as does mammography and perhaps even more since the measurements from DXA are quantitative and require precision down to 0.5% and even less than that.

The record of the OAR CBMD facility accreditation program, shows that physicist site visits have improved machine precision. There are examples where physicists visited a site for the first time and machine precision was way out of this range.

In one example the physicist detected a drift of 2.5% that had occurred over a period of about 5 years and would have gone undetected had physicists not been introduced to the CBMD program. There are also other lesser examples on DXA machine instability that went unrecognized and unreported before a physicist visited the site, detected the problem and had it resolved. There are also other examples of misapplication of the phantom for the Shewhart plotting. These have a direct impact on the quality of patient care.

The OAR CBMD Facility Accreditation Program and its physics group have developed a very reliable program **mandating mandatory medical physicist participation in BMD site accreditation**. The OAR CBMD medical physics group trains other medical physicists to become competent in the evaluation of a BMD program and declares them competent after a specific set of criteria have been met. These can be found in the OAR CBMD Policy Manual for Medical Physicists. Only medical physicists who meet these requirements are permitted to join the OAR CBMD Facility Accreditation Program, thereby providing a high level of quality.

It should be noted, as with mammography medical physicists in subspecialties such as imaging, radiotherapy and other areas are all acceptable if they pass the training and are declared competent within the OAR CBMD Facility Accreditation Program.

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The proposed watering down of the physicist requirement in the CPSO document, as it pertains to BMD services, can only lead to an erosion of impartial quality oversight that will result in serious mistakes such as those mentioned above. Such mistakes can also lead to litigation. Most importantly, it can result in an avoidable reduction in patient care quality.

Specific Recommendations:

1. Change Section 1.9.1 of the draft document as follows:

MRTs responsible for performing BMD must complete specific courses, which fulfil the requirements of the OAR CBMD Facility Accreditation Program. It is recommended that OAMRS and ISCD certified technologists who have earned their certification prior to 2018 be “grandfathered” into the ADT program with the understanding that they earn, or be in the process of earning their OAR CBMD ADT designation by 2020. Since the OAR CBMD ADT Course, as well as the OAR CBMD Advanced ADT courses will be offered in 2018, technologists should have no difficulty in obtaining the appropriate training required for facility accreditation.

2. Change section 1.11 of the draft document as follows:

The use of a Qualified Medical Physicist as a consultant is encouraged. It is important to note that the OAR CBMD Facility Accreditation Program requires the **mandatory involvement** of medical physicists.

“A Qualified Medical Physicist is an individual who is competent to practice independently in one or more of the subfields in medical physics. The Qualified Medical Physicist should be certified in the appropriate subfield(s) by the American Board of Radiology (ABR), the Canadian College of Physics in Medicine, or by the American Board of Medical Physics (ABMP).”

The most appropriate subfield of medical physics for this document is Diagnostic Medical Physics. (Other certification including Medical Physics, Radiation Oncology Physics, Radiological Physics, Diagnostic Radiological Physics, and Diagnostic Imaging Physics may also be acceptable).

In Canada, listings of certified medical physicists can be obtained from the Canadian College of Physicists in Medicine. www.ccpm.org

3. Change section 2.3.5 of the draft document as follows:

“Equipment and Quality Control activities must meet Canadian BMD Accreditation Program (CBMD) requirements and **the BMD facility must be accredited by the OAR CBMD Facility Accreditation Program by January 1, 2020.**”

In keeping with the requirements of the OAR CBMD Facility Accreditation Program, particularly the medical physicist’s site visit, **the CBMD medical physicist assigned to the site undergoing accreditation must be consulted/involved in equipment and quality control activities.**

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We would be pleased to answer any questions that you may have regarding the comments above and thank you for the opportunity to comment on this draft document.

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Ontario Association of Radiologists

