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2013 Pediatric Position Development Conference

2013 Pediatric Position Development Conference: Executive Summary and Reflections

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Abstract

The International Society for Clinical Densitometry (ISCD) convened its second Pediatric Position Development Conference (PDC) on October 2–3, 2013 in Baltimore, MD. The conference was co-sponsored by the American Society for Bone and Mineral Research (ASBMR) and was held immediately before their annual meeting. The aim of a PDC is to make recommendations for standards in the field of bone densitometry. The recommendations address issues such as quality control, data acquisition and analysis, and the interpretation and reporting of bone densitometric results. In 2007, ISCD convened its first Pediatric PDC to address issues specific to skeletal health assessments in children and adolescents. The 2013 Pediatric PDC focused on advances in the field since that initial conference that would lead to revisions of the original positions. Topics for consideration were developed by the ISCD and its Scientific Advisory Committee. Clinically relevant questions related to each topic were assigned to task forces for a comprehensive review of the medical literature and subsequent presentation of reports to an international panel of experts. Expert panelists included representatives from both the ISCD and ASBMR. The recommendations of the PDC Expert Panel were subsequently reviewed by the ISCD Board of Directors and positions accepted by majority vote. The approved recommendations became the Official Positions of the ISCD. The positions are to be submitted to the ASBMR for its consideration for endorsement. Topics considered at the Pediatric PDC included fracture prediction and definition of osteoporosis, dual-energy X-ray absorptiometry assessment in chronic diseases that may affect the skeleton, dual-energy X-ray absorptiometry interpretation and reporting, quantitative computed tomography measurements, and densitometry in infants and young children. We discuss potential implications of the new recommendations and factors leading to a change in the wording of these positions, considering the science that has evolved over the past 6 yr.

Key Word: Children; densitometry; osteoporosis; pediatrics.

Introduction

The Official Positions of the International Society for Densitometry (ISCD) provide official recommendations for the use of bone densitometry for both clinical care and research. Once established, Official Positions are reevaluated periodically at a Position Development Conferences (PDC), as necessitated by advances in the field. The Official Positions are widely used by clinicians and technologists as a reference for quality control, acquisition, analysis, interpretation, and reporting, and form the basis for the material taught in the ISCD Bone Densitometry Courses. The Official Positions resulting from any PDC provide clinicians, technologists, and investigators with a reference standard for skeletal health assessments *(1)*. Because the field of bone densitometry, and in particular the pediatric bone health field, is new and evolving, some clinically important issues that were addressed at the PDC are not accompanied by robust medical evidence and are based largely on expert opinion. Despite the limitations inherent in any subjective process such as a PDC, the

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ISCD, and the American Society for Bone and Mineral Research (ASBMR), the co-sponsors of the Pediatric PDC, believe that it is essential to provide clinicians and technologists with the best distillation of current knowledge in the discipline of bone densitometry, which is the primary aim of a PDC. The Official Positions and accompanying commentary documents also provide an important focus for the scientific community to consider further research to resolve areas of controversy and fill gaps in knowledge.

As for our first Pediatric PDC in 2007, the topics addressed at the recent 2013 conference were selected by the ISCD and the Pediatric Scientific Advisory Committee. Four of the topics had been addressed previously at the initial PDC in 2007. For the first time, we explored potential uses of bone densitometry measurements in infants and young children, a topic of growing interest in the pediatric bone field *(2)*. The topic addressed by each task force was deemed to be clinically relevant, have a perceived need for an Official Position because of lack of overwhelming medical evidence or its controversial nature, and have a reasonable likelihood of achieving a consensus by the Expert Panel *(3)*. The 5 topic areas included: fracture prediction and definition of osteoporosis, DXA assessment in chronic diseases that may affect the skeleton, DXA interpretation and reporting, quantitative computed tomography (QCT) measurements, and densitometry in infants and young children.

The procedures followed at the second Pediatric PDC were similar to those followed previously *(1)*. The 3 co-chairs (CMG, MBL, and BSZ) oversaw the planning and conduct of the 2013 Pediatric PDC. Experts in pediatric skeletal health were identified to serve as a task force chair for each area of focus.

The Task Force members were then selected by each task force chair. The Task force members performed a medical literature search relevant to their area of focus using a method modified from that used by the Cochrane reviews *(4)*. Appropriate articles were selected from these searches for further review. Each Task Force submitted a draft of their Official Positions that were presented and discussed at the PDC in Baltimore, MD.

International experts in the field of bone densitometry were invited to serve as expert panelists. Ten accepted the invitation; 7 were able to attend the PDC in Baltimore, MD. The Expert Panel included individuals from throughout the world, and representatives chosen by the ASBMR or ISCD. The role of the Expert Panel was to review the proposed Official Positions, cast a preliminary vote before the conference to identify areas of controversy, and then re-vote after hearing presentations and the discussion at the PDC. The PDC moderators experienced in the RAND (Santa Monica, California)/University of California at Los Angeles (UCLA) Appropriateness Method were selected by the co-chairs. In collaboration with clinicians at UCLA, the RAND Corporation developed this method to synthesize the scientific literature and expert opinion on health care topics. The 2 moderators (CBL and MBL) assisted the Task Force chairs in the wording and refinement of statements derived from the task forces. They also led the discussion and rating by the Expert Panel during the October 3, 2013 conference.

All Official Positions for the 2013 PDC were rated by the Expert Panel with respect to the following categories: appropriateness, quality of evidence, strength of recommendation, and application. Statements that the Expert Panel rated as ''appropriate without disagreement'' according to criteria derived from the RAND/UCLA Appropriateness Method *(5)* were referred to the ISCD Board of Directors with a recommendation to become Official Positions. A statement was defined as ''appropriate'' when the expected health benefit exceeded the expected negative consequences such that it was worth performing *(5)*. Recommended Official Positions that were rated by the Expert Panel were then rated according to the necessity to perform in all circumstances (i.e., whether the health benefits outweighed the risks to such an extent that it must be offered to all patients) *(5)*. The scale for quality of evidence included: good (evidence included consistent results from well-designed, well-conducted studies in representative populations), fair (evidence is sufficient to determine effects on outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies), or poor (evidence is insufficient to assess the effects on outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information). The criteria used to define strength of recommendations included: A (strong recommendation supported by the evidence), B (supported by some evidence), and C (supported primarily by expert opinion). The application of the recommendations was either W (worldwide recommendation) or L (application of recommendation varies according to local requirements).

The preliminary Official Positions were presented by each task force chair or their representative with supportive evidence in a morning session that was open to the public and attended by ISCD and ASBMR members, representatives from companies with interests in bone health and skeletal assessment, and other individuals with an interest in bone disease and densitometry. All participants were encouraged to provide comments and suggestions to the expert panelists. In the afternoon and evening closed sessions, the Expert Panel with the PDC co-chairs, task force chairs, and co-moderators determined the final wording of the Official Positions. These recommendations were then presented to the ISCD Board on December 20, 2013 for review and voting. The Board did not alter the content or wording of the proposed Official Positions. All recommendations were approved by a majority vote of the ISCD Board of Directors and became the 2013 ISCD Official Positions. At the time of press, the ASBMR had not received the final manuscript for consideration of its endorsement.

Compared with the first PDC, for some task forces, the number of official positions has been reduced or the wording of the positions has been changed. For some of the positions, the quality of the evidence is rated lower (rather than higher) despite the passing of 6 yr and the expectation that new data would have been generated that would inform and enhance the strength of the recommendations. However, it is important