

DEFINING, ASSESSING, AND CERTIFYING PROCEDURAL COMPETENCY IN ENDOCRINOLOGY, DIABETES, & METABOLISM

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Endocrinologists have long prided themselves as leaders among the cognitive subspecialties. From the beginning, our diagnoses and treatments have been largely based on clinical observations combined with thoughtful consideration of hormone levels in blood. In the early 20th century, bioassays, such as the mouse pregnancy test (1) and tadpole metamorphosis test (2), guided endocrine practice. These were supplanted by relatively crude chemical assays, such as protein bound iodine (3). The subsequent momentous discovery and applications of immunoassays (4), and more recently even more precise physicochemical techniques, such as mass spectrometry, have revolutionized hormone measurements and enhanced clinicians' accuracy in diagnosing and managing endocrine and metabolic disorders.

Early in the history of our subspecialty, the widespread actions of many hormones and dynamic responsiveness of endocrine systems logically led to the introduction of procedures in which patients' physiological state and responsiveness were assessed, such as the basal metabolic rate for thyroid dysfunction (5), hypoosmolar volume expansion in the Levy-Kepler-Power water load test for adrenal insufficiency (6), and increased urinary phosphorus excretion in response to the administration of parathyroid extract in the Ellsworth-Howard test for pseudohypoparathyroidism (7). The identification, characterization, and synthesis of trophic hormones (eg, ACTH, TRH, and CRH) led to the era of dynamic hormonal testing—providing powerful tools for the diagnosis

and localization of endocrine disorders. While all of these were procedures, the foundations for their proper execution and interpretation remained essentially cognitive as these tests required only modest technical skills and posed little if any risk in their performance.

Advances in clinical imaging have revolutionized the detection, differential diagnosis, and localization of endocrine disorders; and many endocrinologists are quite skilled in interpreting images in areas of their special interests (eg, pituitary MRI, adrenal CT, and skeletal x-rays). However, the formal performance and interpretation of these studies has been largely relegated to radiologists, and endocrinologists are typically not reimbursed for interpreting these images. Thirty years before board certification began in Endocrinology and Metabolism, the pioneering use of radioiodine by internists for the diagnosis and treatment of thyroid diseases gave birth to the new specialty of Nuclear Medicine (8). However, by broadening its scope and augmenting standards for training and certification, Nuclear Medicine has now excluded almost all practicing endocrinologists from the direct delivery of these thyroid diagnostic and therapeutic procedures. Similarly, while endocrinologists developed most of the initial radioimmunoassays for hormones, their metabolites, and nutrients, today nearly all hormone assays are performed by hospital-based or commercial clinical pathology laboratories. The evolution of increasingly complex regulatory requirements has almost completely excluded endocrinologists from performing even minor

ISSN Print 0021-972X ISSN Online 1945-7197

Printed in U.S.A.

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Received February 24, 2014. Accepted May 6, 2014.

Abbreviations:



Figure 1. Continuum of Procedural Competency: This scheme depicts the development of procedural competencies through a continuum beginning with fellowship training and continuing during a clinical endocrinologist's subsequent career. This framework proposes that the Knowledge and Experience aspects of procedural competency should be provided by training programs, acquired by candidates, and confirmed by appropriate evaluations for certification of board eligibility. Mastery of one or more procedures can be achieved by clinical endocrinologists either during or after formal subspecialty training and board certification.

analyses, such as urinary ketones. While there were many reasons nationally and locally for endocrinologists' loss of privileges to perform these procedures, one important contributor was the collective failure of the endocrine community to develop a process for defining, assessing, and certifying procedural competencies.

Over the past 50 years, additional diagnostic and therapeutic procedures have been adopted by endocrinologists in their clinical practices: thyroid aspiration biopsy (9) and thyroid sonography (10), dual-energy X-ray (DXA) absorptiometry for assessment of bone mineral density (BMD) (11), and the use of insulin pumps (12) and continuous glucose monitoring (13). However, the American Board of Internal Medicine's (ABIM) requirements for assessing candidates' competency in these procedures has remained limited in scope and lacking in detail. The first Endocrinology and Metabolism subspecialty board examination was held in 1972¹, but it was not until 1989 that any requirement for procedural competency first appeared in ABIM's Policies and Procedures. In 1993, thyroid aspiration biopsy was the first procedure named; and it has since remained the sole procedural competency listed for board eligibility, but with no specification of how this is to be determined based on procedure volume, performance quality, or safe execution.

Because of growing public expectations about quality and transparency in health care delivery, the ABIM Subspecialty Board in Endocrinology, Diabetes, & Metabolism recognizes that we must have a more complete and

specific definition of the competencies expected for procedures currently being performed by clinical endocrinologists. The Endocrinology Board envisions the development procedural competency as a process that begins during fellowship training and continues throughout an endocrinologist's career: beginning with the acquisition of Knowledge and Experience during fellowship, and progressing to the achievement of Mastery in one or more procedures during and after completion of training (Figure 1). The Endocrinology Board believes that satisfying the Knowledge and Experience dimensions of procedural competency justify certifying a candidate's board eligibility, and that training program directors are best positioned to assess these. Because study of such assessments in other specialties has shown that they

can be complex (14–18), Endocrinology program directors and their faculties need data and guidance to fulfill this responsibility. The Endocrinology Board is committed to defining appropriate criteria and approaches for certifying that endocrine trainees have fulfilled the fundamental criteria for procedural competency. The Board believes that this is essential to ensure optimal patient care, meet contemporary society's expectations of health care delivery systems, and strengthen the role of board certification for endocrinologists who seek procedural privileges. In addition, providing rigorous criteria for procedural competence will promote continuity in patient-centered care and help ensure that privileges to prescribe, perform, and be reimbursed for these procedures are maintained by endocrinologists.

To advance the process of certification for procedural competencies, the Endocrinology Board has collaborated with the Association of Program Directors in Endocrinology and Metabolism (APDEM), which recently developed and adopted uniform standards of procedural competency and guidelines for their assessment by endocrine fellowship training programs in three areas: thyroid ultrasound and aspiration biopsy, skeletal DXA interpretation, and management of insulin pumps and continuous glucose monitoring. The Endocrinology Board has embraced this APDEM initiative and, in collaboration with APDEM, plans to seek additional input from stakeholders in professional societies at their upcoming meetings, as well as

from health care delivery systems and patient advocacy groups. The Board envisions the implementation of certification for procedural competencies to be an evolutionary and collaborative process guided by ongoing evaluation of assessment tools and processes, and feedback from program directors, trainees, and professional societies. Documentation by program directors of whether candidates have satisfied the APDEM-proposed standards for procedural competency will begin with the 2015 examination, and these data will be used to define a final set of standards that will become a requirement for the 2017 examination. These changes will not affect currently board certified endocrinologists, who's ability to perform procedures will remain regulated solely through local health system credentialing. Whether the Endocrinology Board should or could play any future role in defining procedural competency after initial board certification remains an issue for discussion; but there is no current plan for this to become a requirement to maintain certification. The Board urges all clinical endocrinologists to become involved and provide input at upcoming meetings of our professional societies and leadership organizations. The coming year will be a critical time for endocrinologists to collaborate in defining criteria for competency in performing the procedures that serve our patients best when they are an integral part of the cognitive approach that has always characterized our subspecialty.

Acknowledgments

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This work was supported by .

¹ The name of the board was changed to "Endocrinology, Diabetes, & Metabolism" in 1992.

Disclosures: Drs. Ladenson and Bhasin serve on the American Board of Internal Medicine Specialty Board in Endocrinology, Diabetes and Metabolism; Dr. Bhasin is also a Member of the Endocrine Society Council. Dr. Danoff is President of the Association of Program Directors in Endocrinology, Diabetes, and Metabolism (APDEM); and Dr. Balasubramanyam is a Past President of APDEM.

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