Pak Heart J

COMPETENCE IN CARDIOLOGY

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"This is the first cardiovascular competency statement to fully utilize the six domains structure promulgated by the Accreditation Council of Graduate Medical Education and adopted and endorsed by the American Board of Internal Medicine," claimed noted John Gordon Harold, MD, MACC, president of the ACC and chair of the writing committee. "It goes beyond medical knowledge and procedure performance, to include the important issues of leading an interdisciplinary team, working in a complex system, communicating effectively, engaging in continuous quality improvement at the individual and system levels, adhering to evidence-based medicine, and demonstrating the highest levels of professionalism."[1]

In the world of cardiology we had wrongly assumed that 'competence' is confined to performing and interpreting of skills such as transthoracic echocardiography, trans-esophageal echocardiography, angiography and percutaneous interventions. The farthest we had gone was to assess competence in eliciting clinical signs and interpreting heart sounds. In the world of academics 'competence' has different connotations. Competence is far more than that and it encompasses many more fields. The Accreditation Council for Graduate Medical Education has defined six areas of competence and some means of assessing them: medical knowledge, patient care including clinical reasoning, practice-based learning and improvement including information management, interpersonal and communication skills, professionalism, and systems-based practice including health economics and teamwork.[2,3]

As of today there is no single agreed-upon definition of competence that encompasses all these important domains. The most comprehensive definition adopted by most is, “Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.”[4,5] Some of these domains are easily definable and measurable where as others are difficult to quantify. Competence is no longer regarded as an achievement but rather a habit of lifelong learning.[6] This of course depends on the context such as demographical and educational characteristics

of patient and of the physician.[6]

Therefore during the past several years, there has been a move toward a more structured definition of competency-based requirements and training. This includes the use of the six competency domains promulgated by the ACGME, and adopted and endorsed by the ABIM (medical knowledge; patient care and procedures; practice-based learning; systems-based practice; interpersonal and communication skills; and professionalism). This format is also increasingly utilized, not only for training programs, but also for demonstration of maintenance of competency for practicing physicians. American College of Cardiology Foundation has also adopted this format as part of its training and lifelong learning competency documents, and has developed tools and programs to assist physicians in assessing, enhancing, and documenting competency. A key characteristic of a competency-based system is the use of outcomes-based evaluations. For training programs, the evaluation tools, for example, include direct observation by instructors, as well as in-training examination, procedure logbooks/portfolios, and simulation.[2-4]

Competence has an integral cognitive function based on acquiring and using knowledge to solve real-life problems.[7] Acquisition of core knowledge with information management and applying knowledge to real-world situations is the essence. This emphasizes using tacit knowledge and personal experience for abstract problem-solving.[8] Some advocate that competence is defined by tacit rather than explicit knowledge.[9] Technical skills as physical examination skills and surgical/procedural skills cannot be overemphasized especially in a specialty like Cardiology.[6,7]

A competent physician demonstrates integrative ability to think, feel, and act like a physician.[10] Competence has an integrative function-using biomedical and psychosocial data in clinical reasoning. This links basic and clinical knowledge across disciplines and is helpful in managing uncertainty.[11] Cardiology is inundated with non-classical presentations. It requires ability to manage perplexing problems, tolerate uncertainty, and make decisions with limited information. [12]

In Cardiology, like all other fields the quality of the patient-doctor relationship affects health and recovery from illness, medical costs and outcomes. This treasurable relationship depends on responding to patients' emotions and involving them in decision making.[13,14] Competence has a relational function-communicating effectively with patients and colleagues. This helps avoiding and handling conflict and facilitates teaching patients, students and colleagues.[15]

Only recently have scientists validated measures captured some of the intangibles in medicine such as trust and professionalism.[16] Competence has an affective and moral function-the willingness, patience and emotional awareness to use these skills judiciously and humanely more so in the context of cardiology. Competence gives moral strength to recognize and respond to cognitive and emotional biases and willingness to acknowledge and correct errors.[17] Competence is expression of relationship between ability of a person, a task in real world and the ecology of health systems and clinical contexts in which that task is performed.[18] Competence like wisdom cannot be achieved through shortcuts. Competence is developmental as knowledge and skill acquisition is a slow developmental process. There is still debate about which aspects of competence should be acquired at which stage of training.[18] How and at what level of training the patient-doctor relationship should be assessed is also difficult to discern.[19]

Competence has six stages: novice, advanced beginner, competent, proficient, expert, and master. Medical students start as novice-learning essential knowledge which may not have direct application to the real world. Doctors start as advanced beginner approaching the patient as a whole and learning how to apply the acquired knowledge in real life scenarios. Development of competence in different contexts and content areas may proceed at different rates. For each of the six competencies, there are rules that must be learned (novice, advanced beginner), and these rules must be applied in increasingly complex contexts (competent, proficient, expert, and master).[20]

The outcomes of assessment should be to enhance learning, improve confidence, and increase learner's ability. This process shall also protect public by denying training to those few trainees who do not attend to their deficiencies. Assessment of competence must take into account what is assessed, how it is assessed, and the assessment's usefulness in nurturing future learning. Reliable tools for assessment of core knowledge, abstract problem solving and basic clinical skills have been developed.[21] We must now establish that they encompass the qualities that define a good physician: the cognitive, technical, integrative, contextual, relational, reflective, affective, and moral aspects of competence.[19]

The assessment of competence is, now, not confined merely to evaluate performance of a skill rather it is assessed under all defined heads equally and rigorously. Core competency components for Percutaneous Coronary Interventions defined by ACCF includes medical knowledge of coronary anatomy, pathophysiology of myocardial ischemia, sound knowledge of radiation safety, procedure related complications and catheter related hardware. More importantly it includes all the following fields: professionalism, interpersonal skills and communication, systems-based practice practice-based learning and improvement and patient care and procedures.[2,3] Tools have been suggested to carry out assessment in all these domains and further refinement is required.[22] Similar core competency, spanned over all domains, must be defined in all fields of cardiology and training may be modulated to achieve these competencies. Evaluation tools must be robust and reliable to assess what is being assessed and help to enhance the competence of the doctors being evaluated.

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