HOD ACTION: Council on Medical Education Report 3 <u>adopted as amended</u> and the remainder of the report <u>filed</u>.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION

CME Report 3-A-14

Subject: Competency-based Medical Education Across the Continuum
                    of Education and Practice

Presented by: Jeffrey P. Gold, MD, Chair

Referred to: Reference Committee C
                    (Kesavan Kutty, MD, Chair)

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1 In 2013, the AMA Council on Medical Education formed a Competency Alignment Task Force to
2 review and disseminate information about the current state of competency-based education across
3 the medical education continuum and into practice. The overarching goal of the Task Force is to
4 seek opportunities to accelerate change in medical education curriculum, pedagogy and
5 competency-based learning. This preliminary report summarizes information from a review of the
6 literature regarding the current state of competency-based medical education (CBME) in the health
7 professions.
8
9 INTRODUCTION
10
11 After a comprehensive systematic review of the medical education definitions related to CBME,
12 Frank et al. proposed the following definition of competency-based education based on recurring
13 concepts in the literature over several decades:
14
15   Competency-based education is an approach to preparing physicians for practice that is
16   fundamentally oriented to graduate outcome abilities and organized around competencies
17   derived from an analysis of societal and patient needs. It deemphasizes time-based training and
18   promises greater accountability, flexibility, and learner-centredness.[1]
19
20 The term "competency" refers to the individual physician, while the term "accreditation" refers to
21 the system to ensure that educational programs at each phase of the continuum teach the
22 competencies at an appropriate level and in an appropriate sequence. CBME is growing across the
23 health professions for a variety of reasons. The government and other payers are increasingly
24 demanding that the profession demonstrate accountability for the competency of those they
25 educate, license, certify and/or credential. To ensure that this need for accountability is met,
26 demonstration and re-demonstration of professional competence have been demanded. This
27 demand is a moving force behind Maintenance of Certification (MOC) and the principles of
28 Maintenance of Licensure (MOL).
29
30 In 1999, the Accreditation Council for Graduate Medical Education (ACGME) and American
31 Board of Medical Specialties (ABMS) adopted a set of competencies intended to assess resident
32 and physician performance in six areas: patient care, medical knowledge, practice-based learning
33 and improvement, interpersonal and communication skills, professionalism, and systems-based
34 practice.[2] This project was originally developed for graduate medical education (GME); each
35 competency is made up of milestones for which residents are required to demonstrate proficiency
36 as they progress through training. These same competency domains are now being used to evaluate

1 medical students and attending physicians. (The ABMS and ACGME subsequently modified the
2 patient care competency domain; it is now called patient care and procedural skills.)
3
4 Competencies in GME have been further broken down to subcompetencies or requisite knowledge,
5 skills and attitudes representing the domains of the broader competencies. To further explicate
6 learning objectives and expectations for learner performance along a developmental continuum,
7 essential behavioral attributes, or milestones, within each competency domain are being further
8 defined and are expected to be demonstrated at key points during the resident's education.[3,4] For
9 selected specialties, the concept of Entrustable Professional Activities (EPAs) has been developed
10 in light of the difficulties in reliably measuring competencies. EPAs are work tasks that are
11 independently executable, observable and measurable in their process and outcome.[5] Faculty use
12 EPAs to make decisions about the level of supervision required for individual trainees. As trainees
13 attain various milestones, their attending supervisors can entrust them to function with more
14 autonomy.
15
16 CBME focuses on the skills and progression of learning of an individual, promoting greater
17 learner-centeredness and potentially allowing greater flexibility in the time required for training.
18 Reducing the emphasis on time-based curricula design may allow physicians to acquire and
19 demonstrate competency in new specialty areas.
20
21 This learner-centered approach could then replace or de-emphasize time-based curriculum
22 frameworks. Time in a given level of education or training would no longer be the most important
23 criterion for board eligibility or even medical school admission criteria or graduation. "Expertise is
24 the ultimate goal of CBME and requires reflective practice."[6]
25
26 SUMMARY OF THE LITERATURE
27
28 Historically, the accreditation process for undergraduate medical education (UME) and GME
29 favored a time-based system, with less focus on trainee competency and achievement of milestones
30 during or at the completion of training. Implementation of competency-based education by the
31 ACGME has subsequently led to a drive for competency-based learning in UME, but a lack of
32 standardization in UME has slowed this transition. The 2011 release from the Liaison Committee
33 on Medical Education (LCME) of the "Functions and Structure of a Medical School: Standards for
34 Accreditation of Medical Education Programs Leading to the MD Degree" states that medical
35 schools must provide the means for assessing student development of core competencies that are
36 expected by the public and the profession.[7]
37
38 To provide a single, relevant infrastructure for curricular resources in the Association of American
39 Medical Colleges' (AAMC) MedEdPORTAL and Curriculum Inventory and Reports (CIR) sites,
40 the AAMC undertook a project to compile and compare a representative sample of competency
41 frameworks from medicine (i.e., the continuum of physician of education, physician specialties,
42 subspecialties, and other countries) to those of other health professions.[8] This initiative represents a
43 first step toward establishing a common taxonomy of competencies. The Physician Competency
44 Reference Set (PCRS) will serve as an aggregation tool that allows the AAMC to collect and
45 analyze data through the Curriculum Inventory about competency-based education and the use of
46 expectations (competencies, objectives, milestones, EPAs, etc.) in medical education
47 (aamc.org/initiatives/cir/about/348808/aboutpcrs.html). Possible reporting includes information on
48 what competencies schools are incorporating into their curricula; where in their curricula schools
49 are incorporating expectations and competencies; how schools are teaching and assessing
50 competencies; and in what context and/or content competencies are being taught.

1   The University of California, San Francisco (UCSF) medical school has fully embraced
2   competencies in its UME training programs, and curricula are being developed around them to
3   ensure that trainees are prepared for residency.[9] Other competency systems that have been
4   formulated include those developed by the Canadian Medical Education Directions for Specialists
5   (CanMEDS) 2005 and the Institute for International Medical Education. As competency-based
6   training is an evolving field, some authors have provided criteria for specifically evaluating a given
7   competency domain. These include focusing on end performance, creating goals that immediately
8   reflect instruction, identifying measurable behaviors, setting goals that are achievable by all
9   learners, and keeping learners informed of what is expected.[10]
10
11   There are several proposed models for competency-based assessment, and the 11 medical schools
12   that were recently funded by the AMA's Accelerating Change in Medical Education initiative will
13   integrate competency-based assessment into their respective curricula over the next five years.
14   Several Canadian and US medical schools have begun offering three-year fast-track programs,
15   some of which are focused specifically on primary care, while others assure a position in a
16   specialty in the institution's GME training programs for fast-track students. Many of these
17   programs, including New York University School of Medicine (NYUSOM), which is a recipient of
18   the AMA funding initiative, are using competency-based assessment in UME and GME to prepare
19   physicians in a shorter period of time. The NYUSOM will use an electronic portfolio and a virtual
20   patient panel in order to teach and track skills within competency domains for students in the three-
21   year program.[11] Another example of a portfolio-based tracking system has been implemented at the
22   Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (CWRU).[12] This
23   program was first implemented in 2004 as a result of a joint venture between the Lerner College of
24   Medicine and CWRU to train future physician-scientists in a five-year track. It is clear from these
25   and other models that technology, electronic portfolios, virtual and simulated patient cases, and
26   digital dashboards have become critical tools in assessing competency.
27
28   In addition, service-based learning and longitudinal clinical experiences are tools being used at
29   medical schools to help students achieve competency in caring for unique populations and in the
30   long-term management of chronic ailments. Many medical schools have implemented single or
31   multi-year continuity clinics[12,13,14,15] in order to give students the ability to participate in patient
32   care over time. This reinforces didactic and clinical knowledge early and fills a needed niche as
33   inpatient stays shorten, thereby limiting a learner's ability to experience the complete management
34   of more complex diseases. It also instills a sense of personal responsibility to a patient population
35   and allows trainees to improve multiple competencies while working with a familiar group of clinic
36   patients. Continuity clinics have long been an aspect of many GME programs, but are a relatively
37   new and evolving concept for UME.
38
39   SUMMARY OF CURRENTLY AVAILABLE VALID AND RELIABLE ASSESSMENTS OF
40   COMPETENCIES
41
42   Early in the implementation of CBME, Carraccio and colleagues summarized the steps to
43   achieving CBME.[16] Two of the four steps identified involved assessment. First was the need to
44   delineate the performance level expected for a particular competence. The next step is to identify
45   how the attainment of that competence will be assessed. These assessment tools should be matched
46   to the competency being evaluated to be most effective.
47
48   Developing assessment tools that are valid and reliable has been felt to be a significant challenge to
49   the implementation of CBME.[6, 17] The component of health professions education that has been
50   most frequently and reliably assessed is that of knowledge acquisition as applied in various high
51   stakes exams for licensure, certification and recertification. Assessments for the full spectrum of

1   competence required for CBME must evaluate the integration of the various domains of the health
2   profession, including knowledge to provide safe and effective care to patients. This generally
3   requires multiple assessments of the learner, utilizing direct observations in the context of a range
4   of simulated or real clinical activities. The latter requires that faculty consistently interpret their
5   observations and evaluations of learners. Thus it requires significant faculty development to
6   achieve reliable and valid ratings of learners.[6,17,18]
7
8   The competencies required for providing patient care are necessarily complex. Reliability of
9   assessments of these competencies can be improved by increased frequency of assessment.
10 Assessments need to be built into the daily work done by the learners and teachers in the care of
11 patients.[6] Some specialties initially implementing the ACGME milestones have moved to define
12 EPAs to provide a more all-inclusive and patient care-focused perspective on these complex
13 competencies.
14
15 CBME requires assessment of learners along the training continuum toward the competence
16 required to practice at the next level of training or to enter into unsupervised practice if at the end
17 of formal training. Several tools for assessing areas of competence other than knowledge
18 acquisition have been validated and found acceptable. Examples of these are Objective Structured
19 Clinical Examinations (OSCE), Objective Structured Assessment of Technical Skills (OSATS),
20 Mini-Clinical Evaluation Exercise (CEX), simulation-based scenarios, and multi-source
21 evaluations.[19] Performance on patient care processes and outcomes can be assessed for practicing
22 physicians or advanced trainees practicing in certain venues somewhat independently.
23
24 Some perceive that assessment of competencies cannot be done unless the perfect evaluation
25 instruments are available, which is not currently the case. Most would agree, however, that great
26 progress can be made with current assessment tools, while always working to refine and improve
27 them.
28
29 CONSIDERATIONS ACROSS THE CONTINUUM OF EDUCATION AND PRACTICE
30
31 In 2000, the ABMS and its 24 Member Boards adopted the MOC programs, which incorporated the
32 six core competencies into a system of documentation of life-long learning and maintenance of
33 clinical competence throughout physicians' careers by the diplomates of the ABMS Member
34 Boards. The changes in each of these component areas have evolved over the years since 1999 so
35 that the graduates of residency training and fellowship programs expect that evaluation in all of
36 these domains will continue throughout their professional careers. For graduates of earlier eras, the
37 establishment and maintenance of professional competence is a complex endeavor.[20]
38
39 The ABMS organized MOC activities into the following four domains:
40 1.   Licensure and Professional Standing
41 2.   Lifelong Learning and Self-Assessment
42 3.   Cognitive Expertise
43 4.   Practice Performance Assessment
44
45 Early in the process, maintenance of a valid, unrestricted state license, often requiring providing
46 documentation of continuing professional education activities, and taking a high-stakes exam at
47 intervals, were the main requirements. Additional emphasis on identifying and addressing gaps in
48 one's own medical knowledge or practice performance is now also required.
49
50 Board-certified physicians have had to pass high-stakes exams in addition to successfully
51 completing GME training during the initial certification process. As a physician's career evolves,

1 however, he/she may no longer practice within the full spectrum of the specialty in which he/she
2 holds primary board certification. This is particularly true if the physician does fellowship training
3 in a particular area. The subspecialty board generally also has requirements for maintaining
4 certification. Some of these requirements may overlap sufficiently such that satisfying self-
5 assessment and practice performance assessment activities may suffice for both. However, taking
6 an exam on content that one does not use often or at all in one's practice, and for which the
7 physician would use easily available electronic resources to update his/her knowledge base if such
8 content were needed in patient care, is understandably daunting for many physicians. The ABMS
9 Member Boards have begun to enhance their programs to be more authentic and relevant to
10 practice.[21] The AMA and the ABMS are also considering the need for mandatory, ongoing, and
11 secure high-stakes examinations and exploring alternative ways to assess knowledge in a way that
12 better integrates with other MOC elements and reflects the application of knowledge in patient care
13 or other professional activities.
14
15 The requirements of MOC do not exist in a vacuum. Although specialty board certification remains
16 a voluntary professional self-regulatory program independent of state medical licensure, the
17 number of hospitals and other health care organizations that make board certification a key
18 qualification, e.g., the Joint Commission and Centers for Medicare and Medicaid Services (CMS),
19 continues to expand. Physicians are frequently asked to report quality data from their practices to
20 payers, participate in group quality projects in their practices and/or hospitals, and undergo ongoing
21 surveys of their professional competence and communication skills from their patients, peers and
22 coworkers conducted by payers, hospitals and other aspects of the health care system.
23
24 Some of the data that these processes collect are reasonably valid and useful to physicians and
25 might, with the physician's permission, be forwarded to his/her specialty board as demonstration of
26 the physician's participation in ongoing assessment of his/her practice environment and
27 commitment to improvement.[19] Then only those diplomates who either do not have the opportunity
28 or who chose not to participate in these group activities would need to perform individual projects.
29 As most practice improvement activities involve many team members other than a particular
30 physician, reporting ongoing activities in a practice or hospital would more accurately reflect
31 systems-based practice improvement.
32
33 The AMA has adopted Principles for MOC that stress the importance of focusing on the
34 competencies that physicians are utilizing to provide care to their patients. The AMA is engaged in
35 ongoing discussions with the ABMS and its Member Boards to encourage continued efforts to
36 improve the validity and reliability of procedures for the evaluation of candidates for certification.
37 Council on Medical Education Report 6-A-14, being considered by the House of Delegates at this
38 meeting, provides more information about MOC and includes a summary of current AMA policies
39 and recommendations regarding MOC.
40
41 AMA POLICY
42
43 Policy H-275.936, "Mechanisms to Measure Physician Competency," asks our AMA to review and
44 propose improvements for assuring continued physician competence, including but not limited to
45 performance indicators, board certification and recertification, professional experience, continuing
46 medical education, and teaching experience.
47
48 SUMMARY AND RECOMMENDATIONS
49
50 As the health professions continue to build curriculum and assessment around the development of
51 competencies, it has become increasingly important to break down the silos across the continuum

1 of medical education and create consistency whenever possible from the premedical interval
2 through lifelong learning in the knowledge and skills necessary for a contemporary physician.
3 Further study is needed to identify the relationship of curriculum, pedagogy and assessment,
4 particularly high stakes or gateway assessments, in the setting of learning styles, as well as the
5 timeline and metrics for development of a lifelong continuum of defined competencies.
6
7 The Council on Medical Education recommends that the following recommendations be adopted
8 and that the remainder of the report be filed.
9
10 1.   That our American Medical Association Council on Medical Education continue to study and
11   identify challenges and opportunities and critical stakeholders in achieving a competency-
12   based curriculum across the medical education continuum and other health professions that
13   provides significant value to those participating in these curricula and their patients. (Directive
14   to Take Action)
15
16 2.   That our AMA Council on Medical Education work to establish a framework of consistent
17   vocabulary and definitions across the continuum of health sciences education that will facilitate
18   competency-based curriculum, andragogy and assessment implementation. (Directive to Take
19   Action)

Fiscal Note: Less than $1,000.

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