

HOD ACTION: Council on Medical Education Report 7 presented as an informational report; no action required and the remainder of the report filed.

REPORT 7 OF THE COUNCIL ON MEDICAL EDUCATION (A-16)

The Implications of Competency-based Medical Education for Undergraduate Medical Education

EXECUTIVE SUMMARY

A robust public discussion regarding the ability of the current U.S. medical education system to produce physicians capable of caring for the needs of today's patients in today's health care system has prompted heightened interest in the potential benefits of competency-based medical education (CBME). Our entrenched, time-based medical education framework, established many years ago, is well supported by existing policies, regulations, and laws, yet questions remain regarding the capability of this aging framework to address challenges associated with physician workforce capacity, rapidly changing patient demographics, and a radically different health care environment.

With very few exceptions, the overwhelming majority of both undergraduate and graduate medical education programs today are time-based. While elements of instruction may include the achievement of required competencies, these programs do not permit learners to progress to the next level of study without also having concluded the length of time established for those particular learning segments.

Proponents of CBME describe a number of known and anticipated benefits associated with its implementation. Supporters of CBME often point to its focus on outcomes and ability to enhance learner motivation, improve efficiencies, and promote self-directed learning. CBME also holds the potential to address the projected physician workforce shortage and reduce levels of medical student debt by shortening the length of time required to produce a practicing physician.

Despite these notable benefits, however, important limitations must be acknowledged and addressed. While some learners may progress through a curriculum more quickly than the current framework allows, the opposite may hold true for others, resulting in additional years of training with associated tuition. Traditional admissions models would also be affected; school admissions processes, timelines, start dates, tuition revenues, faculty scheduling, course scheduling, and infrastructure capacity would all need to be examined in the transition to a new model. Additional resources would likely need to be dedicated to the development of faculty knowledge and skills in competency-based assessment. Educational programs would be required to develop meaningful measures of performance. Students would need to become more adept at identifying learning needs and gaps, and the potential exists for those who achieve competencies more slowly than their peers to face bias from program directors when seeking a residency placement. Finally, the interface between undergraduate medical education and graduate medical education may need to be restructured to allow multiple entry points to graduate training.

This report focuses on the implications of CBME for undergraduate medical education. The AMA and other organizations involved in medical education should continue to explore and study opportunities to support a medical education system that ensures the competency of medical school graduates while improving the efficiency of the medical education continuum, towards the ultimate goal of ensuring an adequate number of highly qualified and practice-ready physicians to serve our nation's patients and meet their critical access to care needs.

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REPORT OF THE COUNCIL ON MEDICAL EDUCATION

CME Report 7-A-16

Subject: The Implications of Competency-based Medical Education for Undergraduate Medical Education

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1 HISTORY OF THE MOVEMENT TOWARD COMPETENCY-BASED EDUCATION

2
3 Competency-based medical education (CBME) has been defined by the International CBME
4 Collaborators as “an outcomes-based approach to the design, implementation, assessment, and
5 evaluation of medical education programs using an organized framework of competencies.”¹ As ten
6 Cate² states, “Competence entails more than the possession of knowledge, skills, and attitudes; it
7 requires the ability to apply these in the clinical environment to achieve optimal results.” As
8 medical educators have evaluated the perceived shortcomings of traditional medical education in
9 producing competent practitioners, competency-based educational models are becoming
10 widespread in the United States and Canada. Indeed, CBME pedagogy has been incorporated into
11 medical education for more than 50 years, and it is firmly established in the framework of
12 undergraduate medical education in the United States and Canada, despite weak empirical evidence
13 of the effect of CBME on learning outcomes.³ CBME has been proposed as a way to move learners
14 through the education/training system into independent practice more effectively while assuring
15 that each learner has developed a minimal level of competency. For some learners, this would
16 decrease the total time required to become competent physicians. Thus CBME has been touted as a
17 means to improve both the effectiveness and efficiency of undergraduate medical education
18 (UME).

19
20 Medical school accreditation standards in the United States and Canada require schools to define
21 the competencies to be achieved by medical students in terms that allow the assessment of
22 students’ achievement in developing the competencies. However, almost all competency-based
23 UME programs utilize competencies as a basis for course structure and content within a time-based
24 medical education (TBME) curricular structure, a basis for assessment of student achievement
25 within a time-based structure, or both. With very few exceptions, noted below, almost all UME
26 programs are still time-dependent. That is, students may not advance to the next levels of the
27 curriculum until the time allotted for the coursework has elapsed, regardless of when competency
28 threshold is achieved.

29
30 While in theory CBME at the UME level could offer the benefits noted above, widespread
31 implementation could lead to problems within UME itself, and at the interfaces and within the
32 institutions on either end of the educational continuum. The structures, forces, paradigms, and
33 culture that support time-based programs within the medical education continuum are well
34 entrenched. This informational report will delineate some of the barriers to implementation of a
35 solely CBME system without the traditional temporal framework of TBME, and is based on several
36 assumptions:

- 1 1. The barriers and challenges discussed here would occur because of a transition to a pure
2 CBME, rather than a competency-based assessment system or curricular structure within a
3 time-based curriculum (TBC). Potential hybrid models are not considered in this report.
- 4 2. Some students would achieve the minimally acceptable level of competency required for
5 promotion or graduation faster than others, and this rate of progression may not be linear.
6 For example, some students may move rapidly through basic science material, but progress
7 at a slower rate in achieving competencies in some of the clinical domains. Assuming this
8 does occur, programs would need to decide what to do with students when they achieve the
9 minimal required competency in one segment of a curriculum, in one domain, or across all
10 domains.
- 11 3. UME does not stand alone in the continuum of medical education. UME must continue to
12 depend on a strong pipeline of applicants and matriculants from premedical education
13 institutions, and a system to supply competent graduates to graduate medical education
14 (GME) programs in a timely manner. Full implementation of CBME would undoubtedly
15 lead to both intended and unintended consequences at the interfaces and systems on either
16 side of UME and within CBME UME programs as well.
- 17 4. A switch to CBME would create complex, inter-related changes and problems, and would
18 require solutions within each individual institution. Some of these will be briefly noted
19 below.
- 20 5. The transition to CBME from TBME would occur at different times and rates for each
21 program, and possibly not at all for some programs, rendering a continuum that would
22 need to accommodate both systems for at least a finite time frame.

23

24 CURRENT CBME PROGRAMS IN UME

25

26 Oregon Health & Science University School of Medicine (OHSU) began offering a CBME
27 curriculum in August 2014 that permits students to move through the curriculum based on
28 achievement of competency, rather than time in the curriculum. OHSU's curriculum transformation
29 to CBME is supported by grant funding from the AMA's Accelerating Change in Medical
30 Education (ACE) initiative. Similarly, the Association of American Medical Colleges (AAMC)
31 developed in 2013 the Education in Pediatrics Across the Continuum (EPAC) program, with grant
32 support from the Josiah Macy Foundation, to explore the feasibility of moving from a traditional
33 model of medical education in the clinical years to competency advancement across the continuum
34 of UME and GME for students planning on a career in pediatrics. Four schools of medicine are
35 participating in the pilot: the University of California, San Francisco; the University of Colorado;
36 the University of Minnesota; and the University of Utah. These schools have identified a group of
37 students who will focus on a career in pediatrics and agree to remain at their respective institutions
38 for residency training. This pilot group of students will advance through the clinical portion of
39 program as they master each competency, rather than through the traditional, "fixed-time" model,
40 and enter GME upon meeting the competency requirements for transition.

41

42 CURRENT COMPETENCY-BASED GME PROGRAMS

43

44 The Accreditation Council for Graduate Medical Education (ACGME) requires approved GME
45 programs to integrate specific ACGME competencies into the program curriculum and develop
46 competency-based goals and objectives for each assignment at each educational level. However,
47 with the exception of a few pilot programs, all U.S. ACGME-approved programs remain time-
48 based. The American Board of Internal Medicine (ABIM) has approved three competency-based
49 pilot programs in gastroenterology/transplant hepatology, geriatrics/palliative medicine, and
50 internal medicine/cardiology.

1 The orthopaedic surgery residency program at the University of Toronto is the only GME program
2 in the U.S. and Canada that is competency-based. Initially a pilot within the program, the entire
3 program is now competency-based rather than time-based.

4 5 KNOWN AND ANTICIPATED BENEFITS THAT COULD RESULT FROM A SHIFT TO 6 CBME

7
8 As noted by Hawkins,⁴ CBME offers the perceived benefits of a focus on learner achievement,
9 emphasis on formative assessment, time-independent trajectory, and increased accountability for
10 learners and faculty. Hawkins also noted that CBME has been proven to improve outcomes in a
11 number of domains, but has not been proven to improve knowledge acquisition in UME. The
12 expected outcomes for CBME extend beyond the individual learner or the medical education
13 system. Notes ten Cate, “the ultimate outcome of competency-based medical education extends
14 beyond measureable attributes of the individual; rather, it is directly linked to better care of
15 individuals and society.”

16
17 As noted by Snell and Frank,⁵ “The compelling promise of CBME lies in its focus on outcomes and
18 on ensuring the competence of graduates.” Aschenbrener⁶ advocates for a competency framework
19 in UME as a tool for leveraging a continuum of medical education across UME, GME, and
20 continuing medical education (CME) as a means to serve the best interests of the profession and
21 the public. Swing⁷ notes that CBME has the potential to improve learner motivation, create a sense
22 of autonomy for the learner, improve efficiency of learners’ time in valued activities, increase
23 sense of self-efficacy, and enhance self-directed learning. As noted by Frank⁸, “Time is a resource
24 to be tailored to the needs of teachers and learners,” while advocating for a shift from time spent in
25 defined activities toward an emphasis on developing learners’ abilities. In summary, CBME offers
26 considerable potential advantages for the individual learner, the UME system, the entire medical
27 education continuum, and society as a whole.

28 29 CHALLENGES TO ADOPTION OF CBME

30 31 *Financial*

32
33 Almost all medical education programs depend on tuition revenues, to a greater or lesser degree, to
34 support the funding needs of the program and institution. Currently, tuition is time-based (semester
35 or year) for all programs in the United States. Conversion to a CBME model, where students
36 progress at variable rates through the curriculum, would result in the need for new models to
37 determine tuition revenues. Institutions could set a fixed tuition for the degree regardless of time
38 necessary for completion, or implement a time-modified degree-based tuition model, where tuition
39 is set for degree completion, with modifiers for the actual length of time required for completion.
40 Institutional budgeting and cash flow needs would likely require new structures in CBME tuition
41 models. Budgeting and financial projections could prove difficult, at least initially.

42
43 New CBME tuition models could result in new challenges relative to student debt, student loan and
44 student scholarship models. New models would need to be developed to determine student loan
45 limits and loan distribution schedules. To ease the burden of costs and to satisfy lenders and
46 scholarship providers, curriculum completion benchmarks would need to be set to determine when
47 payments would be distributed and when repayment would be expected to commence.

48
49 Students’ educational and personal finances and budgeting could become much more challenging.
50 Models in which tuition is linked to time of completion could result in additional debt burden for
51 students, and resultant pressure for advancement. At present, students can reasonably predict how

1 much educational debt they will incur and cost of living support they will need within time-based
2 models. Living arrangements can be predicted and leases set, for example. In a CBME system,
3 where the timing of advancement is less predictable, budget forecasting could represent a
4 significant challenge for students. Assuming a time modification scheme in which UME costs less
5 if accomplished in less than the traditional four years, CBME will be financially attractive to
6 students, but the reverse situation would result in greater debt for the individual student.

7 8 *Admissions*

9
10 Based on the assumption noted above, that some students will accelerate through the curriculum at
11 different rates, it is likely that the total number of students engaged in any portion, segment, or
12 course of the curriculum may vary considerably within and among entry cohorts. Depending on the
13 magnitude of the variability, capacity of the program, and components of the program, schools
14 might need to be flexible in admissions processes, timelines, and start dates. Contributing to the
15 complexity are school finances (tuition revenues), internal scheduling, faculty scheduling, facilities
16 and infrastructure capacity, and student support services capacity. This scenario and confounding
17 factors raise the possibility of the need for programs to adopt multiple start dates for classes, and/or
18 a time-based rolling admissions process for multiple start dates. Schools with multiple campuses
19 would face added challenges of predicting campus enrollment and campus resources.

20
21 Recruitment could prove more difficult for some institutions in a CBME model. Prospective
22 students might be less likely to consider or matriculate at schools where former and current
23 students have historically taken longer to achieve the level of competency required for transition.
24 This in turn could lead to additional competitive pressures on the schools to move students through
25 their curricula as quickly as possible.

26 27 *Progression, Student Advancement, and Scheduling*

28
29 A CBME model that allows students to advance as they achieve competency would require
30 dramatic changes in the way that students and faculty are scheduled. On a pragmatic, logistical
31 level, academic schedules are established, in part, to maximize the efficiency of teaching and
32 optimize faculty time commitments. In TBME, the transition of cohorts of students on set
33 schedules allows faculty and administrators to plan courses and assessments on a schedule set far in
34 advance. Advance planning would likely prove difficult in a CBME system, at least until patterns
35 of progression are identified. Further, many TBME curricula are structured to provide sequencing
36 and integration of courses and concepts in a logical progression. A CBME curriculum would
37 require rethinking of pedagogy and structure to support individualized progression. Scheduling
38 would likely require, in some cases, a “just in time” approach. Another consideration is the
39 program accreditation requirement that the curriculum contain a minimum of 130 weeks of
40 instructional time. CBME implementation might require reevaluation of this requirement by
41 accrediting bodies.

42
43 Faculty decision-making on student advancement would likely require significant restructuring in a
44 CBME model. Currently, the common practice for TBME programs is to convene promotion
45 committees at set times following completion of courses, blocks, or segments of the curriculum.
46 The assessments of individual students are considered by these committees, and students are
47 allowed to advance, or not, based on school policies and the recommendations of those committees.
48 In a CBME program, the timing and methods of assessment would likely differ from TBME, and
49 possibly be unique to each student. The timing of reaching a threshold performance level would be
50 less important, but not unimportant, and less predictable. Standards for advancement would need to
51 be based more on overall portfolio strength, and less on performance on set assessments in time-

1 based courses. This would require a different, more holistic review of student competencies and
2 would likely be more time-consuming and labor-intensive than the current procedures in TBME
3 systems.

4 *Clinical Teaching Resource Allocation*

6 Resource allocation for clinical teaching in a centralized clinical teaching model may be less
7 problematic in a CBME model, and may offer advantages to clinical education. In a traditional
8 TBME clerkship system, learners enter clinical blocks throughout the clinical year. Faculty and
9 support staff are accustomed to variability in learner preparedness and the need for more frequent
10 orientation and assessment. Patient volume is typically not a critical factor in student scheduling.
11 Clinical faculty and teaching team availability could be problematic in a CBME model if student
12 progression were to occur in an unpredictable pattern. CBME in a distributive model could prove
13 to be more problematic than in a centralized model. Geographically separate campuses typically
14 have less flexibility in the number of learners that can be accommodated, and in the availability of
15 student support. Student assignment to geographically distributed campuses is already complex;
16 CBME would likely further complicate the assignment issues for programs and students.
17

18 *Faculty Development Needs*

20 A shift from TBME to CBME would likely be a marked paradigm shift for the faculty who teach
21 and assess medical students. As noted by Dath,⁹ “Arguably, the implementation of CBME requires
22 teachers and evaluators to gain a new understanding of the theory and practice of education...”
23 Significant resources would need to be committed to development of faculty knowledge and skills
24 in competency-based assessment, assuring consistency in assessing students and making
25 determinations for student advancement. Additional release time from other duties would be
26 needed for faculty to learn and adjust during a transition period. Added stress would likely be
27 placed on selected faculty due to committee work to support a transition. Adoption of CBME
28 would also likely have an impact on educators’ portfolios as they seek recognition for promotion
29 and tenure. Traditional institutional promotion and tenure policies may not fit well with tracking
30 faculty contributions to a UME CBME program.
31

32 *Implications for Assessment*

34 Many authors on this subject have noted the challenge of establishing valid and reliable assessment
35 measures for competency. Some have posited that assessment of competency is accomplished by
36 assessing the individual components of competency, yet most agree that the sum of the components
37 does not result in a reliable measure of the whole. Snell and Frank state that “Competence does not
38 equal a list of learning objectives or reductionist tasks. It is a broad objective that necessitates an
39 integration of knowledge, skills, and tasks.” Carraccio¹⁰ posits that the success of the current
40 CBME movement would depend, in part, upon educational programs’ ability to develop
41 meaningful measures of performance in an integrated, non-reductionist assessment system.
42 Holmboe¹¹ has elaborated on the aspects of an assessment system for CBME. Among others, he
43 notes that CBME assessment should be multifaceted and with multiple assessors, continuous and
44 frequent, emphasize learner development, meet minimum standards of quality for assessment tools,
45 and emphasize work-based observation of tasks and skills. Swing, by contrast, notes that the
46 complex competencies necessary for medical practice are best learned by mastering lower level
47 competencies, incorporating them into higher level competencies, and ultimately integrating them
48 into daily performance. Harris¹² notes that CBME will require frequent formative assessments to
49 identify learning needs along the progression to mastery of a competency. Collectively, these
50 aspects of CBME assessment would result in markedly increased demands on faculty time, directly
51

1 and indirectly, and increased need for central support and coordination of assessment in a CBME
2 system. All would come at significant direct, indirect, and opportunity cost for educational
3 programs and institutions.

4 *Impacts on Students*

5
6
7 While CBME could prove to offer many benefits to medical students (more time for self-directed
8 learning, assurance of competency, self-paced learning, decompression, accelerated learning, etc.),
9 CBME could also have detrimental effects on students. CBME requires students to self-monitor
10 progress and identify learning needs. While this aspect of CBME is beneficial for development of
11 self-directed learners, it does come at a potential cost. Not all students will be adept at accurately
12 identifying their gaps and learning needs, potentially creating increased stress and “misdirection”
13 or inefficient use of time. Some students would likely feel additional pressure to accelerate through
14 some stages of learning. “Keeping pace” with peers may create additional stress and self-doubt.
15 CBME could create a culture that identifies slower learners as weaker students, creating additional
16 pressure to keep pace rather than achieve competency. Failure to complete UME within a
17 “normed” time frame could result in a student being viewed as less desirable by GME programs,
18 creating additional stress for students. As noted previously, and depending on financial models,
19 students who are progressing at a slower pace might face an additional financial commitment,
20 further adding to stress and pressure to keep pace. Alternatively, some students may not be
21 motivated to move through a CBME UME curriculum at an optimal pace, creating inefficiency by
22 retaining a seat in the curriculum for an unnecessarily prolonged time frame.

23 *Graduation and Transition to GME*

24
25
26 Institutions of higher education typically have two or three dates for students to formally graduate
27 from their programs and receive diplomas. TBME programs are generally structured to allow
28 completion of the program at a time just before these institutionally determined dates. CBME may
29 not fit well with this model. With students progressing through a CBME curriculum system based
30 on achievement of competency, rather than time in class, traditional graduation programming may
31 not be an effective way for students to transition to GME in a timely and efficient manner.

32
33 Historically, GME program calendars have been structured to accommodate institutional
34 graduation dates for TBME programs. With a few exceptions, graduates of UME programs enter
35 their respective GME programs around July 1. Students in a CBME program would likely achieve
36 competency threshold at different rates. If this were to occur, these students would either have to
37 wait until the next start date for their GME programs, or GME programs would need to adopt a
38 new calendar for incoming resident start times. In the current structure, for students completing
39 their programs early or late (compared to the traditional late spring graduation in TBME programs),
40 the wait time for the next GME start date can be quite long. Newly learned skills and knowledge
41 can erode quickly, in the absence of active application. Student loan repayment deferment could
42 also be affected by delayed entry; lenders would need to adjust rules to accommodate students
43 completing the programs at different times.

44
45 If CBME were to replace TBME for a substantial number of programs, the interface between UME
46 and GME might need to be restructured to address staggered UME program completion. The
47 residency matching process, now an annual event each March through the National Resident
48 Matching Program (NRMP), might also need to be redesigned to accommodate a CBME-based
49 UME system. Potential consequences of CBME on medical school admissions processes were
50 noted previously. One potential solution would be for CBME programs to create alternative
51 activities for “graduated” students awaiting the next GME cycle. Such activities would need not

1 only to provide opportunity for graduates to practice their skills and apply knowledge, but also
2 provide income. The legal and financial barriers to this potential solution may be prohibitive.
3 Alternatively, the GME system might adopt a new structure and calendar for the intake of new
4 first-year residents, with more than one start date. This would not occur without the potential for
5 substantial impacts on GME programs, such as funding of positions, timing of in-service exams,
6 number of allowable positions by the Centers for Medicare & Medicaid Services and ACGME
7 review committees, and subsequent transition to fellowship and board certification examinations.

8 9 CURRENT AMA POLICY

10
11 Currently, the AMA has several policies or directives that address or relate to CBME, as shown in
12 the appendix to this report. To summarize:

13
14 H-295.862, approved by the House of Delegates (HOD) in 2015, states that our AMA supports the
15 adoption of a competency framework for medical education across the continuum and the use of
16 “assessment instruments and tools that are valid and reliable,” and directs our AMA to “study
17 models of competency-based progression within the medical school.”

18
19 D-295.317, approved by the HOD in 2014, calls for study “to identify challenges and
20 opportunities..... in achieving a competency-based curriculum across the medical education
21 continuum....”

22
23 D-295.318, approved by the HOD in 2014, calls for our AMA’s Accelerating Change in Medical
24 Education initiative to “study the impact of competency-based frameworks on student graduation,
25 the residency match process and off-cycle entry into residency programs.”

26
27 D-310.977, approved by the HOD in 2015, calls for our AMA to evaluate “b) the impact on the
28 NRMP and entry into residency programs if medical education programs offer variable time
29 lengths based on acquisition of competencies; c) the impact on financial aid for medical students
30 with variable time lengths of medical education programs; ...and e) the implications for residents
31 and students who achieve milestones earlier or later than their peers.”

32 33 CONCLUSIONS AND AREAS FOR FURTHER STUDY

34
35 While a UME CBME system that allows learners to progress as they achieve competency is
36 theoretically attractive in many ways, the forces that have shaped and support the existing TBME
37 system in UME present considerable challenges and barriers to change. CBME would likely
38 require, at least initially, considerable additional resources and restructuring within UME
39 programs. A shift to CBME in UME cannot occur in isolation. A CBME system at the level of
40 UME would need to be accompanied by realignment of the systems and processes to place
41 graduates into GME programs, including the residency match process. The AMA and other
42 medical education organizations should continue to study and explore opportunities to support a
43 medical education system that ensures competency of UME graduates while improving the
44 efficiency of the medical educational continuum, towards the ultimate goal of ensuring an adequate
45 number of highly qualified and practice-ready physicians to serve our nation’s patients and meet
46 their critical access to care needs.

APPENDIX: RELEVANT AMA POLICY

Alignment of Accreditation Across the Medical Education Continuum H-295.862

1. Our AMA supports the concept that accreditation standards for undergraduate and graduate medical education should adopt a common competency framework that is based in the Accreditation Council for Graduate Medical Education (ACGME) competency domains. 2. Our AMA recommends that the relevant associations, including the AMA, Association of American Medical Colleges (AAMC), American Osteopathic Association (AOA), and American Association of Colleges of Osteopathic Medicine (AACOM), along with the relevant accreditation bodies for undergraduate medical education (Liaison Committee on Medical Education, Commission on Osteopathic College Accreditation) and graduate medical education (ACGME, AOA) develop strategies to: a. Identify guidelines for the expected general levels of learners' competencies as they leave medical school and enter residency training. b. Create a standardized method for feedback from medical school to premedical institutions and from the residency training system to medical schools about their graduates' preparedness for entry. c. Identify areas where accreditation standards overlap between undergraduate and graduate medical education (e.g., standards related to the clinical learning environment) so as to facilitate coordination of data gathering and decision-making related to compliance. All of these activities should be codified in the standards or processes of accrediting bodies. 3. Our AMA encourages development and implementation of accreditation standards or processes that support utilization of tools (e.g., longitudinal learner portfolios) to track learners' progress in achieving the defined competencies across the continuum. 4. Our AMA supports the concept that evaluation of physicians as they progress along the medical education continuum should include the following: (a) assessments of each of the six competency domains of patient care, medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, and systems-based practice; and (b) use of assessment instruments and tools that are valid and reliable and appropriate for each competency domain and stage of the medical education continuum. 5. Our AMA encourages study of competency-based progression within and between medical school and residency. a. Through its Accelerating Change in Medical Education initiative, our AMA should study models of competency-based progression within the medical school. b. Our AMA should work with the Accreditation Council for Graduate Medical Education (ACGME) to study how the Milestones of the Next Accreditation System support competency-based progression in residency. 6. Our AMA encourages research on innovative methods of assessment related to the six competency domains of the ACGME/American Board of Medical Specialties that would allow monitoring of performance across the stages of the educational continuum. 7. Our AMA encourages ongoing research to identify best practices for workplace-based assessment that allow performance data related to each of the six competency domains to be aggregated and to serve as feedback to physicians in training and in practice.

Competency Based Medical Education Across the Continuum of Education and Practice D-295.317

1. Our AMA Council on Medical Education will continue to study and identify challenges and opportunities and critical stakeholders in achieving a competency-based curriculum across the medical education continuum and other health professions that provides significant value to those participating in these curricula and their patients. 2. Our AMA Council on Medical Education will work to establish a framework of consistent vocabulary and definitions across the continuum of health sciences education that will facilitate competency-based curriculum, andragogy and assessment implementation.

Competency-Based Portfolio Assessment of Medical Students D-295.318

1. Our AMA will work with the Association of American Medical Colleges, the American Osteopathic Association and the Accreditation Council for Graduate Medical Education, and other organizations to examine new and emerging approaches to medical student evaluation, including competency-based portfolio assessment. 2. Our AMA will work with the NRMP, ACGME and the 11 schools in the AMA's Accelerating Change in Medical Education consortium to develop pilot projects to study the impact of competency-based frameworks on student graduation, the residency match process and off-cycle entry into residency programs.

National Resident Matching Program Reform D-310.977

(10) will work with the National Resident Matching Program (NRMP) and Accreditation Council for Graduate Medical Education (ACGME) to evaluate the challenges in moving from a time-based education framework toward a competency-based system, including: a) analysis of time-based implications of the ACGME milestones for residency programs; b) the impact on the NRMP and entry into residency programs if medical education programs offer variable time lengths based on acquisition of competencies; c) the impact on financial aid for medical students with variable time lengths of medical education programs; d) the implications for interprofessional education and rewarding teamwork; and e) the implications for residents and students who achieve milestones earlier or later than their peers....

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