HOD ACTION: Council on Medical Education Report 5 adopted, and the remainder of the report filed.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION

CME Report 5-I-19

Subject: The Transition from Undergraduate Medical Education to Graduate Medical Education

Presented by: Jacqueline A. Bello, MD, Chair

INTRODUCTION

A critical step in the development of a physician is the transition from undergraduate medical education (UME), or medical school, to graduate medical education (GME), or residency training. Ensuring a seamless transition supports learners’ well-being and their readiness to take on and master the many challenges in their chosen field of medicine. In addition, patient safety in our nation’s teaching hospitals is paramount in the public eye, as evidenced by coverage of the “July Effect” in the media. This underscores the need for preparedness among first-year resident physicians as well as the need for a highly effective, efficient, and supportive educational environment.

The American Medical Association (AMA) has taken a lead role to address these issues and call for medical education to “mind the gap” between the various stages of medical education—in particular, the UME to GME transition—in part through its Accelerating Change in Medical Education initiative and Reimagining Residency initiative, as described in this report. The AMA is working to help smooth the transition from UME to GME as part of its effort to encourage innovation in the development of medical students, trainees, and physicians throughout their career. This report also provides relevant AMA policy on this topic (see the Appendix).

MEDICAL SCHOOL PREPARATION OF GRADUATES FOR RESIDENCY

One body of data that measures medical student preparedness for entry into residency is the Association of American Medical Colleges’ (AAMC) Graduation Questionnaire (GQ), a national questionnaire administered to graduates of U.S. MD-granting medical schools accredited by the Liaison Committee on Medical Education (LCME). The GQ is an important tool for medical schools to use in program evaluation and to improve the medical student experience.

The AAMC’s All Schools Summary Report for 2018 includes GQ data for the five-year period 2014 to 2018. Eighty-three percent (16,223) of medical school graduates in academic year 2017-2018 (19,537) participated in the 2018 GQ.

Question 12 of the questionnaire asks respondents, “Indicate whether you agree or disagree with the following statements about your preparedness for beginning a residency program.” Averaging the data for the five-year period (2014 to 2018) produces the following numbers. In the right-hand column, the percentages from the “Agree” and “Strongly agree” fields are combined; the table is sorted based on this variable, which ranges from a high of 98.3 percent (“I have the communication skills necessary to interact with patients and health professionals”) to 90.2 percent (“I am confident that I have acquired the clinical skills required to begin a residency program”).

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### Percentage of Respondents Selecting Each Rating

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Total: Agree and Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I have the communication skills necessary to interact with patients and health professionals.</strong></td>
<td>0.2</td>
<td>0.2</td>
<td>1.4</td>
<td>26.2</td>
<td>72.1</td>
</tr>
<tr>
<td><strong>I understand the ethical and professional values that are expected of the profession.</strong></td>
<td>0.2</td>
<td>0.2</td>
<td>1.5</td>
<td>29.9</td>
<td>68.2</td>
</tr>
<tr>
<td><strong>I believe I am adequately prepared to care for patients from different backgrounds.</strong></td>
<td>0.3</td>
<td>0.6</td>
<td>3.4</td>
<td>35.9</td>
<td>59.9</td>
</tr>
<tr>
<td><strong>I have basic skills in clinical decision making and the application of evidence based information to medical practice.</strong></td>
<td>0.3</td>
<td>0.7</td>
<td>4.7</td>
<td>46.2</td>
<td>48.2</td>
</tr>
<tr>
<td><strong>I have a fundamental understanding of the issues in social sciences of medicine (e.g., ethics, humanism, professionalism, organization and structure of the health care system).</strong></td>
<td>0.3</td>
<td>1.0</td>
<td>4.9</td>
<td>40.9</td>
<td>52.8</td>
</tr>
<tr>
<td><strong>I have the fundamental understanding of common conditions and their management encountered in the major clinical disciplines.</strong></td>
<td>0.3</td>
<td>1.0</td>
<td>5.2</td>
<td>52.0</td>
<td>41.5</td>
</tr>
<tr>
<td><strong>I am confident that I have acquired the clinical skills required to begin a residency program.</strong></td>
<td>0.5</td>
<td>1.9</td>
<td>7.4</td>
<td>47.9</td>
<td>42.3</td>
</tr>
</tbody>
</table>

Another assessment of medical schools’ efforts in preparing medical students for residency is the LCME’s Annual Medical School Questionnaire Part II.

Particularly relevant to this report are data from the question, “Indicate where in the curriculum the following topics to specifically prepare students for entry to residency training are covered” (question 19 for the 2018-2019 questionnaire). Aggregate data for 151 medical schools are shown, sorted by the sum of the numbers for the five places in the curriculum where the specific topic is taught, as shown in the right-hand column.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Required 4th Year</th>
<th>Required 3rd Year</th>
<th>Inter session in 3rd or 4th Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transition to Residency</td>
<td>Course</td>
<td>Clinical Clerkship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specialty-specific</td>
<td>One course for all students</td>
<td>Required</td>
<td>Sub-internship</td>
</tr>
<tr>
<td>Training in clinical procedures</td>
<td>55</td>
<td>57</td>
<td>105</td>
<td>135</td>
</tr>
<tr>
<td>Disease management (general or specialty-specific)</td>
<td>44</td>
<td>53</td>
<td>124</td>
<td>140</td>
</tr>
<tr>
<td>Working in teams</td>
<td>32</td>
<td>76</td>
<td>105</td>
<td>124</td>
</tr>
<tr>
<td>Working with the EHR/health records</td>
<td>22</td>
<td>43</td>
<td>110</td>
<td>135</td>
</tr>
<tr>
<td>Hand-off procedures</td>
<td>35</td>
<td>68</td>
<td>100</td>
<td>93</td>
</tr>
</tbody>
</table>
### Patient safety/reporting medical errors

<table>
<thead>
<tr>
<th></th>
<th>16</th>
<th>77</th>
<th>70</th>
<th>104</th>
<th>51</th>
<th>318</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced communication skills</td>
<td>26</td>
<td>68</td>
<td>84</td>
<td>85</td>
<td>44</td>
<td>307</td>
</tr>
<tr>
<td>Stress, wellness, and burnout in residency training</td>
<td>19</td>
<td>81</td>
<td>21</td>
<td>63</td>
<td>58</td>
<td>242</td>
</tr>
<tr>
<td>Health system content (e.g., team care, health care financing)</td>
<td>12</td>
<td>72</td>
<td>38</td>
<td>73</td>
<td>47</td>
<td>242</td>
</tr>
<tr>
<td>On-call emergencies</td>
<td>39</td>
<td>50</td>
<td>84</td>
<td>73</td>
<td>18</td>
<td>264</td>
</tr>
<tr>
<td>Experiencing the life of a resident (e.g., night call/float)</td>
<td>24</td>
<td>35</td>
<td>85</td>
<td>75</td>
<td>6</td>
<td>225</td>
</tr>
<tr>
<td>Medical regulatory content (e.g., licensure, discipline, DEA)</td>
<td>8</td>
<td>55</td>
<td>10</td>
<td>23</td>
<td>32</td>
<td>128</td>
</tr>
<tr>
<td>ACLS/ATLS training and certification</td>
<td>9</td>
<td>47</td>
<td>9</td>
<td>25</td>
<td>35</td>
<td>125</td>
</tr>
</tbody>
</table>

### THE AMA’S ACCELERATING CHANGE IN MEDICAL EDUCATION AND REIMAGING RESIDENCY INITIATIVES

Phase one of the AMA’s Accelerating Change in Medical Education initiative, launched in 2013, was intended to:

[F]oster… a culture of medical education advancement, leading to the development and scaling of innovations at the undergraduate medical education level across the country. After awarding initial grants to 11 U.S. medical schools, the AMA convened these schools to form the Accelerating Change in Medical Education Consortium—an unprecedented collective that facilitated the development and communication of groundbreaking ideas and projects. The AMA awarded grants to an additional 21 schools in 2016. Today, almost one-fifth of all U.S. allopathic and osteopathic medical schools are represented in the 32-member consortium [expanded to 37 schools in 2019], which is delivering revolutionary educational experiences to approximately 19,000 medical students—students who one day will provide care to a potential 33 million patients annually.

Building upon that impetus, in early 2019 the AMA established the Reimagining Residency initiative—a five-year, $15 million grant program to address challenges associated with the transition from UME to GME and the maintenance of progressive development through residency and across the continuum of physician training. Grants are intended to promote systemic change in GME and support bold, creative innovations that establish new curricular content and experiences to enhance readiness for practice, support well-being in training, and (of particular relevance to this report) provide a meaningful and safe transition from UME to GME. Learn more at: ama-assn.org/education/improve-gme/ama-reimagining-residency-initiative.

Included in the Accelerating Change in Medical Education and Reimagining Residency initiatives are grantees that are focusing on the UME/GME transition. For example, at Florida International University (FIU) Herbert Wertheim College of Medicine, readiness for residency is monitored by way of competency-based assessments using the Entrustable Professional Activities (EPAs).

As an awardee for both the UME and GME phases of the AMA’s grants, New York University Langone School of Medicine is using its latest grant to further its coaching experience through the “NYU Transition to Residency Advantage.” The goal of this work is to “enhance the transition from UME to GME through robust coaching, individualized pathways, and enhanced assessment...
tools to enable GME programs to shift away from one-size-fits-all education.” Similarly, the University of North Carolina School of Medicine received funding from the Reimagining Residency initiative for Fully Integrated Readiness for Service Training (FIRST): Enhancing the Continuum from Medical School to Residency to Practice. Its goals include “implementing a generalizable health systems science curriculum for GME and competency-based assessment tools that span the educational continuum.” In addition, the Association of Professors of Gynecology and Obstetrics received a planning grant for its “Right Resident, Right Program, Ready Day One” project, intended to transform the UME to GME transition for residents entering obstetrics and gynecology programs.

CHALLENGES TO CHANGE

As noted in the introduction, certain innovations that improve the transition from UME to GME may challenge existing processes/systems managed by organizations responsible for medical education accreditation, certification, licensing, and residency matching. For example, one of the innovations being studied in the AMA-led consortium is competency-based medical education, in which learners are advanced to the next level of training upon satisfactory demonstration of the requisite knowledge and skills, versus a strictly time-based system that treats all learners alike. Despite the considerable value of this new paradigm from the learner perspective, it may present hurdles to the system of medical education accreditation, funding, and certification and further inhibit (at least in the short run) the development of a smoother UME/GME transition.

Another concern, which relates to the match into residency, is the growing number of residency program applications being submitted by applicants. This is due, in part, to a growing number of medical school graduates in the U.S. and concerns among residency applicants about limited availability of residency program slots. This issue is particularly pointed in competitive specialties. The increased number of applications is expensive and inefficient for applicants and burdensome for residency program directors and personnel, who must review and prioritize these applications. The rising volume of applications leads programs to employ applicants’ scores on the United States Medical Licensing Examination (USMLE) for screening purposes, eliminating applications below a certain arbitrary line.

This process for applicant screening, while understandable given the circumstances, runs counter to AMA policy, which reflects the principle that “selection of residents should be based on a broad variety of evaluative criteria,” and asks that ACGME requirements “state clearly that residency program directors must not use NBME or USMLE ranked passing scores as a screening criterion for residency selection.” It also lessens the opportunity for holistic review of candidates, through which more intangible attributes and life experience are given equal (if not greater) weight than school grades and examination scores. Indeed, as noted by the authors of a recent perspective in JAMA, “the current USMLE 3-digit scores may be distracting the medical education system from the goal of building an innovative, diverse, and resilient physician workforce.”

Invitational Conference on USMLE Scoring (InCUS)

The AMA and other leading organizations in medical education convened an invitational conference in March 2019, the Invitational Conference on USMLE Scoring (InCUS), to explore issues around unintended uses of USMLE scores. As noted in a summary report and preliminary recommendations from the meeting, the general consensus among participants is that “[t]he current UME-GME transition system is flawed and not meeting the needs of various stakeholders. Over time, various stakeholder groups have tried to optimize the system for their own purposes, but this has left some, including applicants, with an undue burden and at worst negatively impacted
diversity.” One of the recommendations arising from the conference, also noted in the report, is to “convene a cross-organizational panel to create solutions for the assessment and transition challenges from UME to GME, targeting an approved proposal, including scope/timelines by end of calendar year 2019.” As further noted in the report, these challenges would include “[r]educing the number of applications perceived by residency applicants as necessary to obtain a position,” “[i]mproving Residency Program Directors’ ability to more holistically evaluate candidates,” and “[i]mproving the trust of school-based assessments for residency screening and selection.”

During the ensuing public comment period, the Council on Medical Education developed and submitted comments on the InCUS recommendations; key points included the following:

- The overemphasis on USMLE performance in the residency application process is unacceptable; a single three-digit score detracts from learning and engaging fully in the medical student experience, and may inhibit schools’ implementation of curricular innovation. A holistic approach to assessing applicants, in contrast, with attention given to life experience and emotional intelligence, among other qualities, allows for individual talents to emerge and minimizes the impact of any one point, and may help increase the number of successful applicants from racial/ethnic minority populations.

- Any changes made to the residency application process need to consider the alternative tools for evaluation that remain. Preclinical grades, clinical rotation evaluations, and school-based assessments such as the MSPE/Dean’s letter all have considerable shortcomings. Equally problematic is reliance on the reputation of the medical school, which is often determined by research dollars, not the quality of the teaching. Removing the numerical score may discriminate against medical students from new and lesser known U.S. medical schools and U.S. students attending international schools.

- All stakeholders in the process will need to “give” something as part of this transition. For example, students will need to be limited on the number of applications they submit, accrediting bodies (e.g., ACGME, LCME) will need to prohibit the use of USMLE as a program-level metric, and we need to reexamine the Match to see if it is really meeting the current needs. For program directors, a move to pass/fail scores may increase the burden they face in evaluating an ever-growing number of candidates.

- The overarching goal of this work needs to be broadened beyond “to decrease reliance on the USMLE Step 1 score for residency screening” and more toward “to improve and enhance the holistic evaluation of resident applicants.”

The dialogue leading to the Council’s response encompassed a rich and robust exchange of viewpoints among Council members—reflecting the complexity of these issues and the multiple levers, processes, and people affected by “the system” (including, and most importantly, our patients). Through the Council on Medical Education and senior staff, the AMA will continue to monitor, provide feedback on, and report back to the HOD on the status of outcomes from InCUS.

Additional issues in the UME/GME transition were limned in a forum hosted by the Council on Medical Education during the AMA’s 2019 Annual Meeting. These include:

For students:
- The need for honest self-reflection and assessment of strengths and weaknesses.
- The need for honest and effective coaching and mentoring.
For medical schools:

- The need for transparency, accuracy, and honesty in assessments of students.
- The need to balance the responsibility to students (to help them successfully match) with the responsibility to residency programs (to be honest about students’ strengths and weaknesses).
- The fear of unsuccessful matches reflecting poorly on the institution.
- “Failure to fail” (that is, the failure to fail those students who should not be advanced).

For residency program directors:

- The need to provide feedback to schools about interns’ performance.
- The growing popularity of the “residency boot camp” model (e.g., the Resident Prep Curriculum, a weeklong boot camp to help ease the transition into surgical residency).
- The need for a more holistic review of applications and less reliance on USMLE scores.

Overall:

- Inadequacy of the medical student performance evaluation (MSPE) to distinguish among applicants to residency (in other words, the “Lake Wobegon” effect).
- The need to move beyond the UME, GME, and CME silos to the lifelong learning model.
- Consider high-frequency, low-stakes assessment models, to look at a learner’s real-time, cumulative trajectory of growth in knowledge, clinical skills, and professionalism.
- Multiple “scouts” evaluating performance in many types of venues/situations (not just clinical), to average out multiple direct observations.
- The need for free flow of information (in particular, the “right” information—i.e., that which is insightful, without being overwhelming, such that the signal to noise ratio becomes weak).
- Lack of trust among all parties and “gaming” the system; the match process, by its very nature, encourages masking faults and flaws. “Warm handoffs” may help increase trust in the system.

ENTRUSTABLE PROFESSIONAL ACTIVITIES

One framework that may provide a more useful assessment of learners to improve the UME/GME transition are the Core Entrustable Professional Activities (EPAs) for Entering Residency of the AAMC. The EPAs “provide expectations for both learners and teachers that include 13 activities that all medical students should be able to perform upon entering residency, regardless of their future career specialty. The guidelines are based on emerging literature documenting a performance gap at the transition point between medical school and residency training.”

SUMMARY

The AMA has taken a lead role in improving and easing the transition from UME to GME for learners, program directors, and patients alike. The process has a wide array of variables and stakeholders. Chief pain points are students submitting an inordinate and increasing number of applications in an attempt to match into programs in their chosen fields, and the (mis)use of USMLE Step 1 scores as a primary screening criterion for interviews. The complexity of the issue demands a wide-ranging solution. Through InCUS and related work, such as the Reimagining Residency initiative, the AMA is working to encourage a transition of the residency application/matching system towards a more holistic evaluation of applicants’ full range of competencies and traits that would provide a broader assessment of a student’s capabilities and “fit” with a program. In addition, through its Council on Medical Education and its ability to convene key stakeholders involved in medical education, the AMA will continue working to ensure that new residents are ready to undertake the rigors of residency from day one and learn (under supervision) how to serve their patients, from both an individual and a population perspective.
APPENDIX: RELEVANT AMA POLICY

H-295.895, “Progress in Medical Education: Structuring the Fourth Year of Medical School”

It is the policy of the AMA that: (1) Trends toward increasing structure in the fourth year of medical school should be balanced by the need to preserve opportunities for students to engage in elective clinical and other educationally appropriate experiences. (2) The third and fourth years as a continuum should provide students with a broad clinical education that prepares them for entry into residency training. (3) There should be a comprehensive assessment of clinical skills administered at a time when the results can be used to plan each student’s fourth-year program, so as to remedy deficiencies and broaden clinical knowledge. (4) Medical schools should develop policies and procedures to ensure that medical students receive counseling to assist them in their choice of electives. (5) Adequate and timely career counseling should be available at all medical schools. (6) The ability of medical students to choose electives based on interest or perceived academic need should not be compromised by the residency selection process. The American Medical Association should work with the Association of American Medical Colleges, medical schools, and residency program directors groups to discourage the practice of excessive audition electives. (7) Our AMA should continue to work with relevant groups to study the transition from the third and fourth years of medical school to residency training, with the goal of ensuring that a continuum exists in the acquisition of clinical knowledge and skills.


H-295.862, “Alignment of Accreditation Across the Medical Education Continuum”

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.


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

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.

3. Our AMA will continue to explore, with the Accelerating Change in Medical Education initiative and with other stakeholder organizations, the implications of shifting from time-based to competency-based medical education on residents’ compensation and lifetime earnings.


H-275.953, “The Grading Policy for Medical Licensure Examinations”

1. Our AMA’s representatives to the ACGME are instructed to promote the principle that selection of residents should be based on a broad variety of evaluative criteria, and to propose that the ACGME General Requirements state clearly that residency program directors must not use NBME or USMLE ranked passing scores as a screening criterion for residency selection.

2. Our AMA adopts the following policy on NBME or USMLE examination scoring: (a) Students receive "pass/fail" scores as soon as they are available. (If students fail the examinations, they may request their numerical scores immediately.) (b) Numerical scores are reported to the state licensing authorities upon request by the applicant for licensure. At this time, the applicant may
request a copy of his or her numerical scores. (c) Scores are reported in pass/fail format for each student to the medical school. The school also receives a frequency distribution of numerical scores for the aggregate of their students.

3. Our AMA will co-convene the appropriate stakeholders to study possible mechanisms for transitioning scoring of the USMLE and COMLEX exams to a Pass/Fail system in order to avoid the inappropriate use of USMLE and COMLEX scores for screening residency applicants while still affording program directors adequate information to meaningfully and efficiently assess medical student applications, and that the recommendations of this study be made available by the 2019 Interim Meeting of the AMA House of Delegates.

4. Our AMA will: (a) promote equal acceptance of the USMLE and COMLEX at all United States residency programs; (b) work with appropriate stakeholders including but not limited to the National Board of Medical Examiners, Association of American Medical Colleges, National Board of Osteopathic Medical Examiners, Accreditation Council for Graduate Medical Education and American Osteopathic Association to educate Residency Program Directors on how to interpret and use COMLEX scores; and (c) work with Residency Program Directors to promote higher COMLEX utilization with residency program matches in light of the new single accreditation system. (CME Rep. G, I-90 Reaffirmed by Res. 310, A-98 Reaffirmed: CME Rep. 3, A-04 Reaffirmed: CME Rep. 2, A-14 Appended: Res. 309, A-17 Modified: Res. 318, A-18 Appended: Res. 955, I-18)
REFERENCES


2 Ibid.

3 American Medical Association Council on Medical Education Report 2-I-18, “Accelerating Change in Medical Education Consortium Outcomes.”


5 Ibid.


