

How the Quadruple Aim Widens the Lens on the Transition to Residency

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Medical education is interconnected with the health of the population. In recent years, reforms in undergraduate medical education (UME) and graduate medical education (GME) have attempted to align physician training outcomes with complexities in medical practice. Concerningly, UME and GME have not always worked in concert toward this aim. Various stages of medical education and practice remain siloed, and health outcomes in the United States lag behind other developed nations.¹

The Quadruple Aim, a framework highlighting the goals of lower costs, improved patient outcomes, improved care team experiences, and improved patient experiences, is accepted as a compass to optimize health system performance.² Systems improvement goals in medical education should align with goals for health care, such as those in the Quadruple Aim.

The Coalition for Physician Accountability recently convened the UME-GME Review Committee (UGRC) to address challenges in the UME-GME transition—including complexity, negative impact on well-being, costs, and inequities—and to make recommendations to improve the transition. In addition to individual members representing diverse perspectives, 10 organizations associated with medical education provided representatives. Among the guiding principles for the work were optimizing fit between applicants and programs to ensure the highest quality health care for patients and communities, and increasing trust between medical schools and residency programs. The work resulted in 34 recommendations across 9 themes.³

When one considers the Quadruple Aim, it becomes clear that the UGRC recommendations, if implemented, have potential for direct and indirect

positive impacts on patients, with indirect impacts being mediated through improved experiences and well-being of learners transitioning into residency (applicants) as well as residency program staff and faculty. Residency program directors are in the unique position of training the next generation of physicians and advancing the health of the public through the development of a sustainable, diverse, and competent workforce. Reviewing the UGRC recommendations through the lens of the Quadruple Aim demonstrates the importance of optimizing the UME-GME transition and emphasizes each medical educator's obligation to continuously improve this complex process to positively affect patients and all involved stakeholders. The **BOX** provides guiding principles of the UGRC, and the **TABLE** provides themes, selected recommendations, and suggested actions program directors and others may take to improve the UME-GME transition. The online supplementary data provides additional detail about the UGRC's recommendations.

Relevance to the Quadruple Aim

Lower Costs

The current transition places significant financial burdens on debt-laden applicants and overstretched residency program staff. Graduates from Liaison Committee on Medical Education–accredited schools have median educational debt from \$200,000 to \$215,000.⁴ Electronic Residency Application Service fees are substantial based on average numbers of applications submitted. Registration for the National Resident Matching Program and costs for interviewing and away rotations add to expenses. Applicants commit time reviewing suboptimal advising resources, preparing applications, and interviewing, all of which detracts time from their final year of medical school. Yet the stakes of not matching far outweigh monetary and opportunity costs, and applicant behavior has reflected this with year-over-year increases in applications submitted and programs ranked.⁵ In parallel, residency programs are

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Editor's Note: The online version of this article contains The Coalition for Physician Accountability's Undergraduate Medical Education to Graduate Medical Education Review Committee: membership, guiding principles workgroups, and recommendations.

BOX Guiding Principles of the Undergraduate Medical Education to Graduate Medical Education (UME-GME) Review Committee

1. Optimizing fit between applicants and programs to ensure the highest quality health care for patients and communities.
2. Increasing trust between medical schools and residency programs.
3. Mitigating current reliance on licensure examinations in the absence of valid, standardized, trustworthy measures of students' competence and clinical care.
4. Increasing transparency for applicants to understand how residency selection operates.
5. Considering the needs of all types of applicants in making its recommendations.
6. Considering financial cost to applicants throughout the application (and UME-GME transition) process.
7. Minimizing individual and systemic bias throughout the UME-GME transition process.

overwhelmed by the volume of applications. The cost of recruitment and selection, measured in faculty time as well as financial expenditures, pulls resources from education and patient care.

The UGRC recommendations address these problems. Recommendations for continued virtual interviews during the COVID-19 pandemic, and for ongoing studies on the benefits and disadvantages of in-person interviews and away rotations, are directed at controlling costs. Recommendations centered on providing low-cost, trustworthy program information in an easily accessible database will allow applicants to create a feasible application plan. If pilot programs that are aimed at helping students identify goals and reducing application numbers continue to gain support, costs may further be reduced for applicants and residency programs.

Improved Patient Outcomes

Data suggest that physician racial and gender concordance is associated with better patient outcomes.^{6,7} Unfortunately, many aspects of the current UME-GME transition perpetuate inequities among applicants and disadvantage underrepresented in medicine (UIM) applicants applying for residency positions. UGRC recommendations aimed at decreasing the overemphasis on grades or examination scores can help mitigate the influence of minimal differences in group performance on residency selection.⁸ Recommendations focused on equity are aimed at mitigating structural biases toward UIM applicants as well as international and osteopathic applicants, many of whom struggle with belonging.⁹

The UGRC recommendations also call for faculty development in anti-racism, avoiding bias, and ensuring equity.

Improved Care Team Experiences

Residents serve critical roles in the delivery of care, and their ability to do so is affected by their clinical readiness and personal well-being.¹⁰ Ensuring applicant-program compatibility is critical to optimizing training. Many of the UGRC recommendations aimed at matching applicants and programs with corresponding mutual interests have the capacity to improve the experience of all members of the care team. In addition, UGRC recommendations focused on the availability of inclusive and trustworthy advising materials can help applicants find programs that fit their goals and needs. Recommendations aimed at improving resident onboarding and coaching can optimize both trainee well-being and, by extension, patients' experiences of care. For residency program faculty and newly matched learners, improved transparency of assessments, including a post-match summary assessment, can help foster the development of incoming residents' self-directed learning, which has the potential to improve patient care.

Improved Patient Experiences

Optimal patient experiences depend on more than the medical knowledge of a health care professional. Recommendations focused on creating consensus assessment frameworks have the capacity to create competency standards that more directly relate to improved patient experiences. Students and residents afforded clinical learning environments that support growth mindsets and positive identity formation may have the skills necessary for lifelong learning and should therefore be able to deliver optimal care. Recommendations focused on specialty-specific preparation and orientation to local learning environments can translate to residents who are more aware of expectations and are better able to provide high-quality patient care.¹¹

A Fifth Aim: Health Equity

Nundy et al recently proposed the Quintuple Aim to emphasize the importance of achieving health equity.¹² This newly proposed aim also aligns with the UGRC recommendations, specifically those related to diversity, equity, and inclusion; holistic review of applicants; and training and competency expectations in all areas of medicine, including health equity and anti-racism.

TABLE

The Coalition for Physician Accountability's UGRG Themes, Selected Recommendations, and Suggested Actions³

Thirty-Four Final Recommendations Across 9 Themes	
Themes	Selected Recommendations and Suggested Actions
Collaboration and Continuous Quality Improvement	<i>Recommendation:</i> Convene a national ongoing committee to manage continuous quality improvement of the entire process of the UME-GME transition, including an evaluation of the intended and unintended impacts of implemented recommendations. <i>Suggested action:</i> Contribute to ongoing local and national discussions aimed at creating shared goals for the UME-GME transition. Advocate for and participate in collaborative research so that changes to the UME-GME transition are evidence-informed and iterative.
Diversity, Equity, and Inclusion	<i>Recommendation:</i> Members of the medical education continuum must receive continuing professional development regarding anti-racism, avoiding bias, and ensuring equity. Principles of equitable recruitment, mentorship, advising, teaching, and assessment should be included. <i>Suggested action:</i> Advocate for local resources to train faculty and residents to recognize and eliminate bias in the resident selection process. Examine local assessment practices for demographic group performance differences and potential bias. Demand accountability and transparency of processes attempting to improve diversity, equity, and inclusion at the program, hospital, system, and specialty levels.
Trustworthy Advising and Definitive Resources	<i>Recommendation:</i> Evidence-informed, general career advising resources should be available for all medical school faculty and staff career advisors, both domestic and international. <i>Suggested action:</i> Ensure that local GME faculty advising medical students for the transition to residency use current, accurate, trustworthy data. Participate in specialty-specific efforts to provide all applicants with information necessary to make evidence-informed application decisions.
Outcome Framework and Assessment Processes	<i>Recommendation:</i> UME and GME educators, along with representatives of the full educational continuum, should jointly define and implement a common framework and set of outcomes (competencies) to apply to learners across the UME-GME transition. <i>Suggested action:</i> Locally, align UME outcomes with GME readiness. Nationally, contribute to efforts to harmonize UME and GME competencies at the specialty-specific and medical education system levels.
Away Rotations	<i>Recommendation:</i> Convene a workgroup to explore the multiple functions and value of away rotations for applicants, medical schools, and residency programs. <i>Suggested action:</i> Engage in discussions at the specialty-specific as well as cross-specialty levels to identify key questions about away rotations to be studied, such as those that relate to utility, financial/opportunity cost, equity, and applicant/program outcomes. Demonstrate a collaborative commitment to engage in activities to answer these questions and/or build consensus. Continue to advocate for financial resources to support visiting students' away rotations to help mitigate inequities.
Equitable, Mission-Driven Application Review	<i>Recommendation:</i> Filter options available to programs for sorting applicants within the electronic application system should be carefully created and thoughtfully reviewed to ensure each one detects meaningful differences among applicants and promotes review based on mission alignment and likelihood of success at a program. <i>Suggested action:</i> Examine how a program's goals for holistic review of applicants are impacted by the use of screening filters. Adjust local practices based on program goals and program outcomes.
Optimization of Application, Interview, and Selection Processes	<i>Recommendation:</i> Innovations to the residency application process should be piloted to reduce application numbers and concentrate applicants to programs where mutual interest is high, while maximizing applicant placement into residency positions. <i>Suggested action:</i> Participate in specialty-specific and cross-specialty innovation pilots. Contribute to the research necessary to evaluate pilot effectiveness and impact on the residency selection process.
Educational Continuity and Resident Readiness	<i>Recommendation:</i> Specialty-specific, just-in-time training must be provided to all incoming first-year residents to support the transition from the role of student to that of a physician ready to assume increased responsibility for patient care. <i>Suggested action:</i> Based on local needs assessments and identified PGY-1 educational gaps, design and implement local residency readiness programs. Share salutary practices at the specialty society level. Feed aggregate and specific information back to UME in the spirit of continuous quality improvement.

TABLE

The Coalition for Physician Accountability's UGRC Themes, Selected Recommendations, and Suggested Actions³ (continued)

Thirty-Four Final Recommendations Across 9 Themes	
Themes	Selected Recommendations and Suggested Actions
Health and Wellness	<i>Recommendation:</i> Adequate and appropriate time must be assured between graduation and learner start of residency to facilitate this major life transition. <i>Suggested action:</i> Advocate for and establish practices that allow for enough time between incoming residents' prior experiences (eg, medical school graduation) and the start of residency. Examples include reasonable starting dates for orientation (eg, late June), compensating for orientation activities, providing orientation activities to acclimate to new locations, and supporting teaming activities.

Abbreviations: UGRC, Undergraduate Medical Education to Graduate Medical Education Review Committee; UME, undergraduate medical education; GME, graduate medical education; PGY, postgraduate year.

Note: The above represent selected UGRC recommendations only. Full UGRC recommendations are available at: <https://physicianaccountability.org/wp-content/uploads/2021/08/UGRC-Coalition-Report-FINAL.pdf>.

Summary

The UME-GME transition is viewed as a transactional process that occurs over a limited time frame. In reality it is a complex system that, if not reformed, will be driven by self-interest over the public good. Throughout the work of the UGRC, clarity developed on the interconnectedness of the transition, the broader health care system, and our goals for health care improvement. The UGRC recommendations are not mandates but are suggestions for broad improvements to a decentralized process. As a result, the UGRC's recommendations may suffer from a condition of everyone being accountable; therefore, no one being accountable. Leaders in medical education should be compelled to implement the recommendations through individual and local action, organizational and professional societal initiatives, as well as advocacy for systems-wide changes. Adopting the UGRC's recommendations not only has the capacity to improve experiences and outcomes for applicants and residency program faculty and staff, but also holds the promise of contributing to positive patient outcomes.

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