COGME ISSUE BRIEF   *DRAFT*

Council on Graduate Medical Education

Measuring the Impact and Improving the Stewardship of Graduate Medical Education:
A Call for Coordination and Collaboration on Data

Month 202X

In the United States, graduate medical education (GME), also referred to as medical residency, is a critical phase in the development of competent, well-prepared physicians. GME covers the period of training after graduation from medical school and before entry into autonomous clinical practice, when medical residents "learn to provide optimal patient care under the supervision of faculty members."[1] In the course of their training, residents offer much of the free or low-cost care that many at-risk or underserved patient populations rely upon.[2] Thus, GME serves to strengthen health care access and quality, one reason that the federal government provides much of the funding for GME programs.

The substantial federal investment in GME creates what many view as an implicit social contract to prepare physicians to meet the health needs of the American people. However, there is little accountability in the current public financing model of GME.[3] Longitudinal data concerning the inputs, as well as short- and long-term outputs, of the GME system are difficult to access, hindering federal policymakers and other public and private GME stakeholders from fully evaluating the GME system.[4,5] Better access to and use of available data could provide transparency in assessing the impact of public GME investment,[6] allowing researchers to evaluate the performance of specific GME training approaches, study racial and socioeconomic differences in rates of failure involving those who withdraw or are dismissed from residency programs, and follow trends in physician career paths and practice behaviors, among other outcomes of interest in improving GME.

In its 2017 report, the Council on Graduate Medical Education (COGME) identified several national concerns about the state of GME, including a lack of diversity in the physician workforce and inequities in addressing the needs of minority populations and rural and other underserved communities.[2] Moreover, there are long-standing questions about the stewardship of GME funding and the return on investment to taxpayers, as well as quality and efficiency related to the duration and cost of GME.[4] The stresses that the COVID-19 pandemic placed on physicians and the health care workforce as a whole exacerbated all of these challenges, and will continue to impact the post-pandemic recovery.

This *issue brief* from COGME highlights the urgent need to develop, coordinate, and implement a concrete action plan to better measure medical student, resident, and physician performance and workforce composition over time, and to improve the stewardship of GME funding in addressing societal needs.[3] This effort is consistent with findings from the 2018 National Academies of Science, Engineering, and Medicine (NASEM) report on GME outcomes and metrics.[5] Improved standardization, validation, accessibility, and interoperability of already existing data sets would enable GME stakeholders to assess innovative investments aimed at improving the efficiency, quality, affordability, and public health impact of GME, as well as inform efforts to increase the recruitment of underrepresented in medicine (UIM) trainees who more often intend to practice in rural and other underserved communities.

Existing Data

Many medical organizations, including the Association of American Medical Colleges (AAMC), the National Resident Matching Program (NRMP), the Accreditation Council for Graduate Medical Education (ACGME), the Federation of State Medical Boards (FSMB), and American Medical Association (AMA), as well as federal agencies that fund GME programs such as the Health Resources and Services Administration (HRSA), Centers for Medicare and Medicaid Services (CMS), and Veterans Administration (VA), collect a wide range of data on GME for their own purposes. Thus, much of the information necessary to analyze the inputs and impact of GME already exists in some form. For the most part, though, the different data sets are separate, and thus not broadly accessible or interoperable. Unique identifiers include the AAMC ID, the AMA ID, and the National Provider Identifier (NPI). No other profession has this starting point, which can be used for longitudinal tracking and building linked databases.

Summary

Graduate medical education (GME) represents a critical phase in physician training, and medical residents provide access to free or low-cost care for many at-risk or underserved populations. Better sharing and interoperability of data could help in determining the impact of federal GME funding on preparing the physician workforce to meet the health needs of the American people.

COGME recommends:
- Convening a stakeholder group for a series of meetings to improve data access, coordination, and collaboration.
- Investing in longitudinal GME outcomes and accountability research.

The figure below illustrates some of the complexities of gathering data on medical education and practice across the educational and career continuum of a physician, including the different points at which data collection and analysis could be used to improve assessment of GME.
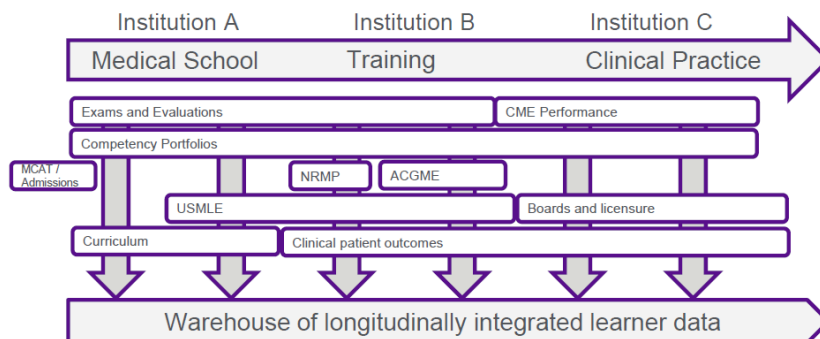

Figure 1: The Medical Education Data Continuum
NOTE: ACGME = Accreditation Council for Graduate Medical Education; CME = continuing medical education; MCAT = Medical College Admission Test; NRMP = National Resident Matching Program; USMLE = U.S. Medical Licensing Examination. [SOURCE: NASEM, 2018[5]; Triola MM, Pusic MV. The Education Data Warehouse: A Transformative Tool for Health Education Research. *Journal of Graduate Medical Education.* 2012: 4(1):113-115.]

Improving Data Sharing and Interoperability

While there is a wealth of raw data on GME, definitions and collection methods may differ across the various unconnected databases in which the data are housed. For example, ACGME, which accredits all GME programs in the United States, collects demographic and career path data on residents, fellows, and faculty physicians. Meanwhile, HRSA separately collects data from its grantee institutions, much of

it available through the HRSA Data Warehouse website (data.HRSA.gov), which provides information and analytic tools about HRSA's physician and other health workforce programs. CMS also allows researchers to access its files (cms.gov/data-research), including Medicare claims data which can be linked to physician practice patterns using the NPI. Making data interoperable from all stakeholders, including accrediting and certifying bodies, specialty boards, professional organizations, healthcare institutions, and government agencies, provides a more comprehensive data set. This would enable responsible parties, such as health workforce researchers and policy organizations, to explore GME's impact on physician workforce composition, distribution, and competency, as well as guide strategies for defining shared metrics of accountability and success. Another vital emerging area for discussion is the use of artificial intelligence (AI) in physician workforce data analysis, which will require expertise in bridging educational and clinical data.[7]

There are some successful small-scale models. New York University Grossman School of Medicine links GME training data to quality of care and overall healthcare costs. The results then support evidence-based education to guide improvement efforts.[3,5] A regional alliance involving Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) has built a model for rural healthcare training and outcome assessment, offering an exemplar of a successful program with system accountability and actionable metrics.[3] These and similar models could serve to guide national GME assessment efforts.

COGME notes past efforts to bring national stakeholders together over common data and metrics. Creating a centralized GME data hub would be a very complex endeavor. It would involve not just building an interoperable system, but also making it timely, cost-effective, and sustainable through broad buy-in, ongoing maintenance and support, consistent data entry and updates, broad accessibility, responsible use, and reliable funding. Still, much of the preliminary work has been addressed, with the overview provided by the 2018 NASEM report,[5] along with the recommendations from the 2017 COGME report.[2]

COGME believes a renewed push is timely to bring together leaders from GME funding agencies, professional medical organizations, philanthropic foundations, and other stakeholders. These entities all have a vested interest in improving medical education and health care through the development and implementation of a plan to make the available GME data sets more robust, accessible, and collaborative.

Conclusion

Understanding the role of GME in addressing our complex U.S. healthcare system and workforce challenges will require an unprecedented, and perhaps at times uncomfortable, level of coordination across all GME stakeholders. In line with the 2018 NASEM report findings, COGME believes that the first step is to assess the data currently available but siloed across different institutions, organizations, and agencies. Efforts to standardize, validate, and share the data necessary to inform and drive change in GME will require close collaboration across all partners to assure fair access and governance, attention to privacy rights, the appropriate incorporation of AI analytic methods, and the avoidance of unintended consequences in data usage. COGME is calling for core GME outcome metrics that are:
- defined through consensus of stakeholders,
- publicly visible, and
- easily accessible, digestible, and meaningful.

As envisioned by COGME, collaborative efforts on GME data collection and analysis can deliver more effective, data-informed policies and programs that will enhance the satisfaction of patients and physicians and provide better stewardship of GME funding, while also working to decrease health disparities and improve health outcomes across all populations, in line with the GME social contract.

COGME Recommendations

COGME is responsible for providing "an ongoing assessment of physician workforce trends, training issues and financing policies, and [recommendations on] appropriate federal and private sector efforts on these issues."[8] Under this charge, COGME recommends that Congress authorize and fund the Department of Health and Human Services to:

Recommendation 1: Convene an inclusive group of GME stakeholders, to include governmental GME funding agencies, as well as leadership representation from select medical organizations, institutions, and philanthropic foundations, for a series of meetings to develop a set of core outcome metrics and guidelines for standardizing, systematizing, and sharing data relevant to GME, as well as to provide recommendations to implement best practices in data collection, storage, and usage. This effort would build on the 2018 NASEM report on GME outcomes and metrics.

Recommendation 2: Invest in longitudinal research on GME training outcomes, including practice behaviors and populations served, modeled on successful local and regional programs. The goal would be to demonstrate the interoperability of data from multiple stakeholders and the impact of federally funded GME programs in meeting the healthcare needs of the country, to inform effective stewardship of taxpayer investment in GME. This can be accomplished by funding HRSA's National Center for Health Workforce Analysis to a) support research on GME accountability at a national scale or through a network of local pilot projects and b) establish a collaborative GME data site at an accountable institution, or to build on existing efforts, with the potential for additional funding from foundations interested in promoting innovations in medical education and physician workforce analysis.[5]

References:

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