



Training the Workforce for a Changing Health System

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Questions about how to best prepare health professionals to practice in an evolving health care delivery system are receiving increased attention. Graduate medical education (GME)—the training that medical school graduates receive as residents, typically in teaching hospitals—has been an ongoing focal point in the discussion about how health care workforce training is conducted and financed. This issue brief provides an overview of the GME system, highlights core policy issues, identifies new training strategies and provides a synthesis of key resources.

Graduate Medical Education Overview

The majority of financing for GME comes from Medicare and Medicaid—an estimated **\$9.7 billion and \$3.9 billion**, respectively, in 2012. Most states contribute to GME through their Medicaid programs. Private insurers provide some funding for GME through negotiated payments with teaching hospitals. The Department of Veterans Affairs (VA) and the Health Resources and Services Administration (HRSA) within the Department of Health and Human Services (HHS) also provided about **\$1.4 billion and \$500 million** respectively.¹

There are two independent Medicare funding streams for GME:

- Direct graduate medical education (DGME) payments—intended to cover the salaries and benefits of residents and faculty and certain other costs; and
- An indirect medical education (IME) adjustment to Medicare prospective

payment system (PPS) inpatient rates, aimed at helping defray additional costs of providing patient care thought to be associated with sponsoring residency programs.

The DGME payment for each teaching institution is calculated by multiplying **three factors**:²

- The weighted resident count—the most recent three year average of full-time equivalent (FTE) residents in an accredited program. The Balanced Budget Act of 1997 capped this resident count to the number each hospital reported in its cost report period ending on or before December 31, 1996.
- Per-resident amount—based on a hospital's allowable GME costs in 1984, divided by the number of residents that year, and adjusted for inflation and locality.
- Medicare bed-day ratio—the ratio of the hospital's Medicare inpatient days to total inpatient days, in order to adjust for the proportion of patient days attributable to Medicare patients.

The IME payment is calculated as a percentage add on to the diagnosis-related group (DRG) payment rate a hospital receives for each Medicare discharge. This add on, called the IME adjustment factor, is computed by using a hospital's ratio of residents to beds, and a multiplier set by Congress. This amount, unlike direct costs, is estimated statistically to account for the spending differences between teaching and non-teaching hospitals.³

Issues

Due to the significant amount of federal and state funding allocated to GME, a point of contention in debates has been how the funds should be used to train physicians. The main debated issues include:

- Whether there is a physician shortage
- Distribution of primary care and specialty physicians
- Geographical disparities in the availability of physicians

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- Transparency of GME payments
- Training a better prepared and practice-ready medical workforce

Shortage of Physicians

Discussions about the appropriate number and types of health care providers factor strongly into the debate about the GME program. There is some debate over whether a physician shortage exists, its magnitude, and solutions to decreasing it. With some exceptions, Medicare capped the number of residency positions used to calculate GME payments in 1997, due to concerns of an oversupply of physicians.⁴

However, medical associations and hospitals are calling for additional Medicare-funded residency positions, citing statistics that point to a physician shortage. For example, according to the Association of American Medical Colleges' (AAMC) Center for Workforce Studies, there will be 45,000 too few primary care physicians—and a shortage of 46,000 surgeons and medical specialists—in the next decade,⁵ primarily due to the retiring workforce and the expectation of increased demands for health care services under the Patient Protection and Affordable Care Act (ACA) coverage expansion.

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However, a recent report from Institute of Medicine (IOM) concludes that increasing Medicare GME payments may not be necessary. The report notes that, despite the cap, funding from other areas has supported a 17.5 percent increase in the number of training slots since then to almost 118,000.⁶ In 2014, an all-time high of 26,678 first-year residency positions were filled from 40,394 applications, according to the National Resident Matching Program.⁷ The American Medical Association, on the other hand, is requesting an increase in federal grants for new residency positions in order to “produce an appropriately-sized and geographically-distributed physician workforce.”⁸

Primary Care

The number of specialist physicians continues to be roughly twice the number of primary care physicians; the distribution is more evenly balanced in most developed countries.⁹ IOM reports that, while “the capacity of the GME system has grown in recent years, it is not producing an increasing proportion of physicians who choose to practice primary care, to

provide care to underserved populations, or to locate in rural or other underserved areas.”¹⁰ The American Academy of Family Physicians has argued that any expansion of GME funding should bolster the number of primary care physicians.¹¹

Geographical Disparities

Certain geographical areas face much more significant health care provider shortages. The Medicare payment cap locked in the ratios of doctors from 1997, and the needs of different areas have not been reevaluated since. The National Health Service Corps provides incentives for residents to work in underserved communities through loan repayments or scholarships during up to four years of training.¹² There are also certain residency cap exemptions for rural hospitals. Another idea has been to create new residency slots in rural hospitals that are linked via telemedicine to urban hospitals.¹³ Despite these efforts, HRSA estimates that an additional 7,000 physicians are needed in federally-designated health professional shortage areas (HPSAs).¹⁴

Transparency of GME Payments

GME funding is distributed directly and primarily to teaching hospitals, which, in turn, have fiduciary control over the funds. Medicare, which is the single largest payer, has minimal reporting requirements; teaching hospitals must only report the data elements that are needed to calculate GME payments. According to IOM's findings, the reported data on GME's direct costs are not complete, standardized or audited.¹⁵

Recent reports by the Medicare Payment Advisory Commission (MedPAC) recommended setting up a performance-based incentive system, where payments would be contingent on educational outcomes. Funding for this system would come from reallocating a portion of Medicare's IME payments.¹⁶ A 2014 IOM report recommends redistributing some funding to alternative facilities such as community health centers, which it indicates have need of residents (who themselves need more community health experience) but lack sufficient resources to draw residents from the academic medical centers that are the primary recipients of funding.¹⁷

Training Initiatives

There is also major concern that newly-trained physicians are not adequately prepared for today's health care setting. According to IOM, physicians in some specialties struggle with simple office-based procedures and routine conditions. In addition, medical educators report that current curriculums inadequately emphasize training in “care coordination, team-based care, costs of care, health information technology, cultural competence, and quality improvement—competencies that are essential to contemporary medical practice.”¹⁸

Reduced exposure to bedside teaching may be responsible for the declining skills of new physicians, according to an article in the journal *Perspective on Medical Education*. While 50 years ago most clinical

teaching occurred at the bedside, today that number is estimated to be 8 to 19 percent.¹⁹ The 2014 IOM report also cites a lack of inter-professional and community-based education. Currently, nearly all GME training is hospital based, even though most physicians practice in community-based settings.²⁰ The Teaching Health Center (THC) program, established by the ACA, covers direct and indirect medical education expenses of residents training in new or expanding community-based primary care residency programs.²¹

In response to calls for a better-trained physician population, medical schools and teaching hospitals are beginning to make changes. In 2009, the Accreditation Council for Graduate Medical Education (ACGME) began restructuring its accreditation system to “enhance education focused on physician competencies that are deemed to be relevant to the health of individuals and populations.”²² Many medical schools now require students to take at least one course in medical humanities.²³ Some medical schools are also shortening education time, reasoning that training is unnecessarily long. More than 30 medical schools successfully operate 6- or 7-year medical programs in which premedical training is reduced from the typical four years of college to two or three years. The *Journal of American Medical Association* points out that, while data are limited, there is no evidence that these perform more poorly on board exams, or as practicing physicians.²⁴

Resources

Major Institutional Reports

Graduate Medical Education That Meets the Nation's Health Needs

Institute of Medicine. June 2014;
<http://goo.gl/TpSMuw>

The report recommends maintaining Medicare GME funding at its current level, while restructuring payment methods to a performance-based system. It also recommends establishing a new funding system, with two subsidiary funds. The GME Operational Fund would finance ongoing residency programs, while the Transformational Fund would finance the development of new innovative programs aimed at increasing performance, infrastructure, transparency, and accountability of future physician workforce training. Finally, the report recommends building a two-part governance infrastructure for federal GME financing—the GME Policy Council within HHS, which would oversee policy development and decision making, and a GME Center within CMS, which would serve the operations center for payments.

Report Touches Off Fight Over Future Of Doctor Training Program

Kaiser Health News. Julie Rovner, July 2013;
<http://goo.gl/TpSMuw>

This article reports mixed reactions to 2014 IOM report. The American Hospital Association expressed disappointment in the proposal to shift funding from hospitals to community-based training sites, while

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the American Academy of Family Physicians voiced its approval. The American Medical Association disagreed with IOM's lack of consensus that a physician shortage exists. The article also discusses the challenges involved in implementing recommended changes, due to the sensitive politics associated with the redistribution of funds.

A 21st Century Health Care Workforce for the Nation

Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services. February 2014;
<http://goo.gl/k2bJCy>

The report discusses an initiative in President Obama's 2014 budget proposal to modernize GME by allocating \$5.23 billion in mandatory funds to an innovative competitive grant program to create new residency slots focused on community-based ambulatory care. Additionally the report describes the expansion of the National Health Service Corps (NHSC) to increase the number of health care providers in underserved areas. The report describes the Primary Care Incentive Payment (PCIP), a program that provides a 10 percent incentive payment for new physicians who choose to go into a primary care specialty.

2013 State Physician Workforce Data Book, Center for Workforce Studies

Association of American Medical Colleges. November 2013;
<http://goo.gl/rTQMgP>

This report examines current physician supply, medical school enrollment, and graduate medical education. It provides state-specific data in a series of figures and corresponding tables.

Graduate Medical Education Financing: Focusing on Educational Priorities

MedPAC. June 2010;
<http://goo.gl/SKvztY>

This report assesses the current GME system and presents several recommendations on how to change the funding of GME. The report recommends removing setting up a performance based incentive system, where payments would be contingent on educational outcomes. Funding for this system would come from reducing Medicare's indirect medical education (IME) payments to eliminate the amount currently paid above empirically justified costs. (Analysis conducted by MedPAC found that IME

payments in 2009 were in excess of justified hospital costs by an estimated \$3.5 billion in 2009.) The report notes the inadequacy in the workforce mix, and the need for better education and training skills as the two specific areas of concern. Additionally, the report recommends making Medicare GME payments public in order to increase public transparency and foster greater accountability. Finally it calls for an independent analysis of the health care workforce to be conducted regularly in order to determine how to improve the health care workforce.

New Educational Models Based on Competency and Population Need

Accelerating Physician Workforce Transformation Through Competitive Graduate Medical Education Funding

HealthAffairs. D. Goodman & R. Robertson, November 2013;
<http://goo.gl/bYqx54>

This article discusses the developmental inertia of graduate medical education in the United States, its varied causes, and how incentive-based funding mechanisms and a competitive peer-review process could help to realign GME programs with the public's priorities.

Shortening Medical Training by 30%

Journal of the American Medical Association. E. Emanuel & V. Fuchs, March 2012;
<http://goo.gl/3YdV51>

This editorial lays out the case for shortening the medical school process. The authors argue that the increasing clinical and scientific complexity of medical care requires a training program that is unchained from notions of the physician "triple threat" of diagnostician- clinician, researcher, and teacher. They point to several institutions in the United States and elsewhere that have already begun to modify their curricula in this manner.

The 3-Year Medical School—Change or Shortchange?

The New England Journal of Medicine. S. Goldfarb & G. Morrison, September 2013;
<http://goo.gl/IES9JJ>

This article argues against shortening the time spent in medical school. The authors call for extensive reform of the third- and fourth-year medical school experience, making more time available for career exploration and interviews as well as restructuring much of the clinical experience to incorporate more formal education and training. The authors add that the classroom years of medical school do not adequately prepare students for residency training—with students lacking medical knowledge, ability to work unsupervised, and professionalism related to assuming responsibility.

The Next GME Accreditation System—Rationale and Benefits

The New England Journal of Medicine. T. Nasca et. Al, March 2012;
<http://goo.gl/cWqBBu>

This report describes the evolving standards for GME program accreditation. The authors describe the establishment of the Accreditation Council for Graduate Medical Education in 1981, characterize its effects as largely positive, and identify several key shortcomings of the process: overly prescriptive program requirements; limited opportunities for innovation, and educational standards that lag behind delivery-system changes. New Accreditation Standards, beginning in July 2013, are built around educational milestones, which measure resident achievement and professional competence for each specialty, and shift programs from 4–5 year assessments to annual review. The authors identify the primary limitations of the new standards as the same inherent to any accreditation model for GME: the educational system itself faces a changing delivery environment and limited resources, and any attempt to make the new standards less burdensome hedge against the risk of lowering the standards for clinical practice.

New Models for Clinical Education

Back to the Bedside: the Role of Bedside Teaching in the Modern Era

Perspectives on Medical Education. Z. Qureshi, February 2014;
<http://goo.gl/iF3u5c>

This piece analyzes a shift away from bedside medical education and into conference rooms to accommodate sophisticated imaging technology and detailed lab results. The author claims this change denies medical students the opportunity to learn patient interaction in a safe, learning environment. He goes on to claim that bedside teaching can be restored with some alteration, so as not to come at the expense of the expanded classroom requirements of modern medical training.

New and Future Approaches to Medical Education

In-Training.Org. D. Fleher, December 2013;
<http://goo.gl/pTbwOJ>

The author discusses models in which schools are eschewing the individualism of the lecture hall in favor of team-based learning, increasingly through massive open online courses (MOOC) that allow students and faculty to "flip the classroom" and facilitate lateral collaboration between students and teachers. He also cites programs that he says teach students to see their patients beyond the episode of care, through Emergency Medical Technician service and work in community clinics, incorporating community health into every aspect of patient health and care.

Reforming Health Professions Education Will Require Culture Change and Closer Ties Between Classroom and Practice

HealthAffairs. G. Thibault, November 2013;
<http://goo.gl/zjDIIG>

The author claims that change in medical education is needed to re-boot the medical workforce for an evolving paradigm of care. He specifically recommends investment in interprofessional education;

new models for clinical education; new content to implement the biological sciences; new educational models based on competency; new educational technologies; and faculty development for teaching and clinical innovation.

Humanities in Medicine: Preparing for Practice

Perspectives on Medical Education. D. Ramai & S. Goldin, October 2013;
<http://goo.gl/GZKqSb>

This piece introduces the reader to a growing trend of incorporating the humanities into medical education. The authors describe how these additions to the medical school curriculum may contribute to doctors' professional competency: improve capacity to listen, interpret, and communicate; foster appreciation for the ethical dimensions of practice; foster an active professional conscience that can withstand the rigors of medical study and practice; and provide a safe and responsible outlet for student doctors and physicians struggling under the burden of witnessing the toll of disease.

New Educational Technologies

Smartphones, Trainees, and Mobile Education: Implications for Graduate Medical Education

Journal of Graduate Medical Education. S. Short et. Al, June 2014;
<http://goo.gl/Gu3HtP>

This article explores the utility of smartphones as an instrument of the "anytime, anywhere" approach to learning. The authors identify early research indicating the utility of real-time training and feedback facilitated by the technology. Electronic libraries of medical textbooks were also indicated as a major benefit to the integration of smartphones into GME. The authors reviewed some of the barriers to this integration, including financial cost, potential appearance of unprofessionalism, the risk of distraction, legal and ethical concerns regarding patient confidentiality, and increasing dependence on mobile technology at the cost of key skill acquisition or the senior-trainee relationship. The authors concluded with recommendations for future research, including the efficacy of specific smartphone interventions in improving knowledge and outcomes, the financial cost of such interventions, and issues of perception as smartphones become more conspicuous tools in the provision of care.

Technology in Medical Education

Journal of Graduate Medical Education. K. Chretien et. Al, June 2014;
<http://goo.gl/oXcOSC>

The authors of this editorial point to a growing practice of incorporating mobile computing devices into clinical training. Smartphones and tablets can connect every clinician with a wealth of information and diagnostic tools, and social media networks can help residents and other students forge bonds of professional collaboration and mutual support with the aid of special groups on major social media platforms, they contend.

Toward Coordinated Care

Interprofessional Care Coordination: Looking to the Future

The New York Academy of Medicine. October 2013;
<http://goo.gl/4PXDkE>

This report begins with a review of the historical trajectory of inter-professional care delivery, as well as the recent NYAM committee initiative to raise awareness of inter-professional care coordination models among providers and policymakers; it identifies the differences and similarities between various coordination models and keys to success; and recommends a blueprint for implementing evidence-based, care coordination models and integrating these principles into GME. Recommendations include: engaging "end users" of care in active decision-making; making the business case for care coordination and its sustainability; supporting demonstration projects testing a "wraparound" model of care; assuring flexibility in care team composition and function based on patient/family need; refining core competencies for coordinated care and incorporating them into GME; and establishing roles and certification procedures for community health workers as part of the care team.

Bridging the Quality Chasm: Interprofessional Teams to the Rescue?

The American Journal of Medicine. R. Weinstein et al, February 2013;
<http://goo.gl/CdW11N>

This piece reviews the historical and developmental context of the present-day interest in interprofessional care teams. Beginning with the Institute of Medicine's 2000 report *To Err is Human* and the Institute's "Quality Chasm" series beginning in 2003, the authors chart the growing interest in assembling multidisciplinary care teams to provide collaborative "whole patient" care. The authors acknowledge the obstacles to such a transition, namely a relative shortage of primary care providers and multiple "silos" in medicine, and recommend an expansion of the primary care workforce and investment in inter-professional education as promising solutions.

Educating Nurses and Physicians: Toward New Horizons

Josiah Macy Jr. Foundation & The Carnegie Foundation for the Advancement of Teaching. July 2010;
<http://goo.gl/xuVTY5>

This report summarizes a conference about changing graduate medical education for the 21st century. The report suggests that several key developments make the imminent adoption of the inter-professional education model more likely – and necessary: dramatic changes in the delivery of care; a rapid "explosion" in science and technology, including a greater reliance on informatics; increasingly complex medical conditions and treatments; and changing reimbursement structures in accordance with the ACA.

Selected Experts

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Websites

Agency for Healthcare Research and Quality
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Association of American Medical Colleges <http://aamc.org>

The Assistant Secretary for Planning and Evaluation
<http://aspe.hhs.gov>

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Bureau of Health Professions
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<http://iom.com>

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ENDNOTES

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