INSIGHT on the Issues

Graduate Medical Education and Medicare: Understanding the Issues

The Medicare program spent about $9 billion on graduate medical education (GME) in 2008. There are important questions about whether the Medicare program, beneficiaries, and taxpayers are getting good value for this investment. How many residents should Medicare fund? To what extent should Medicare GME funding be used to advance workforce policy? For what kinds of training should Medicare pay?

This Insight on the Issues examines the role of Medicare in financing residency training for physicians-in-training at teaching hospitals. It presents information on funding, residency population, and teaching hospital numbers. It also discusses issues facing policymakers concerned about the relationship between Medicare and the physician workforce, including the role that Medicare should play in training residents, the extent to which Medicare funding should be used as a tool to shape the physician workforce, and what kinds of training Medicare should support.

Graduate medical education (GME) is the system of hospital-based training required of all physicians licensed to practice medicine in the United States. After spending four years in medical school (the "undergraduate" portion of medical education), physicians-in-training spend from one to seven years as residents training in hospital-based programs. This residency training is referred to as graduate medical education, and the hospitals that operate residency training programs are known as teaching hospitals.

The GME system, a key component of the country's health care infrastructure, has two main goals: ensuring an adequate supply of providers and ensuring a workforce capable of delivering high-quality care. Without enough physicians, nurses, and other health care providers, Americans lose access to care, both preventive and lifesaving. Absent rigorous standards of training, health care quality for all patients is threatened. Residency training should ensure that our nation has a sufficient supply of the kinds of providers needed to treat patients, and that these providers enter the workforce with the knowledge and skills required to provide high-quality care.

Responsibility for implementing these goals falls to those who oversee the structure and content of residency training programs and those who fund them. The main body charged with overseeing the content of GME programs is the Accreditation Council for Graduate Medical Education (ACGME), a private, nonprofit body that accredits all residency training programs in the United States. Funding for GME programs comes from a number of different sources, but the dominant funder is the Medicare program. This Insight on the Issues focuses on Medicare's role in funding and shaping GME.

Medicare's Role in GME

Medicare is the main funding source for GME in the United States.[1] Medicare pays teaching hospitals to train residents in order to ensure that the country has an adequate supply of doctors and that Medicare patients have access to the treatments and technologies available in teaching hospitals.

Medicare funding for GME comes in two forms: direct and indirect GME. Direct GME pays for the direct costs of operating a residency training program, including salaries for teaching faculty and residents, administrative costs, and rent and overhead costs for rooms used for teaching. Payments are based on the number of residents; every hospital has its own per-resident amount based on historical GME costs. Per-resident amounts are about 6 percent higher for primary care (family practice, general internal medicine, general pediatrics, obstetrics and gynecology), geriatrics, and public health programs than for other training programs.[2] While teaching hospitals are free to train as many residents as they like (or as many as ACGME approves), the number of residents Medicare will support is capped.[3] These caps were put in place in 1997 in response to two concerns: (1) that hospitals had a strong incentive to add residents to get more money, and (2) that the country would soon have an oversupply of physicians.

Indirect GME payments (IME) reimburse hospitals for the additional costs of caring for patients while simultaneously training residents. Teaching hospitals receive an extra payment for each Medicare patient they admit; the amount of extra payment depends on the number of residents the hospital trains and the size of the hospital. Hospitals that have more residents relative to the number of beds receive higher IME payments than hospitals that train fewer residents. As with direct GME payments, the number of residents a hospital may count for purposes of Medicare payment is capped.

GME by the Numbers

In 2008, Medicare paid teaching hospitals about $9 billion in GME funds, or about $100,000 for each of the roughly 90,000 residents supported by the Medicare program.[4] About two-thirds of the money went toward IME payments and one-third for direct GME payments.

While the Medicare program supported training for about 90,000 residents in 2008, the total number receiving training at accredited programs in U.S. hospitals was 109,482, according to ACGME. Seventy-two percent were graduates of U.S. medical schools, while the remainder were graduates of international medical schools. About one-fourth of residents were in the first year of training, while 2 percent were in training year five or beyond. A little more than one-third of residents were training in primary care specialties.[5]

In 2006, 3,824 hospitals admitted Medicare patients, and 1,095 (just under 30 percent) were teaching hospitals. Among teaching hospitals, 243 were "major" teaching hospitals, which means the hospital had at least one resident for every four beds, and 853 were "minor" teaching hospitals, with fewer residents per bed.[6]

Teaching hospitals and residents are unevenly distributed. While a handful of states have more than 50 medical residents for every 100,000 people, most states have fewer than 30, and four states have 10 or fewer medical residents for every 100,000 people.[7] The geographic distribution of residents is important because research shows that residents are more likely to remain and establish practice in the state in which they complete their residency,

because it helps highlight the areas that are relatively underserved by physicians, and because it shows where Medicare GME funding goes.

Medical schools awarded 16,468 MD degrees in 2009. That number is growing in response to calls by the Association of American Medical Colleges (AAMC) and the Council on Graduate Medical Education (COGME) for a significant increase in enrollment by 2020 to address concerns about physician shortages.[8] A total of 18,390 students entered medical school in 2009, suggesting more graduates in the future.[9]

Issues Facing Graduate Medical Education

Supporters and critics have raised a number of issues and concerns about the way Medicare funds GME.[10] These issues come down to three fundamental questions facing policymakers:

- How many residents should Medicare fund?
- To what extent should Medicare GME funding be used to advance workforce policy?
- For what kind of training should Medicare pay?

The underlying theme of each question is whether the Medicare program, the beneficiaries who contribute directly to GME funding through premiums and cost sharing, and taxpayers are getting value from their investment in GME.

How Many Residents Should Medicare Fund?

As mentioned earlier, the number of residents Medicare funds at a given teaching hospital is capped at the number in training at the hospital in 1996.[11] At the time they were instituted, the need for caps was clear: teaching hospitals had a strong incentive to keep adding residents in order to attract more Medicare dollars, at the same time that analysts foresaw an oversupply of physicians in the decades ahead. Today, the concern is not an oversupply of physicians, but a potential shortage of physicians in the future. Already, some states need more primary care physicians.

In response to these concerns, medical schools are increasing their enrollments. In 2009, 18,390 students matriculated at U.S. medical schools, more than a 10 percent increase over five years.[12] In 2006, the AAMC called for increasing enrollment by 30 percent. In 2005, COGME recommended that the number of residents who enter training each year increase from about 24,000 in 2002 to 27,000 in 2015. In 2007, COGME called on Medicare to increase GME funding by at least 15 percent to accommodate more residents.[13]

Not everyone agrees that the nation needs more physicians. Some argue that if we could reform the delivery system to reduce unnecessary care, we would have enough physicians to provide needed care.[14] Others believe that primary care can be provided not only by physicians but also by physician assistants (PAs) and nurse practitioners (NPs), both of whom are less costly to educate.

PAs practice medicine under the supervision of physicians following two years of full-time study.[15] NPs are registered professional nurses trained in providing primary care through at least two additional years of full-time graduate education. In most states, NPs practice without physician supervision. Numerous studies have demonstrated that NPs provide primary care that is comparable in quality to that of MDs.[16]

The strongest argument against more residents is money. Even now, it is not clear just what Medicare gets for the

$9 billion it spends on GME each year. The Medicare Payment Advisory Commission (MedPAC), the independent commission tasked with advising Congress on Medicare payment policies, has consistently found that the additional IME payments teaching hospitals receive for each Medicare patient treated are far higher than the actual cost of treating these patients. In its most recent analysis, MedPAC showed that Medicare inpatient costs per case increased about 2.2 percent for every 10 percent increase in the ratio of residents to hospital beds, less than half the current IME adjustment of 5.5 percent.[17]

Medicare could potentially have a larger impact on the primary care workforce at much lower cost by investing in graduate nursing education. A recent cost analysis[18] projected that a $1 billion investment could add 19,000 more advanced practice nurses to the workforce over the next 10 years.[19]

Perhaps the more fundamental question is why Medicare carries so much of the burden of funding GME. While other payers, both public and private, do provide funding, Medicare is the largest source. Medicare funding for GME is about three times that of Medicaid, the next largest explicit funding source.[20] The extent to which private payers fund GME is debatable because their support tends to be implicit in the prices they negotiate with teaching hospitals relative to prices at nonteaching hospitals. Some estimates put it close to Medicare funding; others suggest it is far less.[21]

Past efforts to expand participation in GME funding have failed. However, ongoing discussions by MedPAC suggest a new effort at expansion. At its March 2010 meeting, MedPAC laid out a set of principles for restructuring GME funding that include transitioning funding from Medicare to general revenues.[22] The new principles, along with increased attention to the growth of entitlement programs, including Medicare, may make fundamental changes to the funding mechanism more likely.

To What Extent Should Medicare GME Funding Be Used to Advance Workforce Policy?

Beyond questions of how many physicians the population needs, there are questions about what kinds of physicians are most needed, and how physicians are distributed geographically. Most analysts agree that the need for primary care physicians is greater than the need for specialists, but existing payment policies favor specialists. In a 2009 letter to Department of Health and Human Services Secretary Sebelius, COGME noted that primary care physicians make up 35 percent of all practicing physicians, but fewer than 20 percent of graduating medical students choose primary care.

Current Medicare GME funding policies favor primary care residency positions with slightly higher per-resident amounts for primary care. The differential dates to the mid-1990s, when for two years primary care per-resident amounts were updated for inflation while other per-resident amounts were not. The differential is less a policy than a historical artifact, and it has little effect on residency training. The higher payments have not led to more primary care residents or physicians.

Another area of workforce policy in need of attention is the supply of geriatricians available to treat Medicare beneficiaries. Various entities have identified the need for more geriatricians.[23, 24, 25] Despite the fact that Medicare is the dominant funding source for residency training, fewer than one-half of 1 percent of all residents are training as geriatricians. In 2009, ACGME reported 410 residents training in geriatrics.[26] While the number of older Americans is growing rapidly, the

number of residents training in geriatrics has declined over the last 10 years.[27]

A third area that GME funding policy could influence is the geographic distribution of residents and physicians. Medicare funds programs today based on how it funded them almost 20 years ago, with the geographic distribution of teaching programs reflecting that of the physician workforce generally. Research has shown that residents are most likely to practice close to where they train, and also that students from rural areas are more likely to practice in rural areas than their urban counterparts.

For What Kind of Training Should Medicare Pay?

An ongoing concern for GME is the requirement from the Centers for Medicare & Medicaid Services that resident training be hospital based in order to be eligible for GME funding. Changes in health care delivery, along with changes in population health, make hospital-based training less relevant today than it was decades ago.

COGME has called for Medicare to broaden the definition of training sites beyond traditional hospital settings and to remove regulatory barriers limiting flexible GME training programs and settings. Teaching hospitals have long advocated for regulatory changes that would make it easier for residents to spend more time in nonhospital settings.

The need for residents to train in the settings in which they are most likely to practice, and to treat the types of patients and illnesses they will treat during their careers, is clear. The challenge is how Medicare (and other payers) should distribute funds outside of the hospital setting. Should Medicare make payments to nonhospital-based residency programs? If so, how should those payments be structured? How should existing GME funding be changed to accommodate new funding streams? These are the types of questions that need answers in order to adapt Medicare's GME funding to new residency training models.

In addition to the question of training settings, there is the question of curriculum content. As noted earlier, we face a large shortage of geriatricians to treat the rapidly expanding Medicare population. One way to deal with this shortage is to train all physicians in specialties that treat large numbers of older patients in geriatrics.

Envisioning the Future: Changes to GME on the Horizon

Recent GME-related activities suggest that policymakers recognize the need to address these issues. The health care reform law enacted in early 2010 provides grants to support the development of teaching health centers providing primary care residency training. The institutions eligible to receive grant funds must be "community-based ambulatory patient care centers."[28] These teaching health centers will be eligible to receive funds for both the direct and indirect costs of medical education, based on existing per-resident funding amounts. These grants are an important step in shifting away from the hospital-centered residency training that currently dominates under the Medicare GME funding system. The new law also creates a graduate nurse education demonstration in which Medicare will support clinical training for advanced practice registered nurses.

More sweeping policy changes may result from MedPAC's recent recommendations. In March 2010, MedPAC introduced a set of policy principles that would fundamentally restructure GME financing. The principles included transitioning GME to

general revenue financing, enhancing workforce analysis and evaluation, and increasing accountability for high education standards.

In April 2010, MedPAC approved a set of recommendations for GME that would retain Medicare as the dominant source of financing, but would tie funding to "support the workforce skills needed in a delivery system that reduces cost growth while maintaining or improving quality."[29] The recommendations identify these skills as practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice, including integration of community-based care with hospital care. The recommendations also call for "workforce analysis to determine the number of residency positions needed in the U.S. in total and by specialty…along with the optimal level and mix of other health professionals."

The demonstrations in health reform and policy recommendations from MedPAC are small steps. Both efforts recognize that the value of GME funding—to the Medicare program and the public in general—could be enhanced and set a foundation for enhancing it over time.

Still, policymakers could go further. It is easy to envision GME funds being used to affect policy goals more directly—for example, raising limits on the number of residents in training for primary care programs only, removing caps for geriatrics programs entirely, or shifting funds to programs in or near underserved areas. More dramatic steps include limiting funding to specialties identified as having a shortage, or requiring that hospitals include geriatric training for all residents. Changes such as these would enhance both the value of our GME investment and the quality of health care all patients receive.

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[1] Other programs that support GME include Medicaid, the Department of Veterans Affairs, the Health Resources and Services Administration, and private payers. While precise estimates are difficult to obtain, Medicare funding is about three times that of Medicaid. Estimates of private funding are especially imprecise. See Barbara Wynn, Cassandra Guarino, Linsey Morse, and Michelle Cho, *Alternative Ways of Financing Graduate Medical Education* (Arlington, VA: RAND, 2006).

[2] Medicare Payment Advisory Commission (MedPAC), "Medical Education in the United States: Supporting long-term delivery system reforms," in *Report to the Congress: Improving Incentives in the Medicare Program* (Washington, DC: MedPAC, 2009).

[3] There are some limited exceptions intended to encourage residency training in rural areas.

[4] MedPAC, "Medical Education in the United States."

[5] Primary care specialties include family medicine, internal medicine, geriatrics, and pediatrics. See Accreditation Council for Graduate Medical Education (ACGME), *Data Resource Book: Academic Year 2008–2009* (Chicago: ACGME, 2009).

[6] The number of residents in training relative to the number of hospital beds is known as the resident-to-bed ratio.

[7] The states with more than 50 medical residents per 100,000 population are Connecticut, Massachusetts, New York, Pennsylvania, and Rhode Island. The states with 10 or fewer medical residents per 100,000 population are Alaska, Idaho, Montana, and Wyoming.

[8] Association of American Medical Colleges (AAMC), *AAMC Statement on the Physician Workforce* (Washington, DC: AAMC, 2006); Council on Graduate Medical Education (COGME), *Sixteenth Report: Physician Workforce Policy Guidelines for the United States, 2000–2020* (Washington, DC: COGME, 2005).

[9] On average, 96 percent of matriculating medical students eventually graduate with an MD degree. See AAMC, *Analysis in Brief: Medical School Graduate and Attrition Rates* (Washington, DC: AAMC, April 2007).

[10] Wynn and others, *Alternative Ways of Financing Graduate Medical Education*; MedPAC, "Medical Education in the United

States"; COGME, *Nineteenth Report: Enhancing Flexibility in Graduate Medical Education* (Washington, DC: COGME, 2007).

[11] Congress has allowed adjustments to the caps several times since 1997. Most recently, the Medicare Prescription Drug Improvement and Modernization Act of 2003 allowed for unused residency slots to be redistributed to hospitals that could demonstrate capacity to train more residents.

[12] AAMC Applicant and Matriculant data, http://www.aamc.org/data/facts/applicantmatriculant/table4-fact2009slrmat-web.pdf (accessed January 27, 2010).

[13] COGME, *Sixteenth Report: Physician Workforce Policy Guidelines for the United States, 2000–2020* (Washington, DC: COGME, 2005); COGME, *Eighteenth Report: New Paradigms for Physician Training for Improving Access to Health Care* (Washington, DC: COGME, 2007).

[14] David C. Goodman and Elliott S. Fisher, "Physician Workforce Crisis? Wrong Diagnosis, Wrong Prescription," *New England Journal of Medicine* 358, no. 16 (2008): 1658–61.

[15] Accreditation Review Commission on Education for the Physician Assistant, Frequently Asked Questions, http://www.arc-pa.org/faq (accessed April 8, 2010).

[16] M. O. Mundinger and others, "Primary Care Outcomes in Patients Treated by Nurse Practitioners or Physicians: A Randomized Trial," *JAMA*, 283, no. 1:59–68; B. J. Kirkwood, D. J. Coster, and R. W. Essex, "Ophthalmic Nurse Practitioner Led Diabetic Retinopathy Screening. Results of a 3-Month Trial," http://www.ncbi.nlm.nih.gov/pubmed/16254596?dopt=Citation (accessed April 1, 2010); U.S. Congress, Office of Technology Assessment, "Nurse Practitioners, Physician Assistants, and Certified Nurse Midwives: A Policy Analysis," http://www.princeton.edu/~ota/disk/1986/8615/8615.pdf (accessed April 1, 2010).

[17] MedPAC, "Medical Education in the United States."

[18] The Lewin Group, *Medicare Graduate Nurse Education New Proposal: Estimates of New Proposal Costs and Benefits* (Falls Church, VA: The Lewin Group, Inc., 2009).

[19] Advanced practice nurses include nurse practitioners who provide primary care; clinical nurse specialists who provide advanced nursing care in specialty areas; nurse anesthetists who provide anesthesia services; and certified nurse midwives who provide gynecological care to women of all ages, as well as obstetric care.

[20] Wynn and others, *Alternative Ways of Financing Graduate Medical Education.*

[21] A. Dobson, J. DaVanzo, and N. Sen, "The Cost-Shift Payment 'Hydraulic': Foundation, History, And Implications," *Health Affairs* (1): 22–33.

[22] C. Boccuti and C. Lisk, "Restructuring medical education financing: Principles and priorities," http://www.medpac.gov/transcripts/public%20med%20ed%20march%202010%20v2.pdf (accessed April 1, 2010).

[23] MedPAC, *Report to the Congress: Impact of the Resident Caps on the Supply of Geriatricians* (Washington, DC: MedPAC, 2003).

[24] American Geriatrics Society and the Association of Directors of Geriatric Academic Programs, *Geriatric Medicine: A Clinical Imperative for an Aging Population* (New York: American Geriatrics Society and the Association of Directors of Geriatric Academic Programs, 2004).

[25] Institute of Medicine, *Retooling for an Aging America: Building the Healthcare Workforce* (Washington, DC: Institute of Medicine, 2008).

[26] ACGME, *ACGME Data Resource Book: Academic Year 2008–2009* (Chicago: ACGME, 2009).

[27] MedPAC, *Report to the Congress*.

[28] Patient Protection and Affordable Care Act, Pub. L. no. 111-148.

[29] MedPAC, Transcript of Public Meeting, Thursday, April 1, 2010, http://www.medpac.gov/transcripts/0401-0402MedPAC.final.pdf.

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