

A Statewide Strategy for Expanding Graduate Medical Education by Establishing New Teaching Hospitals and Residency Programs

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Abstract

The graduate medical education (GME) system in the United States is in need of reform to ensure that the physician workforce being trained is able to meet the current and future health care needs of the population. However, GME funding to existing teaching hospitals and programs relies heavily on support from Medicare, which was capped in 1997. Thus, new, innovative models to expand GME are needed. To address physician shortages, especially in primary care and general surgery and in rural areas, the state of Georgia implemented a statewide

initiative. They increased medical school enrollment by 600 students from 2000 to 2010 and committed to establishing new GME programs at new teaching hospitals to train 400 additional residents by 2018. As increasing the capacity of GME programs likely increases the number of physicians practicing in the state, these efforts aim to encourage trainees to practice in Georgia. Although new teaching hospitals, like these, are eligible for new Medicare funding, this approach to expanding GME also incorporates state funding to cover the start-up costs

associated with establishing a new teaching hospital and GME program.

In this article, the authors provide background on the current state of GME funding in the United States and on the physician workforce and medical education system in Georgia. They then outline the steps taken to expand GME by establishing new teaching hospitals and programs. They conclude by sharing outcomes to date as well as challenges faced and lessons learned so that others can follow this novel model.

Over the last decade, many have come to acknowledge a major shortage of physicians in the United States, with projections by the Association of American Medical Colleges (AAMC) showing a deficit of between 46,100 and 90,400 physicians by 2025.¹ Estimates are based on “baby boomer” physicians reaching retirement age, an aging population requiring more care, and the Affordable Care Act potentially introducing 32 million more patients into the health care system. To meet this need, leaders at the AAMC called for a

substantial increase (30%) in medical school enrollment.² Most of this growth has been accomplished by increasing enrollment at medical schools currently accredited by the Liaison Committee on Medical Education. However, because training to become a physician requires the completion of both a medical degree and a residency program, without a complementary growth in graduate medical education (GME), few additional physicians will be added to our health care system.

Recent trends show that GME expansion across the United States has occurred, but unfortunately it has not reflected the needs of the population. For example, the number of residents in subspecialty programs increased by nearly 40%, yet the number entering primary care specialties during the same 10-year period increased by only 13%.³ The Council on Graduate Medical Education recommended an increase in the proportion of practicing primary care physicians, from 32% of the total physician workforce to 40%, to help meet the future health care needs of the population.⁴ An exhaustive review of this complex issue is beyond the scope of this article, but interested readers could explore the 2014 Institute of Medicine (IOM) report “Graduate Medical Education That Meets the Nation’s

Health Needs,”⁵ as well as several excellent reviews that have been published recently.^{6–8}

In this article, we begin with a brief overview of the current state of GME funding in the United States, then provide a detailed discussion of Georgia’s approach to GME expansion, which includes the development of GME programs at new teaching hospitals as part of a statewide effort to help avert a growing physician shortage.

GME Funding in the United States

For over a decade, many have debated the advantages and disadvantages of the current GME funding model, yet it has remained relatively unchanged for nearly 17 years. Medicare remains the largest, public, single source of GME funding to teaching hospitals since its inception in 1965.^{9,10} Through Medicare, teaching hospitals receive two “education label” payments—a direct graduate medical education (DGME) payment and an indirect medical education (IME) payment. DGME payments were intended to cover the direct costs of training residents, including resident stipends and fringe benefits, and the costs relating to teaching faculty. IME payments were intended to cover the additional patient care costs due to the unique teaching

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Acad Med. 2015;90:1264–1268.

First published online June 30, 2015

doi: 10.1097/ACM.0000000000000803

hospital missions of education and research.¹¹ In 1997, as a cost containment measure, Medicare funding to hospitals for GME was capped with the passage of the Balanced Budget Act.¹² The current funding system encourages hospitals to focus residents' training on providing inpatient services rather than ambulatory care, only widening the gap between the supply of primary care physicians and the demand for care. Finally, little to no accountability is required for receiving these public monies—GME programs are not required to produce specific outcomes, such as graduates with particular skills.

In 2014, the IOM convened a Committee on the Governance and Financing of Graduate Medical Education. As a result of their work, this committee released a provocative and important report that proposed a drastic change to the manner in which GME is funded, including the implementation of a pay-for-performance model, a single payment system to all sponsoring institutions (not necessarily teaching hospitals), and the creation of a GME Operational Fund and a GME Transformation Fund.⁵ These changes all aim to create a physician workforce that better meets the future health care needs of the U.S. population.⁵ With current restrictions on expanding GME programs at existing teaching hospitals, GME leaders are exploring other methods for expanding their GME programs to address the growing physician shortage. Georgia faces a particularly acute shortage of physicians and has taken significant steps to address the growing health care needs of its population.

Georgia's Physician Workforce

Georgia has struggled to produce an adequate physician workforce to meet the health care needs of its large, rural, and growing population.¹³ With only 214.7 active physicians per 100,000 people in the state in 2012, Georgia is ranked 39th in the nation in active physicians per capita and has 12% fewer physicians per capita than the national average (244.5/100,000 people).¹⁴ A recent federal redistribution of unused residency positions, through Section 5503 of the Affordable Care Act, led to Georgia losing residency positions, exacerbating the state's physician shortage.¹⁵ Specifically, Georgia has deficits in the areas of primary care and general surgery, ranking 44th in the nation in active primary care

physicians per capita.¹⁴ Georgia also has 40% fewer surgeons per capita than the nation as a whole (7.7 in Georgia compared with 12.5 in the United States).¹⁶ GME is an important piece of a very complex health care delivery system that must be addressed to meet the health care needs of the population.

Georgia's Medical Education System

In 2012, Georgia had 25% fewer students per capita enrolled in its medical schools than did the nation, so recent efforts to grow the physician workforce have concentrated on building medical school capacity.¹⁷ Between 2000 and 2010, medical school enrollment in the state increased by over 600 students and may grow by an additional 1,000 students by 2020, a 112% increase from 2000.¹⁷

Although increasing medical school class size is critical to addressing the physician shortage, the expansion of medical school enrollment alone will not produce additional physicians. Georgia had only 21.9 residents per 100,000 people in the state in 2012, compared with the nation, which had 36.6.¹⁴ The state, which is ranked 40th in the nation in residents per capita, would need to add 1,500 residency positions to match the national residents per capita rate.¹⁴ Compounding this deficit are troubling growth trends in the state. Between 2000 and 2010, the state saw an increase of roughly 420 residency positions, which represents a growth rate of 24%.¹⁶ Yet, during that same time, the state added 1.6 million people. Thus, the residents per capita rate has held steady over the past decade, growing only slightly from 21.7 to 21.9 residents per 100,000 people in the state. Other states saw substantially greater growth rates over the same period.¹⁴ These data provide a compelling case for the need to expand GME across the state of Georgia, as residents tend to practice in the location where they complete their GME training.¹⁸

Georgia's Approach to GME Expansion

Georgia has several programs to encourage medical students to practice in the rural, less populated areas of the state. Since 1952, scholarships have been available for medical students who are willing to practice in rural counties in Georgia. Loan repayment programs are

also available for physicians who practice in areas with fewer than 35,000 people. Changes to these programs, especially the loan repayment program, currently are being considered to improve their efficacy.

Yet, programs such as these are just one strategy to address the physician shortage and issues with access to care in the state. Historically, Georgia has had an above-average retention rate for graduates of its GME programs—the most recent data show a 52.5% retention rate.¹⁹ Thus, increasing the capacity of GME programs in the state likely will increase the number of practicing physicians.

Most GME expansion in the United States and in Georgia has occurred at existing teaching hospitals, but because the number of residency positions funded by Medicare was capped in 1997, these teaching hospitals have not received additional funding to support new residency positions. However, there is an exception to this cap. Unlike at existing teaching hospitals, new programs at “new teaching hospitals” may receive new DGME and IME funding when certain Medicare requirements are met. The benefits of becoming a teaching hospital may include an influx of much-needed physicians, which may lessen faculty recruitment needs and costs over time; access to excellent patient-centered care provided by residents; the enhancement of hospital quality measures; and possibly an improvement in public opinion, value, and prestige because of teaching hospital status.²⁰ However, the transition from a community hospital to a teaching hospital takes time and support from multiple stakeholders. Building the necessary GME infrastructure and gaining the necessary support from the hospital's boards and medical staff may take three or more years. During new program development, hospitals must meet the accreditation requirements set by the Accreditation Council for Graduate Medical Education (ACGME), recruit program directors and new faculty, write program curricula, and identify and prepare current faculty to teach residents. The costs of this transition are not insignificant, often reaching millions of dollars per hospital, with exact costs reflecting the number of new programs and projected residents. See Table 1 for the estimated costs for a community hospital to start five new GME programs.

Table 1

Estimated Start-up Costs for Five New Graduate Medical Education (GME) Programs (Internal Medical, Family Medicine, Obstetrics–Gynecology, Transitional Year, General Surgery) at One Hospital

Item	Detail	Estimated cost
Personnel costs (yearly)		
1 designated institutional official	1.0 FTE	\$250,000 ^a
5 program directors/associate program directors	0.5 FTEs each	\$650,000 ^a
5 GME coordinators	1.0 FTE each	\$250,000
18 core faculty members	0.1–0.25 FTEs each	\$700,000
1 GME financial analyst/CMS expert	1.0 FTE	\$75,000
Benefits at 30%	N/A	\$577,500
Total		\$2,502,500
Nonpersonnel costs (one-time)		
Hospital renovations	Sleep rooms, offices for residents/faculty	\$500,000
Clinic renovations/lease	Family medicine requires designated clinic space	\$400,000
Faculty recruitment	Designated institutional official and program directors	\$200,000
Legal fees	Affiliation agreements/bylaw changes	\$50,000
Initial faculty development	Program director and core faculty	\$100,000
GME consultant	Budget preparation, etc.	\$100,000
ACGME application fees	5 at \$6,200 each	\$31,000
Total		\$1,381,000
Total costs		\$3,883,500

Abbreviations: FTE indicates full-time equivalent; CMS, Centers for Medicare and Medicaid Services; ACGME, Accreditation Council for Graduate Medical Education.

^aData based on the Association of American Medical Colleges 50th percentile salaries.

As Medicare funding for GME does not begin until a resident is “on-duty,”²¹ the teaching hospital and/or its academic affiliates are responsible for covering the costs associated with establishing a new GME program. Given the resource constraints facing key stakeholders in GME, the addition of new programs at new teaching hospitals across Georgia did not seem feasible without access to a funding stream to cover these start-up costs. Understanding this constraint, GME experts from the Medical College of Georgia met in 2011 at the request of the University System of Georgia (USG) and developed a funding model that would allow hospitals access to GME start-up funds. Undertaking an iterative process that spanned nearly a year, these experts made the following recommendations to guide the distribution of these GME funds:

- Funding should be used to establish 400 residency positions at new teaching hospitals, bringing Georgia in line with the southeast region’s residents per capita rate.¹⁴

- Hospitals should be required to match the funding they receive \$1:\$1.
- New programs should focus predominantly on training primary care physicians and physicians in specialties with significant deficits in Georgia (e.g., general surgery).

Endorsed by the USG Board of Regents, the governor and state legislature, with bipartisan support, agreed to fund the start-up costs of the recommended 400 new residency positions beginning in fiscal year (FY) 13.²² This funding was allocated to the USG, which was charged with overseeing the process of GME expansion. In response, the USG formed a GME committee as part of the Board of Regents and designated a team (the GREAT committee: GME Regents Evaluation and Assessment Team) that included GME experts from public and private medical schools, as well as the executive director of the Georgia Board for Physician Workforce (GBPWF), a state agency that supports medical education, to advise the Board of Regents

in developing a process for assessing the feasibility of establishing new teaching hospitals and to make recommendations on allocating funding.

The GREAT committee developed and implemented a process to assess whether interested nonteaching hospitals were capable of operating high-quality GME programs that likely would meet ACGME accreditation standards. The committee reviewed extensive hospital-specific data (including case mix index, patient and surgical volumes, etc.), along with financial data and projected budgets for GME start-up costs. Committee members along with staff from the USG provided technical expertise, support, and advice on new program development, minimizing start-up costs. The GREAT committee presented their funding recommendations to the Board of Regents GME committee, who then executed contracts with the chosen hospitals according to the committee’s recommendations.

Preliminary Outcomes of Georgia’s GME Expansion

To date, 11 hospitals have partnered with the Board of Regents to receive start-up funding. In FY13 and FY14, a total of \$4.475 million was made available to these hospitals, including \$1.2 million in FY13 and \$3.275 million in FY14. For FY15, \$5.275 million is available to support ongoing efforts, with \$4.275 million allocated for FY16.

As of May 2015, these 11 hospitals have been working to establish approximately 415 new GME positions. Discussions are also ongoing with other potential teaching hospitals to determine their interest in establishing new GME programs. The inclusion of these hospitals could yield additional new GME positions, enabling the USG to reach a new target of 500 GME positions by 2018. See Table 2 for the distribution of these new positions by specialty.

Concerns about the geographic distribution of GME positions are being addressed as well. Before this initiative, no civilian GME programs of a reasonable size operated in places other than the major urban hubs of Atlanta, Augusta, Savannah, and Macon. New programs, however, were established in Georgia’s

Table 2

Projected Distribution of New Residency Programs and Positions in Georgia by 2018, by Specialty

Specialty	Minimum no. of new programs	Maximum no. of new programs	Minimum no. of new positions	Maximum no. of new positions
Internal medicine	6	7	180	213
Family medicine	4	4	63	78
Obstetrics–gynecology	2	2	28	28
General surgery	2	2	30	30
Emergency medicine	1	1	24	24
Psychiatry	1	1	12	12
Transitional year	3	3	22	30
Total	19	20	359	415

most rural areas, including Carrollton, Tifton, Moultrie, Athens, and Rome.

Next Steps

Georgia's approach to GME expansion at the state level has shown promise for addressing the physician shortage; however, a long-term focus is required to maximize the benefits of this initiative and to improve access to care. With this initiative, the state is on track to expand the number of GME positions available by more than 400 by 2018. As GME capacity will increase by approximately 20%, more Georgia medical students will have access to primary care positions in the state. The intention with these new positions is that the residents then will stay to practice in Georgia. According to data from the 2014 GBPW Medical Student Graduate survey, 54% of graduating Georgia medical students matched into a primary care specialty program (family medicine, internal medicine, pediatrics, and obstetrics–gynecology), with 40% declaring primary care as their specialty. Nearly 50% stated that they were going to practice in an underserved area, with 27% wanting to practice in a rural location.²³ According to recent AAMC data, 52.5% of residents in Georgia GME programs stay and practice in Georgia.¹⁹ So, better distribution of GME positions across the state should help relieve the maldistribution of physicians that has long plagued Georgia. As these new GME programs take hold, we also will need to refine and mature our measures of success to include more specific metrics of GME program retention, resident competencies, and overall quality of each program, and ultimately the number of residents who practice long-term in Georgia.

Georgia's Long-Term Plan to Support GME

Although the majority of states still support GME with Medicaid funds, a select few have successfully used state tax revenues to do so. One benefit of using state tax revenues is that it encourages a link with state physician workforce policy goals. Since 1978, Georgia has provided capitation dollars for most civilian family medicine residents, which amounts to approximately \$18,000 per family medicine resident per year. This funding goes directly to the teaching hospitals to help cover training costs. Additional support for pediatric residents and for some obstetrics–gynecology and general surgery residents started in 1997 and 2009, respectively. To ensure the long-term success of ongoing GME expansion efforts, these capitation programs could be extended to cover new family medicine, obstetrics–gynecology, general surgery, and internal medicine residency positions. The state also could ensure that all benefits provided to existing teaching hospitals and programs are extended to new teaching hospitals and programs, including Medicaid matching funds and the Medicaid IME add-on to the diagnosis-related group formula to account for the operating inefficiencies of teaching hospitals.

Challenges to Establishing New GME Programs and Lessons Learned

Although the Georgia GME expansion model could be adopted in other states, significant challenges must be acknowledged and understood.

1. Becoming a “new teaching hospital” is a mission- and culture-changing decision for a hospital, which may be insurmountable for some. Many constituents will require ongoing support.
2. Financial hurdles at hospitals (i.e., hurdles that often are unrelated to, and generally much larger and more complex than, GME financing) need to be resolved before moving forward.
3. The local environment for GME may not be ready or willing for this change. The medical staff may not be supportive of a new educational program. The necessary resources for a GME program may not be available. The community may not really want it.
4. Identifying, recruiting, and retaining physician leaders (i.e., designated institutional officials, program directors, and core faculty) are often difficult, and may be even more difficult in rural areas.
5. “Local politics” will have an impact on a hospital's decision to establish a new GME program.
6. Substantial expertise in GME exists across multiple medical schools and should be used when establishing new programs.
7. Collaboration between agencies (i.e., Medicaid, public and private universities, elected officials, partner hospitals, etc.) is necessary for success.
8. Any plan to establish a new GME program should take into account ongoing financial viability.
9. As with any new educational program, continuous faculty and staff development is required.

An important first step in establishing a new teaching hospital is to form a GME planning/leadership team that will help define the overarching strategic plan for the development process. This team, which should include at a minimum a designated institutional official or director of medical education (for osteopathic programs) and several leaders from the hospital (e.g., chief medical officer, chief of staff, chief financial officer, chief nursing officer), should define the types of programs to be established, oversee the recruitment of physician leaders, coordinate program

development, and develop a GME budget with projected Medicare GME revenues and GME-related expenses. The team should ensure adequate hospital financial resources, as the start-up costs are significant, as well as identify local physician leaders to champion the effort. Transition to a teaching hospital likely will take three or more years, even with highly motivated and effective leaders, because of the challenges listed above. Finally, understanding the local community politics, needs, and context is extremely important; otherwise, local leaders and physicians will become frustrated with the process.

Conclusion

Securing funding for GME and aligning physician workforce efforts remain challenging, especially given the current cap on federal funding for GME. Georgia's innovative, statewide model for expanding GME is one solution; other states now are considering similar statewide options. Although access to funding to defray the start-up costs of establishing a GME program has allowed hospitals to create new programs, which otherwise may not have been possible given declining hospital margins, time will tell whether these nascent programs sustain and produce the physicians needed to care for the population. Tomorrow's health care and physician workforce challenges are complex, interdependent with health care reform and service delivery innovations, and will require continued vigilance and support over time.

Acknowledgments: The authors wish to thank and acknowledge the governor, members of the General Assembly, the chancellor and Board of Regents of the University System of Georgia, the Georgia Statewide Area Health Education Network, members of the Graduate Medical Education Regents Evaluation and Assessment Team (GREAT) committee, and the CEOs and senior leadership teams from the partner hospitals for their support of this important initiative. Their commitment and hard work enabled the progress described here in a short time.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: Reported as not applicable.

Previous presentations: An earlier version of this material was presented by Ben Robinson at two Association of American Medical Colleges meetings: November 3, 2013 (Philadelphia, Pennsylvania) and May 2014 (Washington,

DC). Michelle A. Nuss presented some of this material in a panel discussion at the Association of American Medical Colleges annual meeting on November 8, 2014 (Chicago, Illinois). The session was entitled "Tackling the shortage of GME slots: Solutions within reach."

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