

Services and Support for the Financing of Graduate Medical Education

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**UME-GME
Continuum Initiative**

A graphic consisting of three overlapping, wavy, horizontal bands in shades of blue and white, positioned below the text.

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Introduction

In 2006, the Association of American Medical Colleges (AAMC) recommended a 30-percent increase over 2002 enrollments at medical schools accredited by the Liaison Committee on Medical Education (LCME) to meet the future needs for physicians in the United States (AAMC, 2018). Since that recommendation, the number of LCME-accredited medical schools has increased from 125 to 151. At the same time, the number of colleges of osteopathic medicine (COMs) has increased from 20 to 35 schools operating at 55 sites (AACOM, 2019). Between 2002 and 2017, first-year enrollments at medical schools (MD and DO) increased 50 percent, from 19,567 students to 29,426 students (AAMC, 2018).

The increase in the number of first-year medical students has naturally increased demand for first-year (PGY-1) residency positions. To provide post-graduate training opportunities for osteopathic graduates, many COMs are actively engaged in the development of new graduate medical education (GME) programs. Current standards of the American Osteopathic Association’s Commission on Osteopathic College Accreditation (COCA) require a COM “to strive to develop graduate medical education to meet the needs of its graduates within the defined service area, consistent with the mission of the COM” (American Osteopathic Association, 2017).

The development of new GME programs requires hospitals with enough breadth and volume of clinical services to meet the demands of the Accreditation Council for Graduate Medical Education (ACGME), as well as an engaged hospital leadership and a supportive medical staff. While adequate clinical volumes and leadership support are crucial for the development of new GME, the implementation of new programs will likely be impossible if the programs are not financially sustainable for the hospital. The present paper

describes the revenue sources, costs, and overall financial impact of new GME programs on hospitals. The paper also examines guidelines for selecting hospitals that can meet GME requirements, and it explores the role of consortia in establishing and supporting new GME programs.

Revenue Sources for GME

In 2015, federal agencies (through five programs) and state Medicaid agencies spent approximately \$16.3 billion to fund GME programs (U.S. Government Accounting Office, 2018). Of this total, the federal Medicare program paid approximately 71 percent, or \$10.3 billion, while the federal share of Medicaid totaled 16 percent, or \$2.4 billion (U.S. GAO, 2018). The balance of federal payments included those to children’s hospitals, teaching health centers, and hospitals operated by the Veterans Health Administration (VA) (U.S. GAO, 2018). While each of the federal programs and state Medicaid programs may provide financial resources for new GME programs, financial stability is highly unlikely without adequate Medicare funding.

Medicare

The federal funding of GME programs began in 1965 with the passage of the Social Security Act Amendments, which created the Medicare program. Congress supported the funding of Medicare’s share of GME direct expenses to enhance the quality of care provided to Medicare beneficiaries (Heisler, Mendez, Mitchell, Panangala & Villagrana, 2018). Hospitals receive GME payments through three mechanisms. The largest mechanisms of Medicare funding are Direct Graduate Medical Education (DGME) and Indirect Medical Education (IME) payments. Medicare also provides a payment adjustment related to capital costs.

Direct Graduate Medical Education Payments

The purpose of DGME is to reimburse hospitals for Medicare’s share of direct costs related to the operation of GME programs. Direct costs include expenses, such as the salaries, wages, and benefits of staff (Heisler et al., 2018). Other examples of direct expenses include fees and costs associated with accreditation, office space, and allocated overhead (AAMC, 2014).

Medicare’s fair share of DGME is calculated by first determining the Medicare Part-A (traditional Medicare) and Part-C (Medicare managed care) percentages of total inpatient days. These percentages are then multiplied by the hospital-specific per resident amount (PRA). According to current Medicare regulations, the PRA for Part C is approximately 86 percent of the traditional Medicare PRA (Heisler et al., 2018).

Subject to the three-year rolling average (discussed in the “Limitations” section below), the total DGME payment is calculated according to the following formula (with an example shown in Table 1):

$$\begin{aligned}
 \text{DGME payment} = & (\text{Number of residents} * \text{PRA}) \\
 & * [(\text{Part A days}/\text{Total Medicare inpatient days}) + \\
 & (\text{Part C inpatient days}/\text{Total Medicare inpatient} \\
 & \text{days}) * 86\%]
 \end{aligned}$$

The PRA for each new teaching hospital is determined based on the actual cost per resident during the first full year in which the hospital operates its first residency program (but not later than the second year in which residents are onsite at the hospital). Once Medicare calculates the PRA based on these first-year costs, there are no further adjustments except for annual payment updates. During the first year of the residency program, the hospital’s Medicare Administrative Contractor will calculate an interim PRA based on the average of all teaching hospitals in a geographic region known as a core-based statistical area (CBSA). If there are fewer than three teaching hospitals in the hospital’s CBSA, the Medicare Administrative Contractor will calculate the PRA based on the teaching hospitals in the same census region (Centers for Medicare and Medicaid Services, Medicare Learning Network, 2017). An important caveat is that if a potential teaching hospital has allowed residents onsite as part of a planned rotation (discussed in

TABLE 1. Example Calculation of DGME Payment per Resident and per 10 Residents

	PART A	PART C
Medicare inpatient days	4,000	1,500
Total inpatient days	10,000	10,000
Medicare percent	40%	15%
Per resident amount (PRA)	\$100,000	\$100,000
Managed care adjustment (86%)	NA	\$86,000
	\$40,000	\$12,900
DGME payment allowable per resident = \$52,900		
Total DGME payment for 10 residents = \$529,000		

Limitations), the PRA will be 0, unless costs are claimed in the recipient hospital’s Medicare cost report for that year—even if the hospital had no intention of collecting reimbursement for that training (AAMC, 2014).

A hospital’s final PRA will equal the actual direct cost per resident during the first year of its residency program, or the average PRA for that hospital’s region, whichever is less. As such, hospitals should ensure that they can document GME expenses per resident equal to or greater than the regional PRA.

The PRAs vary among primary-care and nonprimary-care residents and regions of the United States. In 2015, the national average PRA for primary care was \$103,570, while the national average PRA for nonprimary care was \$101,735 (U.S. GAO, 2018). Typically, the nonprimary-care PRA is less than the primary-care PRA (U.S. GAO, 2018). In 2015, hospitals located in the Western United States had the lowest average primary-care PRA (\$90,373), while hospitals in the Northeastern part of the country had the highest average primary-care PRA (\$110,991) (U.S. GAO, 2018). The actual DGME payments for new teaching hospitals are determined

by the average PRA in a hospital's CBSA or census region, the hospital's Medicare utilization and collections, and the mix of primary-care versus non-primary-care programs in the hospital.

Indirect Medical Education Payments

Congress introduced IME payments in 1983 to address concerns that the Inpatient Prospective Payment System (IPPS), which reimburses hospitals prospectively based on average costs, would cause financial hardship for teaching hospitals that incurred additional costs related to teaching activities and caring for uninsured and low-income patients (Nguyen & Sheingold, 2011). The IME adjustment factor, which is multiplied by a hospital's total Medicare collections for Part-A and Part-C inpatient services, is calculated using the following formula:

$$\text{IME adjustment factor} = c * [(1 + r)^{.405} - 1]$$

The "c" is a multiplier determined by Congress and is currently 1.35. The "r" represents the ratio of the number of allowable residents to available beds (Nguyen & Sheingold, 2011). Hospitals report their number of available beds annually in Medicare cost reports; the number of available beds is often equal to the number of licensed beds. The number of beds reported when a hospital operates a residency program can substantially impact IME payments. Thus, hospitals implementing new GME programs should carefully review the number of available beds reported to Medicare, and they should verify that the number is consistent with the Code of Federal Regulations, 42 CFR § 412.105 (Code of Federal Regulations, 1996). **Table 2** shows the IME payment calculation for two examples, highlighting the impact of available beds on IME payments.

TABLE 2. Calculation of IME Payments, Based on Available Beds

	HOSPITAL 1	HOSPITAL 2	DIFFERENCE
Number of allowable residents	50	50	0
Average daily census	150	150	0
Available beds	400	250	150
Ratio of residents to available beds (r)	0.125	0.20	
1 + r	1.125	1.20	
Raised to the power of .405	1.048858	1.076635	
Less 1	0.048858	0.076625	
Multiplier	1.35	1.35	
IME adjustment factor	0.065959	0.103457	
IPPS and managed care inpatient collections	\$25,000,000	\$25,000,000	\$0
IME payment	\$1,648,964	\$2,586,424	\$937,460

Another factor that can impact overall payments to hospitals with residencies is the number of rotations that occur at the hospital. Residents are permitted to rotate to nonhospital clinical training sites, provided that the hospital continues to pay the residents' salaries and benefits and that the hospital has a written agreement with the nonhospital site. For DGME and IME purposes, a hospital may not be allowed to count all of its resident rotations, such as those that occur at another hospital. The financial impact of out-rotations can be substantial, because the home hospital will still incur the costs of the residents while not receiving the DGME and IME payments.

The two examples shown in **Table 3** highlight the impact of the allowable number of residents, with each resident completing two rotations at another hospital and assuming 13 rotations per year.

The inability of hospital 2 in Table 3 to provide two required rotations per resident at its own hospital reduces its IME payment by approximately \$380,000 (representing a 15-percent reduction compared with hospital 1). In addition, the hospital loses approximately \$407,000 in DGME payments, if the PRA is \$52,900 as calculated in Table 1. Thus, hospitals considering new GME programs need to consider the financial impact of out-rotations.

One strategy to limit the negative impact of out-rotations is to rotate-in residents from other residency programs, though this is not an option during the first five years of training. Another strategy is to send residents to VA facilities. Although out-rotations to VA facilities will result in the loss of DME and IME payments, a VA hospital could reimburse the home hospital for all, or at least a portion, of the direct expenses associated with the resident while at the VA hospital.

TABLE 3. Calculation of IME Payments, Based on Allowable Number of Residents

	HOSPITAL 1	HOSPITAL 2	DIFFERENCE
Number of contracted residents	50	50	0
Allowable number of residents	50	42.31	7.69
Available beds	250	250	0
Ratio of residents to available beds (r)	0.125	0.169240	
1 + r	1.125	1.169240	
Raised to the power of .405	1.076635	1.065371	
Less 1	0.076635	0.065371	
Multiplier	1.35	1.35	
IME adjustment factor	0.103457	0.088251	
IPPS and managed care inpatient collections	\$25,000,000	\$25,000,000	\$0
IME payment	\$2,586,424	\$2,206,281	\$380,143

GME Capital-Related Payments

Medicare reimburses teaching hospitals for capital-related expenses using a formula similar to the IME calculation. However, instead of using the resident-to-bed ratio, the formula is based on the ratio of residents-to-average daily census (RADC). The formula to calculate the IME capital adjustment is as follows:

$$\text{Capital adjustment factor} = (e^{0.2822 \times \text{RADC}} - 1)$$

The “e” represents the base of natural logarithms, currently equaling 2.71828. The capital adjustment factor is multiplied by the hospital’s capital cost as reported in the facility’s Medicare cost report (Worksheet L, Line 1). An example calculation for the capital adjustment factor is shown in **Table 4**.

1	Allowable number of residents	12
2	Average daily census	34
	RADC (line 1/line 2)	0.35294
3	RADC * multiplication factor (0.2822)	0.09960
4	e ^{result of line 3} (e = 2.71828)	1.10473
5	Line 4 – 1 (capital adjustment factor)	0.10473
6	Hospital capital payment	\$383,982
7	Medicare GME capital payment	\$40,214

Limitations on Medicare IME and DGME Payments

As previously noted, the calculation of a hospital’s IME payment begins with determining the ratio of the number of allowable residents to available beds. In calculating the IME payment for the current year, Medicare uses the resident-to-bed ratio of either the current year or the prior year—whichever

is lower. As such, the hospital will not receive the maximum IME payments until all new residency programs have filled all positions for two consecutive years.

Medicare also places limits on the number of residency positions that can be reimbursed. The Balanced Budget Act of 1997 placed a cap on the number of residency positions that can be funded by Medicare at existing teaching hospitals. For such hospitals, the initial cap equaled the number of residents reported in 1996 (Heisler et al., 2018). The cap for a new teaching hospital is determined at the end of the fifth year of the first new residency program.

The resident cap at a new teaching hospital is calculated by multiplying the highest number of residents in any postgraduate year by the length of the initial residency period (IRP) for each program (AAMC, 2014). For example, an internal medicine residency (IRP = 3 years) that has five PGY-1 residents, four PGY-2 residents, and three PGY-3 residents would, at the end of the program’s fifth year, have a cap of 15 residents. If the same hospital started a general surgery program (IRP = 5 years) in year four of the five-year window, and if the program had two PGY-1 residents and three PGY-2 residents in year five, the program would add 15 positions to the cap. As each residency program develops a cap, the various program caps are aggregated to create a hospital’s total cap. The cap can continue to be increased for new programs if a hospital has a rural designation from Medicare. The urban/rural status of a hospital is reported on Worksheet S-2, Part 1, Line 27 of hospital cost reports.

Hospitals can move residency positions between programs. However, increasing the number of positions in any residency program requires approval by the appropriate Review Committee (RC) of the ACGME. Medicare will not reimburse hospitals for non-accredited positions. Once established, the resident cap is permanent unless the hospital applies for, and receives, positions from newly closed programs or from the redistribution of unfilled positions, as was allowed after passage of the Patient Protection and Affordable Care Act of 2010 (Heisler et al., 2018). The establishment of Rural Training Track (RTT) residency programs, discussed in the next section, provides

an additional opportunity for existing teaching hospitals to increase their caps.

During the five-year cap-building window, DGME and IME payments are based on the actual number of residents at a new teaching hospital. The number of residents reported to Medicare will likely be less than the number of contracted residents, as not all resident time can be counted for reimbursement purposes (AAMC, 2014). Beginning in year six, the number of residents that is used to determine DGME and IME payments is based on

a three-year rolling average. An implication of the three-year rolling average is that financial results will be better if all program positions are filled by the fourth year of the five-year window, as shown in **Table 5**. As a practical matter, however, this is not always possible to accomplish, because some programs (such as orthopedic surgery) are five years in length and require the presence of multiple ACGME-accredited programs (such as internal medicine, general surgery, and pediatrics) (ACGME, 2017). Furthermore, hospitals may not

TABLE 5. Resident Numbers, for Programs Starting in Years 1 and 2

Program/Resident Positions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Internal medicine/24	8	16	24	24	24	24	24	24	24
Emergency medicine/18	6	12	18	18	18	18	18	18	18
Psychiatry/16	4	8	12	16	16	16	16	16	16
Family medicine/12		4	8	12	12	12	12	12	12
Total contracted residents	18	40	62	70	70	70	70	70	70
Total allowable residents	16.6	36.8	57.0	64.4	64.4	64.4	64.4	64.4	64.4
Three-year rolling average	NA	NA	NA	NA	NA	64.4	64.4	64.4	64.4

TABLE 6. Resident Numbers, for Programs Starting in Years 1, 2, 3, or 5

Program/Resident Positions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Internal medicine/24	8	16	24	24	24	24	24	24	24
Emergency medicine/18		6	12	18	18	18	18	18	18
Psychiatry/16			4	8	12	16	16	16	16
Family medicine/12					4	8	12	12	12
Total contracted residents	8	22	40	50	58	66	70	70	70
Total allowable residents	7.4	20.2	36.8	46.0	53.4	60.7	64.4	64.4	64.4
Three-year rolling average	NA	NA	NA	NA	NA	53.4	59.5	63.2	64.4

have the resources to implement all programs in the first two years, and attempts at implementing too many programs too quickly may cause major operational difficulties.

As shown in the three-year rolling average results in **Table 6**, spreading out the implementation of residency programs over four years results in Medicare reimbursing 53.4 of 66 positions by the sixth year. By contrast, if all the programs are implemented in the first and second year (**Table 5**), the number of positions reimbursed in the sixth year increases to 64.4 positions. Hospitals need to recognize that the timing of the implementation of new GME programs has a big impact on Medicare reimbursement.

Rural Training Track Residency Programs

In RTT residency programs, which are separately accredited by the ACGME, an urban hospital works with a rural hospital or other rural training site to introduce a new residency program. Typically, the first year of training occurs at the urban hospital, and the second and third years are spent primarily at the rural location. Residents in an RTT must spend at least 50 percent of their training time in the rural training environment (AAMC, 2017).

An urban teaching hospital participating in an RTT can increase its cap based on the time that the RTT residents spend at the urban hospital. The urban teaching hospital has five years to develop an RTT cap. The allowable number of RTT residents at the urban hospital is subject to the three-year rolling average. The rural hospital also has five years to develop its cap (AAMC, 2017).

The DGME and IME payments for the rural hospital may not cover the costs of the RTT residency. Therefore, hospitals implementing an RTT should consider the impacts of the DGME and IME at the urban teaching hospital.

Medicaid

Medicaid is the second largest source of federal funding for GME, and this program includes funds provided by the individual states (AAMC, 2016). In 2015, 42 states reported providing GME payments to teaching hospitals totaling approximately \$4.3 billion (AAMC, 2016). The methodology for calculating Medicaid GME payments varies by state, though Medicaid often follows the same methodologies utilized by Medicare. Hospitals considering new teaching programs should explore the support for GME that is provided by state Medicaid programs.

Department of Veterans Affairs

With few exceptions, the VA does not operate GME programs. However, the VA provides rotations for approximately 43,000 residents each year through about 11,000 funded positions (Heisler et al., 2018). Individual VA hospitals that provide rotations for teaching hospitals can subsidize the direct costs of the residents while they are working at the VA hospital (Heisler et al., 2018). As previously noted, a hospital cannot claim DGME and IME payments for the time that residents spend at another hospital. Hospitals in the VA system are an excellent option for providing required rotations that are not available at the home hospital. It should be kept in mind, though, that the target VA hospital must have the positions in its budget, and the teaching hospital will need to execute an agreement with the VA.

Understanding the Costs of GME

Hospitals will incur many costs in implementing and operating new residency programs. The costs will vary, depending on the resources available at a particular hospital and the programs planned for implementation. Hospitals should seek guidance in identifying and estimating the costs required to implement new GME programs.

Start-up Phase

Hospitals should plan on spending at least 18 to 24 months to start a new residency program. However, before submitting a program application, the hospital must either partner with an existing ACGME-approved sponsoring institution or receive ACGME approval to serve as an institutional sponsor. A hospital cannot submit program applications until it has a sponsoring institution. The meeting dates of the ACGME RCs will impact the time required to begin new programs (Barajaz & Turner, 2016). These meeting dates are posted on the ACGME website. Depending on the existing resources available at a particular hospital, the time to implementation—like the costs—will vary.

Expenses incurred during the start-up phase include recruitment expenses, salaries, and benefits for program directors, faculty, and staff, as well as the outfitting of offices, a classroom, and on-call rooms. The program will also incur ACGME application fees and expenses associated with interviewing candidates. Hospitals planning to implement residency programs that require a continuity clinic may realize substantial additional expenses if an existing clinic cannot serve in this capacity.

Program Expenses

The salaries and benefits for residents typically represent the largest expense category associated with new GME programs. Many existing residency programs report their resident salaries and benefits on the program websites. Such reports can be reviewed to gain a better understanding into program expenses. Residents may receive funds for lab coats, medical licenses, books, electronic devices, meals, and attendance at professional meetings.

Hospitals must also provide financial support for the Designated Institutional Officer, program directors, faculty members, and program coordinators. The standards of the RCs often define the time allocation for program directors, the required number of faculty members, and requirements for program coordinators. The salaries needed to recruit program directors and faculty will vary based on the hospital's particular programs and relevant market conditions. Still other direct expenses include access to educational resources (such as a library), simulation equipment, accreditation fees, medical malpractice insurance, faculty and staff development, and a residency management system.

The expense per resident will vary based on the types of programs implemented, the age of the programs, and the geographic location (U.S. GAO, 2018). In the first year, hospitals should expect the cost per resident to approach \$180,000. As programs mature, the cost per resident may decrease to between \$160,000 and \$140,000, or even lower in some cases. According to the GAO (2018), the median direct costs per resident in 2015 totaled approximately \$152,000, and the 75th percentile was approximately \$206,000. That said, there is no standardized approach to calculating the direct costs of residency programs (U.S. GAO, 2018).

Selecting the Right Hospitals for GME

Many hospitals are interested in starting GME programs. However, from a financial perspective, not all hospitals are ideal candidates. Most sole community hospitals (SCHs), critical access hospitals (CAHs), freestanding psychiatric hospitals, small hospitals, and hospitals that inadvertently established a cap face significant financial challenges in implementing GME. Despite the financial hurdles, such hospitals may wish to consider developing GME programs to support the strategic plan of the organization.

Sole Community Hospitals

Hospitals classified as SCHs receive additional payments from Medicare in recognition of their importance in providing health services to geographically isolated populations. In order to qualify for SCH status, a hospital must meet defined distance requirements; be difficult to access due to weather, topography, or driving conditions; or be the primary provider of acute-care services for patients living in the hospital's service region (Thomas, Randolph, Holmes & Pink, 2016). The SCH payments constitute a substantial source of funding for these hospitals (Thomas et al., 2016).

From a GME perspective, the downside of SCH status is that most SCHs are not eligible to receive IME payments. Medicare payments are made to SCHs at either a hospital-specific rate or a federal rate. Those SCHs that are eligible for IME payments receive the federal rate. In 2015, 28 percent of SCHs received the federal rate (Thomas et al., 2016). As such, verification of the SCH payment methodology is essential. The SCH status of hospitals is reported on Worksheet S2 (Part 1, Line 35) of the hospital's current Medicare cost report.

Critical Access Hospitals

Critical access hospitals are rural hospitals that are generally more than 35 miles from any other hospitals, have fewer than 25 licensed beds, have an average length of stay of no more than 96 hours, and provide emergency care 24 hours a day, seven days a week. These hospitals are not reimbursed under the IPPS and are, therefore, not eligible to receive DGME and IME payments. For most services, CAHs are reimbursed at 101 percent of reasonable costs (CMS, MLN, 2017). Due to their typically low patient volumes, CAHs are unlikely to be able to establish residency programs on their own. However, they can potentially serve as rotation sites for GME programs from other hospitals.

Freestanding Psychiatric Hospitals

In 2011, there were 418 freestanding psychiatric facilities and 1,099 hospital-based psychiatric units in the United States (Medicare Payment Advisory Commission, 2018). Hospital-based and freestanding psychiatric facilities are eligible to receive DGME and IME payments. However, freestanding psychiatric hospitals typically face two challenges. First, Medicare patients are unlikely to constitute a significant percentage of the hospital's patients, severely limiting DGME payments. Inpatient psychiatric hospitals receive per diem payments from Medicare (Office of the Federal Register, 2017). The per diem for hospitals that successfully report quality data for the federal fiscal year ending September 30, 2019, is approximately \$783 (CMS, MLN, 2018). The per diem is adjusted for such factors as rural locations and teaching status.

The second challenge concerns IME payments. The calculation for DGME payments is same for both psychiatric hospitals and acute hospitals. However, IME payments are based on the ratio of the number of residents to a psychiatric hospital's

average daily census (ADC), which is added to 1 and then raised by the teaching variable regression coefficient of .5150. The result of this calculation is then multiplied by the facility’s per diem payment. (Office of the Federal Register, 2017; Office of the Federal Register, 2004). See **Table 7**.

TABLE 7. Inpatient Psychiatric Facility Teaching Adjustment Calculation	
Number of interns and residents	12
Average daily census (ADC)	65
(Interns and residents/ADC) + 1 = Teaching variable	1.846
Teaching variable [^] .5150 = Teaching adjustment	1.09117
Base per diem	\$783
Base per diem * Teaching adjustment	\$854

In the above example, an inpatient psychiatric hospital would receive \$71, or 9.1 percent more per Medicare patient day, compared with a non-teaching inpatient psychiatric hospital. The financial sustainability of a psychiatric residency program, unless other sources of funding are available, will depend on the number of patient days and the expenses associated with the program.

Small Hospitals

The number of licensed beds in a hospital is sometimes used as an indicator of a hospital’s capacity to support new GME. However, a better indicator of GME capacity is a hospital’s ADC, the total annual inpatient days divided by 365. The ADC reflects the clinical capacity of a hospital to support residency training. Because hospitals have no incentive to change licensed capacity, it is not unusual

to find a hospital with more than 200 licensed beds but an ADC of 50 or lower. Depending on the types of residency programs, additional indicators may be considered to verify that the programs can meet accreditation requirements. Such indicators include emergency room visits, outpatient clinic volumes, surgical procedures, and deliveries. As previously noted, Medicare will not reimburse a hospital for rotations completed at other hospitals.

Due to low Medicare collections, small hospitals may struggle to generate sufficient IME payments. Hospitals with Medicare collections of less than \$15 million per year may face great difficulties in covering the operating costs associated with new GME programs.

Capped Hospitals

The Balanced Budget Act of 1997 limited the number of residents reimbursed by Medicare to the number claimed by the hospital in 1996. Unfortunately, many hospitals inadvertently established caps for payments by claiming numbers on their Medicare cost reports for residents who rotated to the hospitals from other teaching hospitals. The importance of determining whether a hospital has established caps for DGME and IME payments cannot be overstressed. All Medicare cost reports with dates after January 1, 1996, must be reviewed. Specifically, Worksheet E, Part A, must be reviewed to determine if the hospital has established a cap for IME payments, and Worksheet E-3, Part IV, must be reviewed to determine if the hospital has established a DGME cap. Hospitals are further advised to verify with their Medicare Administrative Contractor that the facility has not established caps.

Return on Investment

The reimbursements provided to hospitals through DGME and IME payments can cover the costs of direct expenses associated with GME programs. In addition, there are other potential returns—financial and nonfinancial—that should be considered in regard to GME programs. These returns include various benefits to both the hospital and the community.

One benefit of GME programs is reduced cost and effort related to physician recruitment and retention (Pungo, Gillanders & Kozakowski, 2010). Hospitals have three main ways to build their physician workforce: recruiting physicians from other facilities, internally developing their own staff of physicians, and retaining the physicians that they have. A residency program provides a hospital with a minimum of three years to interview potential members of the medical community to serve on its staff. A significant advantage of recruiting residents is that they have been trained in the hospital's policies and procedures (Pungo et al., 2010). Many physicians may be attracted to teaching hospitals because they want to be part of the teaching-and-learning environment (Pungo et al., 2010). Pungo, Gillanders, and Kozakowski (2010) noted that the presence of teaching programs can reduce physician turnover. Moreover, while serving in a hospital setting, medical residents may develop a favorable view of the practice opportunities at the hospital and in the community. This may increase the likelihood that they will remain in the community on a long-term basis. These factors represent tangible health care benefits for the community, as well as professional benefits for the hospital.

The establishment of GME residency programs offers numerous economic benefits for communities, especially in regard to the economic impact of new physicians trained via these programs. According to *The National Economic Impact of Physicians: National Report*, published by the American Medical Association in January 2018 (AMA, 2018), the 736,873 “patient-care physicians” in the United States (including both MDs and DOs) generated \$2.3 trillion in direct and indirect economic output, such as sales revenues, in 2015. Each individual physician supported about \$3.2 million in economic output. The report further noted that physician activity supported approximately 12.6 million jobs in 2015, with each physician supporting about 17 jobs. Physicians supported almost \$93 billion in state and local taxes in 2015, with each physician supporting about \$126,000 in taxes (AMA, 2018).

These statistics clearly show that by training new physicians in residency programs, hospitals are providing major economic and health care benefits to their communities and to the nation. These benefits, when considered with the previously noted financial and professional benefits to the hospitals themselves, can be strong incentives for the development of new GME programs.

How Consortia Can Help Establish New GME

With the implementation of the single GME accreditation system, most formerly AOA residency programs achieving initial accreditation are terminating their AOA accreditation. Technically, these programs no longer need to be part of an Osteopathic Postdoctoral Training Institution (OPTI). Approximately 15 OPTIs have become ACGME institutional sponsors (ACGME, 2018-19). Any OPTIs choosing not to become ACGME institutional sponsors are no longer necessary for accreditation purposes. Nevertheless, the OPTI consortium concept, implemented as part of institutional sponsorship or as new models, can continue to support the development and operation of GME programs.

Consortia in osteopathic medicine can help in the establishment of new GME programs by providing the following services:

- Conducting initial evaluations of the financial feasibility of new GME at potential hospitals.
- Assisting in the development of applications for institutional sponsorship, programs, and osteopathic recognition.
- Educating hospital leadership and medical staff on GME.
- Increasing access to educational resources, such as libraries, online curricula, and faculty development.

- Encouraging research through access to research mentors, statistical support, grants, institutional review boards, and research retreats.
- Increasing access to simulation technology and curricula.

The ability of a consortium to provide these services will be dependent on available resources. However, the programs offered by a consortium can be viewed as an investment in the continuum of osteopathic medical education.

One type of consortium approach would be to provide services at little to no charge to hospitals that serve as core training sites for osteopathic medical students. As the competition for rotational sites intensifies due to the growth of medical schools, the provision of OPTI-like services could enhance the educational experiences and outcomes for trainees and help increase the opportunities available to osteopathic medical students and graduates (AAMC, 2018b). The support provided by consortia can play a crucial role in establishing the osteopathic medical profession as a partner in training the physicians required to meet the health care needs of our nation.

Conclusion

The development of new GME programs requires hospitals with strong clinical services to meet the demands of ACGME programs, as well as supportive hospital leadership and medical staff. However, the successful implementation of new programs will be difficult if the programs are not financially sustainable for the hospital. Revenue sources for GME include federal agencies (through Medicare, Medicaid, the VA, children's hospitals, and teaching health centers) and state Medicaid agencies. Medicare is the largest revenue source, with the main payment mechanisms being DGME and IME. Medicare also provides payment adjustments related to capital costs. Key factors that affect payments include the number of available beds and the allowable number of residents. Hospitals need to carefully consider these factors to maximize their DGME and IME payments. Hospitals also need to follow

strategies to minimize the effects of caps on the number of residency positions. Certain kinds of hospitals—such as SCHs, CAHs, freestanding psychiatric hospitals, and small hospitals—face special challenges in implementing GME. Returns on investment for GME programs include financial and nonfinancial benefits for hospitals and their communities. OPTI-like consortia can help in the establishment of new GME programs by providing several valuable services, including ensuring financial feasibility.

References

- Accreditation Council for Graduate Medical Education (2017). ACGME program requirements for graduate medical education in orthopaedic surgery. Retrieved from <https://www.acgme.org/Specialties/Overview/pfcetid/14/Orthopaedic%20Surgery>
- Accreditation Council for Graduate Medical Education (2018-19). List of sponsors that applied for accreditation under the single accreditation system, academic year 2018-2019. Retrieved from <https://apps.acgme.org/ads/Public/Reports/ReportRun?ReportId=14&CurrentYear=2016&USStateId=>
- American Association of Colleges of Osteopathic Medicine (2019). U.S. colleges of osteopathic medicine. Retrieved from <https://www.aacom.org/become-a-doctor/us-coms>
- American Medical Association (2018). *The National Economic Impact of Physicians: National Report*. Retrieved from <https://www.physician-economicimpact.org/pdf/FullStateReports/US-Study.pdf>
- American Osteopathic Association (2017). *Accreditation of Colleges of Osteopathic Medicine: COM Continuing Accreditation Standards*. Standard 10. Retrieved from <https://osteopathic.org/wp-content/uploads/2018/02/com-continuing-accreditation-standards.pdf>
- Association of American Medical Colleges (2014). Becoming a new teaching hospital: A guide to the Medicare requirements. Retrieved from <https://store.aamc.org/becoming-a-new-teaching-hospital-a-guide-to-medicare-requirements-2014-pdf.html>
- Association of American Medical Colleges (2016). Medicaid graduate medical education payments: A 50-state survey. Retrieved from <https://store.aamc.org/medicaid-graduate-medical-education-payments-a-50-state-survey.html>
- Association of American Medical Colleges (2017). Rural training track programs: A guide to the Medicare requirements. Retrieved from <https://store.aamc.org/rural-training-track-programs-a-guide-to-the-medicare-requirements.html>
- Association of American Medical Colleges (2018a). Results of the 2017 medical school enrollment survey. Retrieved from <https://www.aamc.org/download/459890/data/medicalschoolenrollmentreport.pdf>
- Association of American Medical Colleges (2018b). Growth in medical school enrollment and related clerkship sites availability. Vol. 18. No. 3. Retrieved from <https://www.aamc.org/download/489152/data/may2018growthinmedicalschoolenrollmentandrelatedclerkshipsitesa.pdf>
- Barajaz, M., & Turner, T. (2016). Starting a new residency program: a step-by-step guide for institutions, hospitals, and program directors. Retrieved from <http://dx.doi.org/10.3402/meo.v21.32271>
- Centers for Medicare and Medicaid Services, Medicare Learning Network (2017). Calculating interim rates for graduate medical education (GME) payments in new teaching hospitals. Retrieved from <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM10240.pdf>
- Centers for Medicare and Medicaid Services, Medicare Learning Network. (2018). Inpatient psychiatric facilities prospective payment system (IPF PPS) updates for fiscal year (FY) 2019. Retrieved from <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM10880.pdf>
- Code of Federal Regulations (1996). Prospective Payment Systems for Inpatient Hospital Services, 42 C.F.R. § 412.105. Retrieved from <https://www.govinfo.gov/app/details/CFR-1996-title42-vol2/CFR-1996-title42-vol2-sec412-105/summary>

- Heisler, E. J., Mendez, B. H. P., Mitchell, A., Panangala, S. V., & Villagrana, M. A. (2018). Federal support for graduate medical education: An overview. (Congressional Research Service Report No. R44376). Retrieved from <https://fas.org/sgp/crs/misc/R44376.pdf>
- Medicare Payment Advisory Commission (2018). *A Data Book: Health Care Spending and the Medicare Program*. Retrieved from http://www.medpac.gov/docs/default-source/data-book/jun18_databookentirereport_sec.pdf
- Nguyen, N. X., & Sheingold, S. H. (2011). Indirect medical education and disproportionate share adjustments to Medicare inpatient rates. *Medicare & Medicaid Research Review*, 1(4), e1-e19. Retrieved from <http://dx.doi.org/10.5600/mmrr.001.04.a01>
- Office of the Federal Register, National Archives and Records Administration (November 15, 2004). Vol. 69. No. 2016. Retrieved from https://www.cms.gov/Regulations-and-Guidance/Regulations-and-Policies/QuarterlyProviderUpdates/Downloads/cms1427fc_1.pdf
- Office of the Federal Register, National Archives and Records Administration (August 7, 2017). Vol. 82. No. 150, p. 36773. Retrieved from <https://www.govinfo.gov/content/pkg/FR-2017-08-07/pdf/FR-2017-08-07.pdf>
- Pungo, P. A., Gillanders, W. R., & Kozakowski, S. M. (2010). The direct, indirect, and intangible benefits of graduate medical education programs to their sponsoring institutions. *Journal of Graduate Medical Education*, 2(2), 154-159. doi:10.4300/JGME-D-09-00008.1
- Thomas, S., Randolph, R., Holmes, G. M., & Pink, G. H. (2016). The financial importance of the sole community hospital payment designation [brief]. Retrieved from <https://www.ruralhealthresearch.org/publications/1064>
- U.S. Government Accountability Office (2018). Physician workforce: HHS needs better information to comprehensively evaluate graduate medical education funding. (Report No. GAO-18-240). Retrieved from <https://www.gao.gov/assets/700/690581.pdf>

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