



May 2021

# PHYSICIAN WORKFORCE

## Caps on Medicare- Funded Graduate Medical Education at Teaching Hospitals

Accessible Version



A Century of Non-Partisan Fact-Based Work

# GAO Highlights

Highlights of [GAO-21-391](#), a report to congressional requesters

## Why GAO Did This Study

Studies have shown the United States faces a shortage of physicians, making it increasingly difficult for people to access needed health care. Physicians need GME training before they can practice medicine independently and often practice in the same geographic area as their training.

The vast majority of federal funding for this training—about \$15 billion in 2018—supports physician training through the Department of Health and Human Services' Medicare GME payments. Medicare offers payments to teaching hospitals to offset costs of training full-time equivalent residents, up to a capped number of resident slots for each hospital. For most hospitals, caps reflect the number of residents that Medicare funded in 1996; for hospitals starting their first new GME program in 1997 or later, caps were based on the number of Medicare-funded residents trained at the end of a specific time window.

GAO was asked to review Medicare GME funding. This report, among other issues, describes the extent to which hospitals were over or under their Medicare GME caps and stakeholders' views on extending the time window before new caps are established. GAO analyzed 2018 Medicare data (the most recent available at the time of GAO's analysis), reviewed agency documentation, and interviewed eight selected stakeholder groups—including a GME accreditor and groups representing health care providers—identified through past GAO work.

The Department of Health and Human Services provided technical comments on a draft of this report, which GAO incorporated as appropriate.

View [GAO-21-391](#). For more information, contact Michelle Rosenberg at (202) 512-7114 or [rosenbergm@gao.gov](mailto:rosenbergm@gao.gov).

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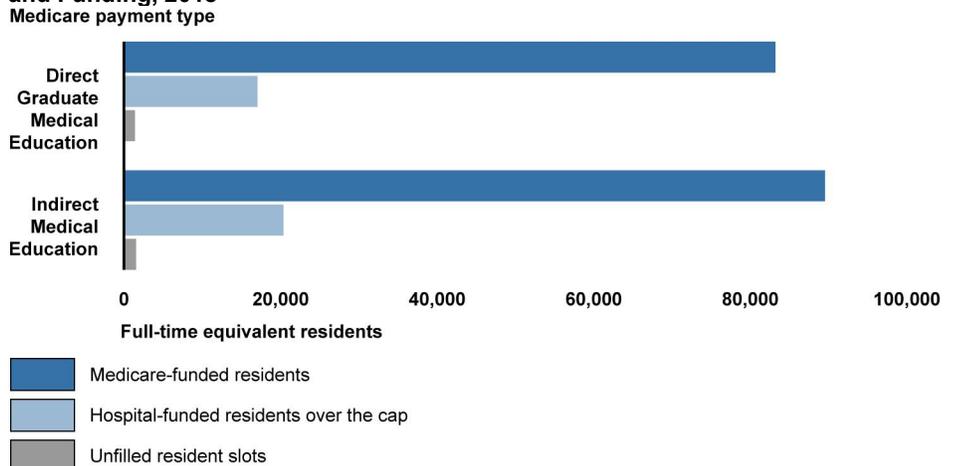
## PHYSICIAN WORKFORCE

### Caps on Medicare-Funded Graduate Medical Education at Teaching Hospitals

## What GAO Found

Medicare sets caps on both of its types of physician graduate medical education (GME) payments (direct and indirect) to teaching hospitals. Caps on these payments determine the number of physician trainees—known as residents—that each payment type supports. Hospitals can use other sources of funds to train more residents than these caps. Medicare data show that in 2018, 70 percent of hospitals were over one or both caps on Medicare-funded residents, and 20 percent of hospitals were under one or both caps. For both payment types, hospitals funded significantly more slots over the cap than they left unfilled, but Medicare still funded the large majority of resident slots.

#### Graduate Medical Education (GME) Residents and Slots by Medicare Payment Type and Funding, 2018



Source: Centers for Medicare & Medicaid Services' data. | GAO-21-391

#### Data table for Graduate Medical Education (GME) Residents and Slots by Medicare Payment Type and Funding, 2018

		Full-time equivalent residents
Direct Graduate Medical Education	Medicare-funded residents	83,210
	Hospital-funded residents over the cap	17,051
	Unfilled resident slots	1,399
Indirect Medical Education	Medicare-funded residents	89,534
	Hospital-funded residents over the cap	20,364
	Unfilled resident slots	1,539

Notes: Medicare's payments for GME are based, in part, on the number of full-time equivalent residents that a hospital trains. Caps reflect the number of residents eligible for the two GME payment types. Direct Graduate Medical Education payments offset direct costs of GME training, such as resident salaries, and Indirect Medical Education payments offset indirect costs of GME training, such as the additional cost of resident supervision.

Medicare gives hospitals starting their first new GME programs 5 years to establish and grow their GME programs before their caps are set. Once set, hospitals' resident caps are generally permanent. GAO asked GME stakeholders about recent proposals to extend this window beyond 5 years. Stakeholders said that extending this time window could result in larger caps and more residents training at some hospitals because the hospitals would have more time to, for example, recruit more faculty and residents or start programs in more complex specialties before caps are set. Some stakeholders representing providers and a researcher suggested targeting the extension to under-resourced hospitals—such as those located in rural areas or areas with health care provider shortages—which often face challenges in quickly recruiting faculty and ensuring a variety of educational experiences for residents. However, they noted that extending the cap-establishment window would not address all challenges that under-resourced hospitals face when starting new GME programs.

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# Contents

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GAO Highlights		2
	Why GAO Did This Study	2
	What GAO Found	2
Letter		1
	Background	5
	Most Hospitals Exceeded Medicare GME Caps, and About 20 Percent of Residents Were Not Funded by Medicare; Few Hospitals Were Under Their Caps	12
	Hospitals Can Reallocate Medicare-Funded Resident Slots to Other Hospitals in Certain Circumstances to Facilitate Resident Training	15
	Stakeholders We Interviewed Said Extending the 5-Year Window for Establishing Caps for New GME Hospitals Could Increase Residents in Under-Resourced Hospitals	18
	Agency Comments	20
<hr/>		
	Appendix I: Characteristics of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education Resident Caps in 2018	22
	Appendix II: Characteristics of Teaching Hospitals Using Medicare Graduate Medical Education Affiliation Agreements to Reallocate Slots for Residents in 2018	24
	Appendix III: GAO Contact and Staff Acknowledgments	26
	GAO Contact	26
	Staff Acknowledgments	26
<hr/>		
Tables		
	Data table for Graduate Medical Education (GME) Residents and Slots by Medicare Payment Type and Funding, 2018	2
	Table 1: Examples of Direct and Indirect Graduate Medical Education Costs for Teaching Hospitals	8
	Table 2: Medicare Graduate Medical Education (GME) Payments to Teaching Hospitals, by Payment Type, 2018	9
	Data table for Figure 1: Examples of Funding Sources for Graduate Medical Education (GME) Residents at Hospitals Over, At, and Under Their Resident Caps	10
	Table 3: Graduate Medical Education (GME) Residents Not Funded by Medicare, by Payment Type, 2018	12

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Table 4: Unfilled Medicare-Eligible Graduate Medical Education (GME) Resident Cap Slots, by Payment Type, 2018	14
Table 5: Number of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education (GME) Resident Caps, by Hospital Characteristic, 2018	22
Table 6: Number of Teaching Hospitals That Used Medicare Graduate Medical Education (GME) Affiliation Agreements to Reallocate Slots for Residents, by Hospital Characteristic, 2018	24

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Figure

Graduate Medical Education (GME) Residents and Slots by Medicare Payment Type and Funding, 2018	2
Figure 1: Examples of Funding Sources for Graduate Medical Education (GME) Residents at Hospitals Over, At, and Under Their Resident Caps	10

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**Abbreviations**

CMS	Centers for Medicare & Medicaid Services
DGME	Direct Graduate Medical Education
GME	graduate medical education
HPSA	Health Professional Shortage Area
IME	Indirect Medical Education

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May 21, 2021

The Honorable Gary C. Peters  
Chairman  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Jacky Rosen  
United States Senate

An adequate, well-trained health care provider workforce is essential to ensure Americans have access to quality health care services. However, studies show that more physicians are needed in certain geographic areas or specialties—particularly in rural areas and primary care specialties—to meet the changing needs of the U.S. population.<sup>1</sup>

Physicians must complete graduate medical education (GME) training before they can practice medicine independently, and availability of opportunities for this training plays a key role in determining the composition and distribution of the physician workforce. Research has shown that about half of physicians tend to practice in the same area where they completed their GME training, so the location of this training is important.<sup>2</sup> However, physicians completing GME training—known as residents—are unevenly distributed across the country, with most concentrated in certain urban centers and the Northeast, according to our 2017 report.<sup>3</sup>

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<sup>1</sup>For example, the Health Resources and Services Administration, an agency within the U.S. Department of Health and Human Services, estimated that, as of December 2020, primary care physician shortages affected about 83 million Americans, or approximately 25 percent of the population. About one-third (29 percent) of Americans affected by primary care shortages live in rural areas, though they account for approximately 18 percent of the total U.S. population.

<sup>2</sup>See, for example, S.D. Seifer, K. Vranizan, and K. Grumbach, “Graduate Medical Education and Physician Practice Location: Implications for Physician Workforce Policy,” *JAMA*, vol. 274, no. 9 (1995): pp. 685-691; and K.J. Quinn, et al., “Influencing Residency Choice and Practice Location through a Longitudinal Rural Pipeline Program,” *Academic Medicine*, vol. 86, no. 11 (2011):pp. 1397-1406.

<sup>3</sup>See GAO, *Physician Workforce: Locations and Types of Graduate Training Were Largely Unchanged, and Federal Efforts May Not Be Sufficient to Meet Needs*, [GAO-17-411](#) (Washington, D.C.: May 25, 2017).

The federal government significantly invests in GME, primarily through Medicare payments administered by the Centers for Medicare & Medicaid Services (CMS) within the Department of Health and Human Services.<sup>4</sup> Medicare paid hospitals about \$15 billion for GME training in 2018.<sup>5</sup>

Medicare GME payments are used to partially offset costs of training a certain number of full-time equivalent residents at each hospital.<sup>6</sup> At most hospitals, Medicare funds the same number of slots for physician residents as it funded in 1996—referred to as a hospital’s resident caps.<sup>7</sup> For hospitals that first started training residents in a new GME program after 1996, the resident caps were based on the number of residents Medicare funded in the third or fifth year after the new program started at that hospital, depending on when it began. This cap-establishment window is currently 5 years for hospitals starting their first new GME program. Once set, hospitals’ Medicare resident caps are generally permanent, though there are options for hospitals to temporarily reallocate their resident slots to different hospitals. Hospitals can train more residents than their caps without additional payments from the Medicare GME program; we refer to these as hospitals over their caps. Hospitals can also leave resident slots unfilled that would have been eligible for Medicare funding; we refer to these as hospitals under their caps.

Researchers have identified challenges associated with the Medicare GME resident caps. For example, the National Academy of Medicine and others have concluded that Medicare’s largely inflexible resident caps perpetuate inequities in the physician workforce, particularly in areas

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<sup>4</sup>The federal government also supports physician GME training through the Medicaid program, the Children’s Hospital GME program, the Teaching Health Center GME program, the Department of Defense, and the Department of Veterans Affairs.

<sup>5</sup>Medicare is a federally financed program that provides health insurance coverage to people age 65 and older, certain individuals with disabilities, and those with end-stage renal disease. According to CMS, Medicare spent \$750.2 billion in 2018.

<sup>6</sup>Throughout this report, we use the term resident to mean full-time equivalent resident unless otherwise noted. Medicare calculates its GME payments based on the number of full-time equivalent residents a hospital trains, rather than the number of individual residents. There are some components of GME training that Medicare does not pay hospitals for, such as research, so the number of full-time equivalent residents training at a hospital is less than the number of individual residents. The Medicare GME program also funds some training for podiatrists and dentists—which is not subject to a resident cap.

<sup>7</sup>See 42 U.S.C. §§ 1395ww(d)(5)(B)(v), 1395ww(h)(4)(F).

where the population and health care needs have changed since caps were set 25 years ago.<sup>8</sup> We also reported that CMS generally cannot target existing Medicare GME funds to areas facing health care shortages because CMS must follow statutory requirements unrelated to workforce needs to disburse these funds.<sup>9</sup>

Given the role of Medicare GME payments in addressing future workforce needs, you asked us to review issues related to caps on the number of residents for which Medicare pays. In this report, we describe

1. the extent to which hospitals were over or under their Medicare resident caps;
2. the extent to which hospitals temporarily reallocated Medicare resident cap slots to other hospitals; and
3. stakeholders' views on proposals to extend the 5-year window before caps are set for hospitals starting their first new GME programs.

To describe the extent to which hospitals were over or under their Medicare resident caps, we analyzed 2018 data from Medicare Cost Reports—the most recent reliable data available at the time of our analysis.<sup>10</sup> Specifically, we compared the number of residents that hospitals reported training in 2018 to the number of 2018 residents that Medicare paid for, subject to the caps. We focused our analysis on the 962 short-term hospitals that received funding, trained residents, and had a cap established for each of Medicare's two types of GME payments in

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<sup>8</sup>See, for example, National Academy of Medicine, *Graduate Medical Education* (2014); Council on Graduate Medical Education, *Towards the Development of a National Strategic Plan for Graduate Medical Education* (Rockville, Md.: April 2017); Council on Graduate Medical Education, *Enhanced Flexibility in Graduate Medical Education* (Rockville, Md.: September 2007); and Medicare Payment Advisory Commission, "Ch. 4: Graduate Medical Education Financing: Focusing on Education Priorities," *Report to the Congress: Aligning Incentives in Medicare* (Washington, D.C.: June 2010); F. Mullan, C. Chen, E. Steinmetz, "The Geography of Graduate Medical Education: Imbalances Signal Need for New Distribution Policies," *Health Affairs*, vol. 32, no. 11 (2013): pp. 1914–1921.

<sup>9</sup>See GAO, *Health Care Workforce: Comprehensive Planning by HHS Needed to Meet National Needs*, [GAO-16-17](#) (Washington, D.C.: Dec. 11, 2015).

<sup>10</sup>Medicare Cost Reports contain information such as facility characteristics and costs to provide services to Medicare beneficiaries. Hospitals submit this information to CMS for each of their cost reporting periods, which can vary by hospital.

2018.<sup>11</sup> We also analyzed these data in conjunction with data from the Health Resources and Services Administration to identify hospitals that were located in a rural area and hospitals that were located in a county that contained a Health Professional Shortage Area (HPSA).<sup>12</sup> To assess the reliability of each of these sources of data, we reviewed documentation, interviewed agency officials, and checked the data for obvious errors. We determined them to be sufficiently reliable for our purpose.

To describe the extent to which hospitals temporarily reallocated Medicare resident cap slots to different hospitals, we reviewed relevant statutes and regulations, reviewed agency documentation, and analyzed data from the 2018 Medicare Cost Reports.

To describe stakeholders' views on proposals to extend the 5-year window before caps are set for hospitals starting their first new GME programs, we interviewed stakeholders representing key parts of GME training. Specifically, we interviewed eight stakeholders—four groups representing health care providers, two groups representing hospitals, one GME accrediting organization, and one researcher. We identified these stakeholders based on past GAO work on GME, as well as by asking interviewees for suggestions. The information we obtained from stakeholders is not generalizable to the experiences or views of other stakeholders.

We conducted this performance audit from April 2020 to May 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that

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<sup>11</sup>There were 1,319 hospitals that received Medicare GME funding in 2018. We excluded from our analysis 123 hospitals that had not yet established their resident caps and 234 hospitals that did not receive funding and train residents for both Medicare payment types. These two types of payments are described in the background of this report.

<sup>12</sup>HPSAs are areas, facilities, or populations that are facing shortages for primary care providers, mental health providers, or dentists. The Health Resources and Services Administration designates HPSAs and calculates the number of additional primary care physicians needed in a given area to achieve a 1:3,500 ratio of providers to patients, or 1:1,000 for correctional facilities. This calculation does not consider primary care services provided by nurse practitioners and physician assistants.

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the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

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### Physician Workforce Needs and GME

The Health Resources and Services Administration estimates that about 83 million Americans live in an area with too few primary care physicians to care for the population as of December 2020.<sup>13</sup> To address shortages, the agency projects that 15,193 more primary care physicians would need to work in these HPSAs.

Most areas facing health care provider shortages are rural—about 62 percent of primary care HPSAs are located in rural areas and 29 percent of the population affected by these shortages live in rural areas. Though 18 percent of the U.S. population live in rural areas, only 11 percent of physicians practice in rural areas.<sup>14</sup> Researchers have found that people living in rural areas are less likely to receive preventative health care, and face higher rates of many chronic illnesses and maternal mortality than the urban population.<sup>15</sup> Hospitals in rural areas are often under-resourced, which affects their ability to fund GME training. Between January 2013 and February 2020, we found that 101 rural hospitals closed, likely because of financial challenges.<sup>16</sup>

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<sup>13</sup>Health Resources and Services Administration, *First Quarter of Fiscal Year 2021 Designated HPSA Quarterly Summary* (Dec. 31, 2020).

<sup>14</sup>Health Resources and Services Administration, “Defining Rural Population,” accessed March 3, 2021, <https://www.hrsa.gov/rural-health/about-us/definition>; S.A.Shipman et al. “The Decline In Rural Medical Students: A Growing Gap In Geographic Diversity Threatens The Rural Physician Workforce” *Health Affairs*, vol. 38, no. 12 (2019): pp. 2011-2018.

<sup>15</sup>M.C. Garcia, M. Faul, et al. “Reducing Potentially Excess Deaths from the Five Leading Causes of Death in the Rural United States,” *MMWR Surveillance Summaries*, vol. 66, no. 2 (2017): pp. 1-12.

<sup>16</sup>GAO, *Rural Hospital Closures: Number and Characteristics of Affected Hospitals and Contributing Factors*, [GAO-18-634](#) (Washington, D.C.: Aug. 29, 2018); and GAO, *Rural Hospital Closures: Affected Residents Had Reduced Access to Health Care Services*, [GAO-21-93](#) (Washington, D.C.: Dec. 22, 2020).

Residents often continue to practice in locations where they complete GME training, which ultimately influences the distribution of the health care workforce. A 2020 study found that 56 percent of the residents who completed their training between 2010 and 2019 were still practicing in the state in which they trained at the end of 2019, and a 2015 study found that a similar portion of family medicine residents practiced within 100 miles of their training site after completing their training.<sup>17</sup>

We and others have found that Medicare GME funding is unevenly distributed between states, with most residents and GME training programs located in the Northeast.<sup>18</sup> In 2017, we reported that few GME training sites were located in rural, underserved communities. We also found that less than 1 percent of residents overall, including those who were not funded by Medicare, trained at a rural hospital in 2015.<sup>19</sup>

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## GME Training

Physicians must complete GME training in a particular specialty—such as family medicine or anesthesiology—after medical school before they can practice medicine independently. During their training, residents work under supervision of other physicians to gain experience caring for patients. Residents often train in their chosen specialty for at least 3 years, but some residents choose specialties with a longer initial residency training, such as general surgery, or pursue additional residency training in a subspecialty, such as cardiology. Hospitals often partner with participating sites—such as outpatient clinics—to train residents on a rotating basis and meet their educational needs. As of

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<sup>17</sup>Association of American Medical Colleges, “Report on Residents 2020, Table C6. Physician Retention in State of Residency Training, by State,” accessed February 17, 2020, <https://www.aamc.org/data-reports/students-residents/interactive-data/report-residents/2020/table-c6-physician-retention-state-residency-training-state>; E.B. Fagan, C. Gibbons, S.C. Finnegan, et al., “Family Medicine Graduate Proximity to Their Site of Training: Policy Options for Improving the Distribution of Primary Care Access,” *Family Medicine*, vol. 47, no. 2 (2015): pp. 124–130.

<sup>18</sup>See [GAO-17-411](#) and National Academy of Medicine, *Graduate Medical Education*.

<sup>19</sup>See [GAO-17-411](#).

June 2020, there were about 145,000 individual residents completing GME training in the U.S.—a 28 percent increase since 2011.<sup>20</sup>

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## GME Program Requirements

Hospitals receive Medicare GME payments for training residents in approved programs, which generally means the programs are accredited.<sup>21</sup> Accreditation criteria vary by specialty, but include sufficient

- ratio of faculty to residents;
- patient volume;
- availability of specific clinical experiences, such as training in other specialties;
- leadership from an experienced GME program director; and
- financial resources for long-term sustainability of the program.

Accreditors, such as the Accreditation Council for Graduate Medical Education, assess and monitor compliance with GME institutional and program requirements.

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## Hospital Costs for Medicare GME Program Establishment and Training

Hospitals provide financial support for residents' training, including paying both direct and indirect costs of training residents. (See table 1.)

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<sup>20</sup>Accreditation Council for Graduate Medical Education. *Data Resource Book, Academic Year 2019-2020* (Chicago, Ill.: Accreditation Council for Graduate Medical Education, 2020).

<sup>21</sup>Though many residents train in teaching hospitals, other health care organizations can manage GME programs. For example, teaching health centers provide training at Federally Qualified Health Centers, and medical schools can sponsor GME programs.

**Table 1: Examples of Direct and Indirect Graduate Medical Education Costs for Teaching Hospitals**

Direct costs	Indirect costs
<ul style="list-style-type: none"> <li>• Resident salaries and fringe benefits</li> <li>• Faculty compensation</li> <li>• Administrative staff compensation</li> <li>• Building space</li> <li>• Medical malpractice insurance premiums</li> <li>• Accreditation and licensing fees</li> <li>• Resident recruitment costs</li> <li>• Faculty development</li> <li>• Program funded conferences and travel fees</li> <li>• Subsidies for parking, housing, or meals</li> <li>• Education materials, such as equipment, technology, software, and textbooks</li> </ul>	<ul style="list-style-type: none"> <li>• Additional diagnostic tests or procedures ordered by residents</li> <li>• Longer time for residents to interpret test results</li> <li>• Higher staff-to-patient ratios</li> <li>• Increased record keeping to maintain educational records for residents</li> <li>• Less efficient provision of services by residents in lieu of more experienced clinicians</li> <li>• Additional costs of resident supervision, especially during the resident's first year of residency</li> <li>• Greater use of highly specialized or emerging technologies, such as burn units or transplant units</li> </ul>

Source: GAO. | GAO-21-391

The cost of GME training varies, and our 2018 review of studies found estimates that ranged from \$35,164 to \$226,331 per resident.<sup>22</sup> Medicare pays a portion of these training costs for each resident it funds—about \$171,000 on average in 2018—though we found that the amount it paid varied from about \$68,000 per resident to about \$279,000 per resident depending on the hospital.<sup>23</sup>

Hospitals starting their first GME training program spend an estimated \$2 million to \$8 million over 3 to 7 years to establish GME programs, according to information from hospital representatives. Hospitals do not begin receiving Medicare GME payments until they begin training residents. Therefore, during this establishment period, hospitals must identify other funds to recruit faculty, hire a GME program director, and establish educational and business infrastructure to ensure that a wide variety of educational experiences are available to residents, according to examples provided by four stakeholders representing providers, one representing hospitals, and an accreditor.

<sup>22</sup>See GAO, *Physician Workforce: HHS Needs Better Information to Comprehensively Evaluate Graduate Medical Education Funding*, [GAO-18-240](#) (Washington, D.C.: Mar. 9, 2018).

<sup>23</sup>To account for outliers, this range represents the 5<sup>th</sup> percentile and the 95<sup>th</sup> percentile of payments per resident. See [GAO-18-240](#) for more detailed information on factors that affect how Medicare GME payments vary across hospitals.

## Medicare GME Payments and Resident Caps

Medicare funds GME through two types of payments: Direct Graduate Medical Education (DGME) payments to offset direct costs of GME training, and Indirect Medical Education (IME) payments to offset indirect costs of GME training. Both of these payments are calculated using formulas set by statute, which take many factors into account including the number of residents a hospital trained.<sup>24</sup> In 2018, Medicare paid \$15 billion across the two payment types to support GME training at 1,319 hospitals—an average of \$11 million per hospital. (See table 2.)

**Table 2: Medicare Graduate Medical Education (GME) Payments to Teaching Hospitals, by Payment Type, 2018**

Medicare GME payment type	Number of hospitals	Total payments (millions of dollars)	Average payment per hospital (millions of dollars)
Direct Graduate Medical Education	1,274	4,235	3
Indirect Medical Education	1,242	10,900	9
<b>Total</b>	<b>1,319</b>	<b>15,136</b>	<b>11</b>

Source: Centers for Medicare & Medicaid Services data. | GAO-21-391

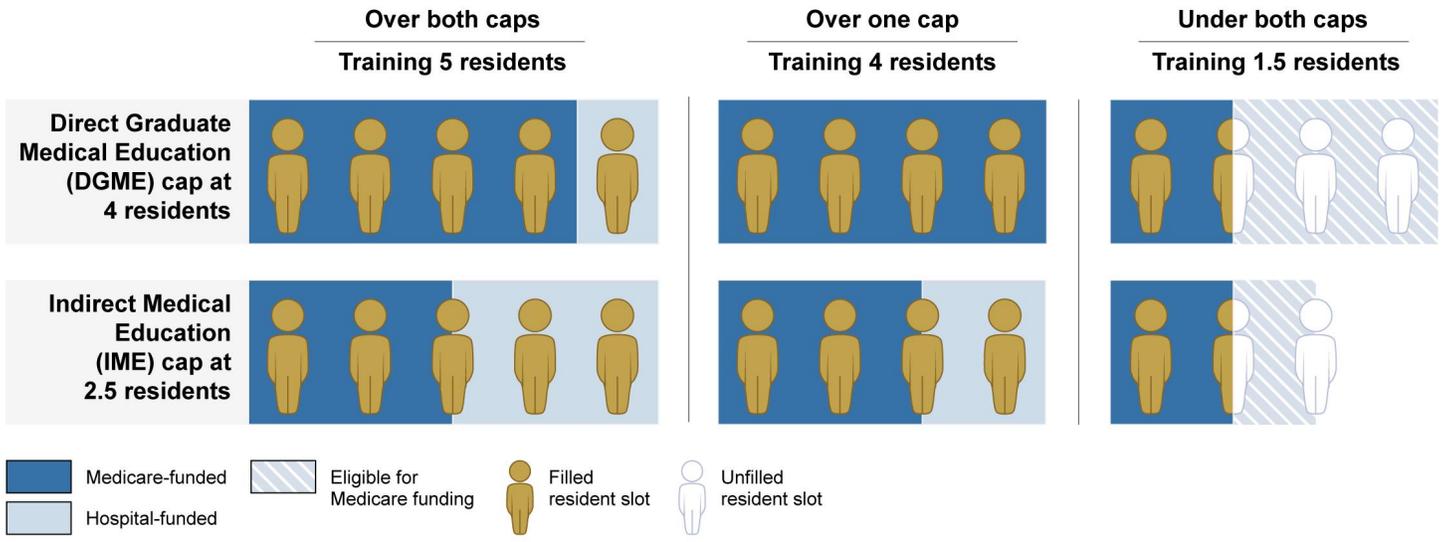
Note: Medicare funds GME through two payment types, which have different rules for calculating payments. Direct Graduate Medical Education payments offset direct costs of GME training, such as resident salaries, and Indirect Medical Education payments offset indirect costs of GME training, such as the additional cost of resident supervision. Numbers do not total due to rounding.

Both DGME and IME payments are subject to a hospital-specific cap on the number of physician residents used to calculate the payments.<sup>25</sup> DGME and IME caps are calculated separately, so a hospital may be over its cap for one payment type and under its cap for the other. (See fig. 1.) For example, a hospital training 4 family medicine residents in 1996 may have 4 cap slots for DGME payments and 2.5 cap slots for IME payments because the time residents spent training in non-hospital settings was not eligible for IME payments when caps were established in 1997.

<sup>24</sup>See 42 U.S.C. §§ 1395ww(d)(5)(B), 1395ww(h).

<sup>25</sup>Critical access hospitals (certain rural hospitals with 25 or fewer inpatient beds) are not subject to these caps.

**Figure 1: Examples of Funding Sources for Graduate Medical Education (GME) Residents at Hospitals Over, At, and Under Their Resident Caps**



Source: GAO. | GAO-21-391

**Data table for Figure 1: Examples of Funding Sources for Graduate Medical Education (GME) Residents at Hospitals Over, At, and Under Their Resident Caps**

	Over both caps / Training 5 residents	Over one cap / Training 4 residents	Under both caps / training 1.5 residents
Direct Graduate Medical Education (DGME) cap at 4 residents	4 medicare funded 1 hospital funded	4 medicare funded	1.5 medicare funded 2.5 eligible for medicare funded but unfilled
Indirect Medical Education (IME) cap at 2.5 residents	2.5 medicare funded 2.5 hospital funded	2.5 medicare funded / 1.5 hospital funded	1.5 medicare funded 1.5 eligible for medicare funded but unfilled

Note: Medicare’s payments for GME training are meant to cover a portion of training costs for physician trainees—referred to as residents—and are based, in part, on the number of full-time equivalent residents that a hospital trains up to caps on residents for each Medicare payment type. Hospitals may train more residents than one or both of these caps, but Medicare cannot provide funding for these additional residents according to statute. DGME payments offset direct costs of GME training, such as resident salaries, and IME payments offset indirect costs of GME training, such as the additional cost of resident supervision. Most residents over a hospital’s caps are funded by hospitals rather than through other government programs or philanthropic funds.

In general, the methodology for establishing hospitals’ caps depends on when they started training residents.

- **1996 and earlier.** Hospitals that were training residents before enactment of the Balanced Budget Act of 1997 had their caps set in

1997 based on the number of residents they reported training in their 1996 Medicare cost report.<sup>26</sup> Caps at most hospitals were set using this method.

- **1997 and later.** Hospitals without caps set in 1996 have a window of time when Medicare will fund all the residents they train before caps are set on residents in new programs.<sup>27</sup> Caps are generally based on the number of residents that Medicare funded in the last year of the hospital's window.<sup>28</sup> This window was 3 years for hospitals that started training residents on September 30, 2012 and earlier, and 5 years for hospitals that started training residents on October 1, 2012 and later. For example, if a program began training residents in July 2013, its caps would be set based on the number of residents that Medicare funded in the academic year that started in July 2017.

For most hospitals, resident caps are permanent once they are established. However, there are some exceptions:

- Rural hospitals may adjust their caps if they start a new GME program.<sup>29</sup>
- Urban hospitals may adjust their caps if they start a GME program that includes significant training time in rural settings.<sup>30</sup>

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<sup>26</sup>Pub. L. No. 105-33, §§ 4621(b), 4623, 111 Stat. 251, 476-78 (1997) (codified, as amended, at 42 U.S.C. §§ 1395ww(d)(5)(B)(v), 1395ww(h)(4)(F).) If these hospitals established new GME programs between January 1, 1995, and August 5, 1997, they could increase their caps to account for growth in these programs.

<sup>27</sup>A hospital without caps set in 1997 will start its cap-establishment window the first time it trains residents in a new GME program. However, it can train residents rotating from another hospital's existing programs without starting its own cap-establishment window.

<sup>28</sup>In general, caps are set by multiplying the number of residents in the largest class for each program in the last year of the cap-establishment window by the minimum number of years needed to complete the program, adjusting for the time residents in each program spent training at different hospitals, and adding the resulting number of residents for each program together. See 42 C.F.R. §§ 413.78(b), 413.79 (2019).

<sup>29</sup>42 C.F.R. §§ 412.105(f)(1)(v)(D), 413.79(e)(3) (2019).

<sup>30</sup>42 C.F.R. §§ 412.105(f)(1)(x), 413.79(k) (2019).

- Hospitals with DGME caps set in 1997 at less than one resident or later at less than three residents can reestablish their caps.<sup>31</sup>

## Most Hospitals Exceeded Medicare GME Caps, and About 20 Percent of Residents Were Not Funded by Medicare; Few Hospitals Were Under Their Caps

Our analysis of Medicare data shows that in 2018, 70 percent of teaching hospitals were over at least one of their caps, meaning they trained at least one more resident than Medicare funded.<sup>32</sup> In total, there were 17,051 residents not funded by DGME and 20,364 not funded by IME. (See table 3.)

**Table 3: Graduate Medical Education (GME) Residents Not Funded by Medicare, by Payment Type, 2018**

Medicare GME payment type	Number of hospitals over their caps	Residents not funded by Medicare	Total residents trained	Percent of residents trained that were not funded by Medicare
Direct Graduate Medical Education	535	17,051	100,261	17
Indirect Medical Education	619	20,364	109,898	19

Source: Centers for Medicare & Medicaid Services data. | GAO-21-391

Note: We limited our analysis to 962 hospitals that received funding, trained residents, and had an established cap on Medicare-funded residents for Direct Graduate Medical Education payments and

<sup>31</sup>Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, div. CC, § 131, 134 Stat. 1182, 2974 (2020) (to be codified at 42 U.S.C. § 1395ww(h)(4)(H)(i)(II-V)). In May 2021, CMS published a proposed rule to implement this provision, as well as additional provisions in the law affecting GME payments. These provisions include: (1) providing for the distribution of additional residency positions, including positions allocated specifically for teaching hospitals in HPSAs; (2) promoting a rural hospital GME funding opportunity; and (3) requiring resetting per-resident amounts and full-time equivalent resident caps for certain hospitals after hosting medical resident rotators for short durations. See Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Proposed Policy Changes and Fiscal Year 2022 Rates; Quality Programs and Medicare Promoting Interoperability Program Requirements for Eligible Hospitals and Critical Access Hospitals; Proposed Changes to Medicaid Provider Enrollment; and Proposed Changes to the Medicare Shared Savings Program, 86 Fed. Reg. 25070, 25502 (proposed May 10, 2021).

<sup>32</sup>We compared the number of full-time equivalent residents that were eligible for payment in 2018 to the number of full-time equivalent residents that Medicare was allowed to pay for after the caps were applied.

Medicare Indirect Medical Education payments in 2018. Direct Graduate Medical Education payments offset direct costs of GME training, such as resident salaries, and Indirect Medical Education payments offset indirect costs of GME training, such as the additional cost of resident supervision. Medicare's payments for GME are meant to cover a portion of training costs and are based, in part, on the number of full-time equivalent residents that a hospital trains, up to caps on residents for each Medicare payment type. Hospitals may train more residents than one or both of these caps, but Medicare cannot provide funding for these additional residents, according to statute.

In 2018, 50 percent of hospitals were over both their DGME and IME caps.

- Compared to other hospitals, these hospitals were disproportionately large (over 450 beds), with large GME programs (over 135 residents) that were established before caps were set in 1997. (See appendix I for more information on these hospitals.)
- The same portion of hospitals located in counties that contained a HPSA were over both of their Medicare GME caps as hospitals in other areas.<sup>33</sup> Of 343 hospitals located in a county that contained a HPSA, half were over both caps. Overall, hospitals in counties that contained a HPSA trained 6,431 residents not funded by DGME and 7,285 not funded by IME.
- A smaller portion of hospitals located in rural areas were over both of their Medicare GME caps than hospitals in urban areas. Of 60 hospitals located in rural areas, about one-third (22 hospitals) were over both caps.<sup>34</sup> Overall, rural hospitals trained 114 residents not funded by DGME and 192 not funded by IME.

Hospitals over their caps have multiple options to supplement their Medicare GME funding.

- **Other federal programs.** We previously found 69 percent of hospitals that received Medicare GME payments in 2015 also received GME payments from another federal program, such as Medicaid or the Department of Veterans Affairs, though most of these hospitals' federal funding came from Medicare.<sup>35</sup>
- **Clinical revenue.** Stakeholders representing hospitals and providers explained that hospitals use revenue earned from clinical services to

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<sup>33</sup>We considered a hospital to be in a county that contained a HPSA if the Health Resources and Services Administration designated any part of the county a geographic HPSA for primary care physicians as of 2018. That means the area had fewer than one primary care physician per 3,500 people in the designated area.

<sup>34</sup>Thirteen of these rural hospitals were also located in a county that contained a HPSA. Of these, four were over both caps.

<sup>35</sup>See [GAO-18-240](#).

support resident training. Hospital representatives said that many hospitals fund GME training because it is an important part of their mission, and GME training helps them better meet the needs of their communities by increasing their workforce. Stakeholders explained that large academic medical centers are particularly likely to support resident training unfunded by Medicare. These hospitals typically train a wide variety of specialties, partner with other clinical sites, and incorporate GME training into their budgets to train more residents.

- **Philanthropic donations.** Some hospitals rely on philanthropic donations to support GME training, though provider and hospital representatives noted that this was not a significant source of GME funding.

A smaller number of hospitals were under their Medicare caps in 2018. Specifically, Medicare data show that 22 percent of hospitals left at least one resident slot unfilled that would have been eligible for Medicare funding. Among those hospitals, the number of unfilled slots was generally small. (See table 4.)

**Table 4: Unfilled Medicare-Eligible Graduate Medical Education (GME) Resident Cap Slots, by Payment Type, 2018**

Medicare GME payment type	Number of hospitals under a cap	Unfilled Medicare-eligible resident cap slots	Medicare-eligible resident cap slots <sup>a</sup>	Percent of Medicare-eligible resident cap slots that were unfilled
Direct Graduate Medical Education	167	1,399	88,310	2
Indirect Medical Education	148	1,539	88,602	2

Source: Centers for Medicare & Medicaid Services data. | GAO-21-391

Notes: We limited our analysis to 962 hospitals that received funding, trained residents, and had an established cap on Medicare-funded residents for Direct Graduate Medical Education payments and Medicare Indirect Medical Education payments in 2018. Direct Graduate Medical Education payments offset direct costs of GME training, such as resident salaries, and Indirect Medical Education payments offset indirect costs of GME training, such as the additional cost of resident supervision. Medicare’s payments for GME are meant to cover a portion of training costs and are based, in part, on the number of full-time equivalent residents that a hospital trains, up to caps on residents for each Medicare payment type. Hospitals may train fewer residents than these caps—i.e., be under a cap—but they cannot be paid for these unfilled slots.

<sup>a</sup>Some residents are not subject to the caps, such as residents in new GME programs at rural hospitals. As a result, Medicare can pay for more residents than these caps.

In 2018, 11 percent of hospitals were under both of their Medicare caps. These hospitals with unfilled slots were disproportionately small (180 or fewer beds), located in rural areas, and had their caps set after 1997. (See appendix I for more information on these hospitals.)

Stakeholders identified multiple reasons why hospitals may train fewer residents than their caps, leaving resident slots eligible for Medicare funding unfilled.

- Two provider representatives said that changes to a hospital's GME programs may affect its ability to train its full number of residents. For example, if a clinic where residents train closes, the hospital may need to reduce the number of residents it trains until it partners with another training site.
- Two provider representatives explained that primary care specialties can have trouble recruiting residents and faculty to their GME programs due to a variety of factors, including differences in compensation between primary care physicians and specialty care physicians that lead medical students toward specialty care. As a result, hospitals with these programs may not be able to fill all of their resident slots or recruit sufficient faculty to their programs.<sup>36</sup>

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## Hospitals Can Reallocate Medicare-Funded Resident Slots to Other Hospitals in Certain Circumstances to Facilitate Resident Training

Hospitals may temporarily reallocate Medicare resident cap slots, and the associated Medicare funding, if residents from their GME programs train at another hospital.<sup>37</sup> Hospitals can temporarily reallocate slots to

1. facilitate resident rotations to other hospitals, or
2. continue residents' training if the original hospital cannot train them.

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<sup>36</sup>Hospitals recruit residents through an annual matching process, which occurs in March of each year. To prepare, hospitals finalize the number of resident positions that they will be able to train in the upcoming academic year in January. Residents apply to residency programs and rank their choices. The National Residency Match Program then compares residents' ranks to the number of available positions and hospitals' ranks of the residents to assign residents to each hospital. In 2018, 96 percent of the 30,232 positions for first-year residents were filled.

<sup>37</sup>See 42 U.S.C. § 1395ww(h)(4)(H)(ii). Hospitals have limited opportunities to permanently change their caps, including changes to unfilled slots. Specifically, rural hospitals may start new GME programs and urban hospitals may start programs that include training in rural areas. In addition, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 and the Patient Protection and Affordable Care Act, enacted in 2010, included provisions that permanently increased some hospitals' caps, including a redistribution of unfilled slots to hospitals that were over their caps.

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Our analysis of Medicare data shows that in 2018 approximately 40 percent of hospitals used at least one of these two options to reallocate or receive resident slots.

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## Resident Rotations to Affiliated Hospitals

Hospitals can use Medicare GME affiliation agreements to facilitate resident rotations to other hospitals. Provider representatives explained that these rotations may be used to meet educational requirements. For example, residents specializing in general surgery may work at another hospital to gain experience with transplanting organs or treating certain types of trauma.

In order for resident slots to be reallocated under a Medicare GME affiliation agreement,

- a hospital's residents must spend time training at one or more affiliated hospitals, and
- all hospitals in the affiliated group must be either co-owned, located in close proximity, or co-sponsors of a GME program.<sup>38</sup>

In a Medicare GME affiliation agreement, hospitals are able to aggregate their cap slots and divide them among the group.<sup>39</sup> For example, a provider and hospital representative noted that co-owned hospital groups may reallocate slots among their hospitals to those that receive higher payments per resident.<sup>40</sup> CMS does not require the number of slots reallocated to correspond to the number of residents rotating at each

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<sup>38</sup>To meet the location requirement, hospitals must be located within the same or contiguous metropolitan statistical area, as defined by the Office of Management and Budget. To meet the co-sponsorship requirement, hospitals must be listed by an accrediting organization as the sponsor, primary clinical site, or major participating institution for one or more GME programs. Hospitals must submit documentation, including the number of slots reallocated and residents rotated to each hospital, to a Medicare Administrative Contractor before the academic year begins on July 1. Hospitals may affiliate for one year or more with one or more other hospitals, and all hospitals must be connected by a series of rotational agreements. See 42 C.F.R. §§ 413.75(b), 413.79(f) (2019).

<sup>39</sup>Hospitals cannot increase the total number of slots in the group—in other words, any increases in one hospital's slots must be offset by a decrease in another hospital's slots—and each resident cannot be counted as more than one resident slot. There is no limit on the number of years for which a hospital can affiliate.

<sup>40</sup>IME payments are an adjustment to Medicare's payments for patient care and tend to be larger at hospitals with more Medicare patients and offering more complex care.

hospital; as a result, hospitals under their caps can reallocate unfilled slots to other hospitals as long as they meet requirements for rotations and co-ownership, proximity, or co-sponsorship.

Our analysis of Medicare data shows that in 2018, 37 percent (357 hospitals) of hospitals used a Medicare GME affiliation agreement to temporarily reallocate resident slots. These hospitals reallocated about 2,600 DGME slots and about 2,700 IME slots, which represented about 3 percent of all resident slots that Medicare funded in 2018. (See appendix II for more information on the hospitals that used Medicare GME affiliation agreements to reallocate Medicare-funded resident slots in 2018.)

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## Continuing Resident Training

In the following circumstances when a hospital or GME program cannot train its residents, it has two options to temporarily reallocate its slots to any hospital that continues training the residents:

- If a natural disaster or other circumstance outside a hospital's control affects a hospital's ability to train its residents, hospitals can enter into emergency Medicare GME affiliation agreements.<sup>41</sup> These agreements allow residents to continue Medicare-funded training elsewhere until the original hospital can resume training them. CMS officials reported that no hospitals participated in emergency Medicare GME affiliation agreements in 2018.
- If a hospital or GME program permanently closes, that hospital can reallocate its Medicare-funded slots to the hospital to which the resident transfers until the displaced resident completes training.<sup>42</sup> Once displaced residents from a closed hospital complete their training, CMS follows a process to permanently reallocate these

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<sup>41</sup>42 C.F.R. §§ 412.105(f)(1)(vi), 413.79(f)(7), (2019). Specifically, CMS may allow hospitals to enter into emergency affiliation agreements in the event of a Social Security Act section 1135 emergency period, which is when the President declares a disaster or emergency under the Stafford Act or National Emergencies Act and the Secretary of Health and Human Services declares a public health emergency under section 319 of the Public Health Service Act. See 42 U.S.C. § 1320b-5(g)(1).

<sup>42</sup>42 C.F.R. §§ 412.105(f)(1)(ix), 413.79(h), (2019). A displaced resident is any resident who has been accepted to, or was participating in, a hospital's residency program on the day that the hospital or program closure was publicly announced.

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slots.<sup>43</sup> Medicare data show that in 2018, to train displaced residents due to closures, 42 hospitals received 66 total resident DGME slots and 47 hospitals received 76 total resident IME slots.<sup>44</sup>

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## Stakeholders We Interviewed Said Extending the 5-Year Window for Establishing Caps for New GME Hospitals Could Increase Residents in Under-Resourced Hospitals

CMS allows hospitals starting their first new GME programs 5 years to establish and grow their GME programs before it caps the number of residents eligible for Medicare funding.<sup>45</sup> We asked stakeholders representing hospitals, providers, and accreditors about proposals to extend this cap-establishment window beyond 5 years.<sup>46</sup>

Stakeholders said that extending Medicare's 5-year cap-establishment window for hospitals new to GME could increase the overall number of

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<sup>43</sup>The Patient Protection and Affordable Care Act instructed CMS to establish a process to redistribute slots from teaching hospitals that close to hospitals that meet certain criteria, including geographic proximity to the closed hospital. Pub. L. No. 111-148, § 5506, 124 Stat. 119, 661 (2010) (codified at 42 U.S.C. §§ 1395ww(d)(5)(B)(v), 1395ww(h)(4)(H)(vi)). CMS has completed 16 rounds of redistributions since 2010. If a GME program closes, the cap slot reverts to the original hospital once the displaced resident graduates.

<sup>44</sup>The number of reallocated slots is likely fewer than the number of residents displaced. This is because the IME and DGME programs do not pay for all of a resident's time spent training, and a receiving hospital can only increase its cap if Medicare would otherwise not be allowed to pay for the displaced residents because of its cap. And, if the original hospital is training more residents than its cap, then the receiving hospital may not receive a full slot for each resident.

<sup>45</sup>Federal law required CMS to establish rules for calculating the direct GME caps of new medical residency programs established on or after January 1, 1995. In 1998, CMS implemented these statutory requirements and provided a 3-year cap-establishment window. For fiscal year 2013, CMS increased the cap-establishment window from 3 years to 5 years for hospitals that started training residents after October 2012. This change was made in response to concerns that 3 years was not enough time to achieve accreditation requirements, particularly for hospitals that intend to start more than one program. CMS officials reported that the provider community requested that the period be increased to 5 years at the time.

<sup>46</sup>For example, in a letter to CMS, the American Medical Association proposed allowing hospitals up to 10 years to build their programs before CMS establishes their caps.

residents trained.<sup>47</sup> Specifically, it would provide hospitals with more time to establish and grow new residency programs that could utilize Medicare funding. For example, hospitals could increase the number of faculty or increase training opportunities at other health care sites in the area, which means hospitals could increase the number of residents in their existing programs over time. This additional time could also allow hospitals to start new GME programs in more complex specialties that require hospitals to establish programs in other specialties before their caps are set. For example, anesthesiology GME programs must be co-located with internal medicine and general surgery GME programs.

Stakeholders said that extending the 5-year window would particularly help under-resourced hospitals, including those that are small or located in rural areas, train more GME residents. Stakeholders representing hospitals, accreditors, and providers said that extending the 5-year window would give under-resourced hospitals more time to address the following challenges:

- **Establishing a sufficient patient population.** Hospital and provider representatives, an accreditor, and a researcher said that under-resourced hospitals—particularly in rural areas—may face challenges in achieving some accreditation requirements. Specifically, they may need to significantly expand their patient population by partnering with other hospitals to ensure that residents have an adequate mix of educational experiences.
- **Recruitment and retention.** Representatives of providers and hospitals, a researcher, and an accreditor said that hospitals in rural or shortage areas have difficulty recruiting faculty and residents. Giving these hospitals more time to establish their caps will help them start more programs and attract more residents to their communities before the Medicare-funded resident caps are set.

Three provider representatives suggested that an extension of the cap-establishment window should be targeted to reflect workforce needs, such as giving only hospitals located in areas most in need of additional

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<sup>47</sup>Medicare data shows that since 1996, 110 hospitals have established their cap through the 3-year or 5-year cap-establishment process. Of these hospitals, 33 were over their caps for both Medicare programs, and 22 were under their caps for both programs. (See Appendix I for more information on these hospitals). An additional 119 hospitals were establishing their cap as of 2018.

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health care providers more time to establish programs.<sup>48</sup> They cautioned that a broader extension of the cap-establishment window may lead to cap increases at other hospitals, which could exacerbate recruiting challenges for hospitals in high-need areas and perpetuate the current maldistribution of the physician workforce.

However, stakeholders clarified that increasing the cap-establishment window may not address specific challenges under-resourced hospitals face when starting or maintaining new GME programs. Medicare GME payments are not available until residents have started training, so hospitals need to use other funds to build their GME training capacity. Hospital and provider representatives said many under-resourced hospitals struggle to start GME programs despite the benefits of using GME programs to increase the number of health care providers in their communities. Three stakeholders noted that grant programs from the Health Resources and Services Administration and some states may be available to some hospitals.

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## Agency Comments

The Department of Health and Human Services provided technical comments on a draft of this report, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the Secretary of Health and Human Services, appropriate congressional committees, and other interested parties. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7114 or [rosenbergm@gao.gov](mailto:rosenbergm@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs are on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.



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<sup>48</sup>Current policies allow teaching hospitals starting new programs in rural areas to increase their caps. However, about 32 percent of primary care HPSAs are not located in rural areas, affecting about 41 million Americans.

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Letter

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Michelle Rosenberg  
Acting Director, Health Care

Appendix I: Characteristics of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education Resident Caps in 2018

# Appendix I: Characteristics of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education Resident Caps in 2018

**Table 5: Number of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education (GME) Resident Caps, by Hospital Characteristic, 2018**

		Number of all hospitals (percent)	Number of hospitals over both caps (percent)	Number of hospitals under both caps (percent)
All hospitals <sup>a</sup>	Total	962	481 (50% of all hospitals)	102 (11% of all hospitals)
Region	Midwest	263 (27)	120 (25)	24 (24)
	Northeast	249 (26)	110 (23)	26 (25)
	South	273 (28)	158 (33)	38 (37)
	West	177 (18)	93 (19)	14 (14)
Urban or rural <sup>b</sup>	Urban	902 (94)	459 (95)	93 (91)
	Rural	60 (6)	22 (5)	9 (9)
Located in or near a provider shortage area <sup>c</sup>	Shortage area	343 (36)	173 (36)	35 (34)
	Not a shortage area	619 (64)	308 (64)	67 (66)
Hospital size	Small (180 or fewer beds)	235 (24)	80 (17)	40 (39)
	Medium (181–450 beds)	482 (50)	214 (44)	54 (53)
	Large (451 or more beds)	245 (25)	187 (39)	8 (8)
GME program size	Small (14 or fewer residents) <sup>d</sup>	242 (25)	55 (11)	42 (41)
	Medium (15–135 residents)	487 (51)	236 (49)	53 (52)
	Large (136 or more residents)	233 (24)	190 (40)	7 (7)
Year caps were set <sup>e</sup>	1997	852 (89)	448 (93)	80 (78)
	After 1997	110 (11)	33 (7)	22 (22)
Ratio of primary care residents to specialty care residents <sup>f</sup>	More specialty care residents than primary care residents	305 (32)	208 (43)	22 (22)
	1–5 times more primary care residents than specialty care residents	285 (30)	146 (30)	29 (28)

**Appendix I: Characteristics of Teaching Hospitals Over or Under Their Medicare Graduate Medical Education Resident Caps in 2018**

		<b>Number of all hospitals (percent)</b>	<b>Number of hospitals over both caps (percent)</b>	<b>Number of hospitals under both caps (percent)</b>
	More than 5 times more primary care residents than specialty care residents	103 (11)	41 (9)	13 (13)
Training in non-hospital settings	Yes	440 (46)	250 (52)	29 (28)
	No	522 (54)	231 (48)	73 (72)

Source: GAO analysis of data from Centers for Medicare & Medicaid Services and the Health Resources and Services Administration. | GAO-21-391

Notes: Medicare’s payments for GME are meant to cover a portion of training costs, and Medicare’s payments for GME are based, in part, on the number of full-time equivalent residents that a hospital trains, up to caps on physician residents for each Medicare payment type (direct and indirect). Hospitals may train more residents than one or both of these caps, but Medicare cannot provide funding for these additional residents, according to statute.

<sup>a</sup>We limited our analysis to 962 hospitals that received funding, trained residents, and had an established cap on Medicare-funded residents for Direct Graduate Medical Education payments and Indirect Medical Education payments in 2018.

<sup>b</sup>We considered a hospital to be located in a rural area if it was located in a rural Zip Code according to the Federal Office of Rural Health Policy, within the Health Resources and Services Administration. The Federal Office of Rural Health Policy identifies ZIP Codes as rural if they are in: (i) a non-metropolitan county; (ii) a metropolitan county, but with a Rural-Urban Commuting Area code of 4 or higher; or (iii) one of 132 large and sparsely populated census tracts with a Rural-Urban Commuting Area code of 2 or 3. The Rural-Urban Commuting Area codes are used by the U.S. Department of Agriculture to classify census tracts as urban or rural based on measures of population density, urbanization, and daily commuting.

<sup>c</sup>We considered a hospital to be located in or near a provider shortage area if the Health Resources and Services Administration designated any part of the county a geographic Health Professional Shortage Area for primary care physicians in 2018. That means that the area has fewer than one primary care physician per 3,500 people in the designated area.

<sup>d</sup>We use the term resident to mean full-time equivalent resident unless otherwise noted. Medicare calculates its GME payments based on the number of full-time equivalent residents a hospital trains, rather than the number of individual residents. There are some components of GME training that Medicare does not pay hospitals for, such as research, so the number of full-time equivalent residents training at a hospital is less than the number of individual residents. The majority of Medicare GME funding is for physician training, though Medicare also funds training for podiatrists and dentists.

<sup>e</sup>Hospitals that trained residents in 1996 had their caps set in 1997 based on the number of residents Medicare funded in 1996. Hospitals that started training residents in 1997 or later had 3 to 5 years to increase Medicare-funded residents before caps were set.

<sup>f</sup>Medicare considers the following specialties to be primary care: family medicine, general internal medicine, general pediatrics, preventive medicine, geriatric medicine, and osteopathic general practice. Of the 962 hospitals we analyzed, 269 were missing one or both of the variables used to calculate this ratio.

## Appendix II: Characteristics of Teaching Hospitals Using Medicare Graduate Medical Education Affiliation Agreements to Reallocate Slots for Residents in 2018

**Table 6: Number of Teaching Hospitals That Used Medicare Graduate Medical Education (GME) Affiliation Agreements to Reallocate Slots for Residents, by Hospital Characteristic, 2018**

		Number of all hospitals (percent)	Number of hospitals that reallocated slots (percent)	Number of hospitals that received a reallocated slot (percent)
All hospitals <sup>a</sup>	Total	962	218 (23% of all hospitals)	162 (17% of all hospitals)
Region	Midwest	263 (27)	73 (33)	56 (35)
	Northeast	249 (26)	72 (33)	53 (33)
	South	273 (28)	33 (15)	22 (14)
	West	177 (18)	40 (18)	31 (19)
Urban or rural <sup>b</sup>	Urban	902 (94)	212 (97)	155 (96)
	Rural	60 (6)	6 (3)	7 (4)
Located in or near a provider shortage area <sup>c</sup>	Shortage area	343 (36)	86 (39)	61 (38)
	Not a shortage area	619 (64)	132 (61)	101 (62)
Hospital size	Small (180 or fewer beds)	235 (24)	49 (22)	43 (27)
	Medium (181–450 beds)	482 (50)	107 (49)	86 (53)
	Large (451 or more beds)	245 (25)	62 (28)	33 (20)
GME program size	Small (14 or fewer residents) <sup>d</sup>	242 (25)	56 (26)	40 (25)
	Medium (15–135 residents)	487 (51)	90 (41)	73 (45)
	Large (136 or more residents)	233 (24)	72 (33)	49 (30)
Year caps were set <sup>e</sup>	1997	852 (89)	178 (82)	157 (97)
	After 1997	110 (11)	40 (18)	5 (3)

**Appendix II: Characteristics of Teaching Hospitals Using Medicare Graduate Medical Education Affiliation Agreements to Reallocate Slots for Residents in 2018**

		<b>Number of all hospitals (percent)</b>	<b>Number of hospitals that reallocated slots (percent)</b>	<b>Number of hospitals that received a reallocated slot (percent)</b>
Ratio of primary care residents to specialty care residents <sup>f</sup>	More specialty care residents than primary care	305 (32)	96 (44)	60 (37)
	1–5 times more primary care residents	285 (30)	75 (34)	56 (35)
	More than 5 times more primary care residents	103 (11)	19 (9)	14 (9)
Training in non-hospital settings	Yes	440 (46)	107 (49)	77 (48)
	No	522 (54)	111 (51)	85 (52)

Source: GAO analysis of data from Centers for Medicare & Medicaid Services and the Health Resources and Services Administration. | GAO-21-391

<sup>a</sup>We limited our analysis to 962 hospitals that received funding, trained residents, and established a cap on slots for Medicare-funded residents for both Medicare payment types (direct and indirect) in 2018. Hospitals can use Medicare GME affiliation agreements to share Medicare-funded resident slots if residents rotate among the hospitals and the hospitals are co-owned, co-sponsors of a GME program, or located in the same area. In 2018, 357 hospitals used a Medicare GME affiliation agreement to change their slots, including some hospitals that increased slots for one payment type and decreased slots for the other. As a result, some hospitals are included in all three columns of the table.

<sup>b</sup>We considered a hospital to be located in a rural area if it was located in a rural Zip Code according to the Federal Office of Rural Health Policy, within the Health Resources and Services Administration. The Federal Office of Rural Health Policy identifies ZIP Codes as rural if they are in: (i) a non-metropolitan county; (ii) a metropolitan county, but with a Rural-Urban Commuting Area code of 4 or higher; or (iii) one of 132 large and sparsely populated census tracts with a Rural-Urban Commuting Area code of 2 or 3. The Rural-Urban Commuting Area codes are used by the U.S. Department of Agriculture to classify census tracts as urban or rural based on measures of population density, urbanization, and daily commuting.

<sup>c</sup>We considered a hospital to be located in or near a provider shortage area if the Health Resources and Services Administration designated any part of the county a geographic Health Professional Shortage Area for primary care physicians in 2018. That means the area has fewer than one primary care physician per 3,500 people in the designated area.

<sup>d</sup>We use the term resident to mean full-time equivalent resident unless otherwise noted. Medicare calculates its GME payments based on the number of full-time equivalent residents a hospital trains, rather than the number of individual residents. There are some components of GME training that Medicare does not pay hospitals for, such as research, so the number of full-time equivalent residents training at a hospital is less than the number of individual residents. The majority of Medicare GME funding is for physician training, though Medicare also funds training for podiatrists and dentists.

<sup>e</sup>Hospitals that trained residents in 1996 set their caps based on the number of residents they trained that year. Hospitals that started training residents after 1996 had 3 to 5 years to set their caps; any of these hospitals new to GME that were located in an urban area could increase their Medicare-funded slots in 2018. Starting in 2019, new and existing urban hospitals can use Medicare GME affiliation agreements to increase or decrease their caps once they are set. See 83 Fed. Reg. 41144, 41492 (Aug. 17, 2018).

<sup>f</sup>Medicare considers the following specialties to be primary care: family medicine, general internal medicine, general pediatrics, preventive medicine, geriatric medicine, and osteopathic general practice. Of the 962 hospitals we analyzed, 269 were missing one or both of the variables used to calculate this ratio.

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## Appendix III: GAO Contact and Staff Acknowledgments

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### GAO Contact

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### Staff Acknowledgments

In addition to the contact named above, James Cosgrove (Director), William Hadley (Assistant Director), A. Elizabeth Dobrenz (Analyst-in-Charge), Jamison Koeman, and Eric Wedum made key contributions to this report. Also contributing were Caroline Hale, Ethiene Salgado-Rodriguez, Caitlin Scoville, Yesook Merrill, and Jennifer Whitworth.

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