United States Government Accountability Office

Report to Congressional Requesters

April 2021

GRADUATE MEDICAL EDUCATION

Programs and Residents Increased during Transition to Single Accreditor; Distribution Largely Unchanged

Accessible Version

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GAO-21-329

GAO Highlights

Highlights of GAO-21-329, a report to congressional requesters

April 2021

GRADUATE MEDICAL EDUCATION

Programs and Residents Increased during Transition to Single Accreditor; Distribution Largely Unchanged

Why GAO Did This Study

Physician GME provides the clinical education to practice medicine independently in the U.S. Agencies within the Department of Health and Human Services (HHS) fund GME, including over $15 billion from Medicare in 2018 (the latest year for which data were available).

To be eligible for federal funding, GME programs generally must be accredited. In 2014, the two primary accreditation organizations for physician GME—ACGME and AOA—announced plans for ACGME to serve as the nation's single accreditor for these GME programs as of July 2020. The transition, which began in 2015, established a physician training framework to provide uniform, quality care to patients across the U.S.

GAO was asked to review the changes during the transition to a single GME accreditor. This report describes changes in the number, composition (e.g., specialty or subspecialty), and geographic distribution of GME programs and their residents.

GAO analyzed ACGME and AOA program and resident data for academic years 2014-2015 through 2019-2020. GAO also reviewed documents and interviewed officials from HHS agencies, ACGME, and AOA about HHS programs that fund GME, as well as changes in the number of programs and residents, their composition, and geographic distribution of their primary training sites during the transition to ACGME as the single accreditor.

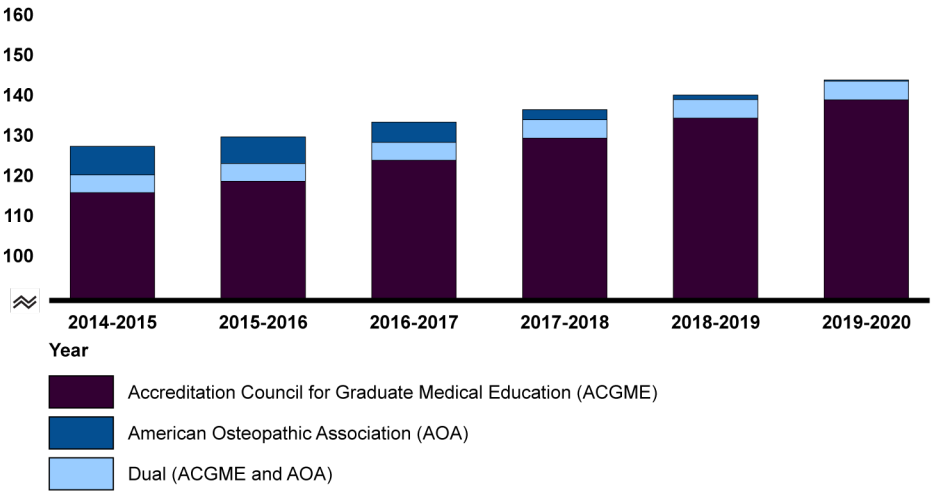
GAO provided a draft of this report to HHS for comment. HHS provided technical comments, which GAO incorporated as appropriate.

View GAO-21-329. For more information, contact A. Nicole Clowers at (202) 512-7114 or clowersa@gao.gov.

What GAO Found

The number of programs that provide graduate medical education (GME) for physicians—commonly known as residency programs—and the number of residents in those programs increased during the transition to a single accreditor for GME programs. Between 2014-2015 and 2019-2020—the last academic year of the transition to the Accreditation Council for Graduate Medical Education (ACGME) as the single accreditor—the number of GME programs increased by 14 percent, from 10,608 to 12,117. Most (73 percent) of the 1,032 programs solely accredited by the American Osteopathic Association (AOA) in 2014-2015 applied for, and of these almost all were accredited by ACGME in 2019-2020; the remaining AOA-accredited programs chose to close. Overall, the number of residents training in GME programs increased by 13 percent.

Graduate Medical Education Residents by Program Accreditor, Academic Years 2014-2015 through 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329

Data table for Graduate Medical Education Residents by Program Accreditor, Academic Years 2014-2015 through 2019-2020

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
ACGME	116.246	119.099	124.302	129.816	134.815	139.356
Dual	4.446	4.404	4.493	4.575	4.621	4.672
AOA	7.104	6.633	5.023	2.531	1.092	0.286

The composition of GME programs and residents—that is, whether they were in a specialty or subspecialty—did not change between 2014-2015 and 2019-2020. In both years, 83 percent of residents trained in a specialty program, such as internal medicine. Of the residents in a specialty program, nearly half trained in a primary care specialty (i.e., internal medicine, family medicine, or pediatrics). The remaining residents trained in a subspecialty, such as cardiovascular disease.

The geographic distribution of programs and residents was largely unchanged between 2014-2015 and 2019-2020. In both years, most (about 60 percent) programs and residents were located in the South and Northeast, and nearly all (98 percent) programs and residents trained in urban areas. Of the 3,142 counties in the U.S., GME programs in 2014-2015 were located in 467 counties. By 2019-2020, the number of counties with programs increased to 525. While there was growth in the number of programs and residents in rural areas, growth in urban areas was greater.

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Abbreviations

AAMC	Association of American Medical Colleges
ACGME	Accreditation Council for Graduate Medical Education
AOA	American Osteopathic Association
CMS	Centers for Medicare & Medicaid Services

COVID-19	Coronavirus Disease 2019
DO	doctor of osteopathic medicine
GME	graduate medical education
HHS	Department of Health and Human Services
HRSA	Health Resources and Services Administration
MD	doctor of medicine

441 G St. N.W.
Washington, DC 20548

April 13, 2021

Congressional Requesters

Physician graduate medical education (GME), also known as residency, provides clinical education and prepares a physician for the independent practice of medicine in the United States. Specifically, after completing medical school and receiving a medical degree, physicians enter a multi-year residency training program in teaching hospitals and health centers, health departments, private medical practices, and other sites, during which they complete their formal education as a physician. These physicians are known as residents and complete a GME program in a specific medical specialty, such as internal medicine. Some physicians may choose to subspecialize and undergo additional GME training—also referred to as fellowships—in areas such as cardiovascular disease.

Within the Department of Health and Human Services (HHS), the Centers for Medicare & Medicaid Services (CMS) and the Health Resources and Services Administration (HRSA) fund GME, including over $15 billion from Medicare in 2018 (the latest year for which data were available). To receive this funding, residency programs generally must be accredited.

Historically, the two primary accreditation organizations for physician GME were the Accreditation Council for Graduate Medical Education (ACGME) and the American Osteopathic Association (AOA).[1] In academic year 2014-2015, more than 90 percent of residents were trained in GME programs accredited by ACGME.[2] The GME programs accredited by ACGME focused on an allopathic approach—a system which uses a science-based approach to treatment and care for patients using a wide range of modalities, including therapeutics, diagnostics, interventions, and physical therapy, according to ACGME officials.[3] The GME programs accredited by AOA focused on an osteopathic approach—a philosophy that emphasizes the interrelationship between

[1]Graduates of allopathic medical schools are doctors of medicine (MD) and graduates of osteopathic medical schools are doctors of osteopathic medicine (DO).

[2]The 2014-2015 academic year was from July 1, 2014, through June 30, 2015.

[3]Prior to academic year 2014-2015, DO graduates of osteopathic medical schools were eligible for and had trained in residency programs accredited by ACGME.

structure and function, and has an appreciation of the body's ability to heal itself, among other things.

On February 26, 2014, ACGME, AOA, and the American Association of Colleges of Osteopathic Medicine announced a memorandum of understanding outlining a single GME accreditation system in the United States with ACGME as the single GME accreditor.[4] Beginning July 1, 2015, GME programs previously accredited by AOA were able to apply for ACGME accreditation under the terms of the memorandum of understanding. Under the agreement, on June 30, 2020, AOA stopped accrediting GME programs and ACGME became the single GME accreditor for these GME programs.[5]

Prior to this agreement, GME programs exclusively accredited by ACGME did not include training in osteopathic principles. As part of the agreement, ACGME-accredited programs can now apply for osteopathic recognition, which provides an opportunity for physicians, including those who did not graduate from an accredited college of osteopathic medicine, to obtain GME training in osteopathic principles and practices, which they can apply to patient care. The single GME accreditation system will allow graduates of allopathic and osteopathic medical schools to complete their residency and fellowship education in any ACGME-accredited program. The system also established a physician training framework designed to provide uniform, quality care to patients across the United States.[6]

There have been questions about the extent to which programs that had been accredited by AOA would be able to achieve accreditation from ACGME and be able to continue training residents. You asked us to review the changes during the transition to a single accreditor. In this report, we describe changes in the number, composition (e.g., specialty

[4]The American Association of Colleges of Osteopathic Medicine was founded to lend support and assistance to the nation's osteopathic medical schools, and to serve as a unifying voice for osteopathic medical education.

[5]AOA stopped accreditation for GME programs on June 30, 2020, with the exception of select situations. In select situations, some GME programs accredited by AOA will continue for a limited time beyond June 30, 2020; for example, they will continue teaching their current residents before closing, but will not accept any new residents.

[6]Individuals enrolled in GME specialty (residency) programs are residents, while individuals enrolled in GME subspecialty (fellowship) programs are fellows. We refer to participants in all GME programs as residents.

or subspecialty), and geographic distribution of GME programs and their residents.

To describe changes in the number of programs and residents in GME training overall, we reviewed annual data for academic years 2014-2015 through 2019-2020 on GME programs and residents within the 50 states and the District of Columbia from the two GME accrediting bodies—ACGME and AOA. Data for academic year 2019-2020 were the most recent data at the time of our review.

- To describe changes in programs and residents by composition (i.e., specialty of training) and geographic distribution between 2014-2015 and 2019-2020, we obtained data on programs and residents for 2014-2015 and 2019-2020. We examined the composition of programs and residents across primary care and other specialties, compared with subspecialty training programs.[7] We defined primary care as the specialties of internal medicine, family medicine, and pediatrics.[8]
- We also analyzed the geographic distribution of programs and residents by identifying the Census Bureau geographic region and county of each GME program's primary training site.[9] We also used Rural-Urban Commuting Area codes to categorize the location of

[7]We grouped GME programs by specialties and subspecialties using ACGME and AOA categories.

[8]Some residents train in a combined GME program called internal medicine-pediatrics, which provides training in a combination of internal medicine and pediatrics. We considered those residents and programs to be primary care.

[9]We used the primary training site for these analyses. Residents may also train for more limited periods at participating sites, but data about the number of residents training in these locations were not available, because neither ACGME nor AOA collect data on the extent to which residents train at participating sites.

For the census regions, see U.S. Census Bureau, *Geographic Terms and Definitions*, accessed August 21, 2020, https://www.census.gov/programs-surveys/popest/about/glossary/geo-terms.html.

programs and residents' primary training sites as being either urban or rural.[10]

- In addition, we examined AOA data on programs and their residents that had been solely accredited by AOA in 2014-2015 (the last academic year before the transition) by their 2019-2020 ACGME accreditation status.

We assessed the reliability of ACGME, AOA, and geographic data by reviewing documentation, discussing the data with knowledgeable officials, and performing data reliability checks, such as examining the data for missing values and obvious errors, to test the internal consistency and reliability of the data. After taking these steps, we determined the data from each of these sources were sufficiently reliable for the purposes of our reporting objectives.

We also interviewed officials from ACGME and AOA about changes in the number of programs and residents, their composition, and geographic distribution of their primary training sites during the transition to ACGME as the single accreditor. Finally, we reviewed documents and interviewed CMS and HRSA officials regarding the programs they administer that fund GME and their agencies' roles related to oversight of and involvement in physician GME accreditation.

We conducted this performance audit from March 2020 through April 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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[10]Rural-Urban Commuting Area codes characterize all census tracts regarding their rural and urban status using Bureau of Census Urbanized Area and Urban Cluster definitions in combination with work commuting information. There are two current versions of the codes, one for census tracts and another for zip codes. We used the most recent zip code version, which is based on Census Bureau data from 2010, for both academic years in our analysis. See Economic Research Service, *Rural-Urban Commuting Area Codes*, accessed August 28, 2020 https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/. Addresses defined as urban core by code were grouped as urban and the remainder were grouped as rural.

Background

Medical School and GME Training

Prior to entering GME training, students complete medical school under one of two medical practice philosophies—allopathic or osteopathic.

- **Allopathic physicians** represent the majority of physicians and have a doctor of medicine degree (known as MDs).
- **Osteopathic physicians** have a doctor of osteopathic medicine degree (known as DOs).[11]

Following medical school, residents in GME programs train in an institution, usually in a hospital or clinic, under the direct or indirect supervision of physician faculty members.[12] Historically,

- **ACGME**-accredited GME programs focused on allopathic training, and these programs were available to U.S. or Canadian medical school graduates with an MD, U.S. medical school graduates with a DO, and international medical graduates with the equivalent of an MD degree.[13]
- **AOA**-accredited GME programs focused on osteopathic training, and these programs were available only to U.S. medical school graduates with a DO degree.

While ACGME- and AOA-accredited programs separately, some programs were accredited by both organizations (we refer to these as

[11]According to the American Association of Colleges of Osteopathic Medicine, the osteopathic philosophy embraces the concept of the unity of the living organism's structure (anatomy) and function (physiology), and emphasizes the following principles: (1) the human being is a dynamic unit of function; (2) the body possesses self-regulatory mechanisms that are self-healing in nature; (3) structure and function are interrelated at all levels; and (4) rational treatment is based on these principles.

[12]According to ACGME, state licensing boards establish the requirements for physicians to practice medicine in each state, and all state medical boards require licensure candidates to complete at least one year of postgraduate training to be eligible for a full and unrestricted medical license. In some jurisdictions, the requirement is higher: the physician must complete 2 or 3 years of residency training to obtain a license.

[13]The Educational Commission on Foreign Medical Graduates certifies international medical graduates before they enter U.S. GME programs.

dually accredited programs) prior to ACGME becoming the single GME accreditor.

Whether in an ACGME- or AOA-accredited program, physicians can pursue GME training within a variety of specialties or subspecialties. Initially, physicians go through GME training for a specialty—such as internal medicine, family medicine, pediatrics, anesthesiology, radiology, or general surgery. Of the specialties, family medicine, internal medicine, and pediatrics are considered primary care specialties, as they provide comprehensive first contact and continuing care for persons with a broad range of health concerns. After completion of training in a specialty, some residents choose to seek additional GME training through a subspecialty fellowship program. For example, a physician who completed an internal medicine GME program may decide to subspecialize in cardiovascular disease.[14]

HHS Agencies' GME Programs and Roles

HHS funds GME programs through two programs administered by CMS: the Medicare GME program and the Medicaid GME program; and two programs administered by HRSA: the Children's Hospitals GME Payment Program and the Teaching Health Center GME program.[15] Most of these GME funds were provided through CMS's Medicare program, which spent more than $15 billion in 2018. (See table 1.)

[14]The percentage of residents who later subspecialize varies based on specialty type. For example, according to a 2008 study, among the primary care specialties, 5 percent of family medicine residents end up subspecializing, compared with 55 and 39 percent of internal medicine and pediatric residents, respectively. Therefore, a resident training in a primary care specialty may not ultimately practice as a primary care physician. See E. Salsberg, et al, "US Residency Training Before and After the 1997 Balanced Budget Act," *JAMA*, vol. 300, no. 10 (2008): 1174-1180.

[15]For additional information on federal funding for graduate medical education, see GAO, *Physician Workforce: HHS Needs Better Information to Comprehensively Evaluate Graduate Medical Education Funding*, GAO-18-240 (Washington, D.C.: Mar. 9, 2018). In addition, the Department of Veterans Affairs (VA) provides training to medical and dental residents through its GME program. For additional information see GAO, *VA Health Care: Actions Needed to Improve Oversight of Graduate Medical Education Reimbursement*, GAO-20-553 (Washington, D.C.: July 17, 2020).

Table 1: CMS and HRSA Graduate Medical Education (GME) Programs and 2018 Spending

Agency	Program	Description	2018 spending (dollars in millions)
CMS	Medicare GME program	This federally financed program—which provides health insurance coverage to people age 65 and older, certain individuals with disabilities, and those with end-stage renal disease—pays for GME training using formula-based payments set by statute.	15,136
CMS	Medicaid GME program	There is no federal requirement for state Medicaid programs to fund GME training, but states may elect to recognize GME training costs as a component of the overall costs incurred by hospitals. Payment for these expenses is shared by the federal government through federal matching funds.	——[a]
HRSA	Children's Hospitals GME Payment program	This program was created to support pediatric, pediatric subspecialty, and non-pediatric subspecialty GME training in freestanding children's hospitals.	299[b]
HRSA	Teaching Health Center GME program	This program was created to increase the number of primary care residents and dentists who train in community-based, ambulatory patient care centers.	119[c]

Source: GAO analysis of Centers for Medicare & Medicaid Services (CMS) data and Health Resources and Services Administration (HRSA) information. | GAO-21-329

Note: CMS's and HRSA's programs also support podiatry and dental residents in programs accredited by the Council of Podiatric Medical Education of the American Podiatric Medical Association and the Commission on Dental Accreditation of the American Dental Association, in addition to programs accredited by the Accreditation Council for Graduate Medical Education and the American Osteopathic Association.

[a]CMS officials said they do not track GME spending by state Medicaid programs. An Association of American Medical Colleges (AAMC) survey found that 43 states, including Washington, D.C., reported federal and state funding for Medicaid GME totaling about $5.6 billion in 2018. The survey reported that in 13 states, programs that educate graduate nurses and other health profession trainees, in addition to medical residents, are eligible to received Medicaid GME payments. "Medicaid Graduate Medical Education Payments: Results from the 2018 50-State Survey", AAMC (2019).

[b]The amount presented represents HRSA obligations for fiscal year 2018. In fiscal year 2019, HRSA reported obligating $306 million for the program. According to HRSA, in each of fiscal years 2018 and 2019, the program made 58 awards to children's hospitals.

[c]The amount presented represents HRSA obligations for fiscal year 2018. For fiscal year 2019, HRSA reported obligating $120 million for the program. According to HRSA, the program made 57 awards in academic year 2017-2018, 56 awards in academic year 2018-2019, and 56 awards in academic year 2019-2020. Program awards are made on an academic year (July 1-June 30) cycle, with the first 3 months paid by one fiscal year and the last 9 months paid by the next fiscal year, according to the agency.

In general, in order for GME programs to be eligible for GME funding through the CMS and HRSA programs, they must be accredited by the relevant accrediting body.[16] While the HHS agencies fund GME and require accreditation for eligibility, CMS and HRSA officials said they do not have a role related to oversight or administration of the accreditation

[16]For Medicare and the HRSA GME programs, the relevant accrediting body includes AGCME and AOA, as long as AOA has accredited programs. CMS officials said there is no federal accreditation requirement under Medicaid for GME.

organizations, or the transition to ACGME as the single accreditor for physician GME programs.

Number of Programs and Residents Increased during Transition to Single Accreditor; Composition and Geographic Distribution Were Largely Unchanged

The Number of GME Programs and Residents Increased during the Transition to a Single Accreditor

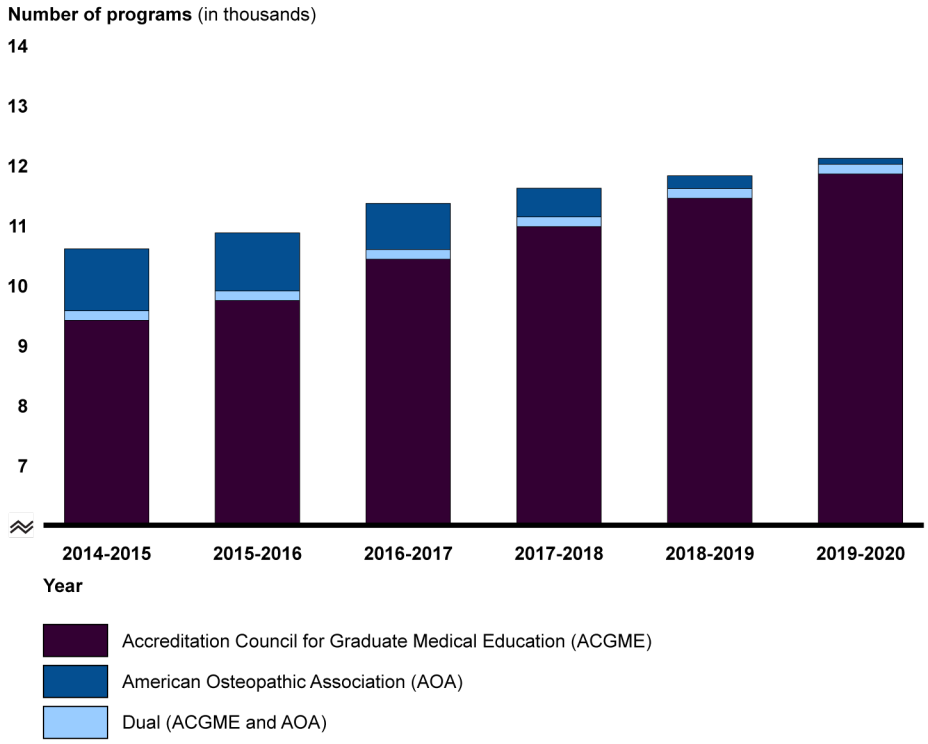
Our analysis of ACGME and AOA data shows the number of GME programs increased during the transition to ACGME as the single accreditor. After the 2014 announcement of the transition to ACGME as the single GME accreditor, the number of GME programs increased 14 percent: from 10,608 programs in 2014-2015 to 12,117 programs in 2019-2020. (See fig. 1.) During this time, the number of programs solely accredited by AOA decreased from 1,032 programs in 2014-2015 to 100 programs in 2019-2020.[17] As programs received accreditation from ACGME, they no longer needed to maintain their AOA accreditation in order to continue as an accredited program. In addition to AOA programs seeking ACGME accreditation, some programs accredited by AOA in 2014-2015 may have chosen to close.[18] The number of dually accredited programs—a single program separately accredited by both ACGME and AOA—remained fairly constant at about 160 during this transition. AOA

[17]According to AOA officials, 79 of these programs closed at the end of academic year 2019-2020, the last academic year prior to ACGME becoming the single GME accreditor on July 1, 2020. In addition, the officials reported 10 programs would continue GME after July 1, 2020, while their applications for ACGME accreditation were under review, and 11 programs would continue GME and then close their programs after their current residents complete their training.

[18]AOA officials said that some AOA-accredited programs that closed were not active prior to the transition to ACGME as the single GME accreditor.

officials said that some AOA programs chose to retain both accreditations during the transition in order to participate in the AOA residency match.[19]

Figure 1: Number of Graduate Medical Education (GME) Programs by Accreditor, Academic Years 2014-2015 through 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329

Data table for Figure 1: Number of Graduate Medical Education (GME) Programs by Accreditor, Academic Years 2014-2015 through 2019-2020

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
ACGME	9.415	9.745	10.435	10.979	11.450	11.855
Dual	0.161	0.161	0.163	0.163	0.162	0.162
AOA	1.032	0.967	0.768	0.475	0.213	0.100

[19]The National Resident Matching Program is a private, not-for-profit corporation that provides an impartial venue for matching applicants' and GME program directors' preferences for each other. Early 2020 was the first time that all allopathic (MD) and osteopathic (DO) applicants participated in this matching program for placement in these GME programs.

Notes: Academic years are from July 1 through June 30 of the following year.

Dual refers to programs that received accreditation from ACGME and AOA separately.

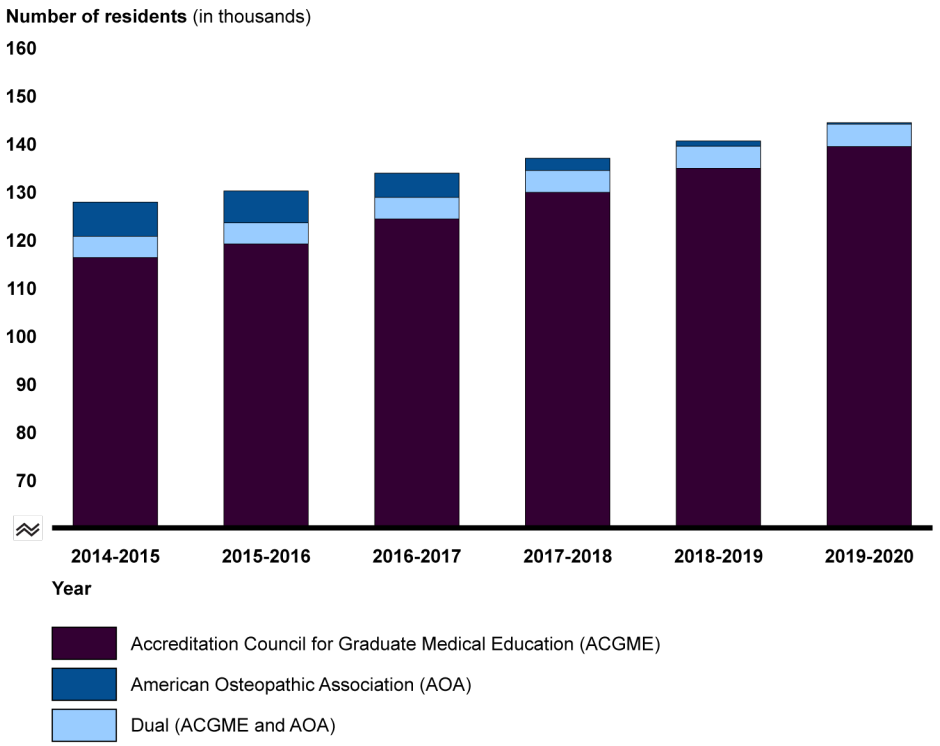
Similarly, the total number of residents in these GME programs increased by 13 percent during the transition to ACGME as the single accreditor: from 127,796 residents in 2014-2015 to 144,314 residents in 2019-2020.[20] (See fig. 2.) During this time, the number of residents in programs solely accredited by AOA decreased from 7,104 residents in 2014-2015 to 286 residents in 2019-2020.[21] The number of residents in dually accredited programs—a program separately accredited by both ACGME and AOA—increased slightly during this period: from 4,446 residents to 4,672 residents.

[20]The number of DOs in residency programs increased during the transition period. In academic year 2014-2015, there were 18,103 DOs in GME programs—7,104 in AOA-accredited programs and 10,999 in ACGME- and dually-accredited programs—programs that were separately accredited by both ACGME and AOA. In 2019-2020, there were 24,379 DOs in GME programs—286 in AOA-accredited programs and 24,093 in ACGME- and dually-accredited programs.

Prior to the transition to ACGME as the single GME program accreditor, we reported on increases in the number of residents in ACGME- and AOA-accredited GME programs. Between academic years 2004-2005 and 2009-2010, the number of residents grew by about 10 percent, and then by another 11 percent by academic year 2014-2015. 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).

[21]According to AOA and ACGME, by 2020 the number of residents in GME programs previously accredited by AOA that received ACGME accreditation grew by more than 20 percent.

Figure 2: Number of Graduate Medical Education (GME) Residents by Program Accreditor, Academic Years 2014-2015 through 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329

Data table for Figure 2: Number of Graduate Medical Education (GME) Residents by Program Accreditor, Academic Years 2014-2015 through 2019-2020

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
ACGME	116.246	119.099	124.302	129.816	134.815	139.356
Dual	4.446	4.404	4.493	4.575	4.621	4.672
AOA	7.104	6.633	5.023	2.531	1.092	0.286

Notes: Academic years are from July 1 through June 30 of the following year.

Dual refers to programs that received accreditation from ACGME and AOA separately.

Regarding those GME programs that had solely been accredited by AOA at the beginning of the transition in 2015, most applied for and received ACGME accreditation, according to AOA data. In 2014-2015, there were

1,032 GME programs that were solely accredited by AOA.[22] During the transition period, 749 of these programs (with about 90 percent of the residents in programs solely accredited by AOA) applied for ACGME accreditation, while 264 programs did not apply.[23] As of June 30, 2020, 720 (or 96 percent) of the 749 programs that applied had received accreditation from ACGME. (See fig. 3.) Of the 29 other programs that applied, but were not accredited by ACGME,

- 19 programs, with 91 residents, withdrew their applications for ACGME accreditation; and
- 10 programs, with 49 residents in 2015, had applications that were under review by ACGME as of June 30, 2020. AOA and ACGME officials noted that ACGME accreditation of these 10 programs was delayed due to the Coronavirus Disease 2019 (COVID-19) pandemic. ACGME officials said that the programs that were unable to have an initial accreditation site visit because of the pandemic have had their final accreditation decisions deferred until the winter 2020-2021 ACGME Review Committee meetings.[24]

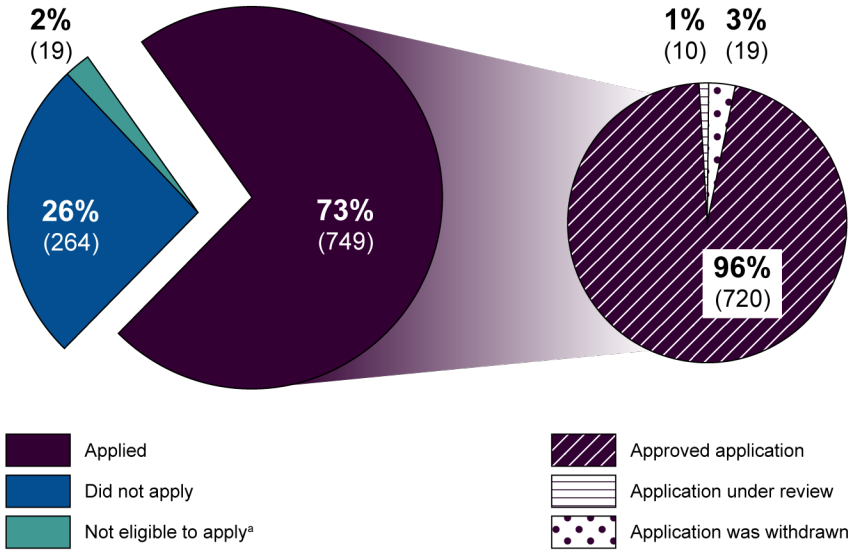
[22]An additional 161 programs were dually accredited—separate accreditation by AOA and ACGME. Programs with dual accreditation did not need to apply for ACGME accreditation in the transition to ACGME as the single GME accreditor.

[23]According to AOA officials, 19 of the 1,032 programs solely accredited by AOA in academic year 2014-2015 were not eligible to apply for ACGME accreditation during the transition, which began July 1, 2015, because they were closed as of June 30, 2015.

According to AOA officials, there are a number of reasons that an AOA-accredited program may not seek ACGME accreditation. These include a hospital deciding to close a program and focus on their other sponsored programs; programs that did not have any enrolled residents for academic years prior to the transition to a single accreditor; parallel programs at a hospital in a specialty or subspecialty—one accredited by AOA and another by ACGME—where resident slots were transferred to the ACGME program; or the hospital closing. AOA officials also noted that the GME program closure rate was not significantly higher during the transition than the historical closure rate for AOA-accredited programs.

[24]ACGME Review and Recognition Committees set accreditation and recognition standards (i.e., requirements) and provide peer evaluation of sponsoring institutions or residency and fellowship programs. Evaluations are conducted to assess whether an institution or program is in substantial compliance with the applicable institutional, program, and recognition requirements, and to confer an accreditation or recognition status. According to ACGME officials, ACGME selectively uses accreditation site visits, among other processes, to assess compliance with the accreditation requirements for sponsoring institutions and programs.

Figure 3: Status of AOA-Accredited Programs' Applications for ACGME Accreditation, as of June 30, 2020



Source: GAO analyses of data from the American Osteopathic Association. | GAO-21-329

Data table for Figure 3: Status of AOA-Accredited Programs' Applications for ACGME Accreditation, as of June 30, 2020

AOA program status	Number	Percent
Applied	749	73
Did not apply	264	26
Not eligible to applya	19	2
Total AOA programs	1,032	100.00
breakdown of those that applied (73% above)		

AOA program application status	Number	Percent
approved	720	96
application under review	10	1
application was withdrawn	19	3
TOTAL AOA Programs that Applied	749	100.00

ACGME officials noted that due to the pressures of the COVID-19 pandemic across the country, patients were arriving or being transferred to hospitals with GME programs, and some were planning for the anticipated surge of patients with COVID-19. Officials determined that these circumstances, and their continued evolution, required a new framework from which GME could effectively operate during the pandemic. See appendix I for additional details on the steps ACGME took related to accreditation during the COVID-19 pandemic.

Notes: Percentage may not add to 100 due to rounding.

This figure shows the application decision of the programs that were solely accredited by the American Osteopathic Association (AOA) in academic year 2014-2015, and the status of their Accreditation Council for Graduate Medical Education (ACGME) accreditation application during the transition to ACGME as the single accreditor.

[a]Nineteen programs solely accredited by AOA in academic year 2014-2015 closed as of June 30, 2015, and therefore were not eligible to apply for ACGME accreditation during the transition, which began July 1, 2015.

In addition to the 10 programs whose applications to ACGME were under review as of June 30, 2020, 11 other programs that did not apply or withdrew their applications will maintain AOA accreditation to continue teaching out their current residents, and then these 11 programs plan to close.[25] According to ACGME officials, AOA programs that continue to teach out their current residents after the transition to ACGME cannot accept new residents in this status.[26]

Osteopathic Recognition

Osteopathic recognition became an option for programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) as part of the transition to ACGME as the single GME accreditor. ACGME's Osteopathic Principles Committee confers this recognition to a program providing requisite education in Osteopathic Principles and Practice. These principles and practice refer to a philosophical and practical approach to patient management and treatment, including osteopathic manipulative treatment, based on an understanding of body unity, self-healing, and self-regulatory mechanisms, and the interrelationship of structure and function.

Source: ACGME | GAO-21-329

[25]According to AOA officials, of these 11 programs, seven applied for ACGME accreditation and then withdrew their applications, three programs did not apply for ACGME accreditation. For the remaining program, a portion of the program was accredited by ACGME and the remaining residents and program will be under AOA accreditation for the existing residents to complete their training.

[26]In March 2017, AOA, ACGME and the American Association of Colleges of Osteopathic Medicine (the third party to the agreement for a single GME accreditor) reached an agreement that seeks to protect residents so they have the ability to complete AOA-approved training and advance to AOA board eligibility. The agreement gave AOA restricted authority to extend the AOA accreditation date to "teach out" their current residents—that is, allow any remaining resident in such programs to complete training in an accredited program. For example, there may be unique circumstances whereby some programs make a good faith effort to achieve ACGME accreditation, but have not transitioned successfully to ACGME accreditation.

As part of the transition to ACGME as the single accreditor, programs accredited by ACGME can apply to have osteopathic recognition.[27] As of June 30, 2020, 261 programs accredited by ACGME had applied for osteopathic recognition. Of these 261 programs:

- Most programs (242) received osteopathic recognition from ACGME.[28]
- Ten applications for osteopathic recognition were under review by ACGME.
- Nine applications for osteopathic recognition were withdrawn by the applicant.

Proportions of Specialty and Subspecialty Programs and Their Residents Remained Unchanged

While the overall number of GME programs increased from 2014-2015 to 2019-2020, the composition—that is, the breakdown of programs by specialty and subspecialty—was similar in both academic years.[29] Our analysis of ACGME and AOA data shows that in 2014-2015 and 2019-2020, almost half (46 percent in 2014-2015 and 45 percent in 2019-2020) of GME programs, with the majority of residents, were specialty programs.[30] (See fig. 4.)

[27]In addition to establishing osteopathic recognition for ACGME-accredited programs, ACGME established an osteopathic neuromusculoskeletal specialty GME program. In academic year 2019-2020, there were 27 GME programs with the osteopathic neuromusculoskeletal specialty; these programs had 53 residents.

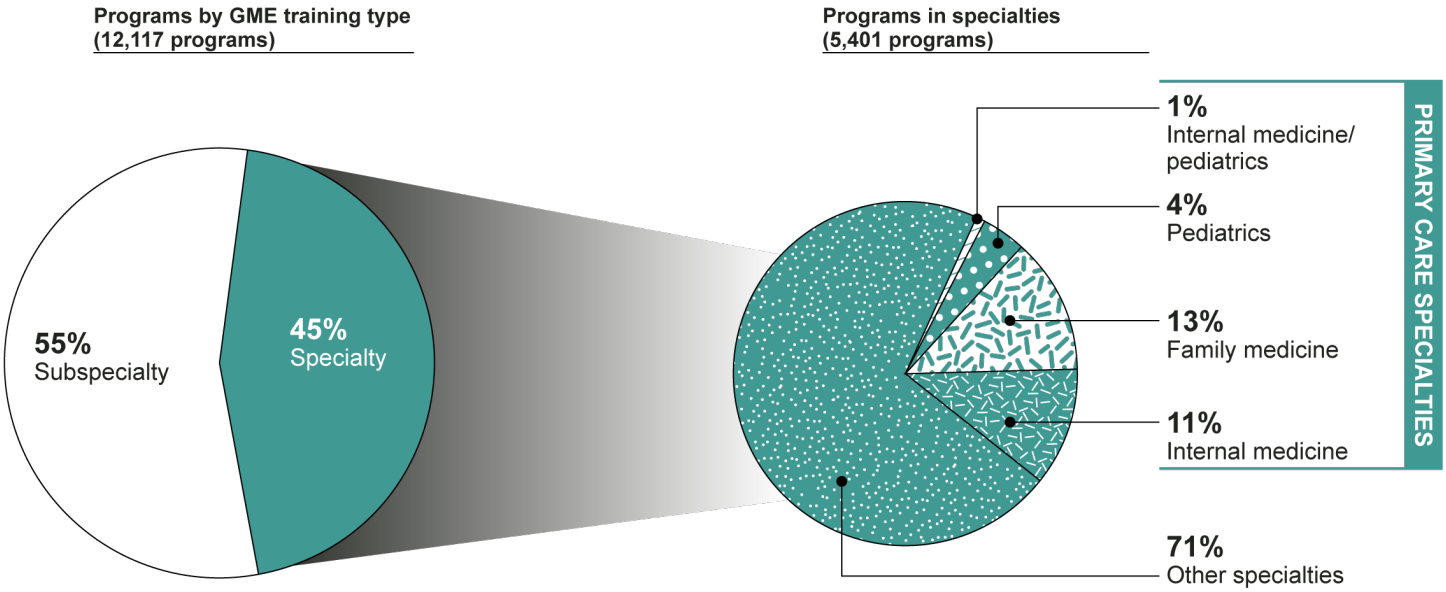
[28]About half of the residents in programs with osteopathic recognition in academic year 2019-2020 (2,498 of 4,940) had an osteopathic focus to their training.

According to ACGME officials, 233 of the 242 programs that were awarded osteopathic recognition still had this recognition as of 2020— these programs were in over 20 specialties and subspecialties—and 15 percent of which were not previously AOA-accredited programs. For the other nine programs, osteopathic recognition was withdrawn voluntarily by the programs. ACGME officials said recognition can be withdrawn voluntarily by the program, or by ACGME if the program is not in compliance with recognition requirements or loses its accreditation. In order for a program to be able to apply for osteopathic recognition from ACGME, it must first receive accreditation from ACGME.

[29]See appendix II for information on the number of GME programs and residents in each specialty and subspecialty in academic year 2019-2020.

[30]In contrast, more than eight in every 10 (81 percent) of the programs solely accredited by AOA in academic year 2014-2015 that transitioned to ACGME accreditation by 2019-2020 were specialty programs.

Figure 4: Graduate Medical Education (GME) Specialty and Subspecialty Programs, Academic Year 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329

Data table for Figure 4: Graduate Medical Education (GME) Specialty and Subspecialty Programs, Academic Year 2019-2020

Program Type	Programs	
	2020	
	Number	Percent
SPECIALTY/SUBSPECIALTY	6,716	55
Subspecialty		
Specialty	5,401	45
TOTAL	12,117	100.00

Program Type	Programs	
	2020	
	Number	Percent
PRIMARY CARE		29
Primary Care Specialty		
All Other Specialties		71
Family Medicine		13
Internal Medicine		11
Internal Medicine/Pediatrics		1

Program Type	Programs	
	2020	
	Number	Percent
Pediatrics		4
TOTAL	5,401	100.00

Notes: Initially, physicians go through GME training in a specialty—such as internal medicine, anesthesiology, or general surgery—and completion allows them to seek initial board certification in that specialty. Some residents, however, may choose to subspecialize and seek additional GME training. For example, after completing an internal medicine program, a physician may decide to subspecialize in cardiovascular disease.

Academic years are from July 1 through June 30 of the following year.

While there were more subspecialty programs than specialty programs in 2014-2015 and 2019-2020, the total number of residents was smaller in subspecialty programs than in specialty programs. For subspecialty programs, which include cardiovascular disease and infectious disease, the average number of residents in 2019-2020 was four and the largest program had 52 residents, ACGME and AOA data show. For specialty programs, the average number of residents in 2019-2020 was 22 and the largest program had 218 residents.[31] (See table 2.)

Table 2: Number of Residents per Type of Graduate Medical Education (GME) Program, Academic Year 2019-2020

Type of program	Number of GME programs (percent)	Number of GME residents (percent)	Number of residents per program		
			Average	Minimum	Maximum
Subspecialty	6,716 (55)	25,139 (17)	4	0[a]	52
Specialty[b]	5,401 (45)	119,175 (83)	22	0[c]	218

Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329.

Notes: Initially, physicians go through GME training in a specialty—such as internal medicine, anesthesiology, or general surgery—and completion allows them to seek initial board certification in that specialty. Some residents, however, may choose to subspecialize and seek additional GME training. For example, after completing an internal medicine program, a physician may decide to subspecialize in cardiovascular disease.

Academic years are from July 1 through June 30 of the following year.

Programs with 0 residents may be inactive or newly accredited programs that have not participated in an annual residency match.

[a]There were 922 subspecialty programs with 0 residents.

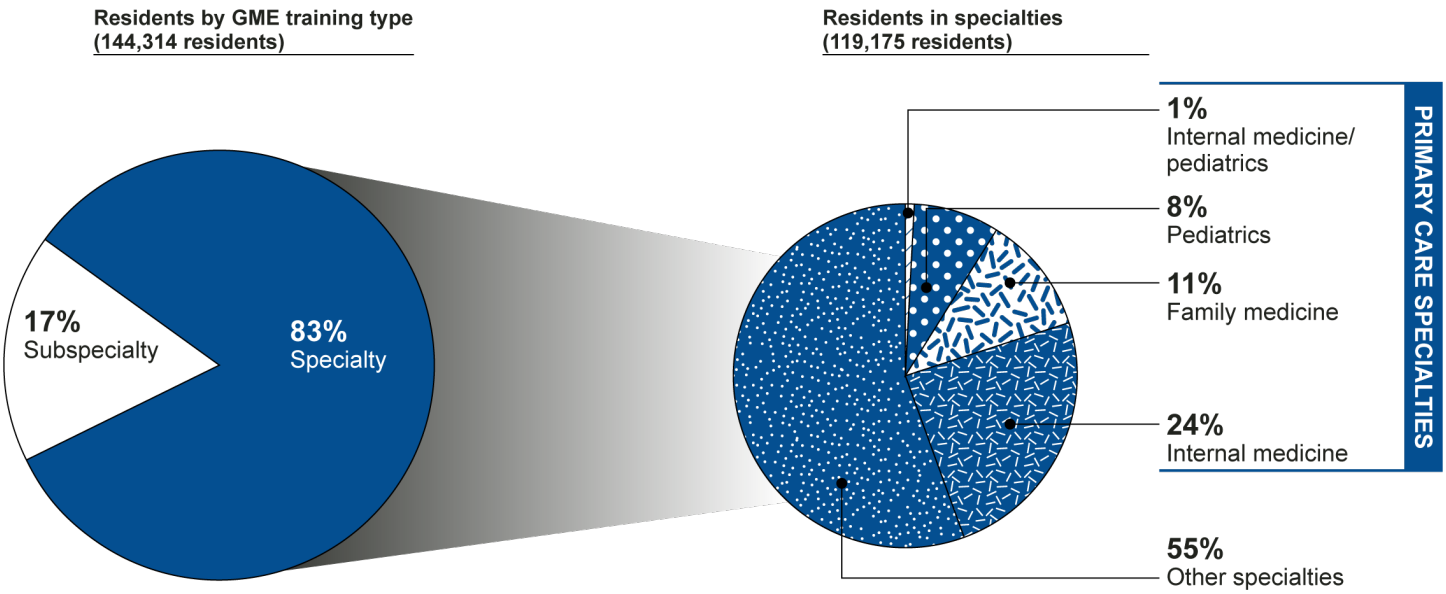
[b]For primary care specialty programs (internal medicine, family medicine, and pediatrics), the average number of residents was 34, ranging from none to 218. There were 80 primary care programs with 0 residents.

[31]Our analysis of ACGME and AOA data found that the average number of residents in specialty and subspecialty programs was the same in academic year 2014-2015.

[c]There were 271 specialty programs with 0 residents.

In both 2014-2015 and 2019-2020, 83 percent of all residents were training in a specialty program and nearly half of these residents (45 percent) trained in one of the primary care specialties. (See fig. 5.)[32]

Figure 5: Graduate Medical Education (GME) Specialty and Subspecialty Residents, Academic Year 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education and the American Osteopathic Association. | GAO-21-329

Data table for Figure 5: Graduate Medical Education (GME) Specialty and Subspecialty Residents, Academic Year 2019-2020

Program Type	Residents	
	2020	
	Number	Percent
SPECIALTY/SUBSPECIALTY	25,139	17
Subspecialty		
Specialty	119,175	83
TOTAL	144,314	100.00

[32]For the programs that were solely accredited by AOA in academic year 2014-2015 that transitioned to ACGME accreditation by 2019-2020, nearly all (94 percent) residents were in specialty programs, with 42 percent of those training in primary care programs.

Program Type	Residents	
	2020	
	Number	Percent
Primary Care Specialty		45
All Other Specialties		55
All Other Specialties		55
Family Medicine		11
Internal Medicine		24.
Internal Medicine/Pediatrics		1
Pediatrics		8
TOTAL	119,175	100.00

Notes: Initially, physicians go through GME training in a specialty—such as internal medicine, anesthesiology, or general surgery—and completion allows them to seek initial board certification in that specialty. Some residents, however, may choose to subspecialize and seek additional GME training. For example, after completing an internal medicine program, a physician may decide to subspecialize in cardiovascular disease.

Academic years are from July 1 through June 30 of the following year.

Percentages do not add to 100 due to rounding.

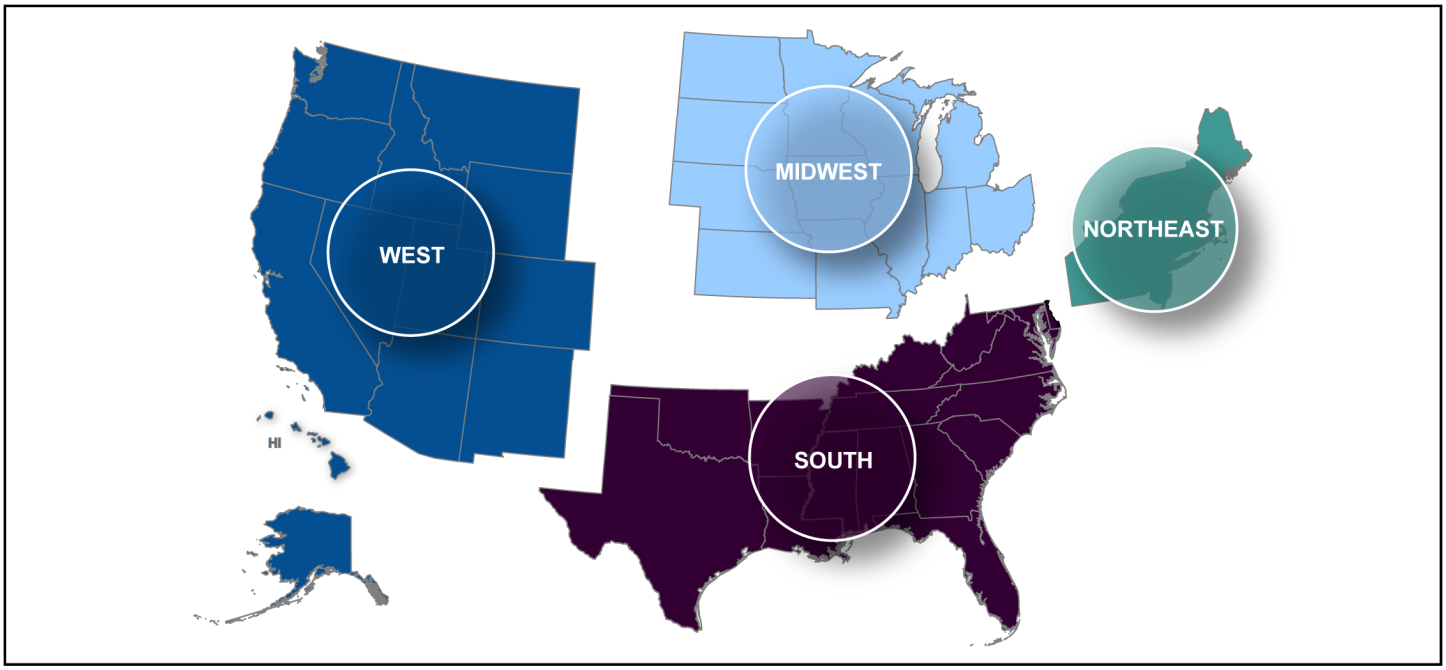
Geographic Distribution of GME Programs and Residents Was Largely Unchanged during Transition

During the transition to a single GME accreditor from 2014-2015 to 2019-2020, the number of GME programs and residents increased in each region of the country, and the geographic distribution was largely unchanged.[33] Our analysis of ACGME and AOA data showed that in 2014-2015, most GME programs and residents were located in the South and Northeast.[34] In 2019-2020, this distribution was largely unchanged, with most programs and residents located in the South and Northeast. (See fig. 6.) The South added the largest number of programs and residents, with 628 additional programs (42 percent of all new programs) and 7,223 additional residents (44 percent of all new residents). The West had the greatest percent increase in programs.

[33]Our analysis of locations of GME programs and residents was based on the programs' primary training site. Residents may also train for more limited periods at participating sites, but data about the number of residents training in these locations were not available, because neither ACGME nor AOA collect data on the extent to which residents train at participating sites.

[34]In contrast, of the programs solely accredited by AOA in academic year 2014-2015 that transitioned to ACGME accreditation by 2019-2020, more than a third of the programs and residents (37 percent) were in the Midwest region followed by 29 percent in the Northeast.

Figure 6: Regional Changes for Graduate Medical Education (GME) Programs and Residents, Academic Years 2014-2015 and 2019-2020



		GME PROGRAMS			GME RESIDENTS		
		GME programs (2014-2015)	*GME programs (2019-2020)*	*Growth (2014-2015 to 2019-2020)*	*GME residents (2014-2015)*	*GME residents (2019-2020)*	*Growth (2014-2015 to 2019-2020)*
REGION	Midwest	2,694 (25%)	2,932 (24%)	9%	31,056 (24%)	33,735 (23%)	9%
	Northeast	3,009 (28%)	3,310 (27%)	10%	38,974 (30%)	41,927 (29%)	8%
	South	3,277 (31%)	3,905 (32%)	19%	38,161 (30%)	45,384 (31%)	19%
	West	1,628 (15%)	1,970 (16%)	21%	19,605 (15%)	23,268 (16%)	19%
	National	10,608 (100%)	12,117 (100%)	14%	127,796 (100%)	144,314 (100%)	13%

Sources: GAO analysis of data from the Accreditation Council for Graduate Medical Education, the American Osteopathic Association, and Census Bureau (data); Map Resources (map). | GAO-21-329

Data table for Figure 6: Regional Changes for Graduate Medical Education (GME) Programs and Residents, Academic Years 2014-2015 and 2019-2020

Region	GME programs (2014-2015)	GME programs (2019-2020)	Growth (2014-2015 to 2019-2020)	GME residents (2014-2015)	GME residents (2019-2020)	Growth (2014-2015 to 2019-2020)
Midwest	2,694 (25%)	2,932 (24%)	9%	31,056 (24%)	33,735 (23%)	9%
Northeast	3,009 (28)	3,310 (27%)	10%	38,974 (30%)	41,927 (29)	8%
South	3,277 (31)	3,905 (32%)	19%	38,161 (30%)	45,384 (31)	19%
West	1,628 (15)	1,970 (16%)	21%	19,605 (15%)	23,268 (16)	19%
National	10,608 (100)	12,117 (100%)	14%	127,796 (100%)	144,314 (100)	13%

Notes: Academic years are from July 1 through June 30 of the following year.

Some region percentages do not add up to 100 due to rounding.

Our analysis of ACGME and AOA data showed that of the 3,142 counties in the United States, GME programs were located in 467 counties and residents were located in 446 counties in 2014-2015.[35] In 2019-2020, GME programs and residents were located in more counties, with programs in 525 counties and residents in 501 counties. As indicated by the numbers, some counties had programs that did not have residents.[36] In 2019-2020:

- About one-third (32 percent) of counties with a GME program only had one program.
- Thirty-eight percent of counties had between two and 10 programs.
- Thirty percent of counties had more than 10 programs, with one of these counties (Cook County, Illinois) having 458 programs.

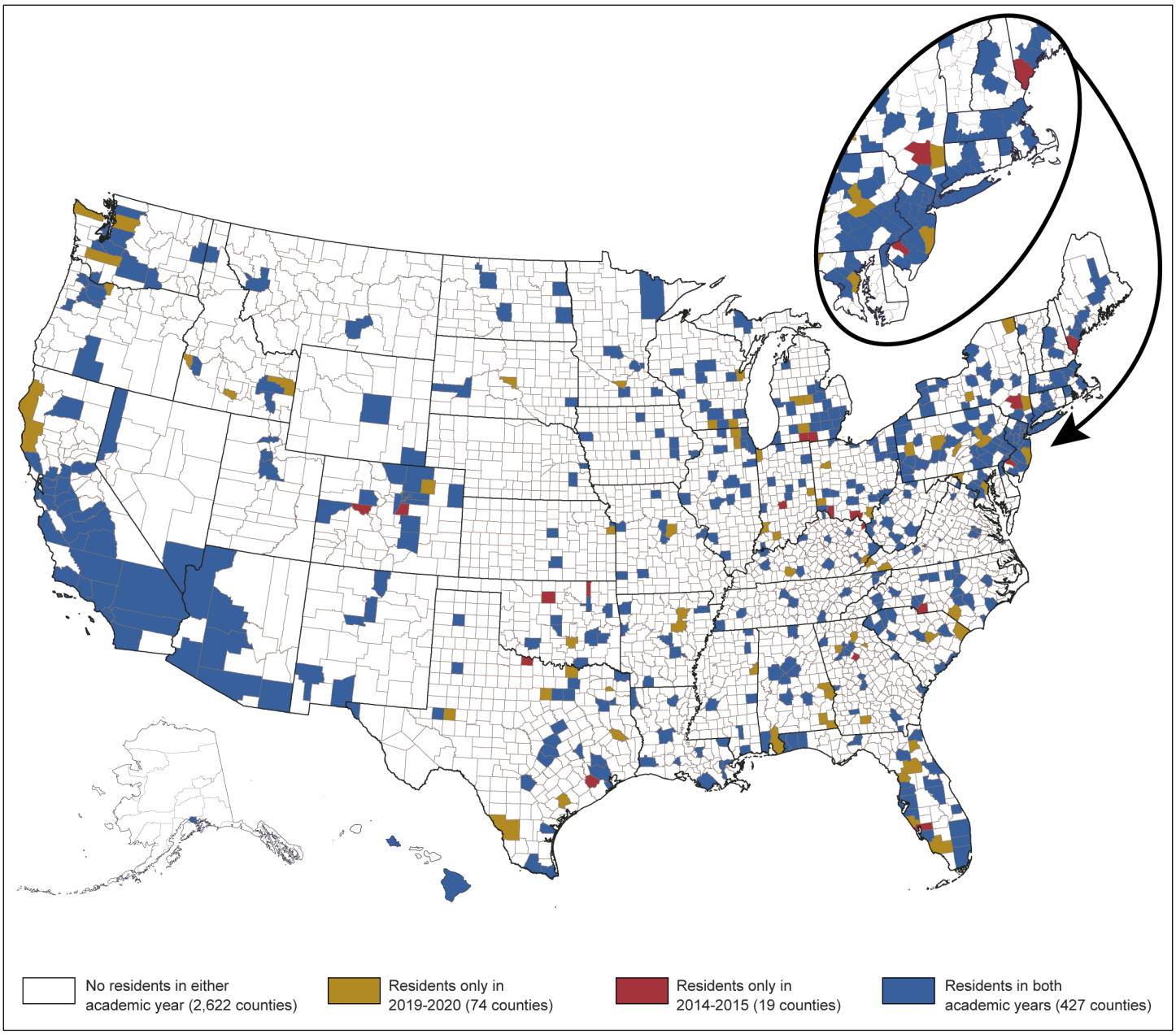
While the overall number of counties with GME residents increased by 55, 19 counties that had residents in 2014-2015 no longer had GME residents in 2019-2020, while 74 counties gained residents between 2014-2015 and 2019-2020.[37] Figure 7 indicates counties with GME residents in 2014-2015, 2019-2020, or both academic years.

[35]Programs solely accredited by AOA in academic year 2014-2015 that transitioned to ACGME accreditation by 2019-2020, and their residents, were located in 178 counties.

[36]Programs may not have residents, because they are currently inactive or newly accredited programs that have not participated in an annual residency match.

[37]In our prior report, we found similar changes over the previous 10-year period—academic years 2004-2005 through 2014-2015—with 57 additional counties having residents—18 counties no longer had residents in 2015 while 75 new counties gained residents. See GAO-17-411.

Figure 7: Distribution of Graduate Medical Education (GME) Residents by County, Academic Years 2014-2015 and 2019-2020



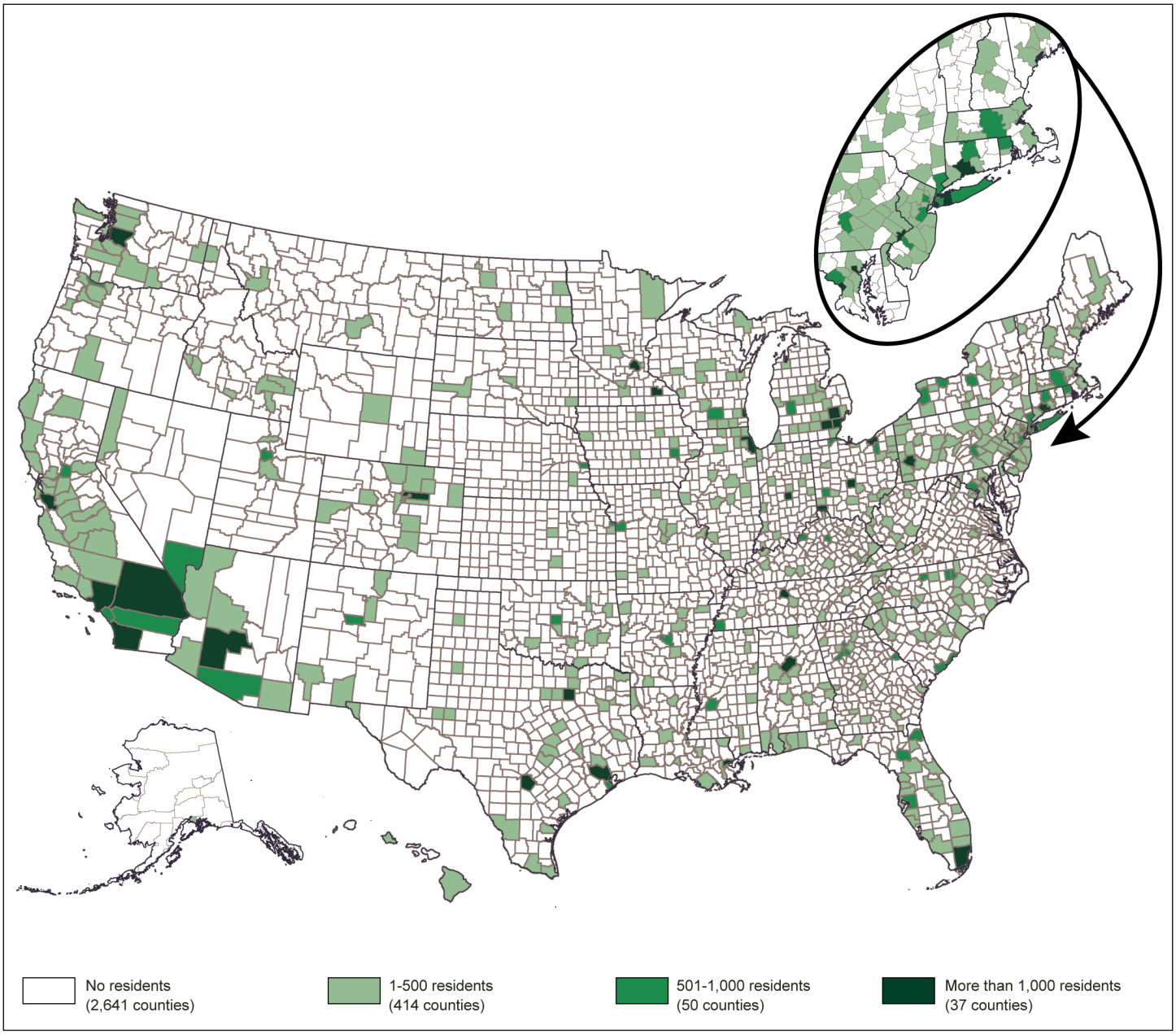
Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education, the American Osteopathic Association, and the Census Bureau. | GAO-21-329

Notes: Resident location based on their primary training site.

Academic years are from July 1 through June 30 of the following year.

The number of GME residents in each county also varied. Our analysis of ACGME and AOA data showed that in 2019-2020, 83 percent of counties with residents had between one and 500 residents, and another 10 percent of counties had between 501 and 1,000 residents. Seven percent of counties had more than 1,000 residents, with one county (Cook County, Illinois) having 5,834 residents in 2019-2020. See figure 8 for counties by number of residents in 2019-2020.

Figure 8: Distribution of Graduate Medical Education (GME) Residents by Number of Residents per County, Academic Year 2019-2020



Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education, the American Osteopathic Association, and the Census Bureau. | GAO-21-329

Notes: Resident location based on their primary training site.

Academic years are from July 1 through June 30 of the following year.

Our analysis of ACGME and AOA data showed that in both 2014-2015 and 2019-2020, nearly all (98 percent) GME programs and residents were located in urban areas.[38] While there was growth in the number of programs in rural areas, urban areas added a greater number of programs: rural areas experienced a 16 percent increase (39 additional programs) compared to a 14 percent increase (1,470 additional programs) in urban areas. Similarly, there was growth in residents whose primary training sites were in rural areas, but urban areas added a greater number of residents: an increase of 33 percent in rural areas (690 residents) compared with a 13 percent increase (15,828 additional residents) in urban areas.

As we previously reported, these geographic trends generally represent the location of GME programs' primary training sites and may not fully account for the locations of clinical experiences residents receive during their training.[39] Officials said that residents training in urban areas may rotate to other participating sites in rural areas or treat patients from surrounding rural areas at urban training sites. According to ACGME officials, one reason for the predominance of residencies located in urban areas is that GME training must be based in areas that can support the requirements for accreditation, including adequate patient volume and variety, and availability of teaching resources in a specialty or subspecialty.

Agency Comments

We provided a draft of this report to HHS for comment. HHS provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the Secretary of HHS, appropriate congressional committees, and other interested parties. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have questions about this report, please contact me at (202) 512-7114 or clowersa@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page

[38]For the programs solely accredited by AOA in academic year 2014-2015 that transitioned to ACGME accreditation by 2019-2020, and their residents, most programs (89 percent) were in urban areas and most residents (93 percent) were in urban areas.

[39]See GAO-17-411.

of this report. GAO staff who made major contributions to this report are listed in appendix III.

A. Nicole Clowers
Managing Director, Health Care

List of Requesters

The Honorable Mike Kelly
Republican Leader
Subcommittee on Oversight
Committee on Ways and Means
House of Representatives

The Honorable Pat Toomey
United States Senate

The Honorable Gus. M. Bilirakus
House of Representatives

The Honorable Vern Buchanan
House of Representatives

The Honorable Ron Estes
House of Representatives

The Honorable Tom Reed
House of Representatives

The Honorable Fred Upton
House of Representatives

The Honorable Brad Wenstrup
House of Representatives

Appendix I: Accreditation Council for Graduate Medical Education Stages and Categories for Graduate Medical Education during the Pandemic

Due to the pressures of the Coronavirus Disease 2019 (COVID-19) pandemic across the country, significant numbers of patients were arriving or being transferred to some teaching hospitals—that is, hospitals that have GME programs. In contrast, other hospitals and institutions were seeing very few of these patients, but were planning for the anticipated surge of COVID-19 patients. According to the Accreditation Council for Graduate Medical Education (ACGME), these circumstances, and their continued evolution, required a new framework from which graduate medical education (GME) can effectively operate during the pandemic. Initially, hospitals or other institutions that sponsor GME programs and their training sites functioned at one of three stages along a continuum: (1) business as usual, (2) increased clinical demands guidance, and (3) pandemic emergency status guidance.

- **Stage 1: Business as usual.** No significant disruption of patient care and educational activities; planning underway for increased clinical demands.
- **Stage 2: Increased clinical demands guidance.** Increased but manageable clinical demand. Some residents need to shift to patient care duties; some educational activities are suspended.[1]
- **Stage 3: Pandemic emergency status guidance**. Crossing a threshold beyond which the increase in volume or severity of illness creates an extraordinary circumstance where education on and delivery of routine care must be reconfigured to focus only on patient care. Most or all residents need to shift to patient care; majority of educational activities are suspended.

[1]Individuals enrolled in GME specialty (residency) programs are residents, while individuals enrolled in GME subspecialty (fellowship) programs are fellows. We refer to participants in all GME programs as residents.

During the COVID-19 pandemic, ACGME officials reported that they monitored the situation in order to appropriately adapt their accreditation processes in response to the circumstances. In all cases, GME programs must ensure that GME residents can successfully complete their programs. Starting July 1, 2020, ACGME began sunsetting its three stages and implementing a new approach to the characterization of GME program operations during the pandemic with a non-emergency category and an emergency category, which require applications to receive acknowledgement.[2]

- **Non-emergency category.** GME programs in the non-emergency category (formerly stages 1 and 2) are subject to all common and specialty-specific program requirements. All previously suspended ACGME activities (milestones, self-study, accreditation site visits) will resume for hospitals or other institutions sponsoring GME programs in the non-emergency category and their accredited programs. For all programs, the common requirements regarding use of telemedicine and telehealth with appropriate supervision are in effect. Each specialty review committee will choose whether to continue to allow for this type of direct supervision with telemedicine in other situations.[3] Hospitals or other institutions sponsoring GME programs that have not expressly applied for acknowledgement of emergency categorization are by default in the non-emergency category.
- **Emergency category.** Hospitals and other institutions sponsoring GME programs that are facing substantial and sustained disruption of GME operations resulting from the COVID-19 pandemic may self-declare themselves in the emergency category. As in the previous framework, ACGME-accredited hospitals or other institutions that sponsor GME programs must comply with all ACGME institutional requirements throughout the term of emergency categorization. According to ACGME officials, GME programs with emergency categorization must continue to prioritize the following areas: compliance with work hour requirements; adequate personal protective equipment resources and training in its use; adequate

[2]For additional information, see Accreditation Council for Graduate Medical Education, *Sponsoring Institution Emergency Categorization*, accessed October 21, 2020, https://acgme.org/COVID-19/Sponsoring-Institution-Emergency-Categorization.

[3]ACGME Review and Recognition Committees set accreditation and recognition standards (i.e., requirements) and provide peer evaluation of sponsoring institutions or residency and fellowship programs. Evaluations are conducted to assess whether an institution or program is in substantial compliance with the applicable institutional, program, and recognition requirements, and to confer an accreditation or recognition status.

supervision in unfamiliar services; suspension of specialty limitations on fellows functioning in their core (primary) specialty so long as that time does not exceed 20 percent of a fellow's annual education time in any academic year; and assignments appropriate to the level of training and physical condition of the resident.

Appendix II: Number of Graduate Medical Education Programs and Residents, by Specialty and Subspecialty, Academic Year 2019-2020

Table 3: Number of Programs and Residents by Specialty or Subspecialty, Academic Year 2019-2020

SPECIALTIES	Number of programs	Number of residents
Allergy and immunology	80	306
Anesthesiology	160	6,688
Child neurology	75	398
Colon and rectal surgery	65	106
Dermatology	144	1,590
Emergency medicine	267	8,271
Family medicine	706	13,662
Family medicine/emergency medicine	1	2
Integrated family medicine and neuromusculoskeletal medicine	6	15
Integrated internal medicine and neuromusculoskeletal medicine	1	0
Internal medicine	567	28,987
Internal medicine/emergency medicine	2	3
Internal medicine/pediatrics	78	1,503
Internship	18	78
Interventional radiology-integrated	89	424
Medical genetics and genomics	47	60
Neurological surgery	121	1,535
Neurology	159	3,050
Neuromusculoskeletal medicine + 1	1	0
Nuclear medicine	37	77
Obstetrics and gynecology	284	5,629
Ophthalmology	126	1,505

SPECIALTIES	Number of programs	Number of residents
Orthopaedic surgery	202	4,383
Osteopathic neuromusculoskeletal medicine	27	53
Otolaryngology	127	1,682
Pathology-anatomic and clinical	141	2,315
Pediatrics	207	9,231
Physical medicine and rehabilitation	92	1,428
Plastic surgery	53	226
Plastic surgery-integrated	82	961
Preventive medicine	72	347
Proctology	1	0
Psychiatry	267	6,574
Radiation oncology	91	771
Radiology-diagnostic	198	4,536
Surgery[a]	333	8,759
Thoracic surgery	74	236
Thoracic surgery-integrated	30	193
Transitional year[b]	162	1,559
Urology	144	1,723
Vascular surgery-integrated	64	309

SUBSPECIALTIES	Number of programs	Number of residents
Abdominal radiology	14	49
Addiction medicine (multidisciplinary)	77	78
Addiction psychiatry	52	77
Adolescent medicine	32	94
Adult cardiothoracic anesthesiology	71	220
Adult congenital heart disease	24	25
Adult reconstructive orthopaedics	24	46
Advanced heart failure and transplant cardiology	80	109
Blood banking/transfusion medicine	51	50
Brain injury medicine	24	19
Cardiovascular disease	247	3,078
Chemical pathology	4	2
Child abuse pediatrics	31	47
Child and adolescent psychiatry	139	881
Clinical cardiac electrophysiology	110	255

SUBSPECIALTIES	Number of programs	Number of residents
Clinical informatics	46	88
Clinical neurophysiology	92	163
Complex general surgical oncology	29	115
Congenital cardiac surgery	14	8
Consultation-liaison psychiatry	62	85
Craniofacial surgery	8	5
Critical care medicine	107	453
Cytopathology	93	125
Dermatopathology (multidisciplinary)	57	69
Developmental-behavioral pediatrics	43	119
Emergency medical services	71	87
Endocrinology, diabetes, and metabolism	149	664
Endovascular surgical neuroradiology	7	8
Epilepsy	81	126
Female pelvic medicine and reconstructive surgery	69	184
Foot and ankle orthopaedics	7	16
Forensic pathology	44	54
Forensic psychiatry	48	80
Gastroenterology	206	1,774
Geriatric medicine	160	296
Geriatric psychiatry	62	42
Gynecologic oncology	63	210
Hand surgery	92	185
Hematology	2	17
Hematology and medical oncology	165	1,829
Hematopathology	86	135
Hospice and palliative medicine (multidisciplinary)	169	375
Infectious disease	153	754
Interventional cardiology	168	351
Interventional radiology-independent	2	0
Maternal and fetal medicine	98	369
Medical biochemical genetics	19	16
Medical microbiology	15	9
Medical oncology	7	35
Medical toxicology	27	76
Micrographic surgery and dermatologic oncology	78	88

SUBSPECIALTIES	Number of programs	Number of residents
Mohs micrographic surgery	2	1
Molecular genetic pathology (multidisciplinary)	42	56
Musculoskeletal oncology	12	17
Musculoskeletal radiology	20	35
Neonatal-perinatal medicine	102	767
Nephrology	150	822
Neurodevelopmental disabilities	8	24
Neuromuscular medicine	52	73
Neuropathology	37	59
Neuroradiology	87	280
Neurotology	24	35
Nuclear radiology	17	12
Obstetric anesthesiology	41	38
Ophthalmic plastic and reconstructive surgery	4	3
Orthopaedic sports medicine	90	215
Orthopaedic surgery of the spine	18	34
Orthopaedic trauma	11	20
Otolaryngic allergy	1	0
Pain medicine (multidisciplinary)	109	391
Pediatric anesthesiology	60	192
Pediatric cardiology	63	457
Pediatric critical care medicine	71	554
Pediatric emergency medicine	79	558
Pediatric endocrinology	72	227
Pediatric gastroenterology	65	322
Pediatric hematology/oncology	75	485
Pediatric hospital medicine	33	71
Pediatric infectious diseases	64	169
Pediatric nephrology	47	110
Pediatric orthopaedics	25	37
Pediatric otolaryngology	30	36
Pediatric pathology	28	23
Pediatric pulmonology	56	168
Pediatric radiology	47	58
Pediatric rehabilitation medicine	22	38
Pediatric rheumatology	36	90

SUBSPECIALTIES	Number of programs	Number of residents
Pediatric surgery	49	85
Pediatric transplant hepatology	16	10
Pediatric urology	26	20
Pediatric/emergency medicine	1	0
Plastic and reconstructive surgery	2	2
Pulmonary disease	22	73
Pulmonary disease and critical care medicine	180	1,987
Regional anesthesiology and acute pain medicine	35	72
Reproductive endocrinology and infertility	52	169
Rheumatology	124	511
Selective pathology	101	167
Sleep medicine (multidisciplinary)	87	182
Spinal cord injury medicine	24	21
Sports medicine	199	342
Surgical critical care	139	290
Transplant hepatology	57	52
Undersea and hyperbaric medicine	9	11
Vascular and interventional radiology	92	256
Vascular neurology	106	128
Vascular surgery	116	244
Total	**12,117**	**144,314**

Source: GAO analysis of data from the Accreditation Council for Graduate Medical Education (ACGME) and the American Osteopathic Association. | GAO-21-329

Note: Academic years are from July 1 through June 30 of the following year.

[a]Surgery includes surgery-general.

[b]A transitional year residency provides a broad-based program of graduate medical education in multiple clinical disciplines designed to facilitate the choice of and preparation for a specific specialty, including specialties requiring a year of fundamental clinical education as a prerequisite. According to ACGME, transitional year programs also provide clinical education for those medical school graduates planning to serve in public health organizations or in the military as general medical officers, or those who desire one year of fundamental clinical education before entering administrative medicine or research.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

A. Nicole Clowers, Managing Director, (202) 512-7114 or clowersa@gao.gov.

Staff Acknowledgments

In addition to the contact above, Kim Yamane (Assistant Director), Natalie Herzog (Analyst-in-Charge), Giselle Hicks, Drew Long, Vikki Porter, and Jennifer Whitworth made key contributions to this report.

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