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DATA RESOURCE BOOK

ACADEMIC YEAR 2018-2019



Data Resource Book

Academic Year 2018-2019

Department of Applications and Data Analysis
Accreditation Council for Graduate Medical Education



Accreditation Council for Graduate Medical Education

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Introduction

Overview

The mission of the Accreditation Council for Graduate Medical Education (ACGME) is to improve health care and population health by assessing and advancing the quality of resident physicians' education through accreditation. The collection and analysis of data are crucial to performing these functions. The ACGME's *Data Resource Book* contains the most recent data on ACGME-accredited institutions and programs, and physicians in ACGME-accredited graduate medical education (GME) programs. The *Data Resource Book* is intended to be a concise reference for policymakers, designated institutional officials, residency/fellowship program directors, and others to identify and clarify issues affecting the accreditation of GME programs and the institutions that sponsor them.

The ACGME continues to improve the *Data Resource Book* to describe the accreditation process in greater detail, and hopes it is a valuable resource for constituents. Feedback and suggestions are welcomed and valued: send comments to databook@acgme.org.

Accreditation Data System

The Accreditation Data System (ADS) is a web-based software system that contains critical accreditation data for all Sponsoring Institutions and programs. It is a tool to collect and organize information for accreditation purposes, and serves as a means of communication between the ACGME and Sponsoring Institutions and programs. It is also used internally by the Department of Field Activities and the staff of the Review Committees in the Department of Accreditation Services in conducting accreditation activities. ADS incorporates several applications and functions, including the Annual Update, Milestones, Case Logs, Surveys, and the application for accreditation.

ADS was originally built by the Department of Applications and Data Analysis in 2000, and went through a major redesign in 2012. During the redesign process, numerous disparate data systems were consolidated and the underlying database structure was completely refactored. Resident/fellow records across programs were linked based on identifying information, and a single record was created at the database level for each individual. ADS, in this way, not only provides an annual look at every Sponsoring Institution and residency and fellowship program, but serves as a system to track residents and fellows longitudinally throughout the course of their educational experience.

The ADS Annual Update is scheduled for Sponsoring Institutions and programs following the start of each academic year. At that time, programs are required to enter information on new residents/fellows, confirm the status of existing/graduating residents/fellows, and enter critical information regarding faculty members, scholarly activity, participating sites, and other major program changes. Sponsoring Institutions are also scheduled to participate and must respond to institutional review questions, and to update any personnel or participating site information. Capturing critical information at the start of the academic year allows the ACGME to facilitate the process of archiving Case Log procedures for graduating residents/fellows, schedule Milestones evaluations for all residents/fellows twice per academic year, and conduct the annual ACGME Resident/Fellow and Faculty Surveys. While the Annual Update occurs once a year, Sponsoring Institutions and programs are expected to keep their information up-to-date at all times. In this sense, ADS is currently the most comprehensive database of GME Sponsoring Institutions, programs, and physicians-in-training in the United States.

Academic Year Reporting

To create a comprehensive report on GME for the academic year, an annual snapshot of the database is taken at the end of each academic year, the results of which are summarized in this book. The trends shown here are based on the combination of these snapshots over time. This particularly affects the counts of withdrawn and newly accredited programs which may change following the publication of this report. The timing of the snapshot also affects the ACGME's ability to report on the graduating cohort, as this information is not fully available until after the fall Annual Update reporting is complete. It is for this reason that the graduates and residents/fellows leaving their programs are reported for the previous academic year (in this edition, the 2017-2018 academic year). Up-to-date information on individual Sponsoring Institutions and programs can be found on the ADS public website (<https://apps.acgme.org/ads/public/>).

Definitions

The definitions listed below clarify use of terms in this Data Resource Book only. These reflect the 2018-2019 academic year, and not necessarily changes to ACGME definitions or data collection terms relative to revised requirements. Additional terms, and in some cases more comprehensive and current definitions of terms included here, are included in the ACGME Glossary of Terms, found on the ACGME website (<http://www.acgme.org/About-Us/Policies-and-Related-Materials>).

Continuing GME Programs: Continuing GME programs are those available to physicians only after successful completion of a pipeline program.

Core Faculty: In specialty programs, core faculty includes faculty members, other than program directors, who devote at least 15 hours per week to resident education and administration. Core faculty members should also evaluate the competency domains, work closely with and support the program director, assist in developing and implementing evaluation systems, and teach and advise residents.

Designated Institutional Official (DIO): The individual in a Sponsoring Institution who has the authority and responsibility for all of that institution's ACGME-accredited programs.

International Medical Graduate (IMG): A graduate of a medical school outside the United States and Canada. IMGs may be citizens of the United States who chose to be educated elsewhere or non-citizens who are admitted to the United States by US Immigration authorities.

Osteopathic Recognition: A determination of substantial compliance with the published Osteopathic Recognition Requirements, following a process of evaluation and peer review.

Participating Site: An organization providing educational experiences or educational assignments/rotations for residents/fellows.

Post-Graduate Year 1 (PGY-1): Any graduate medical education position available to physicians immediately after their completion of medical school. These positions are also referred to as entry-level positions.

Pipeline Specialties: Specialties that lead to primary board certification. The net output of physicians over time from the graduate medical education system into clinical practice is determined by the number of positions available in pipeline specialties. See Appendix A.

Program: A structured educational experience in graduate medical education designed to conform to the Program Requirements of a particular specialty/subspecialty, the satisfactory completion of which may result in eligibility for board certification.

Program Director: The individual designated with authority and accountability for the operation of a residency/fellowship program.

Program Year: Refers to the current year of education (of an individual resident or fellow) within a specific program; this designation may or may not correspond to a resident's or fellow's post-graduate year.

Review Committee: A group comprised of volunteers that sets accreditation standards (requirements), provides peer evaluation of Sponsoring Institutions or programs to assess the degree to which these comply with the applicable published accreditation requirements, and confers an accreditation status on each Sponsoring Institution or program with regard to substantial compliance with those requirements. There are three types of Review Committee: specialty Review Committee, Transitional Year Review Committee, and Institutional Review Committee.

Resident: For the purposes of this publication only, this term is used to refer to any physician in a graduate medical education program, including both residents and fellows.

Sponsoring Institution: The organization (or entity) with ultimate financial and academic responsibility for one or more accredited graduate medical education programs, and that has the primary purpose of providing educational programs and/or health care services. Examples include a university, a medical school, a hospital, a school of public health, a health department, a public health agency, an organized health care delivery system, a medical examiner's office, a consortium, and an educational foundation.

Specialty Group: For analytic purposes, the grouping of specialties and subspecialties into one of three categories based on patient care focus: surgical, medical, and hospital-based. See Appendix B.

Specialty Program: A structured educational experience in a field of medical practice following completion of medical school and, in some cases, prerequisite basic clinical education designed to conform to the Program Requirements of a particular specialty.

Subspecialty Program: A structured educational experience following completion of a prerequisite specialty program in graduate medical education designed to conform to the Program Requirements of a particular subspecialty area.

Withdrawal of Accreditation: The conclusion, whether voluntary or administrative, of accreditation status and services. See the ACGME Manual of Policies and Procedures for more details and specification. These decisions may be made effective at any time during the academic year. Any program with a Withdrawal status effective prior to June 30, 2019 will be excluded from the count of accredited programs for Academic Year 2018-2019 in this edition of the *Data Resource Book*.



Program Accreditation

This section summarizes the accreditation statuses of currently accredited programs, as well as trends in the total number of accredited programs since the 2009-2010 academic year. This section also shows the pattern of accreditation statuses by specialty for all programs, newly accredited programs, and programs with loss of accreditation. Finally, the section includes information on the lengths of programs varying by specialty, as well as on programs that have achieved Osteopathic Recognition.

Accredited Programs by Status

Of the 11,685 total accredited programs, 9,818 (4,246 specialty programs and 5,572 subspecialty programs) had a status of Continued Accreditation, accounting for 84.0% of programs. Only 159 programs (1.4%) had a status of Continued Accreditation with Warning, and an even smaller number, 21 (0.2%), had a status of Probationary Accreditation. Remaining programs had a status of either Initial Accreditation (14.2%) or Withdrawal of Accreditation (0.3%). Among specialty programs, the specialties with the highest percentage of programs with a Continued Accreditation with Warning status are:

- Colon and rectal surgery (15.9%)
- Thoracic surgery - integrated (11.1%)
- Plastic surgery (10.9%)
- Radiation oncology (8.5%)

Obstetrics and gynecology had four programs issued Probationary Accreditation, and neurological surgery and neurology each had two programs on probation. Specialties with one program on probation include allergy and immunology, colon and rectal surgery, family medicine, ophthalmology, plastic surgery, psychiatry, thoracic surgery, and transitional year.

Trends in Accredited Programs

Since the 2014-2015 academic year, there has been a 21.2% increase in the total number of ACGME-accredited programs. This is primarily due to the continued transition to a single graduate medical education (GME) accreditation system. The following specialties had the highest 5-year change in total number of programs:

- Family medicine (191 – 121 previously AOA-approved)
- Internal medicine (149 – 96 previously AOA-approved)
- Emergency medicine (80 – 48 previously AOA-approved)
- Surgery (67 – 43 previously AOA-approved)

Newly Accredited Programs

A total of 556 programs were newly accredited during the 2018-2019 academic year. Of the newly-accredited programs, 333 (59.9%) are in medical specialties and subspecialties, 111 (20.0%) are in hospital-based specialties and subspecialties, and 112 (20.1%) are in surgical specialties and subspecialties. In the last four academic years, specialty programs exceeded 40% of the total number of newly accredited programs, largely due to the transition to a single GME accreditation system. The specialties with the highest number of newly accredited programs are:

- Family medicine (56)
- Surgery (26)
- Transitional year (23)
- Internal medicine (21)

Addiction medicine (multidisciplinary), gastroenterology, regional anesthesiology and acute pain medicine, sports medicine, cardiovascular disease, and interventional cardiology had the highest number of new programs among all subspecialties, with 52, 13, 11, 11, 10, and 10 programs, respectively, accounting for 19.3% of all newly accredited programs added this year. There are 14 subspecialties newly accredited by the ACGME in the past 5 years. New programs in these 14 subspecialties account for 16.3% of all new subspecialty programs.

Withdrawn Programs

Withdrawn programs are reported in three categories: those withdrawn prior to the end of the 2018-2019 academic year (which are not included in the population of accredited programs); those withdrawn at the end of the 2018-2019 academic year; and those with a future-effective withdrawal date. At the time of this report, transitional year had 4 withdrawn programs, preventive medicine had 3 withdrawn programs, followed by family medicine and obstetrics and gynecology each with 2 withdrawn programs during the academic year. The following subspecialties each had 3 withdrawn programs during the academic year: pulmonary disease and orthopaedic sports medicine.

Accredited Training Length

The majority of core programs take 3 or 4 years to complete. Neurological surgery programs have the longest educational program length among core programs at 7 years. Among subspecialty programs, 51.5% are 1 year in length, with the remaining programs requiring 2 or more

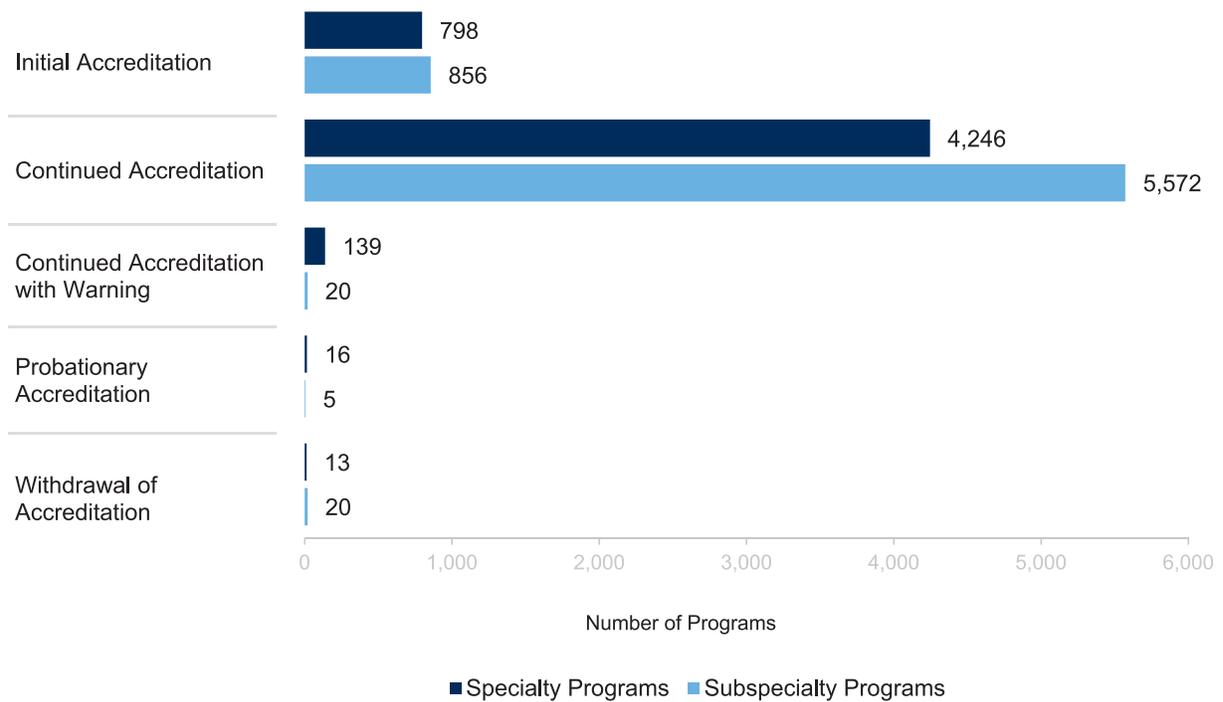
years to complete. The internal medicine subspecialties of advanced heart failure and transplant cardiology, clinical cardiac electrophysiology, interventional cardiology, and transplant hepatology all require the completion of another subspecialty program prior to entry. These 4 subspecialties along with the subspecialties of endovascular surgical neuroradiology, pediatric transplant hepatology, craniofacial surgery, and congenital cardiac surgery require 6-7 total years of prior education and training before entry.

Osteopathic Recognition

The 2018-2019 academic year is the fourth year that the ACGME has recognized training in Osteopathic Principles and Practice in ACGME-accredited programs. Of the 204 programs with Osteopathic Recognition, 132 (64.7%) are family medicine programs and 29 (14.2%) are internal medicine programs. ↖

FIGURE A.1

Accreditation Statuses of Currently Accredited Programs



Notes: Total number of accredited programs = 11,685. Excluding programs withdrawn prior to the end of the academic year (n=16).

FIGURE A.2

Number of Accredited Programs by Academic Year, 2009-2010 to 2018-2019

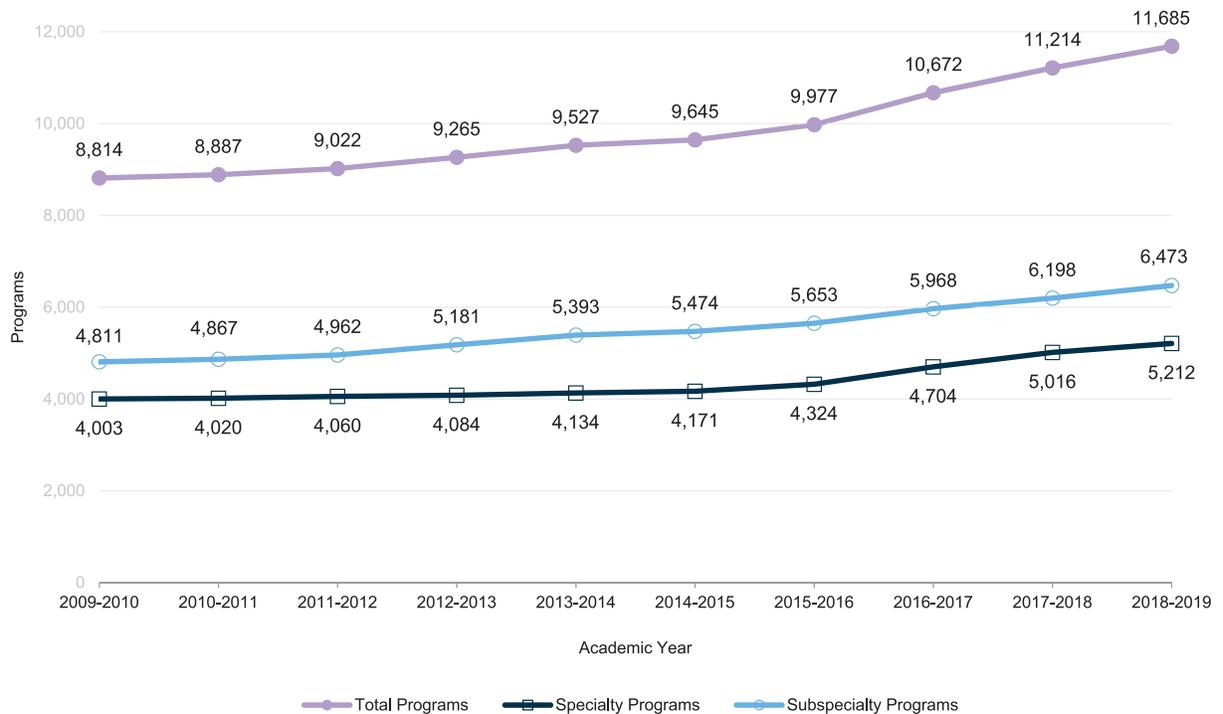


TABLE A.3
Accreditation Statuses of Currently Accredited Programs by Specialty and Subspecialty

Specialty	Total Programs	Accreditation Status									
		Initial Accreditation		Continued Accreditation		Continued Accreditation with Warning		Probationary Accreditation		Withdrawal of Accreditation	
		#	%	#	%	#	%	#	%	#	%
OVERALL	11,685	1,654	14.2%	9,818	84.0%	159	1.4%	21	0.2%	33	0.3%
TOTAL PIPELINE	4,842	741	15.3%	3,958	81.7%	121	2.5%	12	0.2%	10	0.2%
Allergy and immunology	78	1	1.3%	75	96.2%	1	1.3%	1	1.3%	0	0.0%
Anesthesiology	155	17	11.0%	136	87.7%	2	1.3%	0	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	69	6	8.7%	63	91.3%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	64	10	15.6%	54	84.4%	0	0.0%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	29	29	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Obstetric anesthesiology	37	6	16.2%	30	81.1%	1	2.7%	0	0.0%	0	0.0%
- Pain medicine (multidisciplinary)	104	5	4.8%	99	95.2%	0	0.0%	0	0.0%	0	0.0%
- Pediatric anesthesiology	61	6	9.8%	55	90.2%	0	0.0%	0	0.0%	0	0.0%
Colon and rectal surgery	63	8	12.7%	44	69.8%	10	15.9%	1	1.6%	0	0.0%
Dermatology	142	17	12.0%	124	87.3%	1	0.7%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	55	3	5.5%	51	92.7%	0	0.0%	0	0.0%	1	1.8%
- Micrographic surgery and dermatologic oncology	77	5	6.5%	69	89.6%	1	1.3%	1	1.3%	1	1.3%
Emergency medicine	247	63	25.5%	179	72.5%	4	1.6%	0	0.0%	1	0.4%
- Clinical informatics	4	1	25.0%	3	75.0%	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	65	13	20.0%	52	80.0%	0	0.0%	0	0.0%	0	0.0%
- Medical toxicology	27	2	7.4%	25	92.6%	0	0.0%	0	0.0%	0	0.0%
- Pediatric emergency medicine	26	1	3.8%	25	96.2%	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	9	1	11.1%	8	88.9%	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	7	0	0.0%	7	100.0%	0	0.0%	0	0.0%	0	0.0%
Family medicine	671	152	22.7%	508	75.7%	9	1.3%	1	0.1%	1	0.1%
- Clinical informatics	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	48	8	16.7%	40	83.3%	0	0.0%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	149	31	20.8%	118	79.2%	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	143	18	12.6%	125	87.4%	0	0.0%	0	0.0%	0	0.0%
Internal medicine	545	104	19.1%	440	80.7%	1	0.2%	0	0.0%	0	0.0%
- Adult congenital heart disease	21	15	71.4%	6	28.6%	0	0.0%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	76	7	9.2%	68	89.5%	0	0.0%	0	0.0%	1	1.3%
- Cardiovascular disease	245	42	17.1%	200	81.6%	0	0.0%	0	0.0%	3	1.2%
- Clinical cardiac electrophysiology	110	7	6.4%	102	92.7%	0	0.0%	0	0.0%	1	0.9%
- Clinical informatics	16	6	37.5%	10	62.5%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	43	11	25.6%	32	74.4%	0	0.0%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	149	12	8.1%	137	91.9%	0	0.0%	0	0.0%	0	0.0%
- Gastroenterology	202	33	16.3%	168	83.2%	1	0.5%	0	0.0%	0	0.0%
- Geriatric medicine	108	8	7.4%	98	90.7%	0	0.0%	0	0.0%	2	1.9%
- Hematology	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	157	14	8.9%	143	91.1%	0	0.0%	0	0.0%	0	0.0%
- Infectious disease	149	5	3.4%	144	96.6%	0	0.0%	0	0.0%	0	0.0%
- Interventional cardiology	164	18	11.0%	145	88.4%	0	0.0%	0	0.0%	1	0.6%
- Nephrology	149	4	2.7%	144	96.6%	0	0.0%	0	0.0%	1	0.7%
- Medical oncology	8	2	25.0%	6	75.0%	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease	23	6	26.1%	15	65.2%	0	0.0%	0	0.0%	2	8.7%
- Pulmonary disease and critical care medicine	178	30	16.9%	147	82.6%	0	0.0%	0	0.0%	1	0.6%
- Rheumatology	122	10	8.2%	111	91.0%	0	0.0%	0	0.0%	1	0.8%
- Sleep medicine (multidisciplinary)	86	3	3.5%	83	96.5%	0	0.0%	0	0.0%	0	0.0%
- Transplant hepatology	52	5	9.6%	47	90.4%	0	0.0%	0	0.0%	0	0.0%
Medical genetics and genomics	46	1	2.2%	42	91.3%	3	6.5%	0	0.0%	0	0.0%
- Medical biochemical genetics	19	4	21.1%	14	73.7%	0	0.0%	0	0.0%	1	5.3%
- Molecular genetic pathology (multidisciplinary)	42	3	7.1%	39	92.9%	0	0.0%	0	0.0%	0	0.0%
Neurological surgery	115	10	8.7%	102	88.7%	1	0.9%	2	1.7%	0	0.0%
- Endovascular surgical neuroradiology	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%

TABLE A.3 *Continued*

Accreditation Statuses of Currently Accredited Programs by Specialty and Subspecialty											
Specialty	Total Programs	Accreditation Status									
		Initial Accreditation		Continued Accreditation		Continued Accreditation with Warning		Probationary Accreditation		Withdrawal of Accreditation	
		#	%	#	%	#	%	#	%	#	%
Neurology	159	21	13.2%	131	82.4%	5	3.1%	2	1.3%	0	0.0%
- Brain injury medicine	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	91	3	3.3%	87	95.6%	0	0.0%	1	1.1%	0	0.0%
- Epilepsy	77	31	40.3%	45	58.4%	1	1.3%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	8	0	0.0%	8	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	49	4	8.2%	43	87.8%	2	4.1%	0	0.0%	0	0.0%
- Vascular neurology	99	9	9.1%	90	90.9%	0	0.0%	0	0.0%	0	0.0%
Child neurology	74	2	2.7%	72	97.3%	0	0.0%	0	0.0%	0	0.0%
Nuclear medicine	39	0	0.0%	36	92.3%	2	5.1%	0	0.0%	1	2.6%
Obstetrics and gynecology	282	32	11.3%	228	80.9%	17	6.0%	4	1.4%	1	0.4%
- Female pelvic medicine and reconstructive surgery	53	3	5.7%	49	92.5%	1	1.9%	0	0.0%	0	0.0%
- Gynecologic oncology	59	35	59.3%	24	40.7%	0	0.0%	0	0.0%	0	0.0%
- Maternal-fetal medicine	93	74	79.6%	19	20.4%	0	0.0%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	50	41	82.0%	9	18.0%	0	0.0%	0	0.0%	0	0.0%
Ophthalmology	123	8	6.5%	114	92.7%	0	0.0%	1	0.8%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	4	0	0.0%	4	100.0%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	185	28	15.1%	145	78.4%	12	6.5%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	24	4	16.7%	20	83.3%	0	0.0%	0	0.0%	0	0.0%
- Foot and ankle orthopaedics	7	1	14.3%	6	85.7%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	72	6	8.3%	64	88.9%	2	2.8%	0	0.0%	0	0.0%
- Musculoskeletal oncology	12	1	8.3%	10	83.3%	1	8.3%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	92	4	4.3%	88	95.7%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic surgery of the spine	17	1	5.9%	16	94.1%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic trauma	11	2	18.2%	9	81.8%	0	0.0%	0	0.0%	0	0.0%
- Pediatric orthopaedics	26	2	7.7%	24	92.3%	0	0.0%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	19	15	78.9%	3	15.8%	0	0.0%	0	0.0%	1	5.3%
Otolaryngology - head and neck surgery	122	17	13.9%	104	85.2%	1	0.8%	0	0.0%	0	0.0%
- Neurotology	24	4	16.7%	20	83.3%	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	29	7	24.1%	22	75.9%	0	0.0%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	143	1	0.7%	138	96.5%	4	2.8%	0	0.0%	0	0.0%
- Blood banking/transfusion medicine	51	4	7.8%	47	92.2%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	8	4	50.0%	4	50.0%	0	0.0%	0	0.0%	0	0.0%
- Chemical pathology	4	1	25.0%	3	75.0%	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	94	5	5.3%	89	94.7%	0	0.0%	0	0.0%	0	0.0%
- Forensic pathology	43	7	16.3%	36	83.7%	0	0.0%	0	0.0%	0	0.0%
- Hematopathology	87	3	3.4%	84	96.6%	0	0.0%	0	0.0%	0	0.0%
- Medical microbiology	15	0	0.0%	15	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	36	4	11.1%	32	88.9%	0	0.0%	0	0.0%	0	0.0%
- Pediatric pathology	27	1	3.7%	26	96.3%	0	0.0%	0	0.0%	0	0.0%
- Selective pathology	91	9	9.9%	82	90.1%	0	0.0%	0	0.0%	0	0.0%
Pediatrics	212	9	4.2%	202	95.3%	0	0.0%	0	0.0%	1	0.5%
- Adolescent medicine	30	2	6.7%	28	93.3%	0	0.0%	0	0.0%	0	0.0%
- Child abuse pediatrics	31	5	16.1%	26	83.9%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	5	1	20.0%	4	80.0%	0	0.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	43	5	11.6%	38	88.4%	0	0.0%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	102	4	3.9%	98	96.1%	0	0.0%	0	0.0%	0	0.0%
- Pediatric cardiology	62	3	4.8%	58	93.5%	1	1.6%	0	0.0%	0	0.0%
- Pediatric critical care medicine	72	6	8.3%	66	91.7%	0	0.0%	0	0.0%	0	0.0%
- Pediatric emergency medicine	52	0	0.0%	52	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric endocrinology	73	4	5.5%	69	94.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric gastroenterology	65	5	7.7%	59	90.8%	0	0.0%	0	0.0%	1	1.5%
- Pediatric hematology/oncology	74	2	2.7%	71	95.9%	0	0.0%	1	1.4%	0	0.0%

TABLE A.3 *Continued*

Accreditation Statuses of Currently Accredited Programs by Specialty and Subspecialty											
Specialty	Total Programs	Accreditation Status									
		Initial Accreditation		Continued Accreditation		Continued Accreditation with Warning		Probationary Accreditation		Withdrawal of Accreditation	
		#	%	#	%	#	%	#	%	#	%
- Pediatric infectious diseases	65	2	3.1%	63	96.9%	0	0.0%	0	0.0%	0	0.0%
- Pediatric nephrology	46	3	6.5%	43	93.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric pulmonology	54	1	1.9%	53	98.1%	0	0.0%	0	0.0%	0	0.0%
- Pediatric rheumatology	35	1	2.9%	34	97.1%	0	0.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	17	0	0.0%	17	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	15	5	33.3%	10	66.7%	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	91	10	11.0%	80	87.9%	1	1.1%	0	0.0%	0	0.0%
- Brain injury medicine	20	10	50.0%	10	50.0%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Spinal cord injury medicine	24	6	25.0%	18	75.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric rehabilitation	20	1	5.0%	19	95.0%	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	19	2	10.5%	17	89.5%	0	0.0%	0	0.0%	0	0.0%
Plastic surgery	55	4	7.3%	44	80.0%	6	10.9%	1	1.8%	0	0.0%
Plastic surgery - integrated	81	10	12.3%	69	85.2%	2	2.5%	0	0.0%	0	0.0%
- Craniofacial surgery	8	0	0.0%	8	100.0%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	17	1	5.9%	15	88.2%	0	0.0%	0	0.0%	1	5.9%
Preventive medicine	75	5	6.7%	68	90.7%	1	1.3%	0	0.0%	1	1.3%
- Medical toxicology	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Psychiatry	257	44	17.1%	210	81.7%	2	0.8%	1	0.4%	0	0.0%
- Addiction medicine (multidisciplinary)	52	52	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Addiction psychiatry	50	5	10.0%	45	90.0%	0	0.0%	0	0.0%	0	0.0%
- Child and adolescent psychiatry	140	12	8.6%	125	89.3%	1	0.7%	1	0.7%	1	0.7%
- Forensic psychiatry	48	5	10.4%	43	89.6%	0	0.0%	0	0.0%	0	0.0%
- Geriatric psychiatry	61	5	8.2%	56	91.8%	0	0.0%	0	0.0%	0	0.0%
- Consultation-liaison psychiatry	62	5	8.1%	56	90.3%	0	0.0%	0	0.0%	1	1.6%
Radiation oncology	94	5	5.3%	80	85.1%	8	8.5%	0	0.0%	1	1.1%
Radiology-diagnostic	195	8	4.1%	184	94.4%	2	1.0%	0	0.0%	1	0.5%
- Abdominal radiology	13	1	7.7%	12	92.3%	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal radiology	16	0	0.0%	16	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neuroradiology	87	2	2.3%	85	97.7%	0	0.0%	0	0.0%	0	0.0%
- Nuclear radiology	17	0	0.0%	17	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	47	3	6.4%	44	93.6%	0	0.0%	0	0.0%	0	0.0%
- Vascular and interventional radiology	93	0	0.0%	91	97.8%	2	2.2%	0	0.0%	0	0.0%
Interventional radiology - integrated	84	84	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Surgery	323	57	17.6%	243	75.2%	22	6.8%	0	0.0%	1	0.3%
- Complex general surgical oncology	27	4	14.8%	21	77.8%	2	7.4%	0	0.0%	0	0.0%
- Hand surgery	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric surgery	50	1	2.0%	48	96.0%	1	2.0%	0	0.0%	0	0.0%
- Surgical critical care	136	19	14.0%	117	86.0%	0	0.0%	0	0.0%	0	0.0%
- Vascular surgery	109	6	5.5%	101	92.7%	2	1.8%	0	0.0%	0	0.0%
Vascular surgery - integrated	60	7	11.7%	53	88.3%	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery	72	4	5.6%	60	83.3%	7	9.7%	1	1.4%	0	0.0%
- Congenital cardiac surgery	12	1	8.3%	10	83.3%	0	0.0%	1	8.3%	0	0.0%
Thoracic surgery - integrated	27	1	3.7%	23	85.2%	3	11.1%	0	0.0%	0	0.0%
Urology	142	8	5.6%	123	86.6%	11	7.7%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	14	4	28.6%	10	71.4%	0	0.0%	0	0.0%	0	0.0%
- Pediatric urology	26	1	3.8%	24	92.3%	1	3.8%	0	0.0%	0	0.0%
Transitional year	157	44	28.0%	109	69.4%	0	0.0%	1	0.6%	3	1.9%
Internal medicine/Pediatrics	79	1	1.3%	77	97.5%	1	1.3%	0	0.0%	0	0.0%

Notes: Pipeline specialties are highlighted. Program counts exclude programs withdrawn prior to the end of the academic year (n=16).

TABLE A.4

Number of Programs by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019

Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019		
	#	#	#	#	#	#	%
OVERALL	9,645	9,977	10,672	11,214	11,685	2,040	21.2%
TOTAL PIPELINE	3,875	4,021	4,383	4,668	4,842	967	25.0%
Allergy and immunology	75	77	79	79	78	3	4.0%
Anesthesiology	133	135	147	153	155	22	16.5%
- Adult cardiothoracic anesthesiology	61	62	66	66	69	8	13.1%
- Clinical informatics *		1	1	1	1	0	0.0%
- Critical care medicine	54	54	57	62	64	10	18.5%
- Regional anesthesiology and acute pain medicine *			9	18	29	20	222.2%
- Obstetric anesthesiology	27	28	32	34	37	10	37.0%
- Pain medicine (multidisciplinary)	97	100	101	102	104	7	7.2%
- Pediatric anesthesiology	53	56	58	60	61	8	15.1%
Colon and rectal surgery	55	57	58	62	63	8	14.5%
Dermatology	117	120	128	138	142	25	21.4%
- Dermatopathology (multidisciplinary)	53	53	53	56	55	2	3.8%
- Micrographic surgery and dermatologic oncology	63	69	75	77	77	14	22.2%
Emergency medicine	167	179	212	231	247	80	47.9%
- Clinical informatics *	1	3	4	4	4	3	300.0%
- Emergency medical services	42	50	55	61	65	23	54.8%
- Medical toxicology	25	26	27	27	27	2	8.0%
- Pediatric emergency medicine	22	22	26	26	26	4	18.2%
- Sports medicine	6	7	7	8	9	3	50.0%
- Undersea and hyperbaric medicine	6	7	7	7	7	1	16.7%
Family medicine	480	498	540	620	671	191	39.8%
- Clinical informatics *		1	2	2	3	2	200.0%
- Geriatric medicine	40	41	44	45	48	8	20.0%
- Hospice and palliative medicine (multidisciplinary)	108	115	130	140	149	41	38.0%
- Sports medicine	125	127	132	135	143	18	14.4%
Internal medicine	396	421	469	529	545	149	37.6%
- Adult congenital heart disease *		7	10	14	21	14	200.0%
- Advanced heart failure and transplant cardiology	62	68	71	75	76	14	22.6%
- Cardiovascular disease	192	193	210	235	245	53	27.6%
- Clinical cardiac electrophysiology	104	104	105	108	110	6	5.8%
- Clinical informatics *	1	8	12	13	16	15	1500.0%
- Critical care medicine	33	33	34	36	43	10	30.3%
- Endocrinology, diabetes, and metabolism	135	136	141	142	149	14	10.4%
- Gastroenterology	165	168	175	189	202	37	22.4%
- Geriatric medicine	105	105	106	107	108	3	2.9%
- Hematology	3	3	2	2	2	-1	-33.3%
- Hematology and medical oncology	139	144	146	149	157	18	12.9%
- Infectious disease	148	148	146	148	149	1	0.7%
- Interventional cardiology	142	145	150	155	164	22	15.5%
- Nephrology	147	147	149	150	149	2	1.4%
- Medical oncology	10	9	6	7	8	-2	-20.0%
- Pulmonary disease	20	18	20	22	23	3	15.0%
- Pulmonary disease and critical care medicine	142	147	151	170	178	36	25.4%
- Rheumatology	113	113	114	120	122	9	8.0%
- Sleep medicine (multidisciplinary)	83	83	84	84	86	3	3.6%
- Transplant hepatology	43	47	51	51	52	9	20.9%
Medical genetics and genomics	46	45	46	46	46	0	0.0%
- Medical biochemical genetics	11	14	16	17	19	8	72.7%
- Molecular genetic pathology (multidisciplinary)	37	39	39	41	42	5	13.5%
Neurological surgery	105	108	110	112	115	10	9.5%
- Endovascular surgical neuroradiology	2	2	2	2	2	0	0.0%

TABLE A.4 Continued

Number of Programs by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019

Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019		
	#	#	#	#	#	#	%
Neurology	133	139	144	153	159	26	19.5%
- Brain injury medicine *			1	1	1	0	0.0%
- Clinical neurophysiology	96	96	94	91	91	-5	-5.2%
- Epilepsy *	11	39	61	71	77	66	600.0%
- Endovascular surgical neuroradiology	1	1	1	1	2	1	100.0%
- Neurodevelopmental disabilities	8	8	8	8	8	0	0.0%
- Neuromuscular medicine	43	45	46	49	49	6	14.0%
- Vascular neurology	84	87	93	92	99	15	17.9%
Child neurology	73	73	74	74	74	1	1.4%
Nuclear medicine	43	43	42	41	39	-4	-9.3%
Obstetrics and gynecology	243	250	269	278	282	39	16.0%
- Female pelvic medicine and reconstructive surgery	45	48	50	51	53	8	17.8%
- Gynecologic oncology *			48	56	59	11	22.9%
- Maternal-fetal medicine *			73	88	93	20	27.4%
- Reproductive endocrinology and infertility *			41	50	50	9	22.0%
Ophthalmology	116	116	116	119	123	7	6.0%
- Ophthalmic plastic and reconstructive surgery	5	5	5	4	4	-1	-20.0%
Orthopaedic surgery	156	162	168	175	185	29	18.6%
- Adult reconstructive orthopaedics	21	23	23	24	24	3	14.3%
- Foot and ankle orthopaedics	7	6	6	6	7	0	0.0%
- Hand surgery	65	67	68	68	72	7	10.8%
- Musculoskeletal oncology	11	11	11	12	12	1	9.1%
- Orthopaedic sports medicine	95	94	97	96	92	-3	-3.2%
- Orthopaedic surgery of the spine	17	17	16	17	17	0	0.0%
- Orthopaedic trauma	9	9	9	11	11	2	22.2%
- Pediatric orthopaedics	25	25	25	25	26	1	4.0%
Osteopathic neuromusculoskeletal medicine *		1	4	13	19	18	1800.0%
Otolaryngology - head and neck surgery	106	106	109	117	122	16	15.1%
- Neurotology	19	20	20	23	24	5	26.3%
- Pediatric otolaryngology	22	23	22	25	29	7	31.8%
Pathology-anatomic and clinical	142	142	142	143	143	1	0.7%
- Blood banking/transfusion medicine	47	48	49	50	51	4	8.5%
- Clinical informatics *		2	5	7	8	6	300.0%
- Chemical pathology	3	3	4	4	4	1	33.3%
- Cytopathology	91	91	92	94	94	3	3.3%
- Forensic pathology	36	39	40	39	43	7	19.4%
- Hematopathology	85	85	86	85	87	2	2.4%
- Medical microbiology	14	14	15	15	15	1	7.1%
- Neuropathology	32	33	35	34	36	4	12.5%
- Pediatric pathology	27	26	26	27	27	0	0.0%
- Selective pathology	80	79	85	83	91	11	13.8%
Pediatrics	199	204	207	210	212	13	6.5%
- Adolescent medicine	28	28	29	29	30	2	7.1%
- Child abuse pediatrics	26	28	30	32	31	5	19.2%
- Clinical informatics *	1	4	5	5	5	4	400.0%
- Developmental-behavioral pediatrics	37	38	39	41	43	6	16.2%
- Neonatal-perinatal medicine	98	98	99	100	102	4	4.1%
- Pediatric cardiology	57	59	59	60	62	5	8.8%
- Pediatric critical care medicine	64	67	67	67	72	8	12.5%
- Pediatric emergency medicine	51	52	52	52	52	1	2.0%
- Pediatric endocrinology	69	69	71	72	73	4	5.8%
- Pediatric gastroenterology	57	60	63	64	65	8	14.0%
- Pediatric hematology/oncology	70	72	73	74	74	4	5.7%

TABLE A.4 *Continued***Number of Programs by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019**

Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019		
	#	#	#	#	#	#	%
- Pediatric infectious diseases	61	64	64	65	65	4	6.6%
- Pediatric nephrology	45	45	44	45	46	1	2.2%
- Pediatric pulmonology	52	54	54	54	54	2	3.8%
- Pediatric rheumatology	34	36	36	37	35	1	2.9%
- Pediatric sports medicine	14	17	18	17	17	3	21.4%
- Pediatric transplant hepatology	7	9	13	14	15	8	114.3%
Physical medicine and rehabilitation	78	83	86	88	91	13	16.7%
- Brain injury medicine	4	8	13	18	20	16	400.0%
- Neuromuscular medicine	1	1	1	1	1	0	0.0%
- Spinal cord injury medicine	19	20	22	22	24	5	26.3%
- Pediatric rehabilitation	17	19	20	20	20	3	17.6%
- Sports medicine	16	17	19	19	19	3	18.8%
Plastic surgery	71	68	68	61	55	-16	-22.5%
Plastic surgery - integrated	67	69	76	79	81	14	20.9%
- Craniofacial surgery	9	10	9	8	8	-1	-11.1%
- Hand surgery	16	16	16	16	17	1	6.3%
Preventive medicine	72	74	76	76	75	3	4.2%
- Medical toxicology	2	1	1	1	1	-1	-50.0%
- Undersea and hyperbaric medicine	2	1	1	1	1	-1	-50.0%
Psychiatry	193	203	226	248	257	64	33.2%
- Addiction medicine (multidisciplinary) *					52	N/A	N/A
- Addiction psychiatry	45	45	47	49	50	5	11.1%
- Child and adolescent psychiatry	124	126	134	138	140	16	12.9%
- Forensic psychiatry	40	42	46	47	48	8	20.0%
- Geriatric psychiatry	55	56	59	60	61	6	10.9%
- Consultation-liaison psychiatry	54	57	59	61	62	8	14.8%
Radiation oncology	89	91	92	94	94	5	5.6%
Radiology-diagnostic	185	188	194	194	195	10	5.4%
- Abdominal radiology	12	12	12	12	13	1	8.3%
- Endovascular surgical neuroradiology	3	3	4	3	3	0	0.0%
- Musculoskeletal radiology	15	15	16	16	16	1	6.7%
- Neuroradiology	84	86	85	85	87	3	3.6%
- Nuclear radiology	20	18	18	17	17	-3	-15.0%
- Pediatric radiology	46	46	46	46	47	1	2.2%
- Vascular and interventional radiology	94	95	93	93	93	-1	-1.1%
Interventional radiology - integrated *		24	65	78	84	60	250.0%
Surgery	256	261	278	301	323	67	26.2%
- Complex general surgical oncology	19	22	24	25	27	8	42.1%
- Hand surgery	1	1	1	1	1	0	0.0%
- Pediatric surgery	46	47	49	50	50	4	8.7%
- Surgical critical care	112	113	117	128	136	24	21.4%
- Vascular surgery	106	106	107	106	109	3	2.8%
Vascular surgery - integrated	51	51	53	55	60	9	17.6%
Thoracic surgery	65	68	69	72	72	7	10.8%
- Congenital cardiac surgery	12	12	13	13	12	0	0.0%
Thoracic surgery - integrated	26	27	27	26	27	1	3.8%
Urology	126	134	136	138	142	16	12.7%
- Female pelvic medicine and reconstructive surgery	9	10	11	13	14	5	55.6%
- Pediatric urology	28	28	28	26	26	-2	-7.1%
Transitional year	101	101	115	135	157	56	55.4%
Internal medicine/Pediatrics	79	79	79	78	79	0	0.0%

Notes: Pipeline specialties are highlighted. Asterisks (*) indicate specialties and subspecialties added within the last five years. For these specialties and subspecialties, the number and percent change are calculated from the first year of having accredited programs.

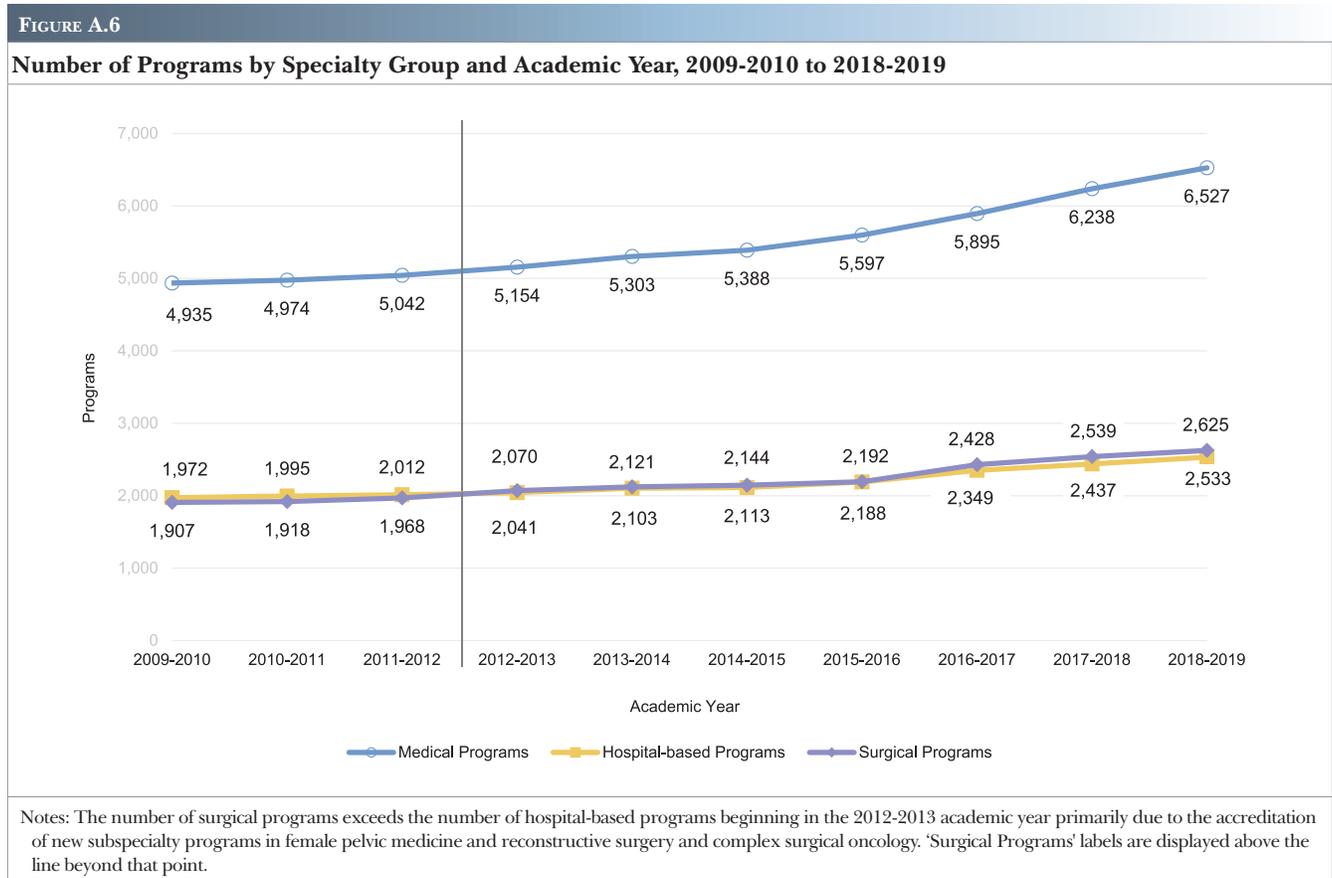
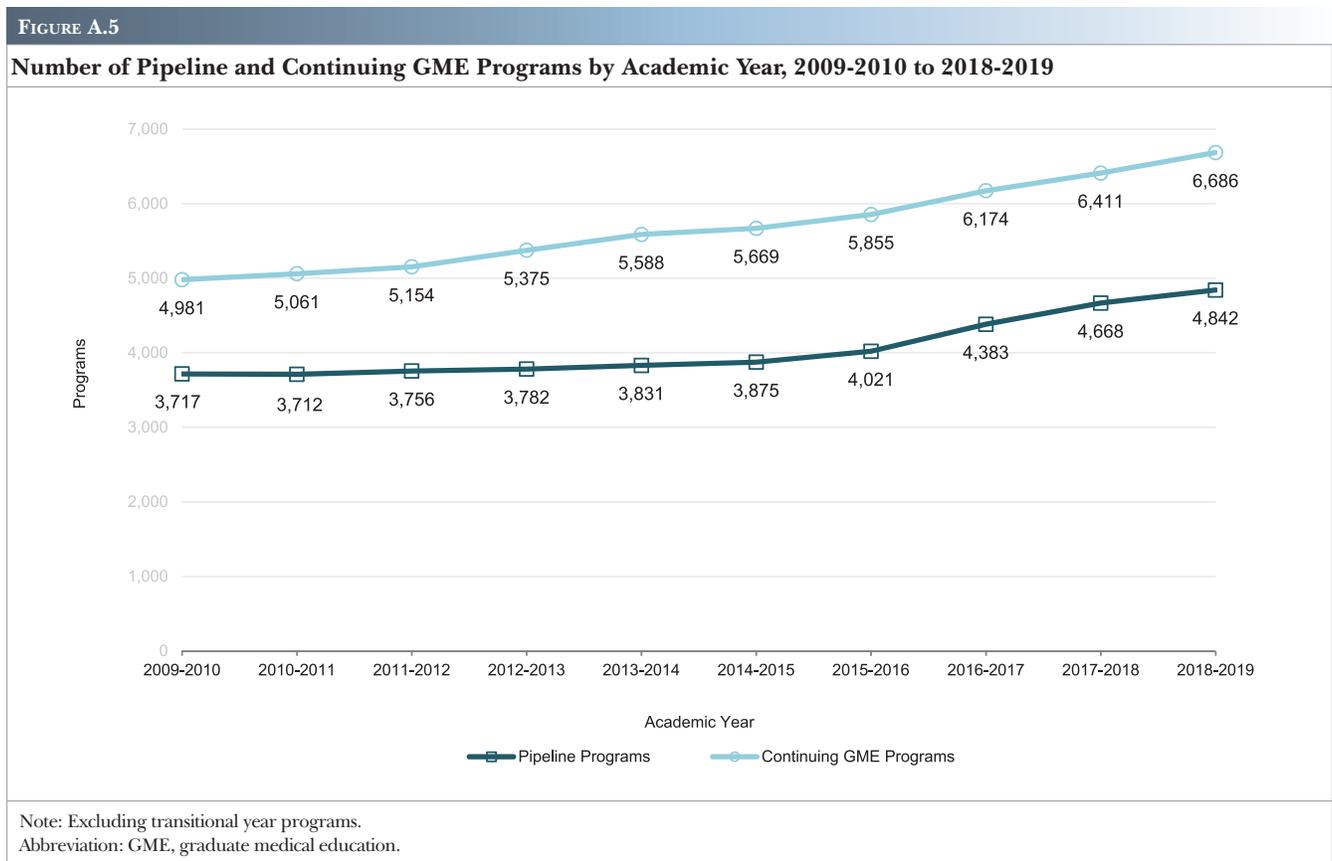


FIGURE A.7

Number of Newly Accredited Programs by Specialty Group

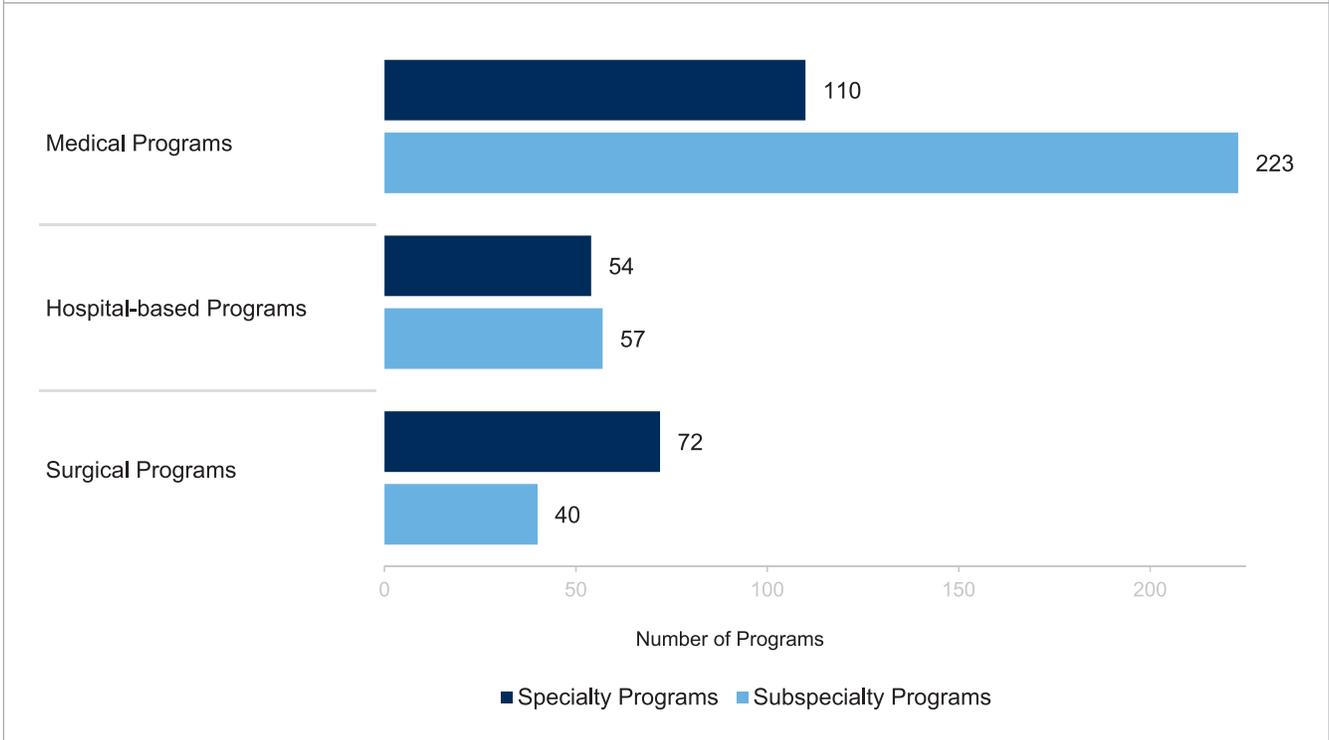


FIGURE A.8

Number of Newly Accredited Programs by Academic Year, 2009-2010 to 2018-2019

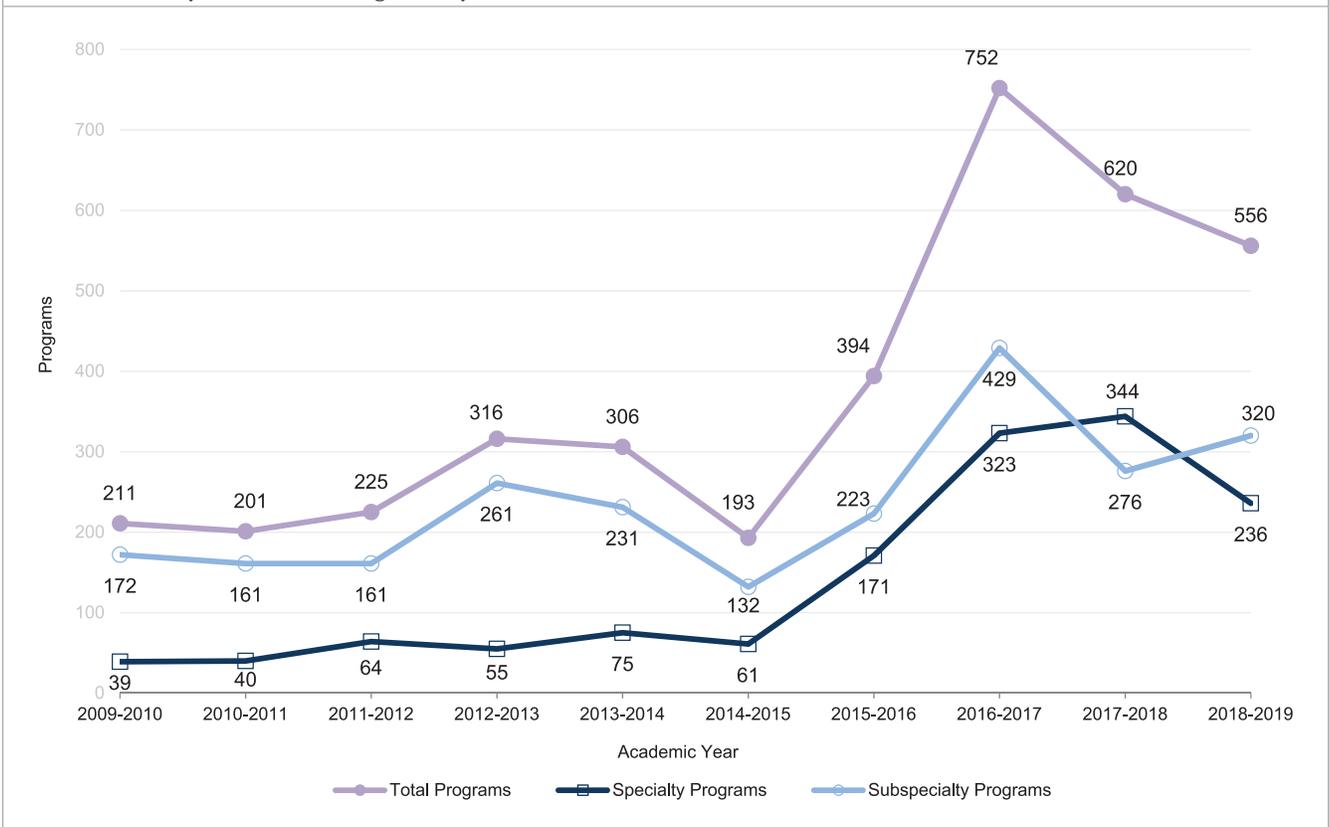


TABLE A.9

Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Newly Accredited Programs	Percentage of Specialty	Percent of All Newly Accredited Programs
OVERALL	11,685	556	4.8%	100.0%
TOTAL PIPELINE	4,842	212	4.4%	38.1%
Allergy and immunology	78	0	0.0%	0.0%
Anesthesiology	155	3	1.9%	0.5%
- Adult cardiothoracic anesthesiology	69	3	4.3%	0.5%
- Clinical informatics *	1	0	0.0%	0.0%
- Critical care medicine	64	3	4.7%	0.5%
- Regional anesthesiology and acute pain medicine *	29	11	37.9%	2.0%
- Obstetric anesthesiology	37	3	8.1%	0.5%
- Pain medicine (multidisciplinary)	104	2	1.9%	0.4%
- Pediatric anesthesiology	61	2	3.3%	0.4%
Colon and rectal surgery	63	1	1.6%	0.2%
Dermatology	142	6	4.2%	1.1%
- Dermatopathology (multidisciplinary)	55	0	0.0%	0.0%
- Micrographic surgery and dermatologic oncology	77	2	2.6%	0.4%
Emergency medicine	247	16	6.5%	2.9%
- Clinical informatics *	4	0	0.0%	0.0%
- Emergency medical services	65	4	6.2%	0.7%
- Medical toxicology	27	0	0.0%	0.0%
- Pediatric emergency medicine	26	0	0.0%	0.0%
- Sports medicine	9	1	11.1%	0.2%
- Undersea and hyperbaric medicine	7	0	0.0%	0.0%
Family medicine	671	56	8.3%	10.1%
- Clinical informatics *	3	0	0.0%	0.0%
- Geriatric medicine	48	5	10.4%	0.9%
- Hospice and palliative medicine (multidisciplinary)	149	9	6.0%	1.6%
- Sports medicine	143	11	7.7%	2.0%
Internal medicine	545	21	3.9%	3.8%
- Adult congenital heart disease *	21	7	33.3%	1.3%
- Advanced heart failure and transplant cardiology	76	2	2.6%	0.4%
- Cardiovascular disease	245	10	4.1%	1.8%
- Clinical cardiac electrophysiology	110	2	1.8%	0.4%
- Clinical informatics *	16	4	25.0%	0.7%
- Critical care medicine	43	7	16.3%	1.3%
- Endocrinology, diabetes, and metabolism	149	8	5.4%	1.4%
- Gastroenterology	202	13	6.4%	2.3%
- Geriatric medicine	108	4	3.7%	0.7%
- Hematology	2	0	0.0%	0.0%
- Hematology and medical oncology	157	9	5.7%	1.6%
- Infectious disease	149	1	0.7%	0.2%
- Interventional cardiology	164	10	6.1%	1.8%
- Nephrology	149	1	0.7%	0.2%
- Medical oncology	8	1	12.5%	0.2%
- Pulmonary disease	23	2	8.7%	0.4%
- Pulmonary disease and critical care medicine	178	8	4.5%	1.4%
- Rheumatology	122	3	2.5%	0.5%
- Sleep medicine (multidisciplinary)	86	2	2.3%	0.4%
- Transplant hepatology	52	1	1.9%	0.2%
Medical genetics and genomics	46	0	0.0%	0.0%
- Medical biochemical genetics	19	2	10.5%	0.4%
- Molecular genetic pathology (multidisciplinary)	42	1	2.4%	0.2%
Neurological surgery	115	3	2.6%	0.5%
- Endovascular surgical neuroradiology	2	0	0.0%	0.0%

TABLE A.9 *Continued*

Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty				
Specialty	Total Programs	Newly Accredited Programs	Percentage of Specialty	Percent of All Newly Accredited Programs
Neurology	159	6	3.8%	1.1%
- Brain injury medicine *	1	0	0.0%	0.0%
- Clinical neurophysiology	91	2	2.2%	0.4%
- Epilepsy *	77	7	9.1%	1.3%
- Endovascular surgical neuroradiology	2	1	50.0%	0.2%
- Neurodevelopmental disabilities	8	0	0.0%	0.0%
- Neuromuscular medicine	49	0	0.0%	0.0%
- Vascular neurology	99	7	7.1%	1.3%
Child neurology	74	0	0.0%	0.0%
Nuclear medicine	39	0	0.0%	0.0%
Obstetrics and gynecology	282	7	2.5%	1.3%
- Female pelvic medicine and reconstructive surgery	53	2	3.8%	0.4%
- Gynecologic oncology *	59	3	5.1%	0.5%
- Maternal-fetal medicine *	93	5	5.4%	0.9%
- Reproductive endocrinology and infertility *	50	0	0.0%	0.0%
Ophthalmology	123	4	3.3%	0.7%
- Ophthalmic plastic and reconstructive surgery	4	0	0.0%	0.0%
Orthopaedic surgery	185	10	5.4%	1.8%
- Adult reconstructive orthopaedics	24	1	4.2%	0.2%
- Foot and ankle orthopaedics	7	1	14.3%	0.2%
- Hand surgery	72	4	5.6%	0.7%
- Musculoskeletal oncology	12	0	0.0%	0.0%
- Orthopaedic sports medicine	92	0	0.0%	0.0%
- Orthopaedic surgery of the spine	17	0	0.0%	0.0%
- Orthopaedic trauma	11	0	0.0%	0.0%
- Pediatric orthopaedics	26	2	7.7%	0.4%
Osteopathic neuromusculoskeletal medicine *	19	6	31.6%	1.1%
Otolaryngology - head and neck surgery	122	7	5.7%	1.3%
- Neurotology	24	1	4.2%	0.2%
- Pediatric otolaryngology	29	4	13.8%	0.7%
Pathology-anatomic and clinical	143	0	0.0%	0.0%
- Blood banking/transfusion medicine	51	1	2.0%	0.2%
- Clinical informatics *	8	1	12.5%	0.2%
- Chemical pathology	4	0	0.0%	0.0%
- Cytopathology	94	2	2.1%	0.4%
- Forensic pathology	43	4	9.3%	0.7%
- Hematopathology	87	2	2.3%	0.4%
- Medical microbiology	15	0	0.0%	0.0%
- Neuropathology	36	2	5.6%	0.4%
- Pediatric pathology	27	0	0.0%	0.0%
- Selective pathology	91	8	8.8%	1.4%
Pediatrics	212	2	0.9%	0.4%
- Adolescent medicine	30	1	3.3%	0.2%
- Child abuse pediatrics	31	0	0.0%	0.0%
- Clinical informatics *	5	0	0.0%	0.0%
- Developmental-behavioral pediatrics	43	2	4.7%	0.4%
- Neonatal-perinatal medicine	102	2	2.0%	0.4%
- Pediatric cardiology	62	2	3.2%	0.4%
- Pediatric critical care medicine	72	5	6.9%	0.9%
- Pediatric emergency medicine	52	0	0.0%	0.0%
- Pediatric endocrinology	73	1	1.4%	0.2%
- Pediatric gastroenterology	65	1	1.5%	0.2%
- Pediatric hematology/oncology	74	0	0.0%	0.0%

TABLE A.9 Continued

Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Newly Accredited Programs	Percentage of Specialty	Percent of All Newly Accredited Programs
- Pediatric infectious diseases	65	0	0.0%	0.0%
- Pediatric nephrology	46	2	4.3%	0.4%
- Pediatric pulmonology	54	0	0.0%	0.0%
- Pediatric rheumatology	35	0	0.0%	0.0%
- Pediatric sports medicine	17	0	0.0%	0.0%
- Pediatric transplant hepatology	15	1	6.7%	0.2%
Physical medicine and rehabilitation	91	3	3.3%	0.5%
- Brain injury medicine	20	2	10.0%	0.4%
- Neuromuscular medicine	1	0	0.0%	0.0%
- Spinal cord injury medicine	24	2	8.3%	0.4%
- Pediatric rehabilitation	20	0	0.0%	0.0%
- Sports medicine	19	0	0.0%	0.0%
Plastic surgery	55	2	3.6%	0.4%
Plastic surgery - integrated	81	2	2.5%	0.4%
- Craniofacial surgery	8	0	0.0%	0.0%
- Hand surgery	17	1	5.9%	0.2%
Preventive medicine	75	4	5.3%	0.7%
- Medical toxicology	1	0	0.0%	0.0%
- Undersea and hyperbaric medicine	1	0	0.0%	0.0%
Psychiatry	257	9	3.5%	1.6%
- Addiction medicine (multidisciplinary) *	52	52	100.0%	9.4%
- Addiction psychiatry	50	2	4.0%	0.4%
- Child and adolescent psychiatry	140	4	2.9%	0.7%
- Forensic psychiatry	48	3	6.3%	0.5%
- Geriatric psychiatry	61	1	1.6%	0.2%
- Consultation-liaison psychiatry	62	1	1.6%	0.2%
Radiation oncology	94	0	0.0%	0.0%
Radiology-diagnostic	195	2	1.0%	0.4%
- Abdominal radiology	13	1	7.7%	0.2%
- Endovascular surgical neuroradiology	3	0	0.0%	0.0%
- Musculoskeletal radiology	16	0	0.0%	0.0%
- Neuroradiology	87	2	2.3%	0.4%
- Nuclear radiology	17	0	0.0%	0.0%
- Pediatric radiology	47	2	4.3%	0.4%
- Vascular and interventional radiology	93	0	0.0%	0.0%
Interventional radiology - integrated *	84	6	7.1%	1.1%
Surgery	323	26	8.0%	4.7%
- Complex general surgical oncology	27	2	7.4%	0.4%
- Hand surgery	1	0	0.0%	0.0%
- Pediatric surgery	50	0	0.0%	0.0%
- Surgical critical care	136	8	5.9%	1.4%
- Vascular surgery	109	4	3.7%	0.7%
Vascular surgery - integrated	60	5	8.3%	0.9%
Thoracic surgery	72	0	0.0%	0.0%
- Congenital cardiac surgery	12	0	0.0%	0.0%
Thoracic surgery - integrated	27	1	3.7%	0.2%
Urology	142	4	2.8%	0.7%
- Female pelvic medicine and reconstructive surgery	14	1	7.1%	0.2%
- Pediatric urology	26	1	3.8%	0.2%
Transitional year	157	23	14.6%	4.1%
Internal medicine/Pediatrics	79	1	1.3%	0.2%

Notes: Pipeline specialties are highlighted. Asterisks (*) indicate specialties and subspecialties added within the last five years.

TABLE A.10

Number of Programs with a Withdrawn Accreditation Status during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Accreditation Withdrawn Prior to Academic Year End		Accreditation Withdrawn at Academic Year End		Future Withdrawal of Accreditation	
		#	%	#	%	#	%
OVERALL	11,685	16	0.1%	28	0.2%	5	0.0%
TOTAL PIPELINE	4,842	4	0.1%	10	0.2%	0	0.0%
Allergy and immunology	78	1	1.3%	0	0.0%	0	0.0%
Anesthesiology	155	0	0.0%	0	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	69	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	1	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	64	0	0.0%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	29	0	0.0%	0	0.0%	0	0.0%
- Obstetric anesthesiology	37	0	0.0%	0	0.0%	0	0.0%
- Pain medicine (multidisciplinary)	104	0	0.0%	0	0.0%	0	0.0%
- Pediatric anesthesiology	61	0	0.0%	0	0.0%	0	0.0%
Colon and rectal surgery	63	0	0.0%	0	0.0%	0	0.0%
Dermatology	142	0	0.0%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	55	0	0.0%	1	1.8%	0	0.0%
- Micrographic surgery and dermatologic oncology	77	1	1.3%	1	1.3%	0	0.0%
Emergency medicine	247	0	0.0%	1	0.4%	0	0.0%
- Clinical informatics	4	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	65	0	0.0%	0	0.0%	0	0.0%
- Medical toxicology	27	0	0.0%	0	0.0%	0	0.0%
- Pediatric emergency medicine	26	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	9	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	7	0	0.0%	0	0.0%	0	0.0%
Family medicine	671	1	0.1%	1	0.1%	0	0.0%
- Clinical informatics	3	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	48	0	0.0%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	149	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	143	0	0.0%	0	0.0%	0	0.0%
Internal medicine	545	0	0.0%	0	0.0%	0	0.0%
- Adult congenital heart disease	21	0	0.0%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	76	0	0.0%	0	0.0%	1	1.3%
- Cardiovascular disease	245	0	0.0%	2	0.8%	1	0.4%
- Clinical cardiac electrophysiology	110	0	0.0%	0	0.0%	1	0.9%
- Clinical informatics	16	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	43	0	0.0%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	149	1	0.7%	0	0.0%	0	0.0%
- Gastroenterology	202	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	108	0	0.0%	2	1.9%	0	0.0%
- Hematology	2	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	157	0	0.0%	0	0.0%	0	0.0%
- Infectious disease	149	0	0.0%	0	0.0%	0	0.0%
- Interventional cardiology	164	0	0.0%	0	0.0%	1	0.6%
- Nephrology	149	0	0.0%	1	0.7%	0	0.0%
- Medical oncology	8	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease	23	1	4.3%	2	8.7%	0	0.0%
- Pulmonary disease and critical care medicine	178	0	0.0%	1	0.6%	0	0.0%
- Rheumatology	122	0	0.0%	1	0.8%	0	0.0%
- Sleep medicine (multidisciplinary)	86	0	0.0%	0	0.0%	0	0.0%
- Transplant hepatology	52	0	0.0%	0	0.0%	0	0.0%
Medical genetics and genomics	46	0	0.0%	0	0.0%	0	0.0%
- Medical biochemical genetics	19	0	0.0%	1	5.3%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	42	0	0.0%	0	0.0%	0	0.0%
Neurological surgery	115	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	2	0	0.0%	0	0.0%	0	0.0%

TABLE A.10 Continued

Number of Programs with a Withdrawn Accreditation Status during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Accreditation Withdrawn Prior to Academic Year End		Accreditation Withdrawn at Academic Year End		Future Withdrawal of Accreditation	
		#	%	#	%	#	%
Neurology	159	0	0.0%	0	0.0%	0	0.0%
- Brain injury medicine	1	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	91	0	0.0%	0	0.0%	0	0.0%
- Epilepsy	77	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	2	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	8	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	49	0	0.0%	0	0.0%	0	0.0%
- Vascular neurology	99	0	0.0%	0	0.0%	0	0.0%
Child neurology	74	0	0.0%	0	0.0%	0	0.0%
Nuclear medicine	39	0	0.0%	1	2.6%	0	0.0%
Obstetrics and gynecology	282	1	0.4%	1	0.4%	0	0.0%
- Female pelvic medicine and reconstructive surgery	53	0	0.0%	0	0.0%	0	0.0%
- Gynecologic oncology	59	0	0.0%	0	0.0%	0	0.0%
- Maternal-fetal medicine	93	0	0.0%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	50	0	0.0%	0	0.0%	0	0.0%
Ophthalmology	123	0	0.0%	0	0.0%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	4	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	185	0	0.0%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	24	1	4.2%	0	0.0%	0	0.0%
- Foot and ankle orthopaedics	7	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	72	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal oncology	12	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	92	3	3.3%	0	0.0%	0	0.0%
- Orthopaedic surgery of the spine	17	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic trauma	11	0	0.0%	0	0.0%	0	0.0%
- Pediatric orthopaedics	26	1	3.8%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	19	0	0.0%	1	5.3%	0	0.0%
Otolaryngology - head and neck surgery	122	0	0.0%	0	0.0%	0	0.0%
- Neurotology	24	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	29	0	0.0%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	143	0	0.0%	0	0.0%	0	0.0%
- Blood banking/transfusion medicine	51	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	8	0	0.0%	0	0.0%	0	0.0%
- Chemical pathology	4	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	94	1	1.1%	0	0.0%	0	0.0%
- Forensic pathology	43	0	0.0%	0	0.0%	0	0.0%
- Hematopathology	87	0	0.0%	0	0.0%	0	0.0%
- Medical microbiology	15	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	36	0	0.0%	0	0.0%	0	0.0%
- Pediatric pathology	27	0	0.0%	0	0.0%	0	0.0%
- Selective pathology	91	0	0.0%	0	0.0%	0	0.0%
Pediatrics	212	0	0.0%	1	0.5%	0	0.0%
- Adolescent medicine	30	0	0.0%	0	0.0%	0	0.0%
- Child abuse pediatrics	31	1	3.2%	0	0.0%	0	0.0%
- Clinical informatics	5	0	0.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	43	0	0.0%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	102	0	0.0%	0	0.0%	0	0.0%
- Pediatric cardiology	62	0	0.0%	0	0.0%	0	0.0%
- Pediatric critical care medicine	72	0	0.0%	0	0.0%	0	0.0%
- Pediatric emergency medicine	52	0	0.0%	0	0.0%	0	0.0%
- Pediatric endocrinology	73	0	0.0%	0	0.0%	0	0.0%
- Pediatric gastroenterology	65	0	0.0%	1	1.5%	0	0.0%
- Pediatric hematology/oncology	74	0	0.0%	0	0.0%	0	0.0%

TABLE A.10 Continued

Number of Programs with a Withdrawn Accreditation Status during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Accreditation Withdrawn Prior to Academic Year End		Accreditation Withdrawn at Academic Year End		Future Withdrawal of Accreditation	
		#	%	#	%	#	%
- Pediatric infectious diseases	65	0	0.0%	0	0.0%	0	0.0%
- Pediatric nephrology	46	0	0.0%	0	0.0%	0	0.0%
- Pediatric pulmonology	54	0	0.0%	0	0.0%	0	0.0%
- Pediatric rheumatology	35	0	0.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	17	0	0.0%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	15	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	91	0	0.0%	0	0.0%	0	0.0%
- Brain injury medicine	20	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	1	0	0.0%	0	0.0%	0	0.0%
- Spinal cord injury medicine	24	0	0.0%	0	0.0%	0	0.0%
- Pediatric rehabilitation	20	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	19	0	0.0%	0	0.0%	0	0.0%
Plastic surgery	55	0	0.0%	0	0.0%	0	0.0%
Plastic surgery - integrated	81	0	0.0%	0	0.0%	0	0.0%
- Craniofacial surgery	8	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	17	0	0.0%	0	0.0%	1	5.9%
Preventive medicine	75	2	2.7%	1	1.3%	0	0.0%
- Medical toxicology	1	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	1	0	0.0%	0	0.0%	0	0.0%
Psychiatry	257	0	0.0%	0	0.0%	0	0.0%
- Addiction medicine (multidisciplinary)	52	0	0.0%	0	0.0%	0	0.0%
- Addiction psychiatry	50	0	0.0%	0	0.0%	0	0.0%
- Child and adolescent psychiatry	140	0	0.0%	1	0.7%	0	0.0%
- Forensic psychiatry	48	0	0.0%	0	0.0%	0	0.0%
- Geriatric psychiatry	61	0	0.0%	0	0.0%	0	0.0%
- Consultation-liaison psychiatry	62	0	0.0%	1	1.6%	0	0.0%
Radiation oncology	94	0	0.0%	1	1.1%	0	0.0%
Radiology-diagnostic	195	0	0.0%	1	0.5%	0	0.0%
- Abdominal radiology	13	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	3	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal radiology	16	0	0.0%	0	0.0%	0	0.0%
- Neuroradiology	87	0	0.0%	0	0.0%	0	0.0%
- Nuclear radiology	17	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	47	0	0.0%	0	0.0%	0	0.0%
- Vascular and interventional radiology	93	0	0.0%	0	0.0%	0	0.0%
Interventional radiology - integrated	84	0	0.0%	0	0.0%	0	0.0%
Surgery	323	0	0.0%	1	0.3%	0	0.0%
- Complex general surgical oncology	27	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	1	0	0.0%	0	0.0%	0	0.0%
- Pediatric surgery	50	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	136	0	0.0%	0	0.0%	0	0.0%
- Vascular surgery	109	0	0.0%	0	0.0%	0	0.0%
Vascular surgery - integrated	60	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery	72	0	0.0%	0	0.0%	0	0.0%
- Congenital cardiac surgery	12	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery - integrated	27	0	0.0%	0	0.0%	0	0.0%
Urology	142	0	0.0%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	14	0	0.0%	0	0.0%	0	0.0%
- Pediatric urology	26	0	0.0%	0	0.0%	0	0.0%
Transitional year	157	1	0.6%	3	1.9%	0	0.0%
Internal medicine/Pediatrics	79	0	0.0%	0	0.0%	0	0.0%

Notes: Pipeline specialties are highlighted. Total program counts exclude programs withdrawn prior to the end of the academic year (n=16).

TABLE A.11

Total Number of Programs, Years of Accredited Prior Training Required, and Accredited Training Lengths by Specialty and Subspecialty

Specialty	MIN No. of Prior Years	Total Programs	Accredited Training Length(s)						
			1	2	3	4	5	6	7
			#	#	#	#	#	#	#
Allergy and immunology	3	78		78					
Anesthesiology	1/0	155			25	130			
- Adult cardiothoracic anesthesiology	4	69	69						
- Clinical informatics	4	1		1					
- Critical care medicine	4	64	64						
- Regional anesthesiology and acute pain medicine	4	29	29						
- Obstetric anesthesiology	3/4	37	37						
- Pain medicine (multidisciplinary)	3/4	104	104						
- Pediatric anesthesiology	4	61	61						
Colon and rectal surgery	5	63	63						
Dermatology	1/0	142			138	4			
- Dermatopathology (multidisciplinary)	4	55	55						
- Micrographic surgery and dermatologic oncology	4	77	77						
Emergency medicine	0	247			185	62			
- Clinical informatics	3	4		4					
- Emergency medical services	3	65	65						
- Medical toxicology	3	27		27					
- Pediatric emergency medicine	3	26			26				
- Sports medicine	3	9	9						
- Undersea and hyperbaric medicine	3	7	7						
Family medicine	0	671			661	10			
- Clinical informatics	3	3		3					
- Geriatric medicine	3	48	48						
- Hospice and palliative medicine (multidisciplinary)	3	149	149						
- Sports medicine	3	143	143						
Internal medicine	0	545			545				
- Adult congenital heart disease	3	21		21					
- Advanced heart failure and transplant cardiology	6	76	76						
- Cardiovascular disease	3	245			245				
- Clinical cardiac electrophysiology	6	110		110					
- Clinical informatics	3	16		16					
- Critical care medicine	3	43		43					
- Endocrinology, diabetes, and metabolism	3	149		149					
- Gastroenterology	3	202			202				
- Geriatric medicine	3	108	108						
- Hematology	3	2		2					
- Hematology and medical oncology	3	157			157				
- Infectious disease	3	149		149					
- Interventional cardiology	6	164	164						
- Nephrology	3	149		149					
- Medical oncology	3	8		8					
- Pulmonary disease	3	23		23					
- Pulmonary disease and critical care medicine	3	178			178				
- Rheumatology	3	122		122					
- Sleep medicine (multidisciplinary)	3/4/5	86	86						
- Transplant hepatology	6	52	52						
Medical genetics and genomics	2/0	46		44		2			
- Medical biochemical genetics	4	19	19						
- Molecular genetic pathology (multidisciplinary)	4	42	42						
Neurological surgery	0	115							115
- Endovascular surgical neuroradiology	6	2	2						

TABLE A.11 *Continued***Total Number of Programs, Years of Accredited Prior Training Required, and Accredited Training Lengths by Specialty and Subspecialty**

Specialty	MIN No. of Prior Years	Total Programs	Accredited Training Length(s)						
			1	2	3	4	5	6	7
			#	#	#	#	#	#	#
Neurology	1/0	159			54	105			
- Brain injury medicine	3/4	1	1						
- Clinical neurophysiology	4	91	91						
- Epilepsy	3	77	77						
- Endovascular surgical neuroradiology	5	2	2						
- Neurodevelopmental disabilities	2	8				8			
- Neuromuscular medicine	4	49	49						
- Vascular neurology	4	99	99						
Child neurology	2	74			74				
Nuclear medicine	1	39			39				
Obstetrics and gynecology	0	282				282			
- Female pelvic medicine and reconstructive surgery	4	53			53				
- Gynecologic oncology	4	59			59				
- Maternal-fetal medicine	4	93			93				
- Reproductive endocrinology and infertility	4	50			50				
Ophthalmology	1	123			123				
- Ophthalmic plastic and reconstructive surgery	4	4		4					
Orthopaedic surgery	0	185					185		
- Adult reconstructive orthopaedics	5	24	24						
- Foot and ankle orthopaedics	5	7	7						
- Hand surgery	5	72	72						
- Musculoskeletal oncology	5	12	12						
- Orthopaedic sports medicine	5	92	92						
- Orthopaedic surgery of the spine	5	17	17						
- Orthopaedic trauma	5	11	11						
- Pediatric orthopaedics	5	26	26						
Osteopathic neuromusculoskeletal medicine	1	19		19					
Otolaryngology - head and neck surgery	0	122					122		
- Neurotology	5	24		24					
- Pediatric otolaryngology	5	29	29						
Pathology-anatomic and clinical	0	143			1	142			
- Blood banking/transfusion medicine	2	51	51						
- Clinical informatics	2	8		8					
- Chemical pathology	2	4	4						
- Cytopathology	2	94	94						
- Forensic pathology	2	43	43						
- Hematopathology	2	87	87						
- Medical microbiology	4	15	15						
- Neuropathology	2	36		36					
- Pediatric pathology	2	27	27						
- Selective pathology	2	91	91						
Pediatrics	0	212			212				
- Adolescent medicine	3	30			30				
- Child abuse pediatrics	3	31			31				
- Clinical informatics	3	5		5					
- Developmental-behavioral pediatrics	3	43			43				
- Neonatal-perinatal medicine	3	102			102				
- Pediatric cardiology	3	62			62				
- Pediatric critical care medicine	3	72			72				
- Pediatric emergency medicine	3	52			52				
- Pediatric endocrinology	3	73			73				
- Pediatric gastroenterology	3	65			65				
- Pediatric hematology/oncology	3	74			74				

TABLE A.11 *Continued*

Total Number of Programs, Years of Accredited Prior Training Required, and Accredited Training Lengths by Specialty and Subspecialty

Specialty	MIN No. of Prior Years	Total Programs	Accredited Training Length(s)						
			1	2	3	4	5	6	7
			#	#	#	#	#	#	#
- Pediatric infectious diseases	3	65			65				
- Pediatric nephrology	3	46			46				
- Pediatric pulmonology	3	54			54				
- Pediatric rheumatology	3	35			35				
- Pediatric sports medicine	3	17	17						
- Pediatric transplant hepatology	6	15	15						
Physical medicine and rehabilitation	1/0	91			54	37			
- Brain injury medicine	3/4	20	20						
- Neuromuscular medicine	3/4	1	1						
- Spinal cord injury medicine	3/4	24	24						
- Pediatric rehabilitation	4	20		20					
- Sports medicine	3/4	19	19						
Plastic surgery	3	55			55				
Plastic surgery - integrated	0	81						81	
- Craniofacial surgery	6	8	8						
- Hand surgery	5	17	17						
Preventive medicine	1/0	75	1	72	2				
- Medical toxicology	3	1		1					
- Undersea and hyperbaric medicine	3	1	1						
Psychiatry	0	257	1			256			
- Addiction medicine (multidisciplinary)	1/2/3/4	52	52						
- Addiction psychiatry	4	50	49	1					
- Child and adolescent psychiatry	3	140		140					
- Forensic psychiatry	4	48	48						
- Geriatric psychiatry	4	61	60	1					
- Consultation-liaison psychiatry	4	62	62						
Radiation oncology	1	94				94			
Radiology-diagnostic	1	195				194	1		
- Abdominal radiology	5	13	13						
- Endovascular surgical neuroradiology	5	3	3						
- Musculoskeletal radiology	5	16	16						
- Neuroradiology	5	87	87						
- Nuclear radiology	5	17	17						
- Pediatric radiology	5	47	47						
- Vascular and interventional radiology	5	93	93						
Interventional radiology - integrated	1	84					84		
Surgery	0	323					323		
- Complex general surgical oncology	5	27		27					
- Hand surgery	5	1	1						
- Pediatric surgery	5	50		50					
- Surgical critical care	3	136	136						
- Vascular surgery	5	109		109					
Vascular surgery - integrated	0	60					60		
Thoracic surgery	5	72		51	21				
- Congenital cardiac surgery	7	12	12						
Thoracic surgery - integrated	0	27						27	
Urology	1/2	142				141	1		
- Female pelvic medicine and reconstructive surgery	3/4	14			14				
- Pediatric urology	5	26	26						
Transitional year	0	157	157						
Internal medicine/Pediatrics	0	79				79			

Notes: Pipeline specialties are highlighted. Under special circumstances, some programs have been granted exceptions to the typical length of accredited training.

TABLE A.12

Number of Programs with Osteopathic Recognition by Specialty and Subspecialty

Specialty	Total Programs	Programs with Osteopathic Recognition	Percent of Specialty	Percent of All Programs with Osteopathic Recognition
OVERALL	11,685	204	1.7%	100.0%
TOTAL PIPELINE	4,842	192	4.0%	94.1%
Allergy and immunology	78	1	1.3%	0.5%
Anesthesiology	155	2	1.3%	1.0%
Dermatology	142	4	2.8%	2.0%
Emergency medicine	247	5	2.0%	2.5%
Family medicine	671	132	19.7%	64.7%
- Geriatric medicine	48	1	2.1%	0.5%
- Hospice and palliative medicine (multidisciplinary)	149	1	0.7%	0.5%
- Sports medicine	143	2	1.4%	1.0%
Internal medicine	545	29	5.3%	14.2%
- Cardiovascular disease	245	1	0.4%	0.5%
Obstetrics and gynecology	282	8	2.8%	3.9%
Osteopathic neuromusculoskeletal medicine	19	3	15.8%	1.5%
Pediatrics	212	3	1.4%	1.5%
- Pediatric sports medicine	17	1	5.9%	0.5%
Physical medicine and rehabilitation	91	1	1.1%	0.5%
Psychiatry	257	1	0.4%	0.5%
Radiology-diagnostic	195	1	0.5%	0.5%
Surgery	323	2	0.6%	1.0%
Transitional year	157	5	3.2%	2.5%
Internal medicine/Pediatrics	79	1	1.3%	0.5%

Note: Pipeline specialties are highlighted.

B Program Characteristics

This section summarizes the geographic distribution of programs overall and by specialty, the distribution of programs and residents by specialty group, and the average number of residents per program overall and by specialty.

Geographic Distribution

There are currently ACGME-accredited programs in all 50 states, the District of Columbia (DC), and Puerto Rico. Based on the most recent US Census estimate for 2018, there are approximately 3.54 total programs (1.58 specialty, 1.96 subspecialty) per 100,000 population, including Puerto Rico. The following states have the highest total number of programs:

- New York (1,307)
- California (1,019)
- Pennsylvania (762)
- Texas (720)

States with the lowest number of programs include Montana (4), Wyoming (4), and Alaska (2). These patterns are consistent when looking at total programs, specialty programs, and pipeline programs by state. Family medicine is currently the only specialty represented across all 50 states, DC, and Puerto Rico.

Distributions by Specialty and Program Size

In looking at the distribution of specialty programs and their active residents, the specialties with the highest percentage of total programs include:

- Family medicine (12.9%)
- Internal medicine (10.5%)
- Surgery (6.2%)
- Obstetrics and gynecology (5.4%)

In contrast, the specialties with the highest percentage of total residents include:

- Internal medicine (24.5%)
- Family medicine (11.3%)
- Pediatrics (7.9%)
- Surgery (7.6%)

These distributions are driven by total number of programs and average program size (average number of residents per program). Internal medicine programs, for example, have an average of approximately 52 residents per program, with at least 1 program having 220 active residents during the 2018-2019 academic year. Pediatrics has the second highest average number of residents per program with approximately 44 residents per program. Overall, the trends in mean number of residents per program show that for specialties, the average number of residents per program peaked at 24 in the 2014-2015 academic year but has since fallen to 22.3 in the 2018-2019 academic year. The average size of subspecialty programs has remained fairly constant over the last 10 years. In the 2018-2019 academic year, there were approximately 3.8 residents per program.

Distributions by Specialty Group

The distribution of programs by specialty group differs in specialty versus subspecialty programs. Of the total number of specialty programs, 44.6% of programs are in medical specialties, 31.7% are in surgical specialties, and 23.7% are in hospital-based specialties. Among subspecialty programs, 64.9% of programs are in medical subspecialties, 15.1% are in surgical subspecialties, and 20.1% are in hospital-based subspecialties. The relative patterns in the distributions of residents across specialty groups can be attributed to both the number of programs and average number of residents per program in the medical, surgical, and hospital-based disciplines. ↗

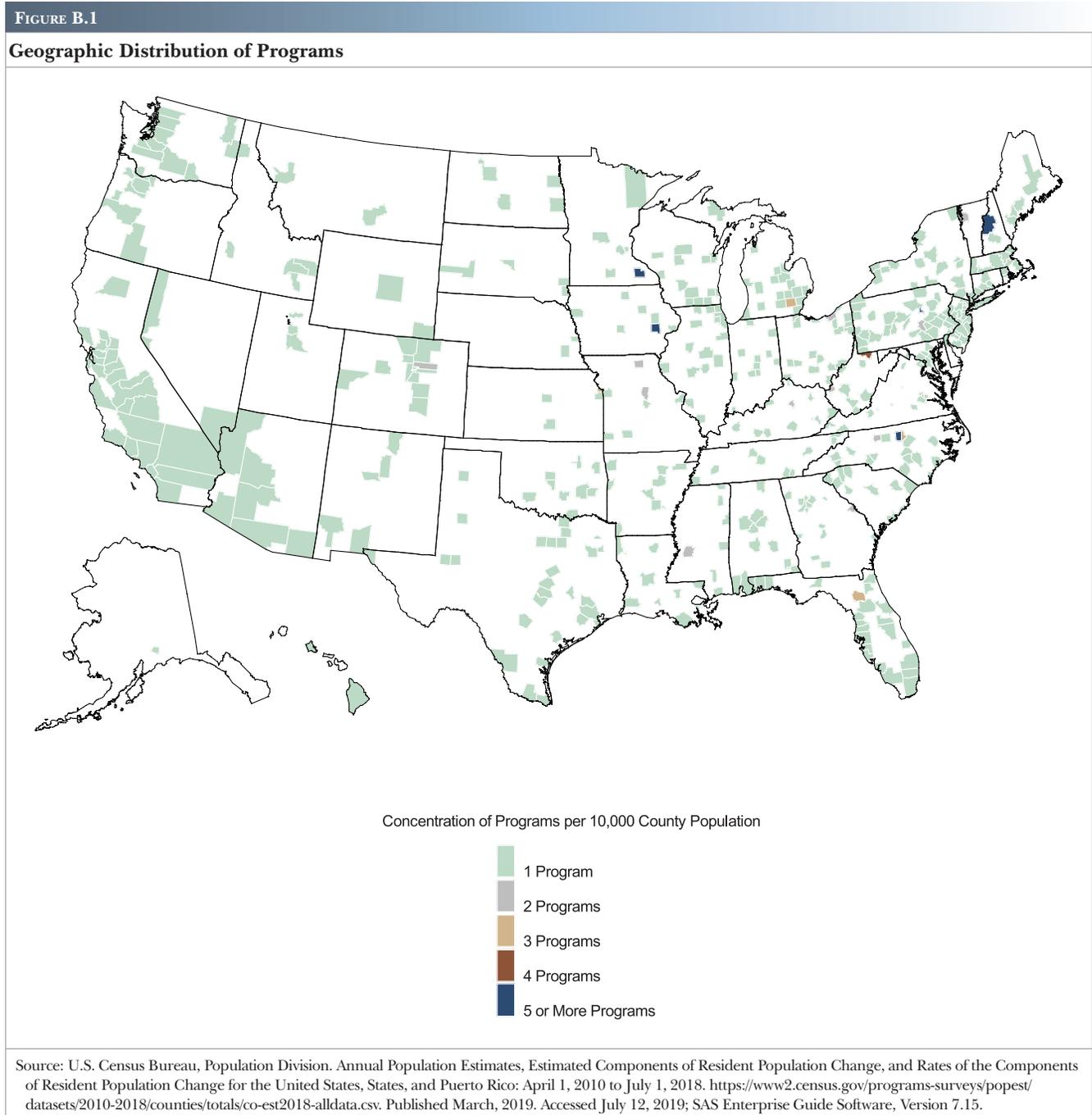


TABLE B.2

Number of Programs and Program Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population – Census Estimate 2018	Total Programs	Percent of All Programs	Programs per 100,000 Pop
OVERALL	-	330,362,587	11,685	100.0%	3.54
Alabama	AL	4,887,871	130	1.1%	2.66
Alaska	AK	737,438	2	0.0%	0.27
Arizona	AZ	7,171,646	179	1.5%	2.50
Arkansas	AR	3,013,825	80	0.7%	2.65
California	CA	39,557,045	1,019	8.7%	2.58
Colorado	CO	5,695,564	141	1.2%	2.48
Connecticut	CT	3,572,665	199	1.7%	5.57
Delaware	DE	967,171	34	0.3%	3.52
District of Columbia	DC	702,455	142	1.2%	20.21
Florida	FL	21,299,325	562	4.8%	2.64
Georgia	GA	10,519,475	228	2.0%	2.17
Hawaii	HI	1,420,491	32	0.3%	2.25
Idaho	ID	1,754,208	12	0.1%	0.68
Illinois	IL	12,741,080	522	4.5%	4.10
Indiana	IN	6,691,878	122	1.0%	1.82
Iowa	IA	3,156,145	105	0.9%	3.33
Kansas	KS	2,911,505	70	0.6%	2.40
Kentucky	KY	4,468,402	146	1.2%	3.27
Louisiana	LA	4,659,978	178	1.5%	3.82
Maine	ME	1,338,404	32	0.3%	2.39
Maryland	MD	6,042,718	262	2.2%	4.34
Massachusetts	MA	6,902,149	464	4.0%	6.72
Michigan	MI	9,995,915	566	4.8%	5.66
Minnesota	MN	5,611,179	230	2.0%	4.10
Mississippi	MS	2,986,530	76	0.7%	2.54
Missouri	MO	6,126,452	286	2.4%	4.67
Montana	MT	1,062,305	4	0.0%	0.38
Nebraska	NE	1,929,268	83	0.7%	4.30
Nevada	NV	3,034,392	47	0.4%	1.55
New Hampshire	NH	1,356,458	53	0.5%	3.91
New Jersey	NJ	8,908,520	286	2.4%	3.21
New Mexico	NM	2,095,428	68	0.6%	3.25
New York	NY	19,542,209	1,307	11.2%	6.69
North Carolina	NC	10,383,620	339	2.9%	3.26
North Dakota	ND	760,077	14	0.1%	1.84
Ohio	OH	11,689,442	610	5.2%	5.22
Oklahoma	OK	3,943,079	101	0.9%	2.56
Oregon	OR	4,190,713	98	0.8%	2.34
Pennsylvania	PA	12,807,060	762	6.5%	5.95
Puerto Rico	PR	3,195,153	73	0.6%	2.28
Rhode Island	RI	1,057,315	74	0.6%	7.00
South Carolina	SC	5,084,127	139	1.2%	2.73
South Dakota	SD	882,235	13	0.1%	1.47
Tennessee	TN	6,770,010	223	1.9%	3.29
Texas	TX	28,701,845	720	6.2%	2.51
Utah	UT	3,161,105	87	0.7%	2.75
Vermont	VT	626,299	41	0.4%	6.55
Virginia	VA	8,517,685	256	2.2%	3.01
Washington	WA	7,535,591	175	1.5%	2.32
West Virginia	WV	1,805,832	86	0.7%	4.76
Wisconsin	WI	5,813,568	203	1.7%	3.49
Wyoming	WY	577,737	4	0.0%	0.69

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE B.3

Number of Specialty Programs and Specialty Program Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Specialty Programs	Percent of All Specialty Programs	Specialty Programs per 100,000 Pop
OVERALL	-	330,362,587	5,212	100.0%	1.58
Alabama	AL	4,887,871	57	1.1%	1.17
Alaska	AK	737,438	1	0.0%	0.14
Arizona	AZ	7,171,646	81	1.6%	1.13
Arkansas	AR	3,013,825	43	0.8%	1.43
California	CA	39,557,045	437	8.4%	1.10
Colorado	CO	5,695,564	58	1.1%	1.02
Connecticut	CT	3,572,665	76	1.5%	2.13
Delaware	DE	967,171	15	0.3%	1.55
District of Columbia	DC	702,455	54	1.0%	7.69
Florida	FL	21,299,325	269	5.2%	1.26
Georgia	GA	10,519,475	111	2.1%	1.06
Hawaii	HI	1,420,491	21	0.4%	1.48
Idaho	ID	1,754,208	10	0.2%	0.57
Illinois	IL	12,741,080	240	4.6%	1.88
Indiana	IN	6,691,878	55	1.1%	0.82
Iowa	IA	3,156,145	46	0.9%	1.46
Kansas	KS	2,911,505	38	0.7%	1.31
Kentucky	KY	4,468,402	64	1.2%	1.43
Louisiana	LA	4,659,978	91	1.7%	1.95
Maine	ME	1,338,404	19	0.4%	1.42
Maryland	MD	6,042,718	106	2.0%	1.75
Massachusetts	MA	6,902,149	165	3.2%	2.39
Michigan	MI	9,995,915	311	6.0%	3.11
Minnesota	MN	5,611,179	74	1.4%	1.32
Mississippi	MS	2,986,530	36	0.7%	1.21
Missouri	MO	6,126,452	109	2.1%	1.78
Montana	MT	1,062,305	3	0.1%	0.28
Nebraska	NE	1,929,268	36	0.7%	1.87
Nevada	NV	3,034,392	31	0.6%	1.02
New Hampshire	NH	1,356,458	23	0.4%	1.70
New Jersey	NJ	8,908,520	160	3.1%	1.80
New Mexico	NM	2,095,428	26	0.5%	1.24
New York	NY	19,542,209	560	10.7%	2.87
North Carolina	NC	10,383,620	140	2.7%	1.35
North Dakota	ND	760,077	11	0.2%	1.45
Ohio	OH	11,689,442	275	5.3%	2.35
Oklahoma	OK	3,943,079	60	1.2%	1.52
Oregon	OR	4,190,713	38	0.7%	0.91
Pennsylvania	PA	12,807,060	336	6.4%	2.62
Puerto Rico	PR	3,195,153	45	0.9%	1.41
Rhode Island	RI	1,057,315	25	0.5%	2.36
South Carolina	SC	5,084,127	69	1.3%	1.36
South Dakota	SD	882,235	9	0.2%	1.02
Tennessee	TN	6,770,010	93	1.8%	1.37
Texas	TX	28,701,845	301	5.8%	1.05
Utah	UT	3,161,105	32	0.6%	1.01
Vermont	VT	626,299	16	0.3%	2.55
Virginia	VA	8,517,685	115	2.2%	1.35
Washington	WA	7,535,591	82	1.6%	1.09
West Virginia	WV	1,805,832	53	1.0%	2.93
Wisconsin	WI	5,813,568	83	1.6%	1.43
Wyoming	WY	577,737	3	0.1%	0.52

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE B.4

Number of Subspecialty Programs and Subspecialty Program Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Subspecialty Programs	Percent of All Subspecialty Programs	Subspecialty Programs per 100,000 Pop
OVERALL	-	330,362,587	6,473	100.0%	1.96
Alabama	AL	4,887,871	73	1.1%	1.49
Alaska	AK	737,438	1	0.0%	0.14
Arizona	AZ	7,171,646	98	1.5%	1.37
Arkansas	AR	3,013,825	37	0.6%	1.23
California	CA	39,557,045	582	9.0%	1.47
Colorado	CO	5,695,564	83	1.3%	1.46
Connecticut	CT	3,572,665	123	1.9%	3.44
Delaware	DE	967,171	19	0.3%	1.96
District of Columbia	DC	702,455	88	1.4%	12.53
Florida	FL	21,299,325	293	4.5%	1.38
Georgia	GA	10,519,475	117	1.8%	1.11
Hawaii	HI	1,420,491	11	0.2%	0.77
Idaho	ID	1,754,208	2	0.0%	0.11
Illinois	IL	12,741,080	282	4.4%	2.21
Indiana	IN	6,691,878	67	1.0%	1.00
Iowa	IA	3,156,145	59	0.9%	1.87
Kansas	KS	2,911,505	32	0.5%	1.10
Kentucky	KY	4,468,402	82	1.3%	1.84
Louisiana	LA	4,659,978	87	1.3%	1.87
Maine	ME	1,338,404	13	0.2%	0.97
Maryland	MD	6,042,718	156	2.4%	2.58
Massachusetts	MA	6,902,149	299	4.6%	4.33
Michigan	MI	9,995,915	255	3.9%	2.55
Minnesota	MN	5,611,179	156	2.4%	2.78
Mississippi	MS	2,986,530	40	0.6%	1.34
Missouri	MO	6,126,452	177	2.7%	2.89
Montana	MT	1,062,305	1	0.0%	0.09
Nebraska	NE	1,929,268	47	0.7%	2.44
Nevada	NV	3,034,392	16	0.2%	0.53
New Hampshire	NH	1,356,458	30	0.5%	2.21
New Jersey	NJ	8,908,520	126	1.9%	1.41
New Mexico	NM	2,095,428	42	0.6%	2.00
New York	NY	19,542,209	747	11.5%	3.82
North Carolina	NC	10,383,620	199	3.1%	1.92
North Dakota	ND	760,077	3	0.0%	0.39
Ohio	OH	11,689,442	335	5.2%	2.87
Oklahoma	OK	3,943,079	41	0.6%	1.04
Oregon	OR	4,190,713	60	0.9%	1.43
Pennsylvania	PA	12,807,060	426	6.6%	3.33
Puerto Rico	PR	3,195,153	28	0.4%	0.88
Rhode Island	RI	1,057,315	49	0.8%	4.63
South Carolina	SC	5,084,127	70	1.1%	1.38
South Dakota	SD	882,235	4	0.1%	0.45
Tennessee	TN	6,770,010	130	2.0%	1.92
Texas	TX	28,701,845	419	6.5%	1.46
Utah	UT	3,161,105	55	0.8%	1.74
Vermont	VT	626,299	25	0.4%	3.99
Virginia	VA	8,517,685	141	2.2%	1.66
Washington	WA	7,535,591	93	1.4%	1.23
West Virginia	WV	1,805,832	33	0.5%	1.83
Wisconsin	WI	5,813,568	120	1.9%	2.06
Wyoming	WY	577,737	1	0.0%	0.17

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE B.5

Number of Pipeline Programs and Pipeline Program Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Pipeline Programs	Percent of All Pipeline Programs	Pipeline Programs per 100,000 Pop
OVERALL	-	330,362,587	4,842	100.0%	1.47
Alabama	AL	4,887,871	53	1.1%	1.08
Alaska	AK	737,438	1	0.0%	0.14
Arizona	AZ	7,171,646	76	1.6%	1.06
Arkansas	AR	3,013,825	41	0.8%	1.36
California	CA	39,557,045	408	8.4%	1.03
Colorado	CO	5,695,564	52	1.1%	0.91
Connecticut	CT	3,572,665	72	1.5%	2.02
Delaware	DE	967,171	13	0.3%	1.34
District of Columbia	DC	702,455	53	1.1%	7.54
Florida	FL	21,299,325	245	5.1%	1.15
Georgia	GA	10,519,475	100	2.1%	0.95
Hawaii	HI	1,420,491	20	0.4%	1.41
Idaho	ID	1,754,208	10	0.2%	0.57
Illinois	IL	12,741,080	224	4.6%	1.76
Indiana	IN	6,691,878	49	1.0%	0.73
Iowa	IA	3,156,145	42	0.9%	1.33
Kansas	KS	2,911,505	36	0.7%	1.24
Kentucky	KY	4,468,402	60	1.2%	1.34
Louisiana	LA	4,659,978	84	1.7%	1.80
Maine	ME	1,338,404	19	0.4%	1.42
Maryland	MD	6,042,718	97	2.0%	1.61
Massachusetts	MA	6,902,149	147	3.0%	2.13
Michigan	MI	9,995,915	285	5.9%	2.85
Minnesota	MN	5,611,179	68	1.4%	1.21
Mississippi	MS	2,986,530	33	0.7%	1.10
Missouri	MO	6,126,452	103	2.1%	1.68
Montana	MT	1,062,305	3	0.1%	0.28
Nebraska	NE	1,929,268	34	0.7%	1.76
Nevada	NV	3,034,392	29	0.6%	0.96
New Hampshire	NH	1,356,458	23	0.5%	1.70
New Jersey	NJ	8,908,520	154	3.2%	1.73
New Mexico	NM	2,095,428	25	0.5%	1.19
New York	NY	19,542,209	521	10.8%	2.67
North Carolina	NC	10,383,620	129	2.7%	1.24
North Dakota	ND	760,077	10	0.2%	1.32
Ohio	OH	11,689,442	253	5.2%	2.16
Oklahoma	OK	3,943,079	59	1.2%	1.50
Oregon	OR	4,190,713	36	0.7%	0.86
Pennsylvania	PA	12,807,060	309	6.4%	2.41
Puerto Rico	PR	3,195,153	40	0.8%	1.25
Rhode Island	RI	1,057,315	24	0.5%	2.27
South Carolina	SC	5,084,127	65	1.3%	1.28
South Dakota	SD	882,235	8	0.2%	0.91
Tennessee	TN	6,770,010	87	1.8%	1.29
Texas	TX	28,701,845	283	5.8%	0.99
Utah	UT	3,161,105	29	0.6%	0.92
Vermont	VT	626,299	16	0.3%	2.55
Virginia	VA	8,517,685	108	2.2%	1.27
Washington	WA	7,535,591	76	1.6%	1.01
West Virginia	WV	1,805,832	50	1.0%	2.77
Wisconsin	WI	5,813,568	77	1.6%	1.32
Wyoming	WY	577,737	3	0.1%	0.52

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE B.6

Hospital-Based Specialty Programs by Specialty and State

State Name	State Abbreviation	AN	EM	MG	NM	PTH	GPM	RO	DR	IRI	TY	Total
OVERALL	-	155	247	46	39	143	75	94	195	84	157	1,235
Alabama	AL	1	2	1	1	3	2	1	3	1	1	16
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	2	4	0	0	1	0	2	4	2	2	17
Arkansas	AR	1	2	0	1	1	0	1	1	1	2	10
California	CA	13	20	5	6	11	8	12	16	9	8	108
Colorado	CO	1	1	1	0	2	2	1	1	1	2	12
Connecticut	CT	2	2	2	0	3	2	1	6	1	1	20
Delaware	DE	0	1	0	0	0	0	0	1	1	1	4
District of Columbia	DC	2	2	1	0	3	0	1	2	1	0	12
Florida	FL	10	18	1	1	7	3	4	9	4	14	71
Georgia	GA	2	4	1	1	2	3	2	3	2	7	27
Hawaii	HI	0	0	0	0	1	0	0	1	0	1	3
Idaho	ID	0	0	0	0	0	0	0	0	0	0	0
Illinois	IL	7	11	0	2	6	2	4	11	4	7	54
Indiana	IN	1	1	1	1	1	0	1	1	1	3	11
Iowa	IA	1	1	1	1	1	1	1	1	1	2	11
Kansas	KS	2	1	0	0	1	0	1	2	1	0	8
Kentucky	KY	2	2	0	0	2	2	2	2	0	1	13
Louisiana	LA	4	3	0	0	3	1	0	4	2	0	17
Maine	ME	1	1	0	0	0	1	0	1	1	0	5
Maryland	MD	3	2	2	3	4	5	3	3	2	3	30
Massachusetts	MA	9	5	1	1	7	3	2	10	4	6	48
Michigan	MI	7	25	2	2	5	2	4	10	3	17	77
Minnesota	MN	2	3	1	0	2	3	2	2	2	1	18
Mississippi	MS	1	2	1	0	1	1	1	1	0	1	9
Missouri	MO	5	5	1	3	4	1	1	4	2	1	27
Montana	MT	0	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	1	1	1	0	2	0	1	2	1	0	9
Nevada	NV	1	2	0	0	0	1	0	0	0	2	6
New Hampshire	NH	1	1	0	0	1	1	1	1	1	0	7
New Jersey	NJ	6	9	0	0	3	2	1	7	1	3	32
New Mexico	NM	1	1	0	0	1	1	0	1	0	1	6
New York	NY	17	30	4	5	17	8	13	25	10	13	142
North Carolina	NC	3	7	2	1	4	2	3	3	3	5	33
North Dakota	ND	0	0	0	0	0	0	0	0	0	1	1
Ohio	OH	9	14	3	0	7	3	4	8	2	9	59
Oklahoma	OK	2	5	1	1	1	0	1	3	0	1	15
Oregon	OR	1	1	1	1	1	0	1	1	1	0	8
Pennsylvania	PA	9	20	2	1	9	1	6	13	7	13	81
Puerto Rico	PR	1	2	0	1	1	0	0	1	0	4	10
Rhode Island	RI	1	2	0	0	1	0	0	1	1	0	6
South Carolina	SC	2	4	1	1	1	1	1	1	1	3	16
South Dakota	SD	0	0	0	0	1	0	0	0	0	1	2
Tennessee	TN	3	4	1	1	4	2	2	4	1	2	24
Texas	TX	8	12	3	2	9	5	6	10	4	6	65
Utah	UT	1	1	1	0	1	1	1	1	1	1	9
Vermont	VT	1	1	0	0	1	0	0	1	0	0	4
Virginia	VA	3	5	1	0	2	0	2	4	1	3	21
Washington	WA	2	2	1	1	2	2	1	4	1	3	19
West Virginia	WV	1	3	0	0	1	2	1	1	0	2	11
Wisconsin	WI	2	2	2	1	2	1	2	4	2	3	21
Wyoming	WY	0	0	0	0	0	0	0	0	0	0	0

Abbreviations: AN, Anesthesiology; EM, Emergency medicine; MG, Medical genetics and genomics; NM, Nuclear medicine; PTH, Pathology-anatomic and clinical; GPM, Preventive medicine; RO, Radiation oncology; DR, Radiology-diagnostic; IRI, Interventional radiology - integrated; TY, Transitional year.

TABLE B.7

Medical Specialty Programs by Specialty and State

State Name	State Abbreviation	AI	D	FM	IM	N	CHN	ONM	PD	PM	P	IP	Total
OVERALL	-	78	142	671	545	159	74	19	212	91	257	79	2,327
Alabama	AL	1	1	8	6	2	1	0	2	1	2	2	26
Alaska	AK	0	0	1	0	0	0	0	0	0	0	0	1
Arizona	AZ	2	4	10	11	4	1	0	3	1	3	1	40
Arkansas	AR	0	1	10	7	1	1	0	1	1	2	1	25
California	CA	10	12	64	42	13	7	0	16	6	23	4	197
Colorado	CO	3	1	15	4	2	1	1	1	1	1	1	31
Connecticut	CT	1	2	4	14	2	1	1	2	0	3	1	31
Delaware	DE	1	0	2	1	0	1	0	1	0	2	1	9
District of Columbia	DC	0	3	1	5	3	1	0	2	1	4	1	21
Florida	FL	3	11	28	36	11	2	0	13	3	17	2	126
Georgia	GA	2	3	17	15	2	2	0	5	1	5	0	52
Hawaii	HI	0	0	3	3	0	0	0	2	0	2	0	10
Idaho	ID	0	0	7	3	0	0	0	0	0	0	0	10
Illinois	IL	2	7	33	26	8	2	0	11	5	11	5	110
Indiana	IN	1	1	14	4	1	1	0	2	1	3	1	29
Iowa	IA	1	1	9	4	1	1	0	2	0	3	0	22
Kansas	KS	1	1	4	3	1	0	0	2	1	2	1	16
Kentucky	KY	0	1	10	5	2	2	0	2	2	3	2	29
Louisiana	LA	3	2	10	8	4	1	0	4	1	4	3	40
Maine	ME	0	0	4	1	1	0	1	1	0	1	1	10
Maryland	MD	3	3	5	11	3	2	0	4	3	4	2	40
Massachusetts	MA	4	4	5	16	5	4	1	5	2	11	4	61
Michigan	MI	3	6	37	35	9	2	4	9	6	11	6	128
Minnesota	MN	1	3	12	4	2	1	0	2	2	3	1	31
Mississippi	MS	1	1	4	5	1	1	0	1	0	1	1	16
Missouri	MO	3	4	9	9	4	3	1	4	2	5	2	46
Montana	MT	0	0	2	1	0	0	0	0	0	0	0	3
Nebraska	NE	0	0	5	2	2	0	0	1	1	2	1	14
Nevada	NV	0	0	7	4	1	0	0	1	1	3	0	17
New Hampshire	NH	0	1	1	1	1	0	0	1	0	1	0	6
New Jersey	NJ	1	3	19	26	4	1	1	10	2	9	2	78
New Mexico	NM	0	1	4	2	1	1	1	1	1	1	0	13
New York	NY	9	12	39	62	14	9	2	32	15	34	5	233
North Carolina	NC	3	4	18	12	3	3	0	5	3	7	3	61
North Dakota	ND	0	0	6	1	0	0	0	0	0	1	0	8
Ohio	OH	4	8	35	32	8	4	0	9	6	10	4	120
Oklahoma	OK	0	1	14	4	1	0	1	4	0	4	2	31
Oregon	OR	0	2	6	5	1	1	1	1	0	2	0	19
Pennsylvania	PA	4	8	48	35	12	3	1	8	6	13	4	142
Puerto Rico	PR	1	1	4	8	1	1	0	4	2	2	1	25
Rhode Island	RI	0	2	2	3	1	0	0	1	0	1	1	11
South Carolina	SC	0	1	13	4	3	1	0	3	0	4	2	31
South Dakota	SD	0	0	3	1	0	0	0	1	0	1	0	6
Tennessee	TN	2	2	10	7	2	2	0	4	1	4	2	36
Texas	TX	4	12	35	28	11	4	1	13	6	15	3	132
Utah	UT	0	1	4	1	1	1	0	1	1	1	1	12
Vermont	VT	0	1	1	1	1	0	0	1	0	1	0	6
Virginia	VA	2	5	16	11	3	2	1	6	3	6	1	56
Washington	WA	1	1	25	6	2	1	0	2	1	2	0	41
West Virginia	WV	0	1	9	5	2	0	1	3	0	3	2	26
Wisconsin	WI	1	3	16	5	2	2	0	3	2	4	2	40
Wyoming	WY	0	0	3	0	0	0	0	0	0	0	0	3

Abbreviations: AI, Allergy and immunology; D, Dermatology; FM, Family medicine; IM, Internal medicine; N, Neurology; CHN, Child neurology; ONM, Osteopathic neuromusculoskeletal medicine; PD, Pediatrics; PM, Physical medicine and rehabilitation; P, Psychiatry; IP, Internal medicine/Pediatrics.

TABLE B.8

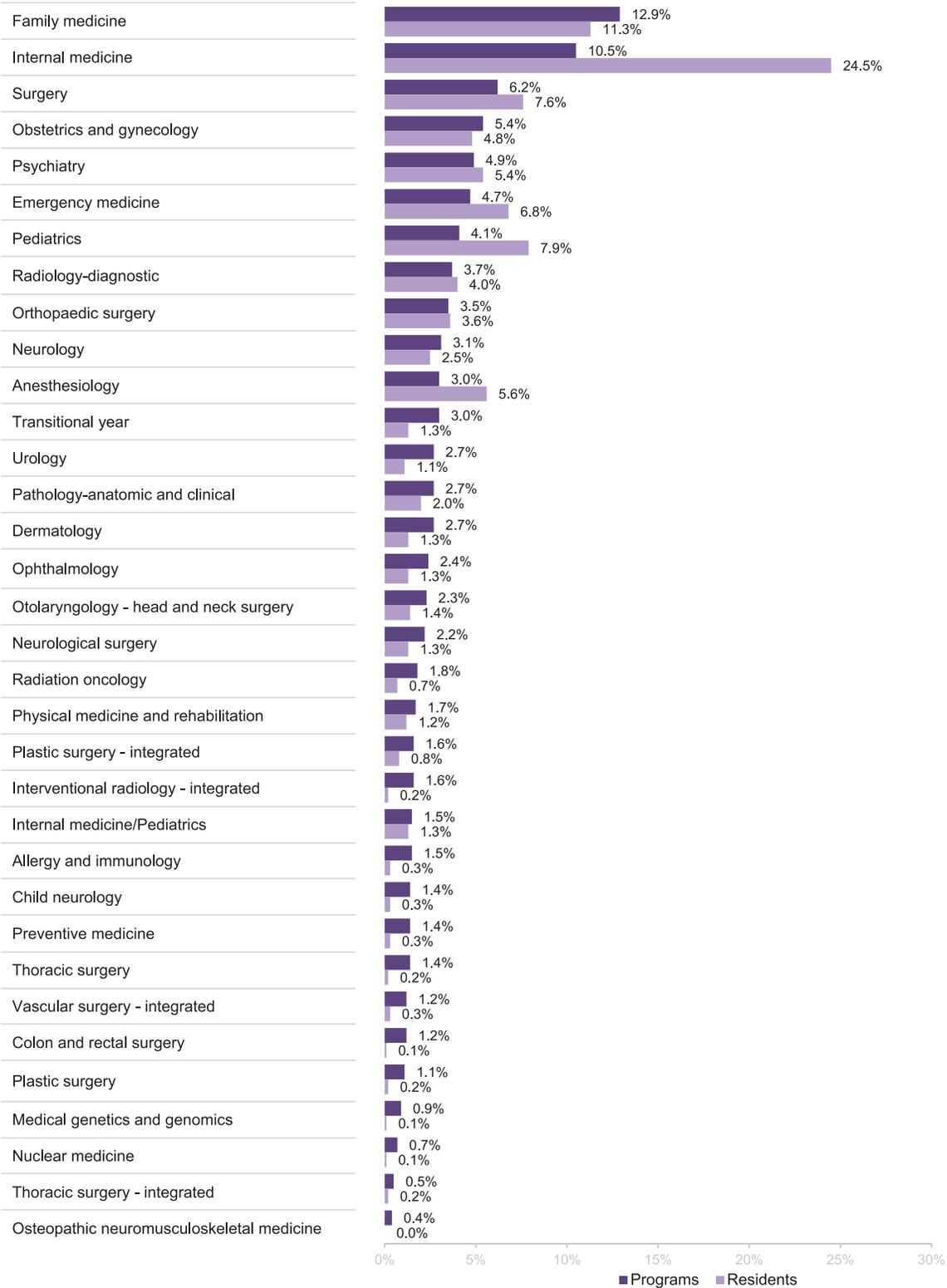
Surgical Specialty Programs by Specialty and State

State Name	State Abbreviation	CRS	NS	OBG	OPH	ORS	OTO	PS	PSI	GS	VSI	TS	TSI	U	Total
OVERALL	-	63	115	282	123	185	122	55	81	323	60	72	27	142	1,650
Alabama	AL	1	1	2	1	2	1	1	0	3	1	1	0	1	15
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	0	2	3	2	3	2	0	1	7	1	1	0	2	24
Arkansas	AR	0	1	1	1	1	1	0	0	1	1	0	0	1	8
California	CA	3	10	22	10	16	10	4	8	22	5	8	3	11	132
Colorado	CO	0	1	2	1	1	1	1	1	5	0	1	0	1	15
Connecticut	CT	1	1	6	1	2	2	0	1	6	1	1	1	2	25
Delaware	DE	0	0	1	0	0	0	0	0	1	0	0	0	0	2
District of Columbia	DC	1	2	3	3	3	2	0	1	3	1	0	0	2	21
Florida	FL	5	4	11	6	7	3	3	3	20	2	2	0	6	72
Georgia	GA	1	2	6	2	4	2	1	1	8	1	1	1	2	32
Hawaii	HI	0	0	2	0	2	1	0	0	2	0	0	0	1	8
Idaho	ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	IL	3	7	13	6	7	6	3	5	12	2	4	1	7	76
Indiana	IN	1	1	2	1	1	1	1	1	2	1	1	1	1	15
Iowa	IA	0	1	1	1	1	1	1	0	3	1	1	1	1	13
Kansas	KS	0	1	3	1	2	1	0	1	3	0	1	0	1	14
Kentucky	KY	1	2	3	2	2	2	1	1	3	0	2	1	2	22
Louisiana	LA	3	3	5	3	4	3	2	1	4	1	1	0	4	34
Maine	ME	0	0	1	0	0	0	0	0	1	1	0	0	1	4
Maryland	MD	1	4	5	4	4	3	1	1	7	0	2	1	3	36
Massachusetts	MA	4	5	6	4	4	3	3	3	10	3	4	1	6	56
Michigan	MI	4	6	24	6	15	8	4	2	23	2	2	1	9	106
Minnesota	MN	2	2	2	2	2	2	2	2	3	2	2	0	2	25
Mississippi	MS	0	1	1	1	1	1	1	1	2	0	1	0	1	11
Missouri	MO	1	3	5	4	5	4	0	3	5	2	1	0	3	36
Montana	MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	1	1	2	1	1	1	1	0	2	0	1	0	2	13
Nevada	NV	0	0	2	0	1	1	0	1	3	0	0	0	0	8
New Hampshire	NH	0	1	1	1	1	1	1	1	1	1	0	0	1	10
New Jersey	NJ	1	1	14	1	7	3	2	2	12	2	1	0	4	50
New Mexico	NM	0	1	1	0	1	1	0	1	1	0	0	0	1	7
New York	NY	9	11	35	17	19	11	3	8	35	8	8	5	16	185
North Carolina	NC	0	4	9	3	4	3	1	3	8	2	3	2	4	46
North Dakota	ND	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Ohio	OH	5	4	15	6	14	8	3	5	19	5	4	2	6	96
Oklahoma	OK	0	1	5	1	1	1	1	0	3	0	0	0	1	14
Oregon	OR	1	1	1	1	1	1	0	1	2	0	1	0	1	11
Pennsylvania	PA	5	8	17	7	13	8	4	5	26	5	5	2	8	113
Puerto Rico	PR	0	1	3	1	1	1	0	0	2	0	0	0	1	10
Rhode Island	RI	1	1	1	1	1	0	0	1	1	0	0	0	1	8
South Carolina	SC	1	1	3	2	3	1	1	2	5	1	0	1	1	22
South Dakota	SD	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Tennessee	TN	1	2	7	2	3	2	3	2	6	0	1	0	4	33
Texas	TX	3	7	19	8	13	8	4	4	19	4	5	1	9	104
Utah	UT	1	1	1	1	1	1	1	1	1	0	1	0	1	11
Vermont	VT	0	1	1	0	1	1	0	0	1	0	0	0	1	6
Virginia	VA	0	4	7	3	3	4	1	3	6	1	2	1	3	38
Washington	WA	1	1	2	2	2	2	0	1	5	1	1	1	3	22
West Virginia	WV	0	1	3	1	2	1	0	1	3	1	1	0	2	16
Wisconsin	WI	1	2	3	2	2	2	0	2	4	1	1	0	2	22
Wyoming	WY	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Abbreviations: CRS, Colon and rectal surgery; NS, Neurological surgery; OBG, Obstetrics and gynecology; OPH, Ophthalmology; ORS, Orthopaedic surgery; OTO, Otolaryngology - head and neck surgery; PS, Plastic surgery; PSI, Plastic surgery - integrated; GS, Surgery; VSI, Vascular surgery - integrated; TS, Thoracic surgery; TSI, Thoracic surgery - integrated; U, Urology.

FIGURE B.9

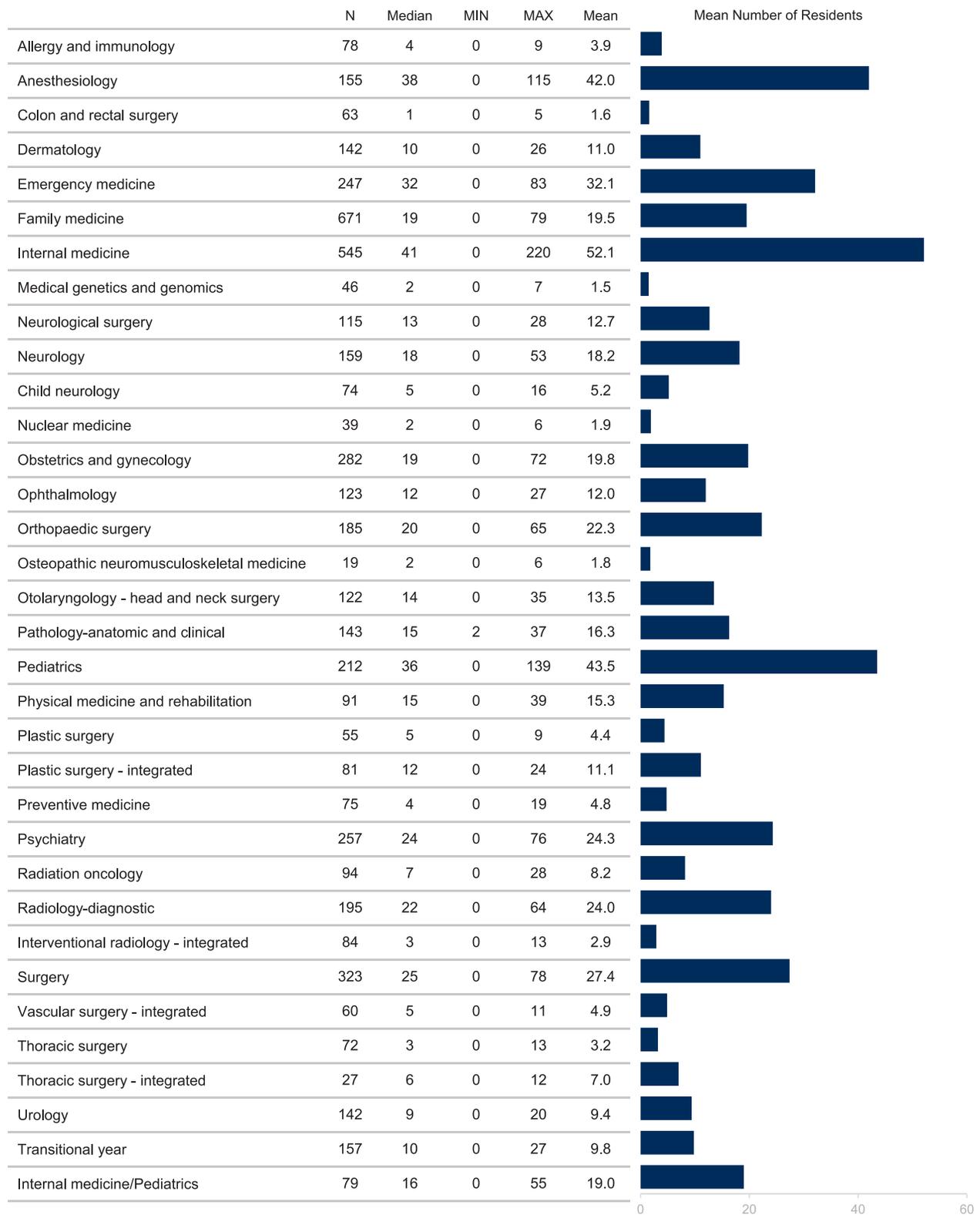
Percentage of Programs and Residents in Each Specialty



Notes: The percentages represent the number of programs/on duty residents in each specialty divided by all programs/on duty residents in specialty programs. Total number of specialty programs = 5,212. Total number of residents in specialties = 115,992.

FIGURE B.10

Mean Number of Residents per Program by Specialty



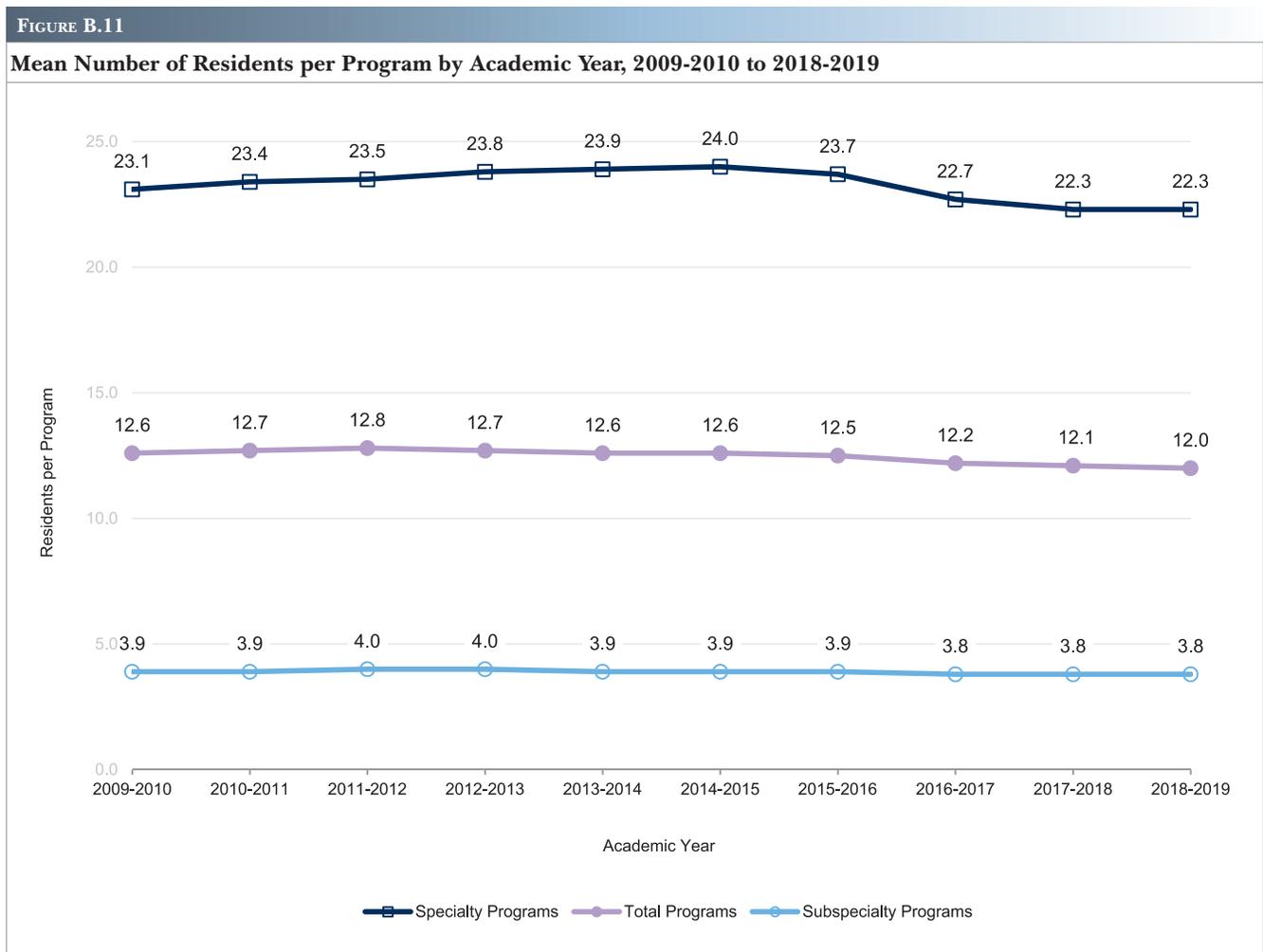
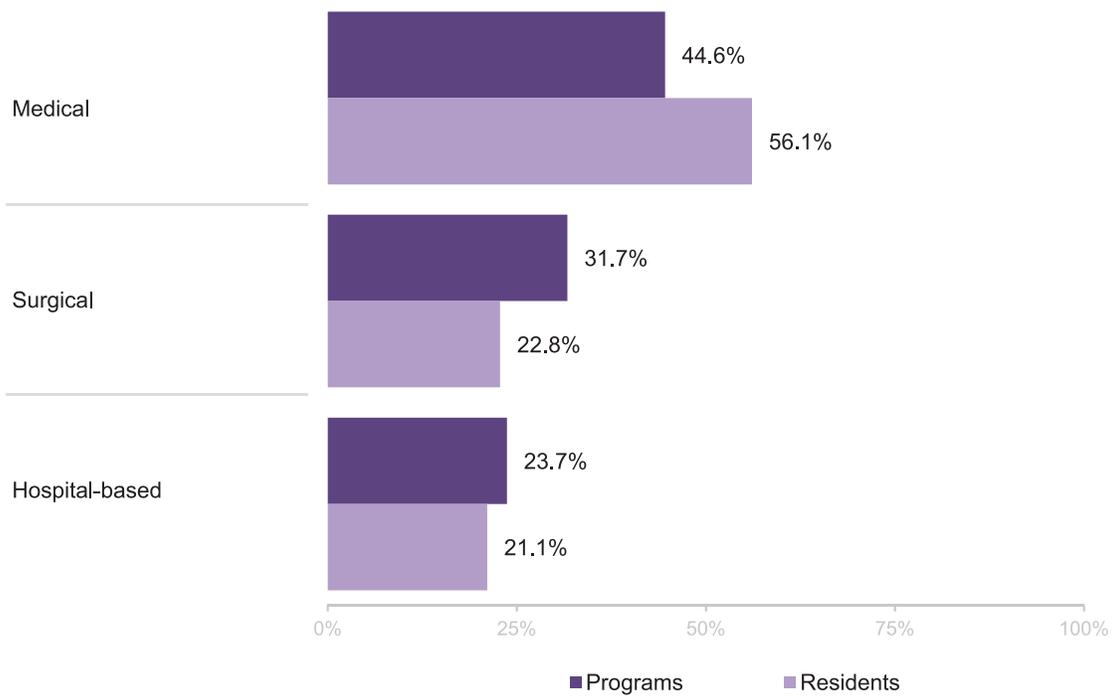


FIGURE B.12

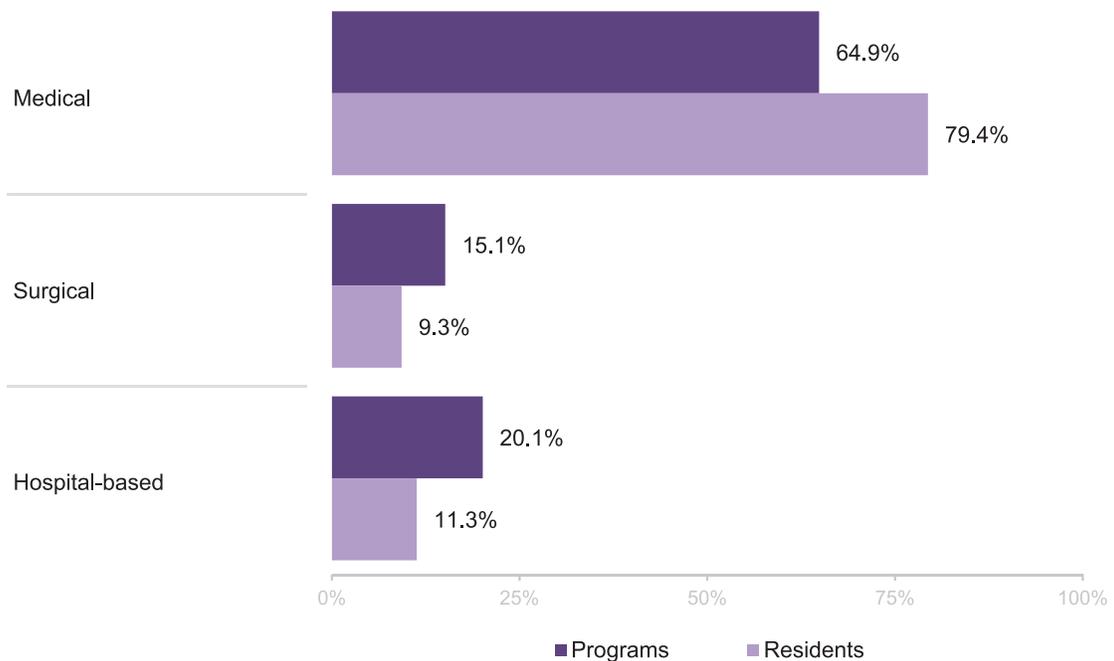
Percent of Programs and Residents in Specialties by Specialty Group



Notes: Total number of specialty programs = 5,212. Total number of residents in specialties = 115,992.

FIGURE B.13

Percent of Programs and Residents in Subspecialties by Specialty Group



Notes: Total number of subspecialty programs = 6,473. Total number of residents in subspecialties = 24,399.

C Resident Characteristics

This section summarizes the characteristics of all active residents, and shows aggregate statistics on their distribution by specialty, medical school type, gender, and ethnicity since the 2009-2010 academic year. In addition, this section includes information on residents entering pipeline and continuing graduate medical education (GME) programs.

Active Residents

Of the total number of active residents (140,391), 115,992 (82.6%) are in specialty programs and 24,399 (17.4%) are in subspecialty programs. Only 0.2% (229) of the total number of active residents are part-time. In terms of trends, there has been a 26.0% increase in total active residents since 2009-2010, with growth in the number of specialty residents at 25.3%, and growth in the number of subspecialty residents at 29.8% over the last 10 years. Among residents in specialty programs, 56.1% (65,077) are in medical specialties, 21.1% (24,500) are in hospital-based specialties, and 22.8% (26,415) are in surgical specialties. The specialties with the highest percentage of total active residents are:

- Internal medicine (20.2%)
- Family medicine (9.3%)
- Pediatrics (6.6%)
- Surgery (6.3%)

Geographic Distribution

Based on the most recent US Census estimate for 2018, there are approximately 42.50 active residents (35.11 specialty, 7.39 subspecialty) per 100,000 population, including Puerto Rico. In line with the states that have the highest number of programs, the following states have the highest number of total active residents:

- New York (18,017)
- California (12,607)
- Texas (9,189)
- Pennsylvania (9,094)

Active Residents by Medical School Type

Of the 115,992 total active residents in specialty programs, 61.8% (71,709) are US allopathic medical school graduates, 21.4% (24,831) are international medical school graduates (IMGs), and 16.7% (19,400) are osteopathic medical school graduates. There are also 51

Canadian medical school graduates, and there is 1 resident for whom medical school type was unknown. The distribution by medical school type is slightly different in subspecialty programs (24,399 active residents), with 57.0% of active residents being graduates of US allopathic medical schools, 32.2% being graduates of international medical schools, 10.4% being graduates of osteopathic medical schools, and less than 1% being Canadian medical school graduates. Over the last 10 years, there has been an 18.0% increase in US allopathic medical school graduates, a 6.7% increase in IMGs, and a 177.3% increase in osteopathic medical school graduates. The specialties with the highest percentage of IMGs include:

- Nuclear medicine (70.7%)
- Pathology – anatomic and clinical (45.2%)
- Internal medicine (38.9%)
- Neurology (32.0%)

While internal medicine has the third-highest percentage of IMGs, this specialty accounts for the highest number of IMGs (11,051) among all specialty programs.

Active Residents by Sex and Ethnicity

Of the 140,391 active residents, 53.1% are male, 43.8% are female, and 3.1% are unreported. The specialties with the highest percentage of female residents include:

- Obstetrics and gynecology (81.8%)
- Allergy and immunology (70.7%)
- Child neurology (67.6%)
- Medical genetics and genomics (66.7%)

The specialties with the lowest percentage of female residents include:

- Orthopaedic surgery (14.7%)
- Neurological surgery (17.3%)
- Interventional radiology – integrated (18.3%)

Overall, 42.3% of all active residents are white, non-Hispanic; 17.8% are Asian or Pacific Islander; 5.3% are Hispanic; 4.4% are black (non-Hispanic); and 0.2% are Native American/Alaskan. 5.4% of active residents were reported as “other,” and 24.6% were reported as “unknown.”

Residents Entering the Pipeline

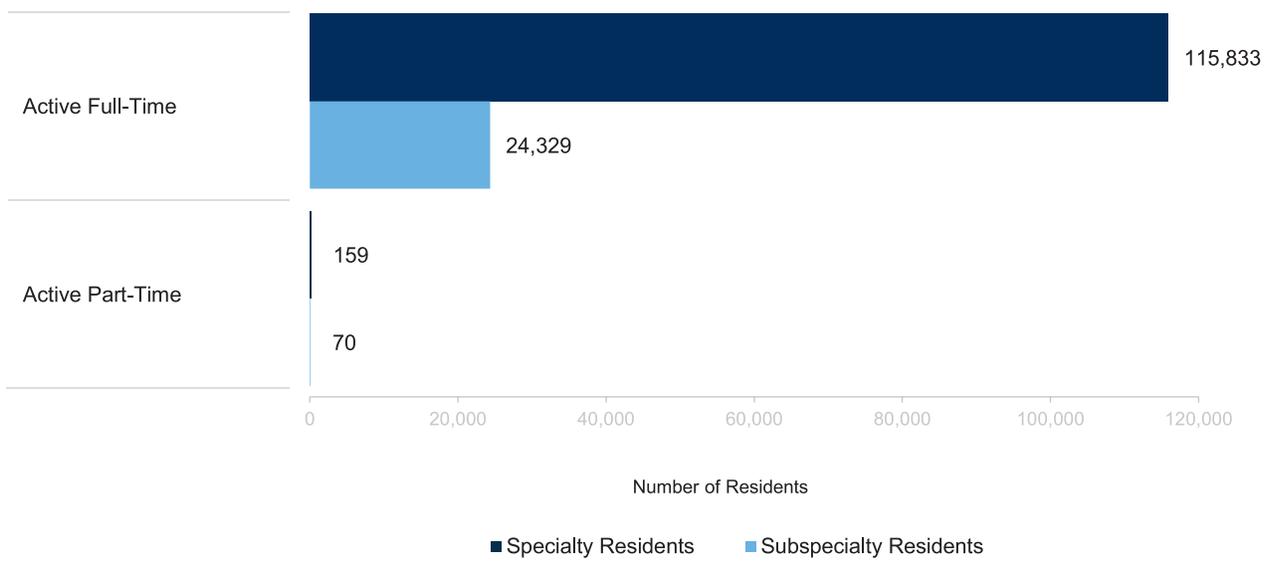
The total number of residents entering the pipeline reached 32,603 for the 2018-2019 academic year. Since

2009-2010, there has been a 26.1% increase in residents entering the pipeline, with varying patterns in growth by medical school type (17.3% increase among US LCME-accredited medical school graduates, 2.6% increase among IMGs, and 167.6% increase among osteopathic medical school graduates). Among the 2018-2019 res-

idents entering the pipeline, 59.2% (19,298) are US LCME-accredited graduates, 22.5% (7,330) are IMGs, 18.3% (5,965) are osteopathic medical school graduates, and less than 1 percent (10) are Canadian medical school graduates. ¹

FIGURE C.1

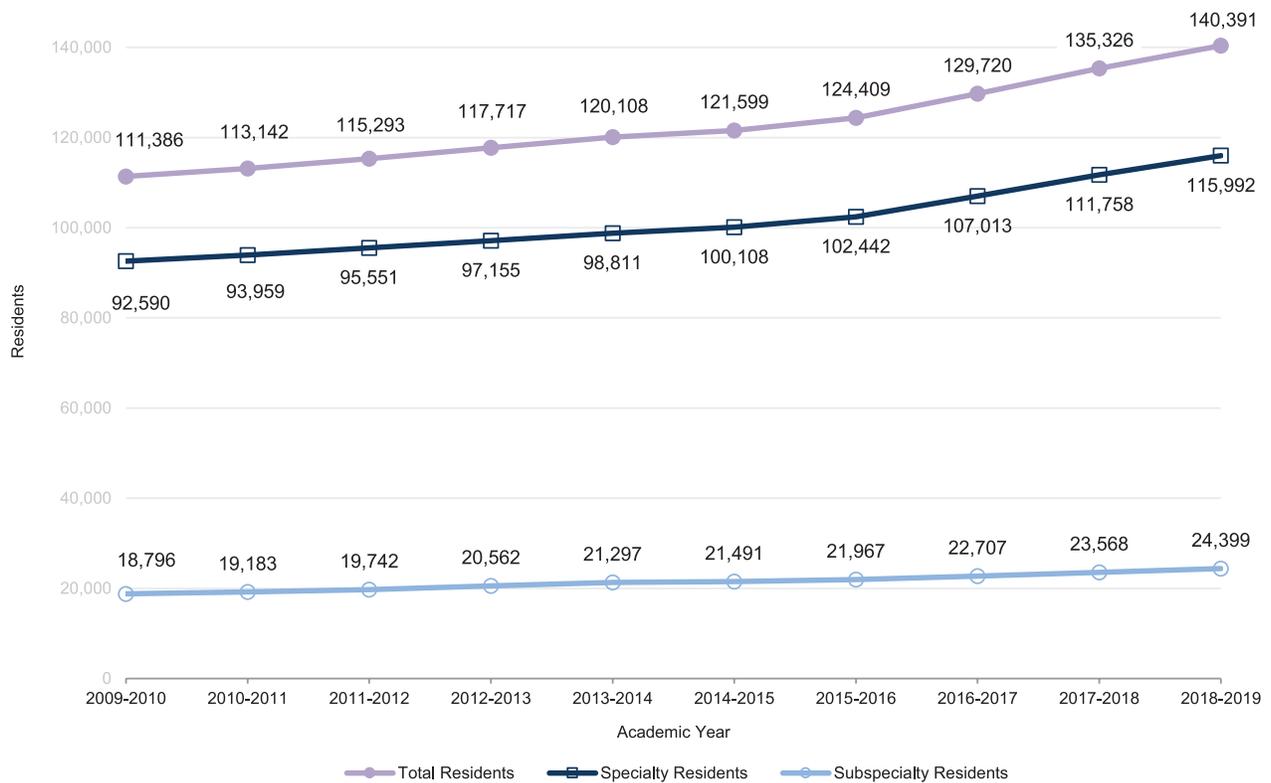
Number of Active Residents by Status



Note: Total number of active residents = 140,391.

FIGURE C.2

Number of Active Residents by Academic Year, 2009-2010 to 2018-2019



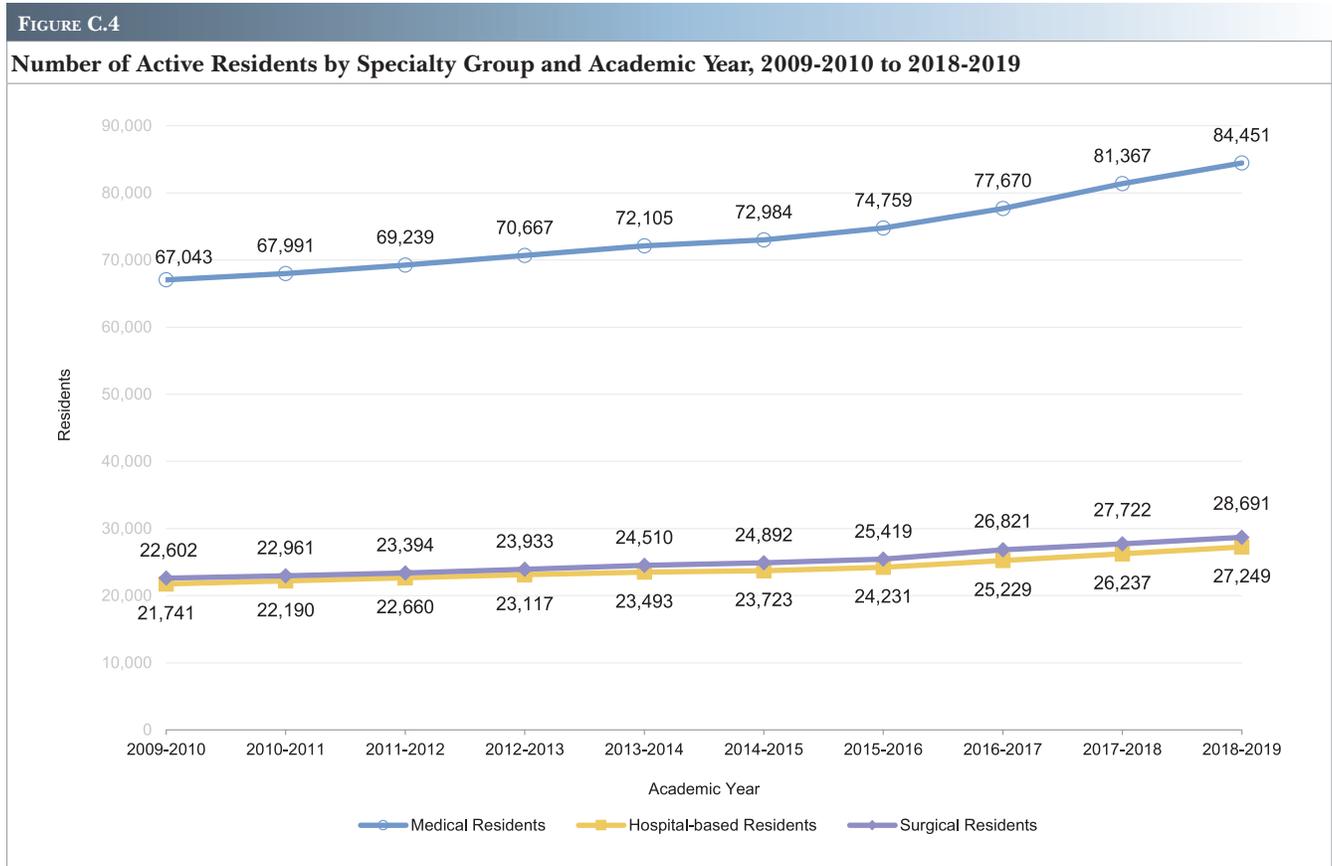
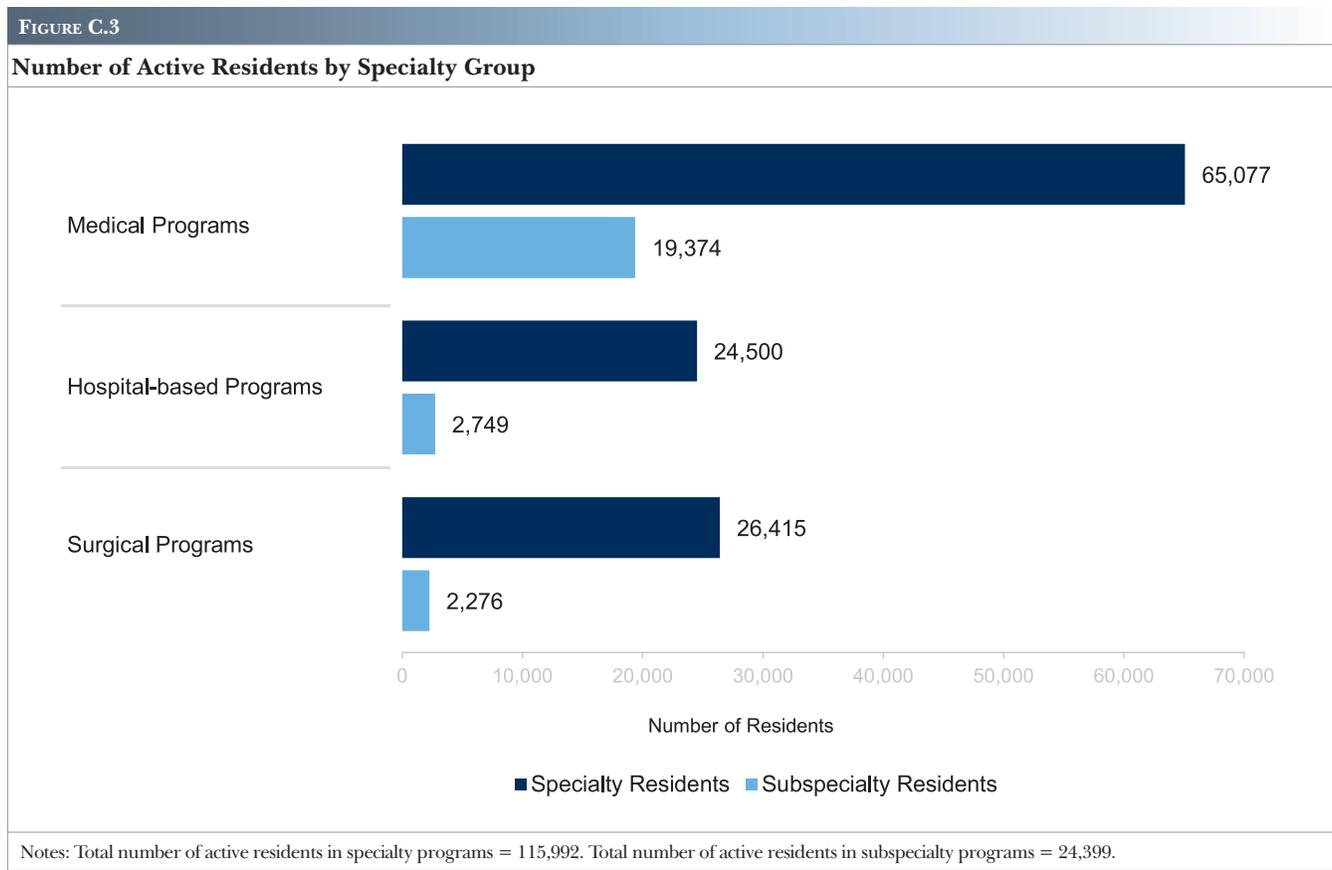


TABLE C.5

Number of Active Residents by Specialty and Subspecialty, Position Type, and Resident Year

Specialty	Total Residents	Resident Year									
		1		2		3		4	5	6	7
		Cat #	Prel #	Cat #	Prel #	Cat #	Prel #	Cat #	Cat #	Cat #	Cat #
OVERALL	140,391	47,832	3,673	39,304	287	35,043	2	10,834	2,906	354	156
TOTAL PIPELINE	113,823	32,603	3,673	32,246	287	30,770	2	10,826	2,906	354	156
Allergy and immunology	304	150		154							
Anesthesiology	6,507	1,545		1,792		1,728		1,442			
- Adult cardiothoracic anesthesiology	215	215									
- Clinical informatics	1			1							
- Critical care medicine	182	182									
- Regional anesthesiology and acute pain medicine	58	58									
- Obstetric anesthesiology	44	44									
- Pain medicine (multidisciplinary)	372	372									
- Pediatric anesthesiology	199	199									
Colon and rectal surgery	101	101									
Dermatology	1,563	535		510		510		8			
- Dermatopathology (multidisciplinary)	67	67									
- Micrographic surgery and dermatologic oncology	82	82									
Emergency medicine	7,940	2,536		2,462		2,353		589			
- Clinical informatics	5	4		1							
- Emergency medical services	62	62									
- Medical toxicology	72	41		31							
- Pediatric emergency medicine	129	54		42		33					
- Sports medicine	16	16									
- Undersea and hyperbaric medicine	9	9									
Family medicine	13,116	4,563		4,388		4,116		49			
- Clinical informatics	12	6		6							
- Geriatric medicine	46	46									
- Hospice and palliative medicine (multidisciplinary)	355	355									
- Sports medicine	239	239									
Internal medicine	28,420	8,971	2,143	8,837	2	8,467					
- Adult congenital heart disease	25	17		8							
- Advanced heart failure and transplant cardiology	105	105									
- Cardiovascular disease	3,017	1,061		989		967					
- Clinical cardiac electrophysiology	259	139		120							
- Clinical informatics	36	22		14							
- Critical care medicine	253	150		103							
- Endocrinology, diabetes, and metabolism	660	334		326							
- Gastroenterology	1,741	608		582		551					
- Geriatric medicine	258	258									
- Hematology	18	13		5							
- Hematology and medical oncology	1,776	605		600		571					
- Infectious disease	760	391		369							
- Interventional cardiology	339	339									
- Nephrology	805	417		388							
- Medical oncology	39	24		15							
- Pulmonary disease	70	41		29							
- Pulmonary disease and critical care medicine	1,898	701		613		584					
- Rheumatology	503	262		241							
- Sleep medicine (multidisciplinary)	177	177									
- Transplant hepatology	47	47									
Medical genetics and genomics	69	28		41							
- Medical biochemical genetics	14	14									
- Molecular genetic pathology (multidisciplinary)	61	61									
Neurological surgery	1,462	230		221		220		221	207	207	156
- Endovascular surgical neuroradiology	1	1									

TABLE C.5 Continued

Number of Active Residents by Specialty and Subspecialty, Position Type, and Resident Year

Specialty	Total Residents	Resident Year									
		1		2		3		4	5	6	7
		Cat #	Prel #	Cat #	Prel #	Cat #	Prel #	Cat #	Cat #	Cat #	Cat #
Neurology	2,893	859		820		782		432			
- Brain injury medicine	1	1									
- Clinical neurophysiology	163	163									
- Epilepsy	112	112									
- Endovascular surgical neuroradiology	1	1									
- Neurodevelopmental disabilities	25	5		5		7		8			
- Neuromuscular medicine	67	67									
- Vascular neurology	129	129									
Child neurology	383	134		126		123					
Nuclear medicine	75	32		24		19					
Obstetrics and gynecology	5,571	1,400	19	1,403		1,366		1,383			
- Female pelvic medicine and reconstructive surgery	145	50		50		45					
- Gynecologic oncology	197	72		67		58					
- Maternal-fetal medicine	350	125		114		111					
- Reproductive endocrinology and infertility	163	53		54		56					
Ophthalmology	1,473	497		497		479					
- Ophthalmic plastic and reconstructive surgery	5	3		2							
Orthopaedic surgery	4,125	837		837		834		819	798		
- Adult reconstructive orthopaedics	47	47									
- Foot and ankle orthopaedics	15	15									
- Hand surgery	154	154									
- Musculoskeletal oncology	14	14									
- Orthopaedic sports medicine	205	205									
- Orthopaedic surgery of the spine	28	28									
- Orthopaedic trauma	19	19									
- Pediatric orthopaedics	37	37									
Osteopathic neuromusculoskeletal medicine	34	15		19							
Otolaryngology - head and neck surgery	1,651	340		340		325		327	319		
- Neurotology	32	18		14							
- Pediatric otolaryngology	35	35									
Pathology-anatomic and clinical	2,329	620		624		571		514			
- Blood banking/transfusion medicine	57	57									
- Clinical informatics	9	6		3							
- Chemical pathology	1	1									
- Cytopathology	134	134									
- Forensic pathology	44	44									
- Hematopathology	131	131									
- Medical microbiology	12	12									
- Neuropathology	50	31		19							
- Pediatric pathology	23	23									
- Selective pathology	166	166									
Pediatrics	9,221	3,105	70	3,041	56	2,949					
- Adolescent medicine	87	33		27		27					
- Child abuse pediatrics	38	22		11		5					
- Clinical informatics	12	6		6							
- Developmental-behavioral pediatrics	102	39		37		26					
- Neonatal-perinatal medicine	761	260		248		253					
- Pediatric cardiology	444	158		144		142					
- Pediatric critical care medicine	534	198		181		155					
- Pediatric emergency medicine	408	142		138		128					
- Pediatric endocrinology	241	84		78		79					
- Pediatric gastroenterology	311	112		100		99					
- Pediatric hematology/oncology	484	156		164		164					

TABLE C.5 *Continued***Number of Active Residents by Specialty and Subspecialty, Position Type, and Resident Year**

Specialty	Total Residents	Resident Year									
		1		2		3		4	5	6	7
		Cat #	Prel #	Cat #	Prel #	Cat #	Prel #	Cat #	Cat #	Cat #	Cat #
- Pediatric infectious diseases	177	62		61		54					
- Pediatric nephrology	116	46		34		36					
- Pediatric pulmonology	162	56		49		57					
- Pediatric rheumatology	91	32		30		29					
- Pediatric sports medicine	26	26									
- Pediatric transplant hepatology	9	9									
Physical medicine and rehabilitation	1,395	401		434		406		154			
- Brain injury medicine	17	17									
- Neuromuscular medicine	1	1									
- Spinal cord injury medicine	20	20									
- Pediatric rehabilitation	38	22		16							
- Sports medicine	30	30									
Plastic surgery	243	75		78		90					
Plastic surgery - integrated	901	170		160		161		152	138	120	
- Craniofacial surgery	8	8									
- Hand surgery	22	22									
Preventive medicine	357	193		164							
- Medical toxicology	4	2		2							
- Undersea and hyperbaric medicine	2	2									
Psychiatry	6,247	1,766		1,718		1,599		1,164			
- Addiction medicine (multidisciplinary)	39	39									
- Addiction psychiatry	83	80		3							
- Child and adolescent psychiatry	869	445		424							
- Forensic psychiatry	66	66									
- Geriatric psychiatry	52	52									
- Consultation-liaison psychiatry	71	71									
Radiation oncology	774	196		193		192		193			
Radiology-diagnostic	4,671	1,131		1,200		1,159		1,176	5		
- Abdominal radiology	41	41									
- Endovascular surgical neuroradiology	5	5									
- Musculoskeletal radiology	32	32									
- Neuroradiology	259	259									
- Nuclear radiology	11	11									
- Pediatric radiology	55	55									
- Vascular and interventional radiology	274	274									
Interventional radiology - integrated	246	118		39		46		28	15		
Surgery	8,844	1,478	1,441	1,473	229	1,473	2	1,403	1,345		
- Complex general surgical oncology	111	57		54							
- Hand surgery	8	8									
- Pediatric surgery	83	40		43							
- Surgical critical care	284	284									
- Vascular surgery	248	126		122							
Vascular surgery - integrated	292	61		62		61		55	53		
Thoracic surgery	232	102		101		29					
- Congenital cardiac surgery	8	8									
Thoracic surgery - integrated	189	36		36		37		30	23	27	
Urology	1,331	343		336		326		323	3		
- Female pelvic medicine and reconstructive surgery	37	10		20		7					
- Pediatric urology	20	20									
Transitional year	1,532	1,532									
Internal medicine/Pediatrics	1,501	388		371		378		364			

Note: Pipeline specialties are highlighted.

Abbreviations: Cat, categorical resident positions; Prel, preliminary resident positions.

TABLE C.6

Number of Active Residents by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019

Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	#	%
	#	#	#	#	#	#	%
OVERALL	121,599	124,409	129,720	135,326	140,391	18,792	15.5%
TOTAL PIPELINE	98,411	100,761	105,297	109,822	113,823	15,412	15.7%
Allergy and immunology	298	287	287	296	304	6	2.0%
Anesthesiology	5,978	6,051	6,207	6,346	6,507	529	8.8%
- Adult cardiothoracic anesthesiology	177	183	193	207	215	38	21.5%
- Clinical informatics *			1	2	1	0	0.0%
- Critical care medicine	159	175	183	181	182	23	14.5%
- Regional anesthesiology and acute pain medicine *			20	48	58	38	190.0%
- Obstetric anesthesiology	35	38	39	39	44	9	25.7%
- Pain medicine (multidisciplinary)	336	337	354	361	372	36	10.7%
- Pediatric anesthesiology	191	205	205	205	199	8	4.2%
Colon and rectal surgery	94	94	95	97	101	7	7.4%
Dermatology	1,275	1,323	1,424	1,517	1,563	288	22.6%
- Dermatopathology (multidisciplinary)	77	76	71	72	67	-10	-13.0%
- Micrographic surgery and dermatologic oncology	68	73	83	83	82	14	20.6%
Emergency medicine	5,941	6,244	6,885	7,461	7,940	1,999	33.6%
- Clinical informatics *	1	3	4	4	5	4	400.0%
- Emergency medical services	44	50	62	46	62	18	40.9%
- Medical toxicology	58	61	63	63	72	14	24.1%
- Pediatric emergency medicine	98	101	113	119	129	31	31.6%
- Sports medicine	9	11	14	16	16	7	77.8%
- Undersea and hyperbaric medicine	7	9	13	8	9	2	28.6%
Family medicine	10,499	10,762	11,277	12,161	13,116	2,617	24.9%
- Clinical informatics *		2	7	8	12	10	500.0%
- Geriatric medicine	49	49	44	41	46	-3	-6.1%
- Hospice and palliative medicine (multidisciplinary)	243	274	304	333	355	112	46.1%
- Sports medicine	202	210	217	229	239	37	18.3%
Internal medicine	24,259	24,983	26,301	27,647	28,420	4,161	17.2%
- Adult congenital heart disease *		5	15	14	25	20	400.0%
- Advanced heart failure and transplant cardiology	74	82	94	98	105	31	41.9%
- Cardiovascular disease	2,626	2,670	2,746	2,918	3,017	391	14.9%
- Clinical cardiac electrophysiology	151	154	142	185	259	108	71.5%
- Clinical informatics *		5	19	34	36	31	620.0%
- Critical care medicine	210	208	217	238	253	43	20.5%
- Endocrinology, diabetes, and metabolism	604	613	624	645	660	56	9.3%
- Gastroenterology	1,467	1,505	1,565	1,656	1,741	274	18.7%
- Geriatric medicine	249	239	260	274	258	9	3.6%
- Hematology	21	22	15	16	18	-3	-14.3%
- Hematology and medical oncology	1,637	1,660	1,713	1,745	1,776	139	8.5%
- Infectious disease	727	724	694	715	760	33	4.5%
- Interventional cardiology	309	309	315	318	339	30	9.7%
- Nephrology	895	863	844	808	805	-90	-10.1%
- Medical oncology	67	59	34	34	39	-28	-41.8%
- Pulmonary disease	81	75	74	73	70	-11	-13.6%
- Pulmonary disease and critical care medicine	1,571	1,630	1,702	1,812	1,898	327	20.8%
- Rheumatology	431	445	458	477	503	72	16.7%
- Sleep medicine (multidisciplinary)	153	165	163	164	177	24	15.7%
- Transplant hepatology	41	40	39	46	47	6	14.6%
Medical genetics and genomics	74	73	71	70	69	-5	-6.8%
- Medical biochemical genetics	8	9	9	12	14	6	75.0%
- Molecular genetic pathology (multidisciplinary)	49	53	53	56	61	12	24.5%
Neurological surgery	1,295	1,325	1,375	1,408	1,462	167	12.9%
- Endovascular surgical neuroradiology	2	2	1	3	1	-1	-50.0%

TABLE C.6 *Continued***Number of Active Residents by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019**

Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019		
	#	#	#	#	#	#	%
Neurology	2,323	2,413	2,544	2,750	2,893	570	24.5%
- Brain injury medicine *				1	1	0	0.0%
- Clinical neurophysiology	220	200	169	171	163	-57	-25.9%
- Epilepsy *	12	53	74	101	112	100	833.3%
- Endovascular surgical neuroradiology	2	1	2	1	1	-1	-50.0%
- Neurodevelopmental disabilities	17	23	27	28	25	8	47.1%
- Neuromuscular medicine	54	63	60	55	67	13	24.1%
- Vascular neurology	91	112	126	115	129	38	41.8%
Child neurology	347	360	360	373	383	36	10.4%
Nuclear medicine	93	84	74	71	75	-18	-19.4%
Obstetrics and gynecology	5,102	5,187	5,372	5,473	5,571	469	9.2%
- Female pelvic medicine and reconstructive surgery	123	132	139	142	145	22	17.9%
- Gynecologic oncology *			172	187	197	25	14.5%
- Maternal-fetal medicine *			268	322	350	82	30.6%
- Reproductive endocrinology and infertility *			120	160	163	43	35.8%
Ophthalmology	1,420	1,432	1,446	1,474	1,473	53	3.7%
- Ophthalmic plastic and reconstructive surgery	6	6	6	5	5	-1	-16.7%
Orthopaedic surgery	3,604	3,684	3,760	3,941	4,125	521	14.5%
- Adult reconstructive orthopaedics	37	44	41	40	47	10	27.0%
- Foot and ankle orthopaedics	16	16	15	14	15	-1	-6.2%
- Hand surgery	140	144	146	151	154	14	10.0%
- Musculoskeletal oncology	15	15	16	17	14	-1	-6.7%
- Orthopaedic sports medicine	219	203	217	204	205	-14	-6.4%
- Orthopaedic surgery of the spine	31	31	32	32	28	-3	-9.7%
- Orthopaedic trauma	16	17	14	18	19	3	18.8%
- Pediatric orthopaedics	39	43	38	39	37	-2	-5.1%
Osteopathic neuromusculoskeletal medicine *		3	8	21	34	31	1033.3%
Otolaryngology - head and neck surgery	1,506	1,517	1,541	1,592	1,651	145	9.6%
- Neurotology	28	30	28	29	32	4	14.3%
- Pediatric otolaryngology	34	33	33	34	35	1	2.9%
Pathology-anatomic and clinical	2,339	2,318	2,334	2,341	2,329	-10	-0.4%
- Blood banking/transfusion medicine	53	48	47	49	57	4	7.5%
- Clinical informatics *		3	10	11	9	6	200.0%
- Chemical pathology	1	2	1	1	1	0	0.0%
- Cytopathology	136	141	139	138	134	-2	-1.5%
- Forensic pathology	41	50	46	43	44	3	7.3%
- Hematopathology	137	132	132	125	131	-6	-4.4%
- Medical microbiology	11	10	12	10	12	1	9.1%
- Neuropathology	44	50	55	48	50	6	13.6%
- Pediatric pathology	28	22	23	17	23	-5	-17.9%
- Selective pathology	158	154	154	168	166	8	5.1%
Pediatrics	8,867	8,933	9,063	9,159	9,221	354	4.0%
- Adolescent medicine	72	79	89	88	87	15	20.8%
- Child abuse pediatrics	34	37	35	34	38	4	11.8%
- Clinical informatics *	2	7	9	10	12	10	500.0%
- Developmental-behavioral pediatrics	97	102	92	108	102	5	5.2%
- Neonatal-perinatal medicine	703	738	759	759	761	58	8.3%
- Pediatric cardiology	415	422	432	434	444	29	7.0%
- Pediatric critical care medicine	467	496	507	518	534	67	14.3%
- Pediatric emergency medicine	355	373	385	392	408	53	14.9%
- Pediatric endocrinology	245	243	243	241	241	-4	-1.6%
- Pediatric gastroenterology	274	282	290	300	311	37	13.5%
- Pediatric hematology/oncology	473	476	488	501	484	11	2.3%

TABLE C.6 <i>Continued</i>							
Number of Active Residents by Specialty and Subspecialty and Academic Year, 2014-2015 to 2018-2019							
Specialty	Academic Year					5-Year Change	
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019		
	#	#	#	#	#	#	%
- Pediatric infectious diseases	175	162	164	171	177	2	1.1%
- Pediatric nephrology	115	101	102	101	116	1	0.9%
- Pediatric pulmonology	165	159	167	158	162	-3	-1.8%
- Pediatric rheumatology	76	76	81	86	91	15	19.7%
- Pediatric sports medicine	22	24	23	26	26	4	18.2%
- Pediatric transplant hepatology	8	6	8	12	9	1	12.5%
Physical medicine and rehabilitation	1,276	1,293	1,324	1,351	1,395	119	9.3%
- Brain injury medicine	3	7	9	13	17	14	466.7%
- Neuromuscular medicine	0	1	0	0	1	0	0.0%
- Spinal cord injury medicine	15	16	16	21	20	5	33.3%
- Pediatric rehabilitation	28	25	26	27	38	10	35.7%
- Sports medicine	21	24	22	28	30	9	42.9%
Plastic surgery	392	363	316	266	243	-149	-38.0%
Plastic surgery - integrated	574	663	748	829	901	327	57.0%
- Craniofacial surgery	10	9	9	4	8	-2	-20.0%
- Hand surgery	20	23	24	23	22	2	10.0%
Preventive medicine	332	355	353	351	357	25	7.5%
- Medical toxicology	4	3	5	4	4	0	0.0%
- Undersea and hyperbaric medicine	5	3	3	2	2	-3	-60.0%
Psychiatry	5,176	5,358	5,619	5,907	6,247	1,071	20.7%
- Addiction medicine (multidisciplinary) *					39	N/A	N/A
- Addiction psychiatry	66	80	77	74	83	17	25.8%
- Child and adolescent psychiatry	820	826	840	865	869	49	6.0%
- Forensic psychiatry	66	72	63	79	66	0	0.0%
- Geriatric psychiatry	58	58	56	53	52	-6	-10.3%
- Consultation-liaison psychiatry	82	79	80	86	71	-11	-13.4%
Radiation oncology	721	733	749	767	774	53	7.4%
Radiology-diagnostic	4,676	4,740	4,769	4,760	4,671	-5	-0.1%
- Abdominal radiology	44	45	46	44	41	-3	-6.8%
- Endovascular surgical neuroradiology	4	5	6	6	5	1	25.0%
- Musculoskeletal radiology	33	30	33	32	32	-1	-3.0%
- Neuroradiology	245	256	265	269	259	14	5.7%
- Nuclear radiology	16	13	12	11	11	-5	-31.2%
- Pediatric radiology	88	79	65	55	55	-33	-37.5%
- Vascular and interventional radiology	260	275	284	290	274	14	5.4%
Interventional radiology - integrated *			13	60	246	233	1792.3%
Surgery	7,732	7,834	8,184	8,475	8,844	1,112	14.4%
- Complex general surgical oncology	104	101	105	107	111	7	6.7%
- Hand surgery	8	8	8	8	8	0	0.0%
- Pediatric surgery	83	82	83	80	83	0	0.0%
- Surgical critical care	218	236	248	253	284	66	30.3%
- Vascular surgery	248	233	241	246	248	0	0.0%
Vascular surgery - integrated	205	234	260	272	292	87	42.4%
Thoracic surgery	216	223	224	223	232	16	7.4%
- Congenital cardiac surgery	8	10	5	9	8	0	0.0%
Thoracic surgery - integrated	117	138	161	183	189	72	61.5%
Urology	1,177	1,254	1,276	1,304	1,331	154	13.1%
- Female pelvic medicine and reconstructive surgery	27	28	29	34	37	10	37.0%
- Pediatric urology	26	25	25	24	20	-6	-23.1%
Transitional year	1,089	1,077	1,110	1,320	1,532	443	40.7%
Internal medicine/Pediatrics	1,458	1,464	1,483	1,492	1,501	43	2.9%

Notes: Pipeline specialties are highlighted. Asterisks (*) indicate specialties and subspecialties added within the last five years. For these specialties and subspecialties, the number and percent change are calculated from the first year of having active residents.

TABLE C.7

Number of Active Part-Time Residents by Specialty and Subspecialty

Specialty	Total Residents	Number of Part-Time Residents	Percent of All Residents in Specialty	Percent of All Part-Time Residents
OVERALL	140,391	229	0.2%	100.0%
TOTAL PIPELINE	113,823	149	0.1%	65.1%
Allergy and immunology	304	7	2.3%	3.1%
Anesthesiology	6,507	8	0.1%	3.5%
- Adult cardiothoracic anesthesiology	215	0	0.0%	0.0%
- Clinical informatics	1	0	0.0%	0.0%
- Critical care medicine	182	0	0.0%	0.0%
- Regional anesthesiology and acute pain medicine	58	1	1.7%	0.4%
- Obstetric anesthesiology	44	0	0.0%	0.0%
- Pain medicine (multidisciplinary)	372	5	1.3%	2.2%
- Pediatric anesthesiology	199	0	0.0%	0.0%
Colon and rectal surgery	101	0	0.0%	0.0%
Dermatology	1,563	5	0.3%	2.2%
- Dermatopathology (multidisciplinary)	67	0	0.0%	0.0%
- Micrographic surgery and dermatologic oncology	82	0	0.0%	0.0%
Emergency medicine	7,940	9	0.1%	3.9%
- Clinical informatics	5	0	0.0%	0.0%
- Emergency medical services	62	1	1.6%	0.4%
- Medical toxicology	72	1	1.4%	0.4%
- Pediatric emergency medicine	129	0	0.0%	0.0%
- Sports medicine	16	0	0.0%	0.0%
- Undersea and hyperbaric medicine	9	0	0.0%	0.0%
Family medicine	13,116	22	0.2%	9.6%
- Clinical informatics	12	0	0.0%	0.0%
- Geriatric medicine	46	1	2.2%	0.4%
- Hospice and palliative medicine (multidisciplinary)	355	9	2.5%	3.9%
- Sports medicine	239	1	0.4%	0.4%
Internal medicine	28,420	30	0.1%	13.1%
- Adult congenital heart disease	25	0	0.0%	0.0%
- Advanced heart failure and transplant cardiology	105	0	0.0%	0.0%
- Cardiovascular disease	3,017	5	0.2%	2.2%
- Clinical cardiac electrophysiology	259	0	0.0%	0.0%
- Clinical informatics	36	0	0.0%	0.0%
- Critical care medicine	253	0	0.0%	0.0%
- Endocrinology, diabetes, and metabolism	660	0	0.0%	0.0%
- Gastroenterology	1,741	7	0.4%	3.1%
- Geriatric medicine	258	3	1.2%	1.3%
- Hematology	18	0	0.0%	0.0%
- Hematology and medical oncology	1,776	6	0.3%	2.6%
- Infectious disease	760	2	0.3%	0.9%
- Interventional cardiology	339	0	0.0%	0.0%
- Nephrology	805	1	0.1%	0.4%
- Medical oncology	39	0	0.0%	0.0%
- Pulmonary disease	70	0	0.0%	0.0%
- Pulmonary disease and critical care medicine	1,898	5	0.3%	2.2%
- Rheumatology	503	2	0.4%	0.9%
- Sleep medicine (multidisciplinary)	177	1	0.6%	0.4%
- Transplant hepatology	47	0	0.0%	0.0%
Medical genetics and genomics	69	0	0.0%	0.0%
- Medical biochemical genetics	14	0	0.0%	0.0%
- Molecular genetic pathology (multidisciplinary)	61	1	1.6%	0.4%
Neurological surgery	1,462	0	0.0%	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	0.0%

TABLE C.7 Continued

Number of Active Part-Time Residents by Specialty and Subspecialty

Specialty	Total Residents	Number of Part-Time Residents	Percent of All Residents in Specialty	Percent of All Part-Time Residents
Neurology	2,893	8	0.3%	3.5%
- Brain injury medicine	1	0	0.0%	0.0%
- Clinical neurophysiology	163	0	0.0%	0.0%
- Epilepsy	112	1	0.9%	0.4%
- Endovascular surgical neuroradiology	1	0	0.0%	0.0%
- Neurodevelopmental disabilities	25	0	0.0%	0.0%
- Neuromuscular medicine	67	0	0.0%	0.0%
- Vascular neurology	129	1	0.8%	0.4%
Child neurology	383	1	0.3%	0.4%
Nuclear medicine	75	0	0.0%	0.0%
Obstetrics and gynecology	5,571	7	0.1%	3.1%
- Female pelvic medicine and reconstructive surgery	145	1	0.7%	0.4%
- Gynecologic oncology	197	0	0.0%	0.0%
- Maternal-fetal medicine	350	0	0.0%	0.0%
- Reproductive endocrinology and infertility	163	0	0.0%	0.0%
Ophthalmology	1,473	1	0.1%	0.4%
- Ophthalmic plastic and reconstructive surgery	5	0	0.0%	0.0%
Orthopaedic surgery	4,125	4	0.1%	1.7%
- Adult reconstructive orthopaedics	47	1	2.1%	0.4%
- Foot and ankle orthopaedics	15	0	0.0%	0.0%
- Hand surgery	154	0	0.0%	0.0%
- Musculoskeletal oncology	14	0	0.0%	0.0%
- Orthopaedic sports medicine	205	1	0.5%	0.4%
- Orthopaedic surgery of the spine	28	0	0.0%	0.0%
- Orthopaedic trauma	19	0	0.0%	0.0%
- Pediatric orthopaedics	37	0	0.0%	0.0%
Osteopathic neuromusculoskeletal medicine	34	0	0.0%	0.0%
Otolaryngology - head and neck surgery	1,651	1	0.1%	0.4%
- Neurotology	32	0	0.0%	0.0%
- Pediatric otolaryngology	35	0	0.0%	0.0%
Pathology-anatomic and clinical	2,329	3	0.1%	1.3%
- Blood banking/transfusion medicine	57	0	0.0%	0.0%
- Clinical informatics	9	0	0.0%	0.0%
- Chemical pathology	1	0	0.0%	0.0%
- Cytopathology	134	0	0.0%	0.0%
- Forensic pathology	44	0	0.0%	0.0%
- Hematopathology	131	0	0.0%	0.0%
- Medical microbiology	12	0	0.0%	0.0%
- Neuropathology	50	0	0.0%	0.0%
- Pediatric pathology	23	0	0.0%	0.0%
- Selective pathology	166	0	0.0%	0.0%
Pediatrics	9,221	9	0.1%	3.9%
- Adolescent medicine	87	0	0.0%	0.0%
- Child abuse pediatrics	38	0	0.0%	0.0%
- Clinical informatics	12	0	0.0%	0.0%
- Developmental-behavioral pediatrics	102	0	0.0%	0.0%
- Neonatal-perinatal medicine	761	0	0.0%	0.0%
- Pediatric cardiology	444	1	0.2%	0.4%
- Pediatric critical care medicine	534	1	0.2%	0.4%
- Pediatric emergency medicine	408	0	0.0%	0.0%
- Pediatric endocrinology	241	0	0.0%	0.0%
- Pediatric gastroenterology	311	0	0.0%	0.0%
- Pediatric hematology/oncology	484	0	0.0%	0.0%

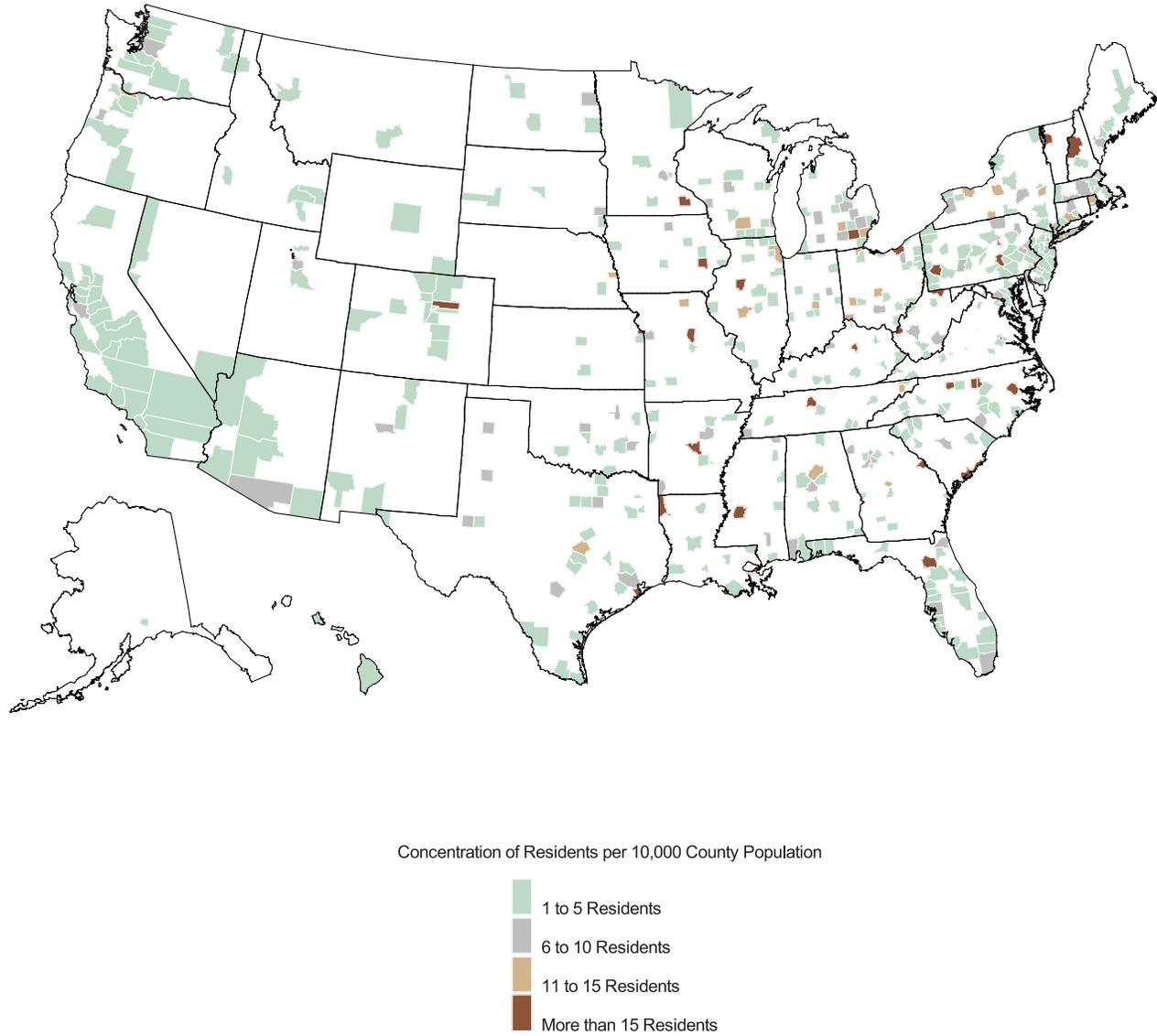
TABLE C.7 *Continued***Number of Active Part-Time Residents by Specialty and Subspecialty**

Specialty	Total Residents	Number of Part-Time Residents	Percent of All Residents in Specialty	Percent of All Part-Time Residents
- Pediatric infectious diseases	177	0	0.0%	0.0%
- Pediatric nephrology	116	0	0.0%	0.0%
- Pediatric pulmonology	162	1	0.6%	0.4%
- Pediatric rheumatology	91	0	0.0%	0.0%
- Pediatric sports medicine	26	0	0.0%	0.0%
- Pediatric transplant hepatology	9	0	0.0%	0.0%
Physical medicine and rehabilitation	1,395	2	0.1%	0.9%
- Brain injury medicine	17	0	0.0%	0.0%
- Neuromuscular medicine	1	0	0.0%	0.0%
- Spinal cord injury medicine	20	0	0.0%	0.0%
- Pediatric rehabilitation	38	0	0.0%	0.0%
- Sports medicine	30	0	0.0%	0.0%
Plastic surgery	243	1	0.4%	0.4%
Plastic surgery - integrated	901	1	0.1%	0.4%
- Craniofacial surgery	8	0	0.0%	0.0%
- Hand surgery	22	0	0.0%	0.0%
Preventive medicine	357	0	0.0%	0.0%
- Medical toxicology	4	0	0.0%	0.0%
- Undersea and hyperbaric medicine	2	0	0.0%	0.0%
Psychiatry	6,247	10	0.2%	4.4%
- Addiction medicine (multidisciplinary)	39	1	2.6%	0.4%
- Addiction psychiatry	83	0	0.0%	0.0%
- Child and adolescent psychiatry	869	4	0.5%	1.7%
- Forensic psychiatry	66	0	0.0%	0.0%
- Geriatric psychiatry	52	1	1.9%	0.4%
- Consultation-liaison psychiatry	71	0	0.0%	0.0%
Radiation oncology	774	0	0.0%	0.0%
Radiology-diagnostic	4,671	7	0.1%	3.1%
- Abdominal radiology	41	0	0.0%	0.0%
- Endovascular surgical neuroradiology	5	0	0.0%	0.0%
- Musculoskeletal radiology	32	0	0.0%	0.0%
- Neuroradiology	259	0	0.0%	0.0%
- Nuclear radiology	11	0	0.0%	0.0%
- Pediatric radiology	55	0	0.0%	0.0%
- Vascular and interventional radiology	274	1	0.4%	0.4%
Interventional radiology - integrated	246	0	0.0%	0.0%
Surgery	8,844	13	0.1%	5.7%
- Complex general surgical oncology	111	0	0.0%	0.0%
- Hand surgery	8	0	0.0%	0.0%
- Pediatric surgery	83	0	0.0%	0.0%
- Surgical critical care	284	2	0.7%	0.9%
- Vascular surgery	248	1	0.4%	0.4%
Vascular surgery - integrated	292	0	0.0%	0.0%
Thoracic surgery	232	1	0.4%	0.4%
- Congenital cardiac surgery	8	0	0.0%	0.0%
Thoracic surgery - integrated	189	2	1.1%	0.9%
Urology	1,331	3	0.2%	1.3%
- Female pelvic medicine and reconstructive surgery	37	0	0.0%	0.0%
- Pediatric urology	20	0	0.0%	0.0%
Transitional year	1,532	2	0.1%	0.9%
Internal medicine/Pediatrics	1,501	2	0.1%	0.9%

Note: Pipeline specialties are highlighted.

FIGURE C.8

Geographic Distribution of Active Residents



Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019; SAS Enterprise Guide Software, Version 7.15.

TABLE C.9

Number of Active Residents and Active Resident Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Residents	Percent of All Residents	Residents per 100,000 Pop
OVERALL	-	330,362,587	140,391	100.0%	42.50
Alabama	AL	4,887,871	1,505	1.1%	30.79
Alaska	AK	737,438	37	0.0%	5.02
Arizona	AZ	7,171,646	1,903	1.4%	26.54
Arkansas	AR	3,013,825	895	0.6%	29.70
California	CA	39,557,045	12,607	9.0%	31.87
Colorado	CO	5,695,564	1,634	1.2%	28.69
Connecticut	CT	3,572,665	2,443	1.7%	68.38
Delaware	DE	967,171	361	0.3%	37.33
District of Columbia	DC	702,455	1,717	1.2%	244.43
Florida	FL	21,299,325	6,514	4.6%	30.58
Georgia	GA	10,519,475	2,750	2.0%	26.14
Hawaii	HI	1,420,491	462	0.3%	32.52
Idaho	ID	1,754,208	139	0.1%	7.92
Illinois	IL	12,741,080	6,654	4.7%	52.22
Indiana	IN	6,691,878	1,483	1.1%	22.16
Iowa	IA	3,156,145	991	0.7%	31.40
Kansas	KS	2,911,505	846	0.6%	29.06
Kentucky	KY	4,468,402	1,443	1.0%	32.29
Louisiana	LA	4,659,978	2,162	1.5%	46.40
Maine	ME	1,338,404	343	0.2%	25.63
Maryland	MD	6,042,718	3,350	2.4%	55.44
Massachusetts	MA	6,902,149	5,691	4.1%	82.45
Michigan	MI	9,995,915	7,109	5.1%	71.12
Minnesota	MN	5,611,179	2,371	1.7%	42.25
Mississippi	MS	2,986,530	797	0.6%	26.69
Missouri	MO	6,126,452	3,098	2.2%	50.57
Montana	MT	1,062,305	85	0.1%	8.00
Nebraska	NE	1,929,268	818	0.6%	42.40
Nevada	NV	3,034,392	700	0.5%	23.07
New Hampshire	NH	1,356,458	431	0.3%	31.77
New Jersey	NJ	8,908,520	3,643	2.6%	40.89
New Mexico	NM	2,095,428	641	0.5%	30.59
New York	NY	19,542,209	18,017	12.8%	92.20
North Carolina	NC	10,383,620	3,758	2.7%	36.19
North Dakota	ND	760,077	166	0.1%	21.84
Ohio	OH	11,689,442	7,108	5.1%	60.81
Oklahoma	OK	3,943,079	1,195	0.9%	30.31
Oregon	OR	4,190,713	1,033	0.7%	24.65
Pennsylvania	PA	12,807,060	9,094	6.5%	71.01
Puerto Rico	PR	3,195,153	955	0.7%	29.89
Rhode Island	RI	1,057,315	862	0.6%	81.53
South Carolina	SC	5,084,127	1,519	1.1%	29.88
South Dakota	SD	882,235	153	0.1%	17.34
Tennessee	TN	6,770,010	2,600	1.9%	38.40
Texas	TX	28,701,845	9,189	6.5%	32.02
Utah	UT	3,161,105	833	0.6%	26.35
Vermont	VT	626,299	314	0.2%	50.14
Virginia	VA	8,517,685	2,814	2.0%	33.04
Washington	WA	7,535,591	2,151	1.5%	28.54
West Virginia	WV	1,805,832	952	0.7%	52.72
Wisconsin	WI	5,813,568	2,014	1.4%	34.64
Wyoming	WY	577,737	41	0.0%	7.10

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE C.10

Number of Active Specialty Residents and Active Specialty Resident Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Specialty Residents	Percent of All Specialty Residents	Specialty Residents per 100,000 Pop
OVERALL	-	330,362,587	115,992	100.0%	35.11
Alabama	AL	4,887,871	1,248	1.1%	25.53
Alaska	AK	737,438	35	0.0%	4.75
Arizona	AZ	7,171,646	1,620	1.4%	22.59
Arkansas	AR	3,013,825	774	0.7%	25.68
California	CA	39,557,045	10,300	8.9%	26.04
Colorado	CO	5,695,564	1,319	1.1%	23.16
Connecticut	CT	3,572,665	2,006	1.7%	56.15
Delaware	DE	967,171	308	0.3%	31.85
District of Columbia	DC	702,455	1,362	1.2%	193.89
Florida	FL	21,299,325	5,513	4.8%	25.88
Georgia	GA	10,519,475	2,307	2.0%	21.93
Hawaii	HI	1,420,491	429	0.4%	30.20
Idaho	ID	1,754,208	137	0.1%	7.81
Illinois	IL	12,741,080	5,632	4.9%	44.20
Indiana	IN	6,691,878	1,263	1.1%	18.87
Iowa	IA	3,156,145	826	0.7%	26.17
Kansas	KS	2,911,505	747	0.6%	25.66
Kentucky	KY	4,468,402	1,198	1.0%	26.81
Louisiana	LA	4,659,978	1,857	1.6%	39.85
Maine	ME	1,338,404	311	0.3%	23.24
Maryland	MD	6,042,718	2,569	2.2%	42.51
Massachusetts	MA	6,902,149	4,324	3.7%	62.65
Michigan	MI	9,995,915	6,178	5.3%	61.81
Minnesota	MN	5,611,179	1,820	1.6%	32.44
Mississippi	MS	2,986,530	679	0.6%	22.74
Missouri	MO	6,126,452	2,458	2.1%	40.12
Montana	MT	1,062,305	84	0.1%	7.91
Nebraska	NE	1,929,268	684	0.6%	35.45
Nevada	NV	3,034,392	646	0.6%	21.29
New Hampshire	NH	1,356,458	348	0.3%	25.66
New Jersey	NJ	8,908,520	3,216	2.8%	36.10
New Mexico	NM	2,095,428	525	0.5%	25.05
New York	NY	19,542,209	14,841	12.8%	75.94
North Carolina	NC	10,383,620	3,004	2.6%	28.93
North Dakota	ND	760,077	162	0.1%	21.31
Ohio	OH	11,689,442	5,819	5.0%	49.78
Oklahoma	OK	3,943,079	1,061	0.9%	26.91
Oregon	OR	4,190,713	848	0.7%	20.24
Pennsylvania	PA	12,807,060	7,366	6.4%	57.52
Puerto Rico	PR	3,195,153	829	0.7%	25.95
Rhode Island	RI	1,057,315	691	0.6%	65.35
South Carolina	SC	5,084,127	1,309	1.1%	25.75
South Dakota	SD	882,235	143	0.1%	16.21
Tennessee	TN	6,770,010	2,088	1.8%	30.84
Texas	TX	28,701,845	7,437	6.4%	25.91
Utah	UT	3,161,105	643	0.6%	20.34
Vermont	VT	626,299	254	0.2%	40.56
Virginia	VA	8,517,685	2,417	2.1%	28.38
Washington	WA	7,535,591	1,795	1.5%	23.82
West Virginia	WV	1,805,832	863	0.7%	47.79
Wisconsin	WI	5,813,568	1,658	1.4%	28.52
Wyoming	WY	577,737	41	0.0%	7.10

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE C.11

Number of Active Subspecialty Residents and Active Subspecialty Resident Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Subspecialty Residents	Percent of All Subspecialty Residents	Subspecialty Residents per 100,000 Pop
OVERALL	-	330,362,587	24,399	100.0%	7.39
Alabama	AL	4,887,871	257	1.1%	5.26
Alaska	AK	737,438	2	0.0%	0.27
Arizona	AZ	7,171,646	283	1.2%	3.95
Arkansas	AR	3,013,825	121	0.5%	4.01
California	CA	39,557,045	2,307	9.5%	5.83
Colorado	CO	5,695,564	315	1.3%	5.53
Connecticut	CT	3,572,665	437	1.8%	12.23
Delaware	DE	967,171	53	0.2%	5.48
District of Columbia	DC	702,455	355	1.5%	50.54
Florida	FL	21,299,325	1,001	4.1%	4.70
Georgia	GA	10,519,475	443	1.8%	4.21
Hawaii	HI	1,420,491	33	0.1%	2.32
Idaho	ID	1,754,208	2	0.0%	0.11
Illinois	IL	12,741,080	1,022	4.2%	8.02
Indiana	IN	6,691,878	220	0.9%	3.29
Iowa	IA	3,156,145	165	0.7%	5.23
Kansas	KS	2,911,505	99	0.4%	3.40
Kentucky	KY	4,468,402	245	1.0%	5.48
Louisiana	LA	4,659,978	305	1.3%	6.55
Maine	ME	1,338,404	32	0.1%	2.39
Maryland	MD	6,042,718	781	3.2%	12.92
Massachusetts	MA	6,902,149	1,367	5.6%	19.81
Michigan	MI	9,995,915	931	3.8%	9.31
Minnesota	MN	5,611,179	551	2.3%	9.82
Mississippi	MS	2,986,530	118	0.5%	3.95
Missouri	MO	6,126,452	640	2.6%	10.45
Montana	MT	1,062,305	1	0.0%	0.09
Nebraska	NE	1,929,268	134	0.5%	6.95
Nevada	NV	3,034,392	54	0.2%	1.78
New Hampshire	NH	1,356,458	83	0.3%	6.12
New Jersey	NJ	8,908,520	427	1.8%	4.79
New Mexico	NM	2,095,428	116	0.5%	5.54
New York	NY	19,542,209	3,176	13.0%	16.25
North Carolina	NC	10,383,620	754	3.1%	7.26
North Dakota	ND	760,077	4	0.0%	0.53
Ohio	OH	11,689,442	1,289	5.3%	11.03
Oklahoma	OK	3,943,079	134	0.5%	3.40
Oregon	OR	4,190,713	185	0.8%	4.41
Pennsylvania	PA	12,807,060	1,728	7.1%	13.49
Puerto Rico	PR	3,195,153	126	0.5%	3.94
Rhode Island	RI	1,057,315	171	0.7%	16.17
South Carolina	SC	5,084,127	210	0.9%	4.13
South Dakota	SD	882,235	10	0.0%	1.13
Tennessee	TN	6,770,010	512	2.1%	7.56
Texas	TX	28,701,845	1,752	7.2%	6.10
Utah	UT	3,161,105	190	0.8%	6.01
Vermont	VT	626,299	60	0.2%	9.58
Virginia	VA	8,517,685	397	1.6%	4.66
Washington	WA	7,535,591	356	1.5%	4.72
West Virginia	WV	1,805,832	89	0.4%	4.93
Wisconsin	WI	5,813,568	356	1.5%	6.12
Wyoming	WY	577,737	0	0.0%	0.00

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE C.12

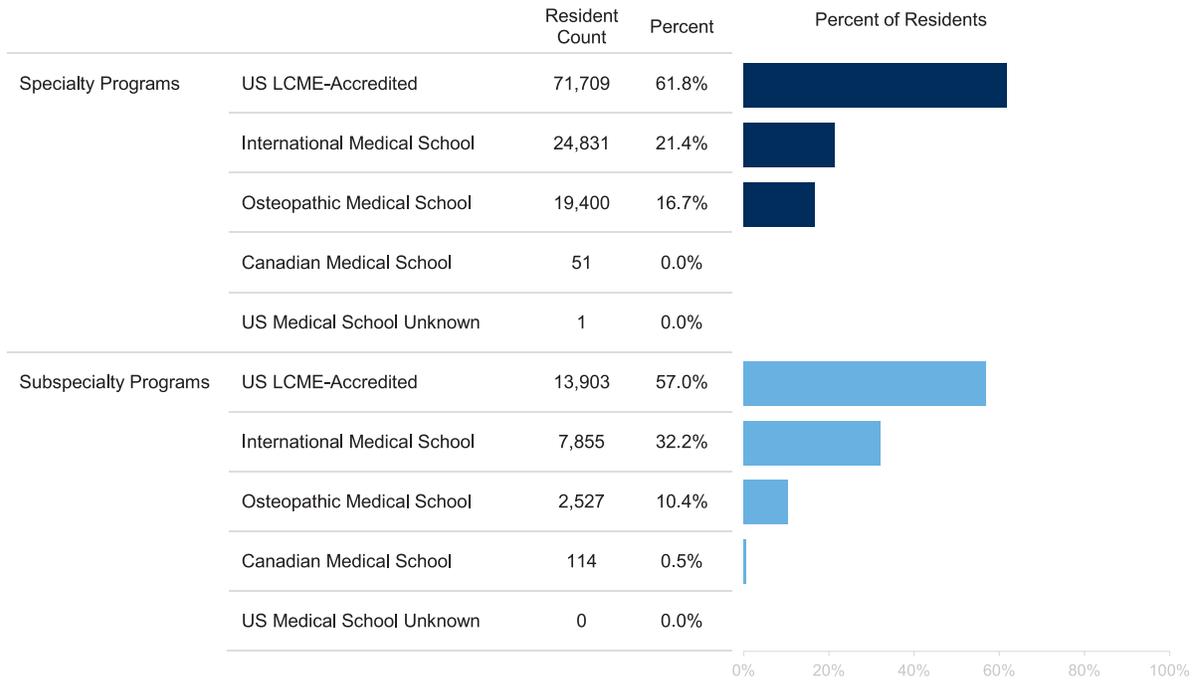
Number of Active Pipeline Residents and Active Pipeline Resident Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Pipeline Residents	Percent of All Pipeline Residents	Pipeline Residents per 100,000 Pop
OVERALL	-	330,362,587	113,823	100.0%	34.45
Alabama	AL	4,887,871	1,224	1.1%	25.04
Alaska	AK	737,438	35	0.0%	4.75
Arizona	AZ	7,171,646	1,593	1.4%	22.21
Arkansas	AR	3,013,825	769	0.7%	25.52
California	CA	39,557,045	10,138	8.9%	25.63
Colorado	CO	5,695,564	1,280	1.1%	22.47
Connecticut	CT	3,572,665	1,991	1.7%	55.73
Delaware	DE	967,171	301	0.3%	31.12
District of Columbia	DC	702,455	1,361	1.2%	193.75
Florida	FL	21,299,325	5,329	4.7%	25.02
Georgia	GA	10,519,475	2,211	1.9%	21.02
Hawaii	HI	1,420,491	413	0.4%	29.07
Idaho	ID	1,754,208	137	0.1%	7.81
Illinois	IL	12,741,080	5,537	4.9%	43.46
Indiana	IN	6,691,878	1,215	1.1%	18.16
Iowa	IA	3,156,145	813	0.7%	25.76
Kansas	KS	2,911,505	742	0.7%	25.49
Kentucky	KY	4,468,402	1,193	1.0%	26.70
Louisiana	LA	4,659,978	1,840	1.6%	39.49
Maine	ME	1,338,404	311	0.3%	23.24
Maryland	MD	6,042,718	2,508	2.2%	41.50
Massachusetts	MA	6,902,149	4,238	3.7%	61.40
Michigan	MI	9,995,915	5,981	5.3%	59.83
Minnesota	MN	5,611,179	1,779	1.6%	31.70
Mississippi	MS	2,986,530	662	0.6%	22.17
Missouri	MO	6,126,452	2,427	2.1%	39.62
Montana	MT	1,062,305	84	0.1%	7.91
Nebraska	NE	1,929,268	681	0.6%	35.30
Nevada	NV	3,034,392	620	0.5%	20.43
New Hampshire	NH	1,356,458	348	0.3%	25.66
New Jersey	NJ	8,908,520	3,174	2.8%	35.63
New Mexico	NM	2,095,428	519	0.5%	24.77
New York	NY	19,542,209	14,650	12.9%	74.97
North Carolina	NC	10,383,620	2,945	2.6%	28.36
North Dakota	ND	760,077	154	0.1%	20.26
Ohio	OH	11,689,442	5,710	5.0%	48.85
Oklahoma	OK	3,943,079	1,055	0.9%	26.76
Oregon	OR	4,190,713	844	0.7%	20.14
Pennsylvania	PA	12,807,060	7,245	6.4%	56.57
Puerto Rico	PR	3,195,153	789	0.7%	24.69
Rhode Island	RI	1,057,315	689	0.6%	65.17
South Carolina	SC	5,084,127	1,284	1.1%	25.26
South Dakota	SD	882,235	137	0.1%	15.53
Tennessee	TN	6,770,010	2,058	1.8%	30.40
Texas	TX	28,701,845	7,330	6.4%	25.54
Utah	UT	3,161,105	627	0.6%	19.83
Vermont	VT	626,299	254	0.2%	40.56
Virginia	VA	8,517,685	2,365	2.1%	27.77
Washington	WA	7,535,591	1,739	1.5%	23.08
West Virginia	WV	1,805,832	845	0.7%	46.79
Wisconsin	WI	5,813,568	1,608	1.4%	27.66
Wyoming	WY	577,737	41	0.0%	7.10

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

FIGURE C.13

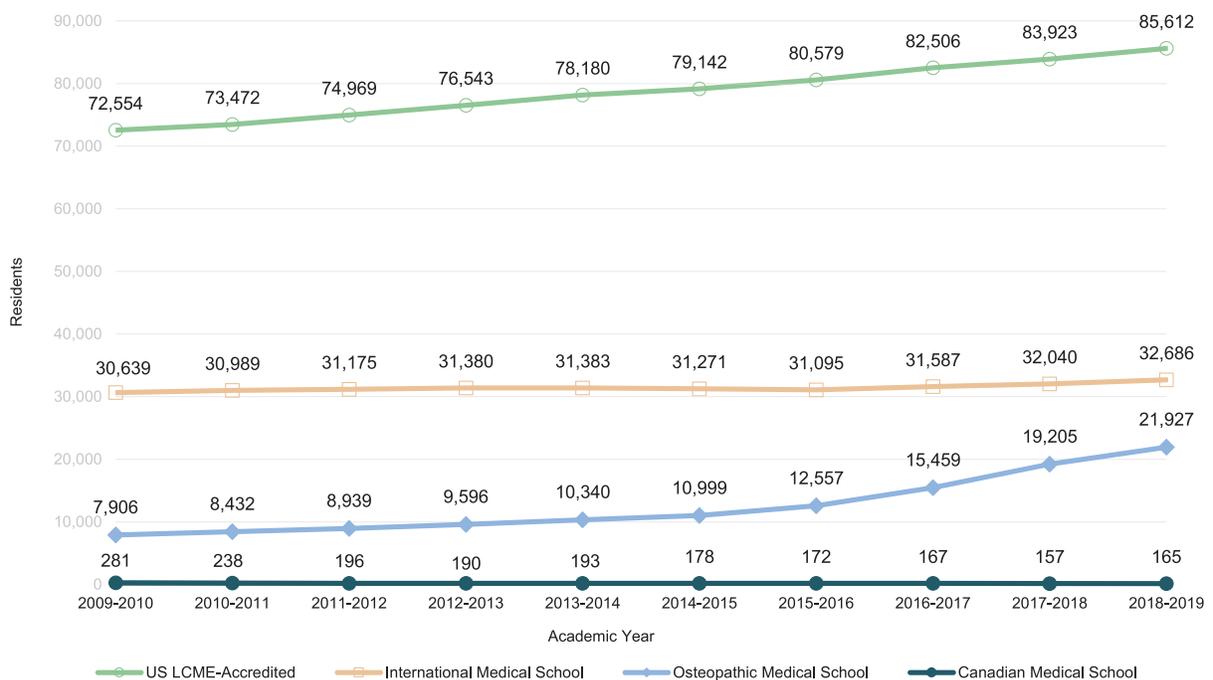
Number of Active Residents by Medical School Type



Notes: Total number of active residents in specialty programs = 115,992. Total number of active residents in subspecialty programs = 24,399.

FIGURE C.14

Number of Active Residents by Medical School Type and Academic Year, 2009-2010 to 2018-2019



Note: Not shown are those graduates for which the specific U.S. medical school is unknown. This number has been fewer than 10 per year for the past five years. Abbreviations: LCME, Liaison Committee on Medical Education.

TABLE C.15

Number of Active Residents by Specialty and Subspecialty and Medical School Type

Specialty	Total Residents	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
OVERALL	140,391	85,612	61.0%	32,686	23.3%	21,927	15.6%	165	0.1%	1	0.0%
TOTAL PIPELINE	113,823	70,258	61.7%	24,544	21.6%	18,976	16.7%	44	0.0%	1	0.0%
Allergy and immunology	304	218	71.7%	54	17.8%	31	10.2%	1	0.3%	0	0.0%
Anesthesiology	6,507	4,656	71.6%	854	13.1%	995	15.3%	2	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	215	159	74.0%	33	15.3%	21	9.8%	2	0.9%	0	0.0%
- Clinical informatics	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	182	124	68.1%	44	24.2%	14	7.7%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	58	41	70.7%	11	19.0%	6	10.3%	0	0.0%	0	0.0%
- Obstetric anesthesiology	44	32	72.7%	8	18.2%	4	9.1%	0	0.0%	0	0.0%
- Pain medicine (multidisciplinary)	372	259	69.6%	58	15.6%	54	14.5%	1	0.3%	0	0.0%
- Pediatric anesthesiology	199	150	75.4%	31	15.6%	15	7.5%	3	1.5%	0	0.0%
Colon and rectal surgery	101	76	75.2%	17	16.8%	5	5.0%	3	3.0%	0	0.0%
Dermatology	1,563	1,324	84.7%	53	3.4%	186	11.9%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	67	45	67.2%	13	19.4%	8	11.9%	1	1.5%	0	0.0%
- Micrographic surgery and dermatologic oncology	82	74	90.2%	2	2.4%	6	7.3%	0	0.0%	0	0.0%
Emergency medicine	7,940	5,484	69.1%	380	4.8%	2,074	26.1%	2	0.0%	0	0.0%
- Clinical informatics	5	4	80.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
- Emergency medical services	62	44	71.0%	6	9.7%	12	19.4%	0	0.0%	0	0.0%
- Medical toxicology	72	55	76.4%	8	11.1%	7	9.7%	2	2.8%	0	0.0%
- Pediatric emergency medicine	129	74	57.4%	40	31.0%	15	11.6%	0	0.0%	0	0.0%
- Sports medicine	16	6	37.5%	1	6.3%	9	56.3%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	9	6	66.7%	1	11.1%	2	22.2%	0	0.0%	0	0.0%
Family medicine	13,116	5,477	41.8%	3,409	26.0%	4,227	32.2%	3	0.0%	0	0.0%
- Clinical informatics	12	5	41.7%	6	50.0%	1	8.3%	0	0.0%	0	0.0%
- Geriatric medicine	46	18	39.1%	21	45.7%	7	15.2%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	355	220	62.0%	80	22.5%	55	15.5%	0	0.0%	0	0.0%
- Sports medicine	239	119	49.8%	29	12.1%	91	38.1%	0	0.0%	0	0.0%
Internal medicine	28,420	12,860	45.2%	11,051	38.9%	4,499	15.8%	10	0.0%	0	0.0%
- Adult congenital heart disease	25	20	80.0%	4	16.0%	0	0.0%	1	4.0%	0	0.0%
- Advanced heart failure and transplant cardiology	105	64	61.0%	33	31.4%	5	4.8%	3	2.9%	0	0.0%
- Cardiovascular disease	3,017	1,556	51.6%	1,127	37.4%	332	11.0%	2	0.1%	0	0.0%
- Clinical cardiac electrophysiology	259	131	50.6%	102	39.4%	23	8.9%	3	1.2%	0	0.0%
- Clinical informatics	36	21	58.3%	12	33.3%	2	5.6%	1	2.8%	0	0.0%
- Critical care medicine	253	67	26.5%	130	51.4%	54	21.3%	2	0.8%	0	0.0%
- Endocrinology, diabetes, and metabolism	660	259	39.2%	350	53.0%	51	7.7%	0	0.0%	0	0.0%
- Gastroenterology	1,741	1,013	58.2%	527	30.3%	199	11.4%	2	0.1%	0	0.0%
- Geriatric medicine	258	83	32.2%	150	58.1%	24	9.3%	1	0.4%	0	0.0%
- Hematology	18	15	83.3%	3	16.7%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	1,776	989	55.7%	680	38.3%	105	5.9%	2	0.1%	0	0.0%
- Infectious disease	760	359	47.2%	312	41.1%	88	11.6%	1	0.1%	0	0.0%
- Interventional cardiology	339	152	44.8%	156	46.0%	30	8.8%	1	0.3%	0	0.0%
- Nephrology	805	190	23.6%	530	65.8%	84	10.4%	1	0.1%	0	0.0%
- Medical oncology	39	16	41.0%	21	53.8%	2	5.1%	0	0.0%	0	0.0%
- Pulmonary disease	70	6	8.6%	58	82.9%	6	8.6%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	1,898	932	49.1%	738	38.9%	227	12.0%	1	0.1%	0	0.0%
- Rheumatology	503	257	51.1%	169	33.6%	75	14.9%	2	0.4%	0	0.0%
- Sleep medicine (multidisciplinary)	177	79	44.6%	76	42.9%	21	11.9%	1	0.6%	0	0.0%
- Transplant hepatology	47	33	70.2%	10	21.3%	2	4.3%	2	4.3%	0	0.0%
Medical genetics and genomics	69	43	62.3%	19	27.5%	7	10.1%	0	0.0%	0	0.0%
- Medical biochemical genetics	14	6	42.9%	7	50.0%	0	0.0%	1	7.1%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	61	31	50.8%	26	42.6%	3	4.9%	1	1.6%	0	0.0%
Neurological surgery	1,462	1,285	87.9%	110	7.5%	65	4.4%	2	0.1%	0	0.0%
- Endovascular surgical neuroradiology	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

TABLE C.15 Continued

Number of Active Residents by Specialty and Subspecialty and Medical School Type

Specialty	Total Residents	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
Neurology	2,893	1,579	54.6%	926	32.0%	386	13.3%	2	0.1%	0	0.0%
- Brain injury medicine	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	163	81	49.7%	62	38.0%	20	12.3%	0	0.0%	0	0.0%
- Epilepsy	112	64	57.1%	43	38.4%	4	3.6%	1	0.9%	0	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	25	19	76.0%	5	20.0%	1	4.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	67	38	56.7%	21	31.3%	7	10.4%	1	1.5%	0	0.0%
- Vascular neurology	129	59	45.7%	59	45.7%	10	7.8%	1	0.8%	0	0.0%
Child neurology	383	277	72.3%	79	20.6%	27	7.0%	0	0.0%	0	0.0%
Nuclear medicine	75	17	22.7%	53	70.7%	4	5.3%	1	1.3%	0	0.0%
Obstetrics and gynecology	5,571	4,229	75.9%	487	8.7%	853	15.3%	1	0.0%	1	0.0%
- Female pelvic medicine and reconstructive surgery	145	126	86.9%	10	6.9%	9	6.2%	0	0.0%	0	0.0%
- Gynecologic oncology	197	162	82.2%	15	7.6%	18	9.1%	2	1.0%	0	0.0%
- Maternal-fetal medicine	350	273	78.0%	51	14.6%	26	7.4%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	163	133	81.6%	21	12.9%	8	4.9%	1	0.6%	0	0.0%
Ophthalmology	1,473	1,351	91.7%	59	4.0%	62	4.2%	1	0.1%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	5	3	60.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	4,125	3,659	88.7%	67	1.6%	399	9.7%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	47	44	93.6%	3	6.4%	0	0.0%	0	0.0%	0	0.0%
- Foot and ankle orthopaedics	15	12	80.0%	2	13.3%	1	6.7%	0	0.0%	0	0.0%
- Hand surgery	154	144	93.5%	3	1.9%	6	3.9%	1	0.6%	0	0.0%
- Musculoskeletal oncology	14	11	78.6%	3	21.4%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	205	158	77.1%	16	7.8%	27	13.2%	4	2.0%	0	0.0%
- Orthopaedic surgery of the spine	28	16	57.1%	8	28.6%	3	10.7%	1	3.6%	0	0.0%
- Orthopaedic trauma	19	16	84.2%	0	0.0%	1	5.3%	2	10.5%	0	0.0%
- Pediatric orthopaedics	37	30	81.1%	4	10.8%	3	8.1%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	34	1	2.9%	0	0.0%	33	97.1%	0	0.0%	0	0.0%
Otolaryngology - head and neck surgery	1,651	1,522	92.2%	32	1.9%	97	5.9%	0	0.0%	0	0.0%
- Neurotology	32	28	87.5%	2	6.3%	0	0.0%	2	6.3%	0	0.0%
- Pediatric otolaryngology	35	25	71.4%	4	11.4%	1	2.9%	5	14.3%	0	0.0%
Pathology-anatomic and clinical	2,329	1,066	45.8%	1,053	45.2%	207	8.9%	3	0.1%	0	0.0%
- Blood banking/transfusion medicine	57	35	61.4%	17	29.8%	5	8.8%	0	0.0%	0	0.0%
- Clinical informatics	9	5	55.6%	3	33.3%	1	11.1%	0	0.0%	0	0.0%
- Chemical pathology	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	134	61	45.5%	66	49.3%	7	5.2%	0	0.0%	0	0.0%
- Forensic pathology	44	23	52.3%	11	25.0%	9	20.5%	1	2.3%	0	0.0%
- Hematopathology	131	61	46.6%	50	38.2%	16	12.2%	4	3.1%	0	0.0%
- Medical microbiology	12	9	75.0%	2	16.7%	1	8.3%	0	0.0%	0	0.0%
- Neuropathology	50	29	58.0%	16	32.0%	4	8.0%	1	2.0%	0	0.0%
- Pediatric pathology	23	12	52.2%	7	30.4%	3	13.0%	1	4.3%	0	0.0%
- Selective pathology	166	55	33.1%	91	54.8%	15	9.0%	5	3.0%	0	0.0%
Pediatrics	9,221	6,050	65.6%	1,819	19.7%	1,348	14.6%	4	0.0%	0	0.0%
- Adolescent medicine	87	69	79.3%	10	11.5%	8	9.2%	0	0.0%	0	0.0%
- Child abuse pediatrics	38	25	65.8%	5	13.2%	8	21.1%	0	0.0%	0	0.0%
- Clinical informatics	12	10	83.3%	1	8.3%	0	0.0%	1	8.3%	0	0.0%
- Developmental-behavioral pediatrics	102	63	61.8%	25	24.5%	14	13.7%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	761	442	58.1%	224	29.4%	94	12.4%	1	0.1%	0	0.0%
- Pediatric cardiology	444	327	73.6%	86	19.4%	27	6.1%	4	0.9%	0	0.0%
- Pediatric critical care medicine	534	355	66.5%	133	24.9%	45	8.4%	1	0.2%	0	0.0%
- Pediatric emergency medicine	408	294	72.1%	71	17.4%	43	10.5%	0	0.0%	0	0.0%
- Pediatric endocrinology	241	131	54.4%	97	40.2%	13	5.4%	0	0.0%	0	0.0%
- Pediatric gastroenterology	311	197	63.3%	85	27.3%	29	9.3%	0	0.0%	0	0.0%
- Pediatric hematology/oncology	484	352	72.7%	90	18.6%	41	8.5%	1	0.2%	0	0.0%

TABLE C.15 Continued

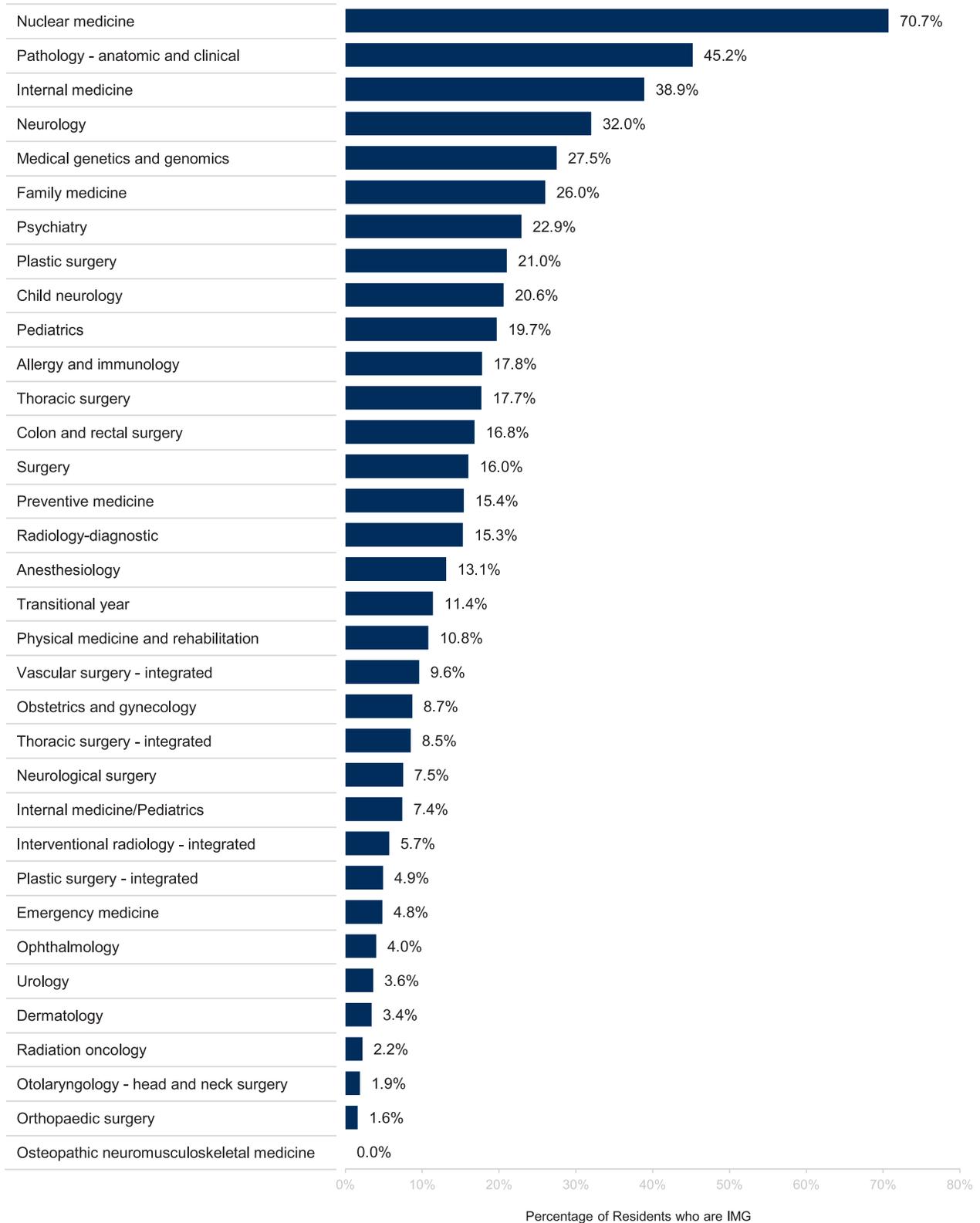
Number of Active Residents by Specialty and Subspecialty and Medical School Type

Specialty	Total Residents	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
- Pediatric infectious diseases	177	110	62.1%	55	31.1%	12	6.8%	0	0.0%	0	0.0%
- Pediatric nephrology	116	72	62.1%	36	31.0%	8	6.9%	0	0.0%	0	0.0%
- Pediatric pulmonology	162	85	52.5%	63	38.9%	14	8.6%	0	0.0%	0	0.0%
- Pediatric rheumatology	91	61	67.0%	20	22.0%	10	11.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	26	16	61.5%	1	3.8%	8	30.8%	1	3.8%	0	0.0%
- Pediatric transplant hepatology	9	5	55.6%	2	22.2%	1	11.1%	1	11.1%	0	0.0%
Physical medicine and rehabilitation	1,395	790	56.6%	150	10.8%	455	32.6%	0	0.0%	0	0.0%
- Brain injury medicine	17	6	35.3%	3	17.6%	8	47.1%	0	0.0%	0	0.0%
- Neuromuscular medicine	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Spinal cord injury medicine	20	12	60.0%	5	25.0%	3	15.0%	0	0.0%	0	0.0%
- Pediatric rehabilitation	38	23	60.5%	3	7.9%	12	31.6%	0	0.0%	0	0.0%
- Sports medicine	30	19	63.3%	2	6.7%	9	30.0%	0	0.0%	0	0.0%
Plastic surgery	243	167	68.7%	51	21.0%	25	10.3%	0	0.0%	0	0.0%
Plastic surgery - integrated	901	852	94.6%	44	4.9%	5	0.6%	0	0.0%	0	0.0%
- Craniofacial surgery	8	7	87.5%	1	12.5%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	22	19	86.4%	0	0.0%	1	4.5%	2	9.1%	0	0.0%
Preventive medicine	357	229	64.1%	55	15.4%	69	19.3%	4	1.1%	0	0.0%
- Medical toxicology	4	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Psychiatry	6,247	3,760	60.2%	1,429	22.9%	1,057	16.9%	1	0.0%	0	0.0%
- Addiction medicine (multidisciplinary)	39	26	66.7%	8	20.5%	5	12.8%	0	0.0%	0	0.0%
- Addiction psychiatry	83	43	51.8%	33	39.8%	6	7.2%	1	1.2%	0	0.0%
- Child and adolescent psychiatry	869	456	52.5%	277	31.9%	134	15.4%	2	0.2%	0	0.0%
- Forensic psychiatry	66	40	60.6%	16	24.2%	9	13.6%	1	1.5%	0	0.0%
- Geriatric psychiatry	52	26	50.0%	23	44.2%	3	5.8%	0	0.0%	0	0.0%
- Consultation-liaison psychiatry	71	38	53.5%	24	33.8%	7	9.9%	2	2.8%	0	0.0%
Radiation oncology	774	741	95.7%	17	2.2%	16	2.1%	0	0.0%	0	0.0%
Radiology-diagnostic	4,671	3,391	72.6%	716	15.3%	562	12.0%	2	0.0%	0	0.0%
- Abdominal radiology	41	16	39.0%	17	41.5%	3	7.3%	5	12.2%	0	0.0%
- Endovascular surgical neuroradiology	5	3	60.0%	1	20.0%	0	0.0%	1	20.0%	0	0.0%
- Musculoskeletal radiology	32	27	84.4%	2	6.3%	1	3.1%	2	6.3%	0	0.0%
- Neuroradiology	259	189	73.0%	52	20.1%	16	6.2%	2	0.8%	0	0.0%
- Nuclear radiology	11	6	54.5%	5	45.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	55	42	76.4%	9	16.4%	3	5.5%	1	1.8%	0	0.0%
- Vascular and interventional radiology	274	216	78.8%	38	13.9%	20	7.3%	0	0.0%	0	0.0%
Interventional radiology - integrated	246	213	86.6%	14	5.7%	19	7.7%	0	0.0%	0	0.0%
Surgery	8,844	6,354	71.8%	1,414	16.0%	1,071	12.1%	5	0.1%	0	0.0%
- Complex general surgical oncology	111	92	82.9%	15	13.5%	0	0.0%	4	3.6%	0	0.0%
- Hand surgery	8	5	62.5%	3	37.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric surgery	83	76	91.6%	5	6.0%	0	0.0%	2	2.4%	0	0.0%
- Surgical critical care	284	210	73.9%	42	14.8%	26	9.2%	6	2.1%	0	0.0%
- Vascular surgery	248	178	71.8%	52	21.0%	16	6.5%	2	0.8%	0	0.0%
Vascular surgery - integrated	292	252	86.3%	28	9.6%	12	4.1%	0	0.0%	0	0.0%
Thoracic surgery	232	177	76.3%	41	17.7%	11	4.7%	3	1.3%	0	0.0%
- Congenital cardiac surgery	8	7	87.5%	0	0.0%	1	12.5%	0	0.0%	0	0.0%
Thoracic surgery - integrated	189	167	88.4%	16	8.5%	6	3.2%	0	0.0%	0	0.0%
Urology	1,331	1,204	90.5%	48	3.6%	79	5.9%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	37	35	94.6%	1	2.7%	1	2.7%	0	0.0%	0	0.0%
- Pediatric urology	20	19	95.0%	0	0.0%	0	0.0%	1	5.0%	0	0.0%
Transitional year	1,532	980	64.0%	175	11.4%	377	24.6%	0	0.0%	0	0.0%
Internal medicine/Pediatrics	1,501	1,258	83.8%	111	7.4%	131	8.7%	1	0.1%	0	0.0%

Note: Pipeline specialties are highlighted.
Abbreviations: LCME, Liaison Committee on Medical Education.

FIGURE C.16

Specialties Organized by Largest Percentages of Active Residents who are International Medical Graduates



Abbreviations: IMG, international medical school graduates.

TABLE C.17

Number of Active Residents by Medical School Type and State

State Name	State Abbreviation	Total Residents	Medical School Type				
			US LCME-Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
OVERALL	-	140,391	85,612	32,686	21,927	165	1
Alabama	AL	1,505	1,035	327	143	0	0
Alaska	AK	37	25	1	11	0	0
Arizona	AZ	1,903	1,166	350	386	1	0
Arkansas	AR	895	494	271	130	0	0
California	CA	12,607	9,857	1,343	1,375	32	0
Colorado	CO	1,634	1,290	56	288	0	0
Connecticut	CT	2,443	1,315	884	238	6	0
Delaware	DE	361	192	61	108	0	0
District of Columbia	DC	1,717	1,106	513	98	0	0
Florida	FL	6,514	3,170	1,985	1,358	1	0
Georgia	GA	2,750	1,735	704	309	2	0
Hawaii	HI	462	291	86	83	2	0
Idaho	ID	139	77	16	46	0	0
Illinois	IL	6,654	4,003	1,643	1,001	7	0
Indiana	IN	1,483	1,003	227	252	1	0
Iowa	IA	991	590	198	203	0	0
Kansas	KS	846	532	167	147	0	0
Kentucky	KY	1,443	896	266	281	0	0
Louisiana	LA	2,162	1,374	635	151	2	0
Maine	ME	343	200	45	98	0	0
Maryland	MD	3,350	2,391	710	246	3	0
Massachusetts	MA	5,691	4,175	1,208	279	29	0
Michigan	MI	7,109	2,989	1,917	2,203	0	0
Minnesota	MN	2,371	1,751	423	189	8	0
Mississippi	MS	797	444	148	205	0	0
Missouri	MO	3,098	2,035	596	465	2	0
Montana	MT	85	42	20	23	0	0
Nebraska	NE	818	446	237	134	1	0
Nevada	NV	700	289	180	231	0	0
New Hampshire	NH	431	312	80	39	0	0
New Jersey	NJ	3,643	1,048	1,635	960	0	0
New Mexico	NM	641	399	139	102	1	0
New York	NY	18,017	9,064	6,911	2,026	15	1
North Carolina	NC	3,758	2,815	402	537	4	0
North Dakota	ND	166	77	79	10	0	0
Ohio	OH	7,108	3,811	1,632	1,654	11	0
Oklahoma	OK	1,195	479	208	508	0	0
Oregon	OR	1,033	800	68	164	1	0
Pennsylvania	PA	9,094	5,118	2,028	1,931	17	0
Puerto Rico	PR	955	610	345	0	0	0
Rhode Island	RI	862	627	154	79	2	0
South Carolina	SC	1,519	1,123	152	242	2	0
South Dakota	SD	153	82	41	30	0	0
Tennessee	TN	2,600	1,887	460	250	3	0
Texas	TX	9,189	6,121	1,835	1,231	2	0
Utah	UT	833	725	52	56	0	0
Vermont	VT	314	243	44	26	1	0
Virginia	VA	2,814	1,807	458	546	3	0
Washington	WA	2,151	1,730	111	306	4	0
West Virginia	WV	952	423	278	251	0	0
Wisconsin	WI	2,014	1,394	343	275	2	0
Wyoming	WY	41	4	14	23	0	0

Abbreviations: LCME, Liaison Committee on Medical Education.

TABLE C.18

Mean Age of Year 1 Residents by Specialty and Subspecialty and Medical School Type

Specialty	OVERALL Age (Avg)	Medical School Type				
		US LCME - Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
OVERALL	30.7	30.1	32.3	30.5	33.5	
TOTAL PIPELINE	29.7	29.2	31.1	29.8	33.3	
Allergy and immunology	32.5	32.2	33.3	33.9	30.0	
Anesthesiology	29.7	29.3	32.1	29.7		
- Adult cardiothoracic anesthesiology	33.0	32.2	35.7	34.0	34.5	
- Clinical informatics						
- Critical care medicine	33.6	33.1	34.8	33.6		
- Regional anesthesiology and acute pain medicine	33.0	33.0	33.5	32.3		
- Obstetric anesthesiology	33.2	32.6	36.3	32.0		
- Pain medicine (multidisciplinary)	33.8	33.4	35.3	34.1	33.0	
- Pediatric anesthesiology	33.1	32.7	34.5	33.7	31.3	
Colon and rectal surgery	34.7	34.5	35.7	34.6	34.0	
Dermatology	30.4	30.2	33.3	31.4		
- Dermatopathology (multidisciplinary)	34.9	33.0	41.4	34.8	37.0	
- Micrographic surgery and dermatologic oncology	33.5	33.3	36.5	35.0		
Emergency medicine	29.5	29.2	30.6	30.0		
- Clinical informatics	33.3	32.0		37.0		
- Emergency medical services	33.3	33.3	34.3	32.6		
- Medical toxicology	31.8	31.3	34.3	33.5	32.0	
- Pediatric emergency medicine	32.5	32.5	32.5	32.3		
- Sports medicine	34.1	33.0	36.0	34.6		
- Undersea and hyperbaric medicine	40.6	43.5	34.0	35.0		
Family medicine	30.3	29.6	31.9	30.1		
- Clinical informatics	39.5	40.0	38.5			
- Geriatric medicine	36.8	37.6	37.6	32.4		
- Hospice and palliative medicine (multidisciplinary)	34.9	34.8	34.8	35.6		
- Sports medicine	32.8	32.3	33.9	33.0		
Internal medicine	29.6	28.8	30.6	29.6	31.0	
- Adult congenital heart disease	34.8	34.9	34.7			
- Advanced heart failure and transplant cardiology	35.5	34.5	37.0	37.8	37.3	
- Cardiovascular disease	32.0	31.6	32.7	32.2		
- Clinical cardiac electrophysiology	35.1	34.8	35.6	35.2	32.0	
- Clinical informatics	34.1	32.0	35.9		51.0	
- Critical care medicine	34.0	33.4	34.5	33.3	34.5	
- Endocrinology, diabetes, and metabolism	32.4	31.4	33.1	32.2		
- Gastroenterology	31.9	31.3	32.9	32.0	31.5	
- Geriatric medicine	34.1	33.3	34.5	34.1	35.0	
- Hematology	32.8	32.4	34.3			
- Hematology and medical oncology	32.3	31.9	33.1	31.8	36.0	
- Infectious disease	33.0	32.1	34.0	32.7		
- Interventional cardiology	35.1	34.2	35.9	35.3	36.0	
- Nephrology	34.1	31.9	35.3	32.6		
- Medical oncology	34.0	34.1	34.2	32.5		
- Pulmonary disease	33.4	30.3	34.1	29.7		
- Pulmonary disease and critical care medicine	32.4	31.8	33.0	32.4		
- Rheumatology	32.3	32.0	32.7	32.5	36.0	
- Sleep medicine (multidisciplinary)	34.5	33.5	35.5	34.6	33.0	
- Transplant hepatology	34.4	33.7	37.3	33.5	32.0	
Medical genetics and genomics	35.9	35.2	36.8	37.0		
- Medical biochemical genetics	34.1	32.8	36.0		29.0	
- Molecular genetic pathology (multidisciplinary)	38.7	36.7	41.4	39.3	29.0	
Neurological surgery	29.3	29.1	31.1	30.0		
- Endovascular surgical neuroradiology	34.0	34.0				

TABLE C.18 Continued

Mean Age of Year 1 Residents by Specialty and Subspecialty and Medical School Type

Specialty	OVERALL Age (Avg)	Medical School Type				
		US LCME - Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
Neurology	30.1	29.6	31.2	29.7	27.0	
- Brain injury medicine	32.0		32.0			
- Clinical neurophysiology	34.3	33.1	35.8	34.3		
- Epilepsy	34.1	33.5	35.2	34.0	33.0	
- Endovascular surgical neuroradiology	32.0		32.0			
- Neurodevelopmental disabilities	29.4	29.4				
- Neuromuscular medicine	33.9	33.3	35.8	32.4	30.0	
- Vascular neurology	33.6	32.6	34.6	33.9	29.0	
Child neurology	31.1	31.1	30.6	31.7		
Nuclear medicine	35.8	34.9	37.2	30.3	32.0	
Obstetrics and gynecology	28.7	28.5	30.6	28.7		
- Female pelvic medicine and reconstructive surgery	32.7	32.6	33.8	34.5		
- Gynecologic oncology	33.5	33.2	38.4	32.4	35.0	
- Maternal-fetal medicine	32.6	32.4	32.6	33.8		
- Reproductive endocrinology and infertility	33.0	32.6	35.4	33.0		
Ophthalmology	29.6	29.3	34.7	30.3	30.0	
- Ophthalmic plastic and reconstructive surgery	33.3	32.5	35.0			
Orthopaedic surgery	28.5	28.4	30.0	29.6		
- Adult reconstructive orthopaedics	33.5	33.4	34.3			
- Foot and ankle orthopaedics	34.1	33.9	36.0	33.0		
- Hand surgery	33.6	33.6	34.0	33.8	29.0	
- Musculoskeletal oncology	33.3	33.0	34.3			
- Orthopaedic sports medicine	34.0	33.7	36.2	34.5	33.3	
- Orthopaedic surgery of the spine	35.4	34.4	36.6	37.3	35.0	
- Orthopaedic trauma	32.7	33.0		35.0	29.5	
- Pediatric orthopaedics	34.5	34.3	37.3	32.7		
Osteopathic neuromusculoskeletal medicine	32.1	31.0		32.1		
Otolaryngology - head and neck surgery	28.5	28.4	29.5	28.9		
- Neurotology	33.9	33.4	38.0			
- Pediatric otolaryngology	32.6	32.4	34.0	33.0	32.4	
Pathology-anatomic and clinical	32.1	30.5	33.9	31.0		
- Blood banking/transfusion medicine	36.8	36.6	37.9	35.2		
- Clinical informatics	34.0	34.5	31.0	35.0		
- Chemical pathology	37.0		37.0			
- Cytopathology	37.1	34.5	39.8	34.4		
- Forensic pathology	33.9	33.4	35.0	33.7	36.0	
- Hematopathology	36.8	34.9	40.1	34.3	35.5	
- Medical microbiology	35.2	35.4	33.5	36.0		
- Neuropathology	35.5	34.4	37.9	35.3	40.0	
- Pediatric pathology	36.6	36.3	37.4	35.0	38.0	
- Selective pathology	36.1	33.7	37.9	34.6	33.0	
Pediatrics	29.0	28.5	30.5	29.0		
- Adolescent medicine	31.7	31.8	32.5	31.2		
- Child abuse pediatrics	32.1	31.9	33.3	31.5		
- Clinical informatics	31.5	31.0	35.0		30.0	
- Developmental-behavioral pediatrics	34.8	34.4	33.8	38.8		
- Neonatal-perinatal medicine	32.6	31.7	34.7	31.5		
- Pediatric cardiology	31.9	31.8	32.4	32.0	30.0	
- Pediatric critical care medicine	31.8	31.7	32.1	30.8		
- Pediatric emergency medicine	31.9	31.7	32.6	32.1		
- Pediatric endocrinology	32.5	30.9	34.7	31.2		
- Pediatric gastroenterology	31.9	31.3	33.9	30.9		
- Pediatric hematology/oncology	31.8	31.6	32.7	31.4	30.0	

TABLE C.18 *Continued***Mean Age of Year 1 Residents by Specialty and Subspecialty and Medical School Type**

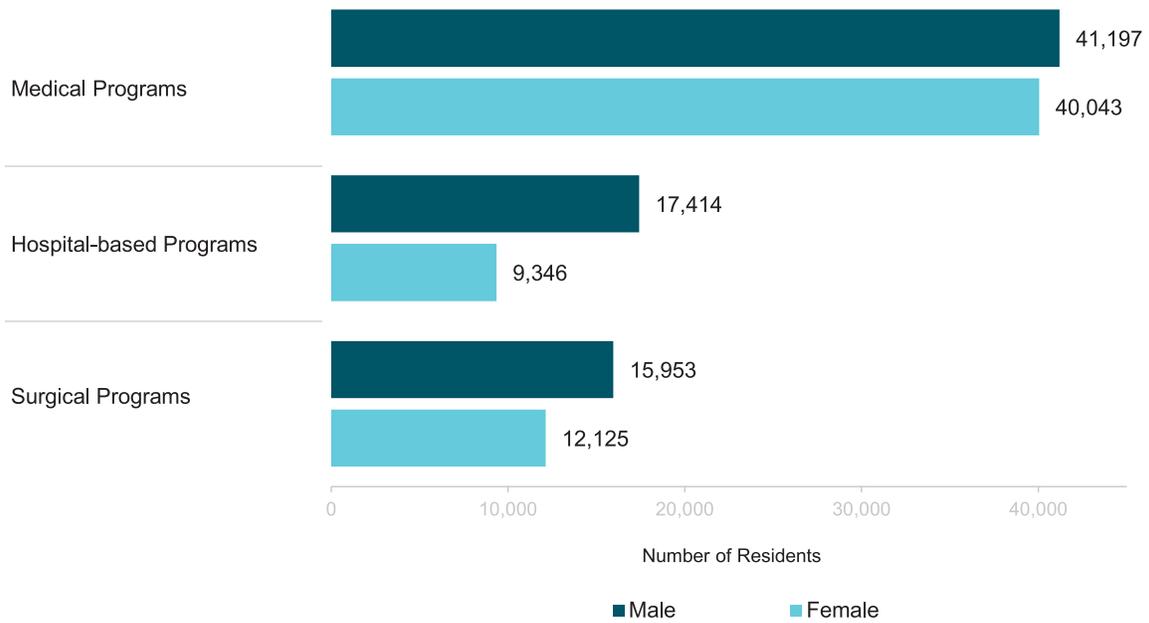
Specialty	OVERALL Age (Avg)	Medical School Type				
		US LCME - Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
- Pediatric infectious diseases	33.2	32.3	35.2	32.3		
- Pediatric nephrology	32.1	31.1	35.2	31.7		
- Pediatric pulmonology	33.4	33.0	33.8			
- Pediatric rheumatology	33.0	32.8	33.4	34.0		
- Pediatric sports medicine	32.2	32.3	30.0	32.5	30.0	
- Pediatric transplant hepatology	34.7	36.0	33.0	33.0	33.0	
Physical medicine and rehabilitation	30.1	29.6	33.1	30.0		
- Brain injury medicine	32.1	31.0	33.3	32.5		
- Neuromuscular medicine	31.0	31.0				
- Spinal cord injury medicine	33.8	33.2	32.6	38.0		
- Pediatric rehabilitation	33.1	33.2	34.0	32.7		
- Sports medicine	32.2	32.2	31.5	32.2		
Plastic surgery	33.8	33.9	34.2	33.2		
Plastic surgery - integrated	28.5	28.4	31.6	31.0		
- Craniofacial surgery	36.1	36.0	37.0			
- Hand surgery	35.5	35.7		37.0	33.5	
Preventive medicine	36.7	36.2	36.7	38.3	38.0	
- Medical toxicology	30.5	30.5				
- Undersea and hyperbaric medicine	31.5	33.0		30.0		
Psychiatry	30.4	29.8	32.6	30.0		
- Addiction medicine (multidisciplinary)	41.6	43.0	40.8	36.0		
- Addiction psychiatry	35.5	33.7	38.1	34.8	33.0	
- Child and adolescent psychiatry	33.7	32.9	34.7	34.5	29.0	
- Forensic psychiatry	34.9	34.9	35.9	33.1	33.0	
- Geriatric psychiatry	35.2	34.3	36.6	32.0		
- Consultation-liaison psychiatry	34.5	33.6	35.6	35.3	36.0	
Radiation oncology	30.7	30.5	35.0	28.0		
Radiology-diagnostic	30.4	30.0	31.8	31.2		
- Abdominal radiology	34.7	33.1	36.7	35.3	32.2	
- Endovascular surgical neuroradiology	35.6	34.3	40.0		35.0	
- Musculoskeletal radiology	34.4	34.6	34.5	37.0	30.5	
- Neuroradiology	34.1	33.9	35.2	33.8	31.5	
- Nuclear radiology	39.3	42.0	36.0			
- Pediatric radiology	36.3	35.5	41.8	32.7	32.0	
- Vascular and interventional radiology	34.0	33.9	34.5	34.4		
Interventional radiology - integrated	29.7	29.4	29.8	32.5		
Surgery	29.3	28.9	30.8	29.4	33.8	
- Complex general surgical oncology	35.4	35.1	35.2		52.0	
- Hand surgery	34.8	35.0	34.3			
- Pediatric surgery	35.3	35.2	36.0			
- Surgical critical care	35.0	34.7	37.2	33.8	34.8	
- Vascular surgery	34.5	34.2	35.0	37.0	31.0	
Vascular surgery - integrated	29.2	29.2	29.0	31.0		
Thoracic surgery	34.9	34.6	36.0	34.0		
- Congenital cardiac surgery	37.0	36.9		38.0		
Thoracic surgery - integrated	28.9	28.5	31.5			
Urology	29.9	29.8	32.5	30.2		
- Female pelvic medicine and reconstructive surgery	32.1	32.1				
- Pediatric urology	34.4	34.5			31.0	
Transitional year	29.6	28.8	32.5	30.3		
Internal medicine/Pediatrics	28.5	28.5	29.8	28.5		

Note: Pipeline specialties are highlighted.

Abbreviations: LCME, Liaison Committee on Medical Education.

FIGURE C.19

Number of Active Residents by Specialty Group and Sex



Note: Not shown are those residents for which sex is unreported (n = 4,313).

FIGURE C.20

Percent of Active Residents by Sex and Academic Year, 2009-2010 to 2018-2019

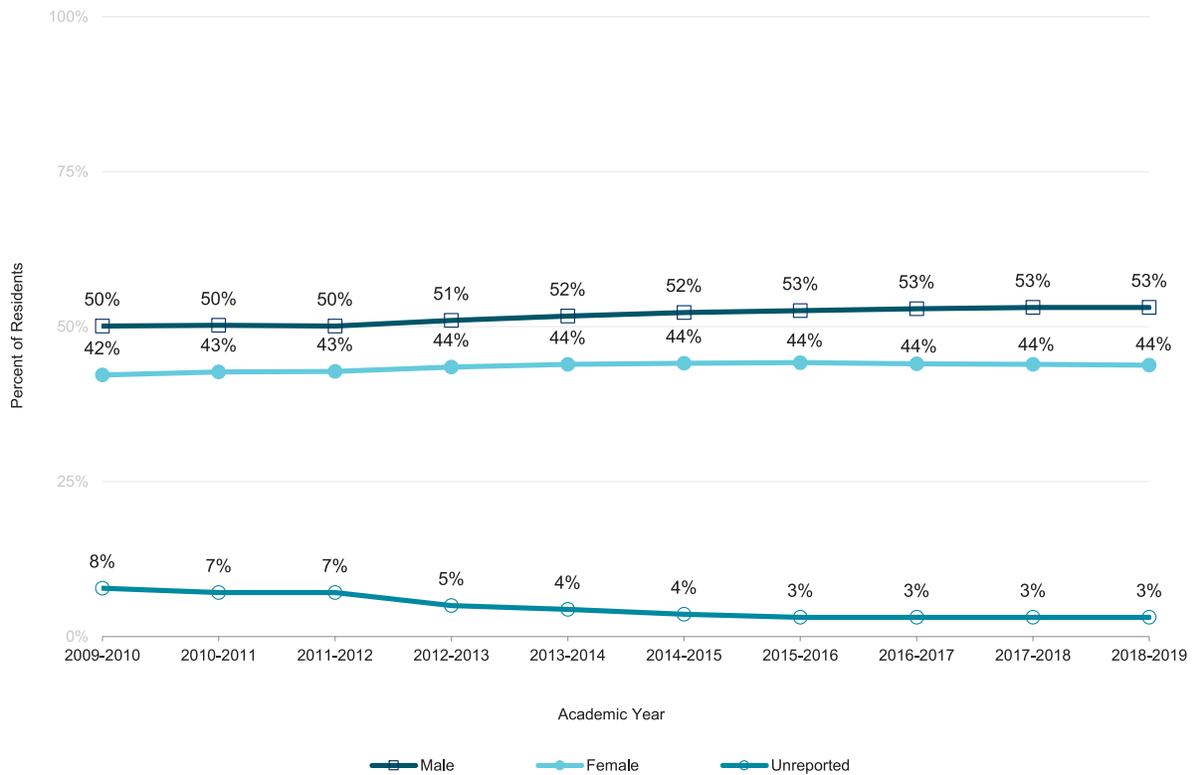


TABLE C.21

Number of Active Residents by Specialty and Subspecialty and Sex

Specialty	Total Programs	Total Residents	Sex					
			Female		Male		Not Reported	
			#	%	#	%	#	%
OVERALL	11,685	140,391	61,514	43.8%	74,564	53.1%	4,313	3.1%
TOTAL PIPELINE	4,842	113,823	49,929	43.9%	59,901	52.6%	3,993	3.5%
Allergy and immunology	78	304	215	70.7%	80	26.3%	9	3.0%
Anesthesiology	155	6,507	2,148	33.0%	4,195	64.5%	164	2.5%
- Adult cardiothoracic anesthesiology	69	215	55	25.6%	151	70.2%	9	4.2%
- Clinical informatics	1	1	0	0.0%	1	100.0%	0	0.0%
- Critical care medicine	64	182	64	35.2%	107	58.8%	11	6.0%
- Regional anesthesiology and acute pain medicine	29	58	23	39.7%	35	60.3%	0	0.0%
- Obstetric anesthesiology	37	44	26	59.1%	16	36.4%	2	4.5%
- Pain medicine (multidisciplinary)	104	372	81	21.8%	285	76.6%	6	1.6%
- Pediatric anesthesiology	61	199	98	49.2%	91	45.7%	10	5.0%
Colon and rectal surgery	63	101	48	47.5%	53	52.5%	0	0.0%
Dermatology	142	1,563	937	59.9%	613	39.2%	13	0.8%
- Dermatopathology (multidisciplinary)	55	67	34	50.7%	31	46.3%	2	3.0%
- Micrographic surgery and dermatologic oncology	77	82	37	45.1%	44	53.7%	1	1.2%
Emergency medicine	247	7,940	2,770	34.9%	5,015	63.2%	155	2.0%
- Clinical informatics	4	5	0	0.0%	5	100.0%	0	0.0%
- Emergency medical services	65	62	22	35.5%	38	61.3%	2	3.2%
- Medical toxicology	27	72	30	41.7%	42	58.3%	0	0.0%
- Pediatric emergency medicine	26	129	83	64.3%	41	31.8%	5	3.9%
- Sports medicine	9	16	4	25.0%	12	75.0%	0	0.0%
- Undersea and hyperbaric medicine	7	9	3	33.3%	6	66.7%	0	0.0%
Family medicine	671	13,116	6,964	53.1%	6,019	45.9%	133	1.0%
- Clinical informatics	3	12	1	8.3%	11	91.7%	0	0.0%
- Geriatric medicine	48	46	28	60.9%	18	39.1%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	149	355	230	64.8%	122	34.4%	3	0.8%
- Sports medicine	143	239	64	26.8%	175	73.2%	0	0.0%
Internal medicine	545	28,420	11,315	39.8%	15,497	54.5%	1,608	5.7%
- Adult congenital heart disease	21	25	13	52.0%	12	48.0%	0	0.0%
- Advanced heart failure and transplant cardiology	76	105	28	26.7%	76	72.4%	1	1.0%
- Cardiovascular disease	245	3,017	734	24.3%	2,255	74.7%	28	0.9%
- Clinical cardiac electrophysiology	110	259	23	8.9%	231	89.2%	5	1.9%
- Clinical informatics	16	36	8	22.2%	28	77.8%	0	0.0%
- Critical care medicine	43	253	81	32.0%	168	66.4%	4	1.6%
- Endocrinology, diabetes, and metabolism	149	660	463	70.2%	191	28.9%	6	0.9%
- Gastroenterology	202	1,741	597	34.3%	1,127	64.7%	17	1.0%
- Geriatric medicine	108	258	164	63.6%	94	36.4%	0	0.0%
- Hematology	2	18	14	77.8%	4	22.2%	0	0.0%
- Hematology and medical oncology	157	1,776	750	42.2%	1,006	56.6%	20	1.1%
- Infectious disease	149	760	396	52.1%	353	46.4%	11	1.4%
- Interventional cardiology	164	339	41	12.1%	289	85.3%	9	2.7%
- Nephrology	149	805	282	35.0%	520	64.6%	3	0.4%
- Medical oncology	8	39	14	35.9%	25	64.1%	0	0.0%
- Pulmonary disease	23	70	13	18.6%	57	81.4%	0	0.0%
- Pulmonary disease and critical care medicine	178	1,898	620	32.7%	1,263	66.5%	15	0.8%
- Rheumatology	122	503	308	61.2%	189	37.6%	6	1.2%
- Sleep medicine (multidisciplinary)	86	177	82	46.3%	90	50.8%	5	2.8%
- Transplant hepatology	52	47	17	36.2%	28	59.6%	2	4.3%
Medical genetics and genomics	46	69	46	66.7%	23	33.3%	0	0.0%
- Medical biochemical genetics	19	14	8	57.1%	6	42.9%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	42	61	26	42.6%	34	55.7%	1	1.6%
Neurological surgery	115	1,462	253	17.3%	1,199	82.0%	10	0.7%
- Endovascular surgical neuroradiology	2	1	0	0.0%	1	100.0%	0	0.0%

TABLE C.21 <i>Continued</i>								
Number of Active Residents by Specialty and Subspecialty and Sex								
Specialty	Total Programs	Total Residents	Sex					
			Female		Male		Not Reported	
			#	%	#	%	#	%
Neurology	159	2,893	1,247	43.1%	1,506	52.1%	140	4.8%
- Brain injury medicine	1	1	1	100.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	91	163	68	41.7%	93	57.1%	2	1.2%
- Epilepsy	77	112	61	54.5%	50	44.6%	1	0.9%
- Endovascular surgical neuroradiology	2	1	0	0.0%	1	100.0%	0	0.0%
- Neurodevelopmental disabilities	8	25	14	56.0%	11	44.0%	0	0.0%
- Neuromuscular medicine	49	67	26	38.8%	40	59.7%	1	1.5%
- Vascular neurology	99	129	44	34.1%	82	63.6%	3	2.3%
Child neurology	74	383	259	67.6%	124	32.4%	0	0.0%
Nuclear medicine	39	75	28	37.3%	46	61.3%	1	1.3%
Obstetrics and gynecology	282	5,571	4,559	81.8%	898	16.1%	114	2.0%
- Female pelvic medicine and reconstructive surgery	53	145	113	77.9%	32	22.1%	0	0.0%
- Gynecologic oncology	59	197	144	73.1%	53	26.9%	0	0.0%
- Maternal-fetal medicine	93	350	261	74.6%	89	25.4%	0	0.0%
- Reproductive endocrinology and infertility	50	163	135	82.8%	28	17.2%	0	0.0%
Ophthalmology	123	1,473	575	39.0%	891	60.5%	7	0.5%
- Ophthalmic plastic and reconstructive surgery	4	5	1	20.0%	4	80.0%	0	0.0%
Orthopaedic surgery	185	4,125	606	14.7%	3,392	82.2%	127	3.1%
- Adult reconstructive orthopaedics	24	47	3	6.4%	44	93.6%	0	0.0%
- Foot and ankle orthopaedics	7	15	3	20.0%	12	80.0%	0	0.0%
- Hand surgery	72	154	35	22.7%	114	74.0%	5	3.2%
- Musculoskeletal oncology	12	14	4	28.6%	10	71.4%	0	0.0%
- Orthopaedic sports medicine	92	205	26	12.7%	171	83.4%	8	3.9%
- Orthopaedic surgery of the spine	17	28	2	7.1%	26	92.9%	0	0.0%
- Orthopaedic trauma	11	19	3	15.8%	16	84.2%	0	0.0%
- Pediatric orthopaedics	26	37	13	35.1%	24	64.9%	0	0.0%
Osteopathic neuromusculoskeletal medicine	19	34	19	55.9%	14	41.2%	1	2.9%
Otolaryngology - head and neck surgery	122	1,651	589	35.7%	1,041	63.1%	21	1.3%
- Neurotology	24	32	5	15.6%	27	84.4%	0	0.0%
- Pediatric otolaryngology	29	35	16	45.7%	19	54.3%	0	0.0%
Pathology-anatomic and clinical	143	2,329	1,149	49.3%	1,147	49.2%	33	1.4%
- Blood banking/transfusion medicine	51	57	30	52.6%	27	47.4%	0	0.0%
- Clinical informatics	8	9	1	11.1%	8	88.9%	0	0.0%
- Chemical pathology	4	1	1	100.0%	0	0.0%	0	0.0%
- Cytopathology	94	134	84	62.7%	49	36.6%	1	0.7%
- Forensic pathology	43	44	31	70.5%	10	22.7%	3	6.8%
- Hematopathology	87	131	61	46.6%	68	51.9%	2	1.5%
- Medical microbiology	15	12	7	58.3%	5	41.7%	0	0.0%
- Neuropathology	36	50	15	30.0%	35	70.0%	0	0.0%
- Pediatric pathology	27	23	15	65.2%	8	34.8%	0	0.0%
- Selective pathology	91	166	82	49.4%	81	48.8%	3	1.8%
Pediatrics	212	9,221	6,002	65.1%	2,343	25.4%	876	9.5%
- Adolescent medicine	30	87	69	79.3%	18	20.7%	0	0.0%
- Child abuse pediatrics	31	38	34	89.5%	4	10.5%	0	0.0%
- Clinical informatics	5	12	4	33.3%	8	66.7%	0	0.0%
- Developmental-behavioral pediatrics	43	102	86	84.3%	16	15.7%	0	0.0%
- Neonatal-perinatal medicine	102	761	561	73.7%	198	26.0%	2	0.3%
- Pediatric cardiology	62	444	226	50.9%	214	48.2%	4	0.9%
- Pediatric critical care medicine	72	534	309	57.9%	218	40.8%	7	1.3%
- Pediatric emergency medicine	52	408	285	69.9%	121	29.7%	2	0.5%
- Pediatric endocrinology	73	241	192	79.7%	49	20.3%	0	0.0%
- Pediatric gastroenterology	65	311	200	64.3%	108	34.7%	3	1.0%
- Pediatric hematology/oncology	74	484	325	67.1%	156	32.2%	3	0.6%

TABLE C.21 Continued

Number of Active Residents by Specialty and Subspecialty and Sex

Specialty	Total Programs	Total Residents	Sex					
			Female		Male		Not Reported	
			#	%	#	%	#	%
- Pediatric infectious diseases	65	177	109	61.6%	68	38.4%	0	0.0%
- Pediatric nephrology	46	116	88	75.9%	28	24.1%	0	0.0%
- Pediatric pulmonology	54	162	102	63.0%	60	37.0%	0	0.0%
- Pediatric rheumatology	35	91	66	72.5%	24	26.4%	1	1.1%
- Pediatric sports medicine	17	26	9	34.6%	17	65.4%	0	0.0%
- Pediatric transplant hepatology	15	9	6	66.7%	2	22.2%	1	11.1%
Physical medicine and rehabilitation	91	1,395	520	37.3%	867	62.2%	8	0.6%
- Brain injury medicine	20	17	7	41.2%	10	58.8%	0	0.0%
- Neuromuscular medicine	1	1	0	0.0%	1	100.0%	0	0.0%
- Spinal cord injury medicine	24	20	13	65.0%	7	35.0%	0	0.0%
- Pediatric rehabilitation	20	38	31	81.6%	7	18.4%	0	0.0%
- Sports medicine	19	30	13	43.3%	17	56.7%	0	0.0%
Plastic surgery	55	243	76	31.3%	166	68.3%	1	0.4%
Plastic surgery - integrated	81	901	366	40.6%	518	57.5%	17	1.9%
- Craniofacial surgery	8	8	3	37.5%	4	50.0%	1	12.5%
- Hand surgery	17	22	10	45.5%	12	54.5%	0	0.0%
Preventive medicine	75	357	157	44.0%	191	53.5%	9	2.5%
- Medical toxicology	1	4	1	25.0%	3	75.0%	0	0.0%
- Undersea and hyperbaric medicine	1	2	1	50.0%	1	50.0%	0	0.0%
Psychiatry	257	6,247	3,043	48.7%	3,023	48.4%	181	2.9%
- Addiction medicine (multidisciplinary)	52	39	12	30.8%	27	69.2%	0	0.0%
- Addiction psychiatry	50	83	30	36.1%	53	63.9%	0	0.0%
- Child and adolescent psychiatry	140	869	519	59.7%	324	37.3%	26	3.0%
- Forensic psychiatry	48	66	42	63.6%	24	36.4%	0	0.0%
- Geriatric psychiatry	61	52	30	57.7%	20	38.5%	2	3.8%
- Consultation-liaison psychiatry	62	71	36	50.7%	31	43.7%	4	5.6%
Radiation oncology	94	774	232	30.0%	532	68.7%	10	1.3%
Radiology-diagnostic	195	4,671	1,235	26.4%	3,414	73.1%	22	0.5%
- Abdominal radiology	13	41	13	31.7%	28	68.3%	0	0.0%
- Endovascular surgical neuroradiology	3	5	3	60.0%	2	40.0%	0	0.0%
- Musculoskeletal radiology	16	32	8	25.0%	24	75.0%	0	0.0%
- Neuroradiology	87	259	59	22.8%	195	75.3%	5	1.9%
- Nuclear radiology	17	11	2	18.2%	9	81.8%	0	0.0%
- Pediatric radiology	47	55	25	45.5%	29	52.7%	1	1.8%
- Vascular and interventional radiology	93	274	29	10.6%	238	86.9%	7	2.6%
Interventional radiology - integrated	84	246	45	18.3%	201	81.7%	0	0.0%
Surgery	323	8,844	3,443	38.9%	5,105	57.7%	296	3.3%
- Complex general surgical oncology	27	111	42	37.8%	69	62.2%	0	0.0%
- Hand surgery	1	8	1	12.5%	7	87.5%	0	0.0%
- Pediatric surgery	50	83	40	48.2%	43	51.8%	0	0.0%
- Surgical critical care	136	284	115	40.5%	168	59.2%	1	0.4%
- Vascular surgery	109	248	62	25.0%	186	75.0%	0	0.0%
Vascular surgery - integrated	60	292	96	32.9%	194	66.4%	2	0.7%
Thoracic surgery	72	232	49	21.1%	183	78.9%	0	0.0%
- Congenital cardiac surgery	12	8	0	0.0%	8	100.0%	0	0.0%
Thoracic surgery - integrated	27	189	55	29.1%	132	69.8%	2	1.1%
Urology	142	1,331	333	25.0%	998	75.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	14	37	28	75.7%	8	21.6%	1	2.7%
- Pediatric urology	26	20	12	60.0%	8	40.0%	0	0.0%
Transitional year	157	1,532	545	35.6%	960	62.7%	27	1.8%
Internal medicine/Pediatrics	79	1,501	862	57.4%	597	39.8%	42	2.8%

Note: Pipeline specialties are highlighted.

FIGURE C.22

Specialties Organized by Largest Percentages of Active Female Residents

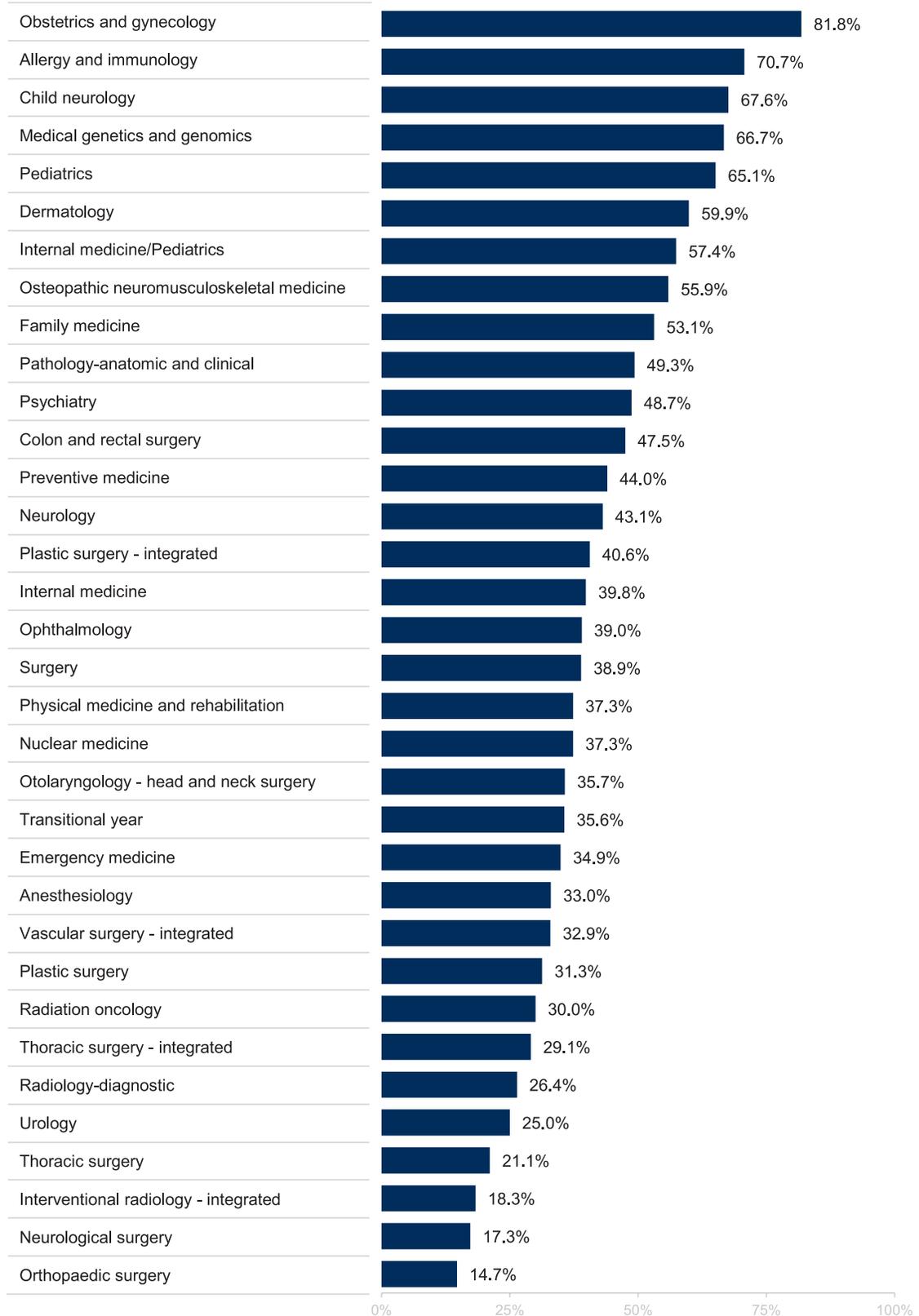


TABLE C.23

Number of Active Residents by Specialty and Subspecialty and Ethnicity

Specialty	Ethnicity						
	White, Non-Hispanic	Asian or Pacific Islander	Hispanic	Black, Non-Hispanic	Native American/Alaskan	Other	Unknown
OVERALL	59,359	25,029	7,395	6,184	276	7,594	34,554
TOTAL PIPELINE	48,057	19,109	5,996	5,079	242	5,672	29,668
Allergy and immunology	119	82	11	8	0	12	72
Anesthesiology	2,811	1,111	282	293	20	270	1,720
- Adult cardiothoracic anesthesiology	116	39	5	4	1	2	48
- Clinical informatics	1	0	0	0	0	0	0
- Critical care medicine	80	31	9	13	0	10	39
- Regional anesthesiology and acute pain medicine	26	19	0	3	0	1	9
- Obstetric anesthesiology	21	4	1	3	0	2	13
- Pain medicine (multidisciplinary)	148	89	12	24	3	30	66
- Pediatric anesthesiology	79	25	7	14	0	9	65
Colon and rectal surgery	58	15	3	2	0	5	18
Dermatology	876	250	45	51	2	89	250
- Dermatopathology (multidisciplinary)	31	12	5	0	0	5	14
- Micrographic surgery and dermatologic oncology	53	9	2	0	0	2	16
Emergency medicine	4,532	804	392	309	19	268	1,616
- Clinical informatics	4	0	0	0	0	0	1
- Emergency medical services	43	6	2	1	0	2	8
- Medical toxicology	45	12	0	2	0	3	10
- Pediatric emergency medicine	59	21	9	8	0	8	24
- Sports medicine	8	1	2	0	0	2	3
- Undersea and hyperbaric medicine	8	0	1	0	0	0	0
Family medicine	6,470	2,421	882	857	42	623	1,821
- Clinical informatics	1	1	0	1	0	3	6
- Geriatric medicine	12	7	3	4	0	10	10
- Hospice and palliative medicine (multidisciplinary)	191	62	19	11	0	18	54
- Sports medicine	140	39	13	14	1	6	26
Internal medicine	7,948	6,072	1,528	1,197	27	1,868	9,780
- Adult congenital heart disease	16	5	1	0	0	0	3
- Advanced heart failure and transplant cardiology	27	25	8	3	1	22	19
- Cardiovascular disease	1,080	770	135	124	5	300	603
- Clinical cardiac electrophysiology	109	65	18	15	2	18	32
- Clinical informatics	13	14	0	2	0	4	3
- Critical care medicine	90	55	12	6	0	25	65
- Endocrinology, diabetes, and metabolism	169	218	68	21	0	78	106
- Gastroenterology	612	498	83	74	1	133	340
- Geriatric medicine	70	73	18	22	1	30	44
- Hematology	5	6	1	0	0	5	1
- Hematology and medical oncology	594	508	80	45	2	152	395
- Infectious disease	305	162	59	38	1	41	154
- Interventional cardiology	117	76	12	14	0	45	75
- Nephrology	186	306	66	38	0	93	116
- Medical oncology	7	22	0	1	0	3	6
- Pulmonary disease	14	30	4	3	0	11	8
- Pulmonary disease and critical care medicine	805	437	89	61	5	139	362
- Rheumatology	210	146	26	16	2	28	75
- Sleep medicine (multidisciplinary)	50	50	7	6	0	18	46
- Transplant hepatology	18	11	4	2	0	7	5
Medical genetics and genomics	37	18	4	3	0	3	4
- Medical biochemical genetics	7	1	1	0	0	1	4
- Molecular genetic pathology (multidisciplinary)	29	16	1	0	0	5	10
Neurological surgery	729	210	62	59	2	105	295
- Endovascular surgical neuroradiology	1	0	0	0	0	0	0

TABLE C.23 *Continued***Number of Active Residents by Specialty and Subspecialty and Ethnicity**

Specialty	Ethnicity						
	White, Non-Hispanic	Asian or Pacific Islander	Hispanic	Black, Non-Hispanic	Native American/Alaskan	Other	Unknown
Neurology	1,088	588	148	107	6	210	746
- Brain injury medicine	0	1	0	0	0	0	0
- Clinical neurophysiology	55	40	5	3	1	14	45
- Epilepsy	33	18	11	3	0	15	32
- Endovascular surgical neuroradiology	0	1	0	0	0	0	0
- Neurodevelopmental disabilities	15	1	2	2	0	2	3
- Neuromuscular medicine	27	6	4	3	0	4	23
- Vascular neurology	45	28	9	7	0	12	28
Child neurology	173	69	38	15	1	23	64
Nuclear medicine	24	17	6	6	0	17	5
Obstetrics and gynecology	2,708	578	347	373	15	197	1,353
- Female pelvic medicine and reconstructive surgery	77	22	12	11	0	5	18
- Gynecologic oncology	134	25	12	8	0	6	12
- Maternal-fetal medicine	210	30	25	29	0	20	36
- Reproductive endocrinology and infertility	95	21	4	11	0	8	24
Ophthalmology	749	323	50	33	2	77	239
- Ophthalmic plastic and reconstructive surgery	5	0	0	0	0	0	0
Orthopaedic surgery	2,385	364	137	119	9	129	982
- Adult reconstructive orthopaedics	27	3	1	0	0	1	15
- Foot and ankle orthopaedics	7	0	0	0	0	1	7
- Hand surgery	83	18	2	5	0	6	40
- Musculoskeletal oncology	7	1	0	1	0	2	3
- Orthopaedic sports medicine	130	10	5	6	0	3	51
- Orthopaedic surgery of the spine	15	2	1	1	0	5	4
- Orthopaedic trauma	10	2	1	1	0	2	3
- Pediatric orthopaedics	23	2	0	3	0	3	6
Osteopathic neuromusculoskeletal medicine	23	3	0	0	0	2	6
Otolaryngology - head and neck surgery	899	240	67	30	4	70	341
- Neurotology	17	4	1	0	0	3	7
- Pediatric otolaryngology	19	5	2	2	0	3	4
Pathology-anatomic and clinical	935	496	120	94	4	165	515
- Blood banking/transfusion medicine	31	9	1	1	0	3	12
- Clinical informatics	3	1	1	0	0	0	4
- Chemical pathology	0	1	0	0	0	0	0
- Cytopathology	60	29	4	1	0	8	32
- Forensic pathology	25	2	3	3	0	3	8
- Hematopathology	58	30	6	5	0	9	23
- Medical microbiology	10	0	0	0	0	0	2
- Neuropathology	32	5	1	0	0	2	10
- Pediatric pathology	13	1	2	1	0	3	3
- Selective pathology	64	42	8	0	0	13	39
Pediatrics	2,950	1,152	586	347	14	257	3,915
- Adolescent medicine	46	9	9	14	0	1	8
- Child abuse pediatrics	23	5	3	2	0	2	3
- Clinical informatics	8	1	0	0	0	1	2
- Developmental-behavioral pediatrics	53	19	8	4	0	4	14
- Neonatal-perinatal medicine	364	162	50	48	2	60	75
- Pediatric cardiology	241	83	22	17	0	25	56
- Pediatric critical care medicine	299	83	40	13	0	29	70
- Pediatric emergency medicine	235	69	16	25	1	23	39
- Pediatric endocrinology	95	62	24	14	0	20	26
- Pediatric gastroenterology	128	74	18	14	1	29	47
- Pediatric hematology/oncology	275	81	25	18	0	24	61

TABLE C.23 Continued

Number of Active Residents by Specialty and Subspecialty and Ethnicity							
Specialty	Ethnicity						
	White, Non-Hispanic	Asian or Pacific Islander	Hispanic	Black, Non-Hispanic	Native American/Alaskan	Other	Unknown
- Pediatric infectious diseases	107	21	10	3	0	10	26
- Pediatric nephrology	57	27	6	12	0	5	9
- Pediatric pulmonology	80	30	18	7	0	11	16
- Pediatric rheumatology	49	12	6	6	0	3	15
- Pediatric sports medicine	18	1	0	2	0	0	5
- Pediatric transplant hepatology	1	3	1	0	0	0	4
Physical medicine and rehabilitation	704	282	59	58	3	70	219
- Brain injury medicine	7	4	0	2	0	3	1
- Neuromuscular medicine	1	0	0	0	0	0	0
- Spinal cord injury medicine	10	6	1	0	0	1	2
- Pediatric rehabilitation	26	4	2	3	0	1	2
- Sports medicine	13	6	2	3	0	2	4
Plastic surgery	128	32	17	14	0	16	36
Plastic surgery - integrated	453	116	26	25	3	31	247
- Craniofacial surgery	1	2	1	0	0	0	4
- Hand surgery	15	2	0	1	0	0	4
Preventive medicine	175	61	20	47	1	12	41
- Medical toxicology	3	0	0	0	0	1	0
- Undersea and hyperbaric medicine	2	0	0	0	0	0	0
Psychiatry	2,588	1,158	361	362	23	319	1,436
- Addiction medicine (multidisciplinary)	23	4	4	0	0	2	6
- Addiction psychiatry	46	18	4	3	1	7	4
- Child and adolescent psychiatry	302	230	55	69	1	40	172
- Forensic psychiatry	28	11	2	7	0	5	13
- Geriatric psychiatry	23	12	3	1	0	3	10
- Consultation-liaison psychiatry	37	9	2	2	0	3	18
Radiation oncology	399	188	27	23	1	27	109
Radiology-diagnostic	2,341	983	195	163	14	288	687
- Abdominal radiology	21	7	1	0	0	2	10
- Endovascular surgical neuroradiology	3	1	0	0	0	1	0
- Musculoskeletal radiology	15	6	0	0	0	2	9
- Neuroradiology	124	44	2	8	0	25	56
- Nuclear radiology	6	1	0	0	0	1	3
- Pediatric radiology	28	10	2	2	0	1	12
- Vascular and interventional radiology	129	61	12	13	0	19	40
Interventional radiology - integrated	131	42	9	3	1	11	49
Surgery	4,124	1,044	454	359	23	387	2,453
- Complex general surgical oncology	66	20	6	2	0	3	14
- Hand surgery	2	0	0	0	0	1	5
- Pediatric surgery	51	11	4	2	0	5	10
- Surgical critical care	179	27	10	3	0	17	48
- Vascular surgery	129	46	9	9	1	24	30
Vascular surgery - integrated	138	49	12	11	2	23	57
Thoracic surgery	128	33	10	11	0	12	38
- Congenital cardiac surgery	5	1	0	0	0	1	1
Thoracic surgery - integrated	108	30	10	4	0	11	26
Urology	747	223	53	46	2	63	197
- Female pelvic medicine and reconstructive surgery	20	5	3	5	0	1	3
- Pediatric urology	8	5	1	0	0	2	4
Transitional year	665	264	87	50	1	46	419
Internal medicine/Pediatrics	684	185	59	71	2	41	459

Notes: Pipeline specialties are highlighted. Unknown ethnicity includes both unknown and blank, while 'Other' indicates a known ethnicity other than the ones available for selection.

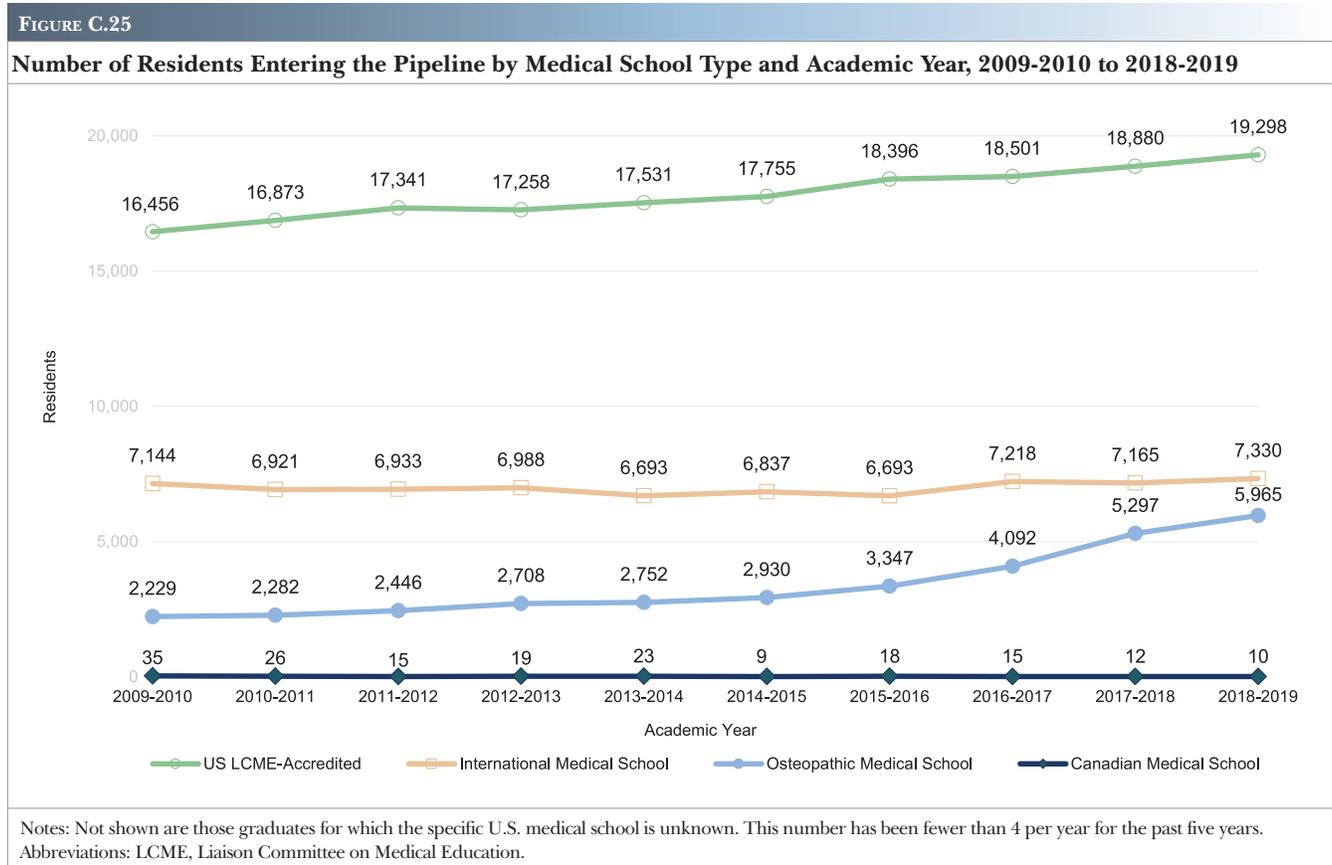
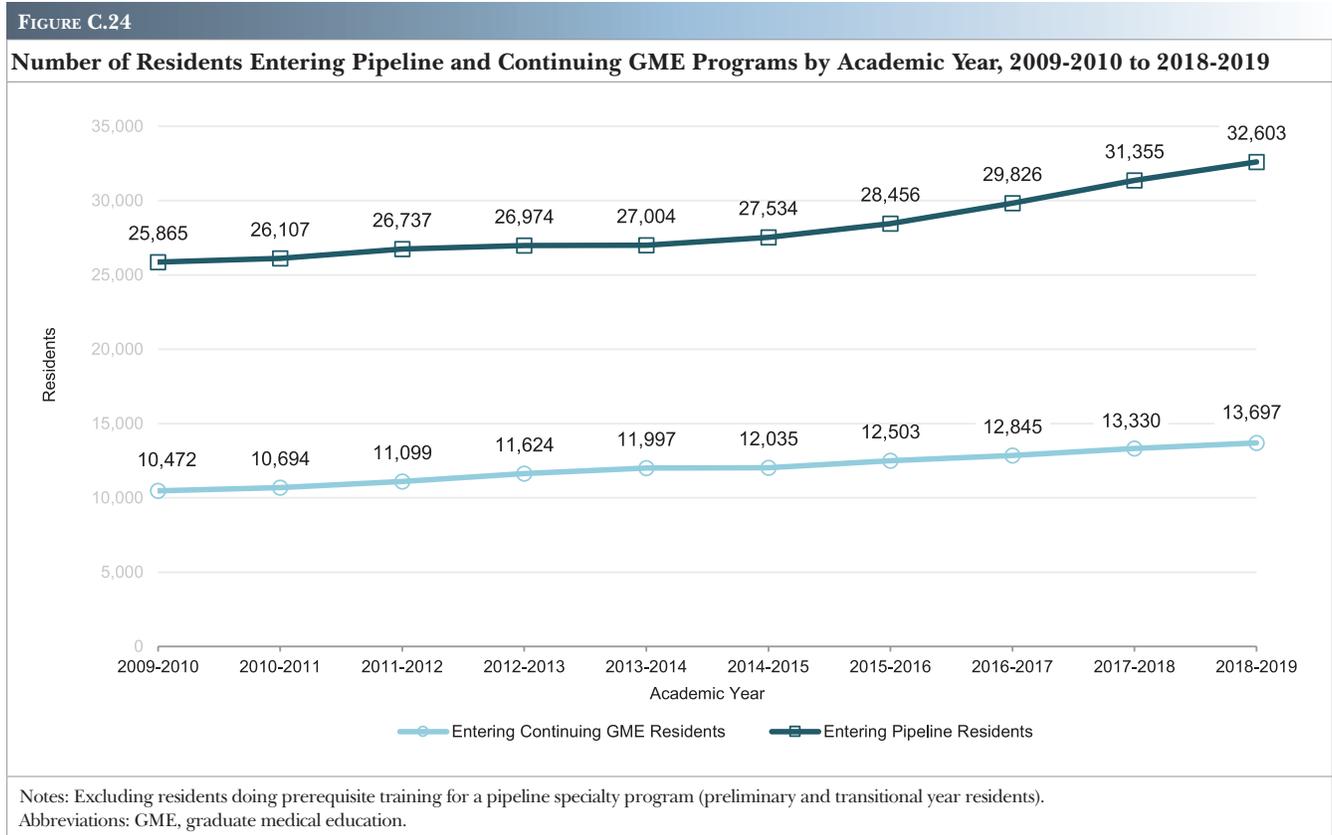


TABLE C.26

Number of Residents Entering the GME Pipeline by Specialty and Medical School Type

Specialty	Total Residents	Medical School Type									
		US LCME-Accredited		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
OVERALL	32,603	19,298	59.2%	7,330	22.5%	5,965	18.3%	10	0.0%	0	0.0%
Anesthesiology	1,545	1,096	70.9%	185	12.0%	264	17.1%	0	0.0%	0	0.0%
Dermatology	535	459	85.8%	17	3.2%	59	11.0%	0	0.0%	0	0.0%
Emergency medicine	2,536	1,747	68.9%	119	4.7%	670	26.4%	0	0.0%	0	0.0%
Family medicine	4,563	1,916	42.0%	1,155	25.3%	1,492	32.7%	0	0.0%	0	0.0%
Internal medicine	8,971	3,768	42.0%	3,650	40.7%	1,551	17.3%	2	0.0%	0	0.0%
Medical genetics and genomics	28	17	60.7%	8	28.6%	3	10.7%	0	0.0%	0	0.0%
Neurological surgery	230	209	90.9%	12	5.2%	9	3.9%	0	0.0%	0	0.0%
Neurology	859	485	56.5%	259	30.2%	114	13.3%	1	0.1%	0	0.0%
Child neurology	134	102	76.1%	22	16.4%	10	7.5%	0	0.0%	0	0.0%
Nuclear medicine	32	8	25.0%	20	62.5%	3	9.4%	1	3.1%	0	0.0%
Obstetrics and gynecology	1,400	1,073	76.6%	107	7.6%	220	15.7%	0	0.0%	0	0.0%
Ophthalmology	497	454	91.3%	24	4.8%	18	3.6%	1	0.2%	0	0.0%
Orthopaedic surgery	837	745	89.0%	13	1.6%	79	9.4%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	15	1	6.7%	0	0.0%	14	93.3%	0	0.0%	0	0.0%
Otolaryngology - head and neck surgery	340	307	90.3%	10	2.9%	23	6.8%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	620	272	43.9%	278	44.8%	70	11.3%	0	0.0%	0	0.0%
Pediatrics	3,105	1,983	63.9%	652	21.0%	470	15.1%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	401	242	60.3%	38	9.5%	121	30.2%	0	0.0%	0	0.0%
Plastic surgery	75	49	65.3%	15	20.0%	11	14.7%	0	0.0%	0	0.0%
Plastic surgery - integrated	170	164	96.5%	5	2.9%	1	0.6%	0	0.0%	0	0.0%
Preventive medicine	193	119	61.7%	32	16.6%	39	20.2%	3	1.6%	0	0.0%
Psychiatry	1,766	1,105	62.6%	359	20.3%	302	17.1%	0	0.0%	0	0.0%
Radiation oncology	196	188	95.9%	7	3.6%	1	0.5%	0	0.0%	0	0.0%
Radiology-diagnostic	1,131	835	73.8%	148	13.1%	148	13.1%	0	0.0%	0	0.0%
Interventional radiology - integrated	118	104	88.1%	4	3.4%	10	8.5%	0	0.0%	0	0.0%
Surgery	1,478	1,133	76.7%	146	9.9%	197	13.3%	2	0.1%	0	0.0%
Vascular surgery - integrated	61	56	91.8%	4	6.6%	1	1.6%	0	0.0%	0	0.0%
Thoracic surgery - integrated	36	32	88.9%	4	11.1%	0	0.0%	0	0.0%	0	0.0%
Urology	343	311	90.7%	13	3.8%	19	5.5%	0	0.0%	0	0.0%
Internal medicine/Pediatrics	388	318	82.0%	24	6.2%	46	11.9%	0	0.0%	0	0.0%

Abbreviations: GME, graduate medical education; LCME, Liaison Committee on Medical Education.

TABLE C.27

Hospital-Based Specialty Residents Entering the GME Pipeline by Specialty and State

State Name	State Abbreviation	AN	EM	MG	NM	PTH	GPM	RO	DR	IRI	Total
OVERALL	-	1,545	2,536	28	32	620	193	196	1,131	118	6,399
Alabama	AL	21	10	1	0	15	6	3	14	2	72
Alaska	AK	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	18	41	0	0	3	0	3	20	1	86
Arkansas	AR	14	16	0	0	4	0	1	7	1	43
California	CA	145	225	5	5	58	20	25	102	13	598
Colorado	CO	4	17	1	0	8	6	2	10	2	50
Connecticut	CT	24	32	0	0	14	3	5	29	3	110
Delaware	DE	0	13	0	0	0	0	0	6	0	19
District of Columbia	DC	15	20	0	0	9	0	2	8	0	54
Florida	FL	82	163	1	2	21	9	6	53	7	344
Georgia	GA	29	48	2	2	10	8	4	23	4	130
Hawaii	HI	0	0	0	0	2	0	0	6	0	8
Idaho	ID	0	0	0	0	0	0	0	0	0	0
Illinois	IL	79	123	0	2	28	5	8	53	8	306
Indiana	IN	26	21	1	0	4	0	1	13	0	66
Iowa	IA	14	9	0	0	6	3	2	7	1	42
Kansas	KS	13	8	0	0	5	0	1	9	1	37
Kentucky	KY	22	23	0	0	6	3	2	12	0	68
Louisiana	LA	25	33	0	0	9	0	0	18	2	87
Maine	ME	5	10	0	0	0	1	0	3	1	20
Maryland	MD	42	25	5	3	21	22	9	25	0	152
Massachusetts	MA	75	65	1	3	38	7	6	58	7	260
Michigan	MI	69	229	0	1	19	1	9	50	5	383
Minnesota	MN	26	32	0	0	11	4	5	22	3	103
Mississippi	MS	8	19	0	0	4	0	1	6	0	38
Missouri	MO	35	47	0	1	18	0	4	32	2	139
Montana	MT	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	10	10	0	0	6	0	1	8	0	35
Nevada	NV	6	18	0	0	0	0	0	0	0	24
New Hampshire	NH	7	6	0	0	4	8	0	3	2	30
New Jersey	NJ	27	86	0	0	12	5	2	29	0	161
New Mexico	NM	6	12	0	0	4	3	0	7	0	32
New York	NY	203	343	2	6	69	15	24	128	18	808
North Carolina	NC	39	77	2	1	18	5	7	27	4	180
North Dakota	ND	0	0	0	0	0	0	0	0	0	0
Ohio	OH	70	141	2	0	26	21	10	45	2	317
Oklahoma	OK	15	31	0	1	5	0	1	13	0	66
Oregon	OR	10	11	0	0	3	0	2	5	2	33
Pennsylvania	PA	92	193	1	0	40	5	13	72	10	426
Puerto Rico	PR	3	7	0	0	3	0	0	4	0	17
Rhode Island	RI	13	21	0	0	4	0	0	6	1	45
South Carolina	SC	15	41	0	0	5	1	1	10	2	75
South Dakota	SD	0	0	0	0	2	0	0	0	0	2
Tennessee	TN	25	34	0	2	17	4	5	25	3	115
Texas	TX	108	145	0	0	48	12	17	78	4	412
Utah	UT	3	9	2	0	5	4	2	6	1	32
Vermont	VT	6	0	0	0	5	0	0	6	0	17
Virginia	VA	26	55	1	0	9	0	3	25	2	121
Washington	WA	35	24	0	3	9	7	3	19	2	102
West Virginia	WV	6	21	0	0	2	3	1	6	0	39
Wisconsin	WI	29	22	1	0	11	2	5	23	2	95
Wyoming	WY	0	0	0	0	0	0	0	0	0	0

Abbreviations: GME, graduate medical education; AN, Anesthesiology; EM, Emergency medicine; MG, Medical genetics and genomics; NM, Nuclear medicine; PTH, Pathology-anatomic and clinical; GPM, Preventive medicine; RO, Radiation oncology; DR, Radiology-diagnostic; IRI, Interventional radiology - integrated.

TABLE C.28

Medical Specialty Residents Entering the GME Pipeline by Specialty and State

State Name	State Abbreviation	D	FM	IM	N	CHN	ONM	PD	PM	P	IP	Total
OVERALL	-	535	4,563	8,971	859	134	15	3,105	401	1,766	388	20,737
Alabama	AL	6	73	90	11	1	0	35	4	14	7	241
Alaska	AK	0	12	0	0	0	0	0	0	0	0	12
Arizona	AZ	9	59	120	16	3	0	51	0	23	6	287
Arkansas	AR	3	45	60	3	1	0	24	4	12	4	156
California	CA	50	497	708	74	16	0	299	29	163	17	1,853
Colorado	CO	7	90	81	14	3	0	33	5	13	4	250
Connecticut	CT	7	27	220	17	0	0	40	0	34	4	349
Delaware	DE	0	14	13	0	0	0	24	0	10	4	65
District of Columbia	DC	8	6	112	15	4	0	47	6	25	4	227
Florida	FL	40	200	545	41	2	0	157	12	102	10	1,109
Georgia	GA	12	117	205	12	4	0	63	6	26	0	445
Hawaii	HI	0	18	27	0	0	0	16	0	14	0	75
Idaho	ID	0	29	23	0	0	0	0	0	0	0	52
Illinois	IL	24	235	485	44	5	0	133	18	63	24	1,031
Indiana	IN	0	110	60	8	1	0	32	4	12	14	241
Iowa	IA	5	59	49	8	1	0	22	0	15	0	159
Kansas	KS	4	40	34	5	0	0	5	3	13	3	107
Kentucky	KY	2	55	62	9	3	0	35	7	19	11	203
Louisiana	LA	9	65	128	15	1	0	44	6	34	16	318
Maine	ME	0	33	13	0	0	2	6	0	5	4	63
Maryland	MD	16	27	217	17	3	0	58	16	37	8	399
Massachusetts	MA	20	48	384	45	9	0	88	11	85	20	710
Michigan	MI	27	235	449	51	4	3	115	25	73	28	1,010
Minnesota	MN	12	82	115	15	2	0	39	12	24	10	311
Mississippi	MS	4	30	55	4	0	0	16	0	6	4	119
Missouri	MO	15	67	158	22	7	0	83	6	40	10	408
Montana	MT	0	17	13	0	0	0	0	0	0	0	30
Nebraska	NE	0	46	44	4	0	0	14	4	9	4	125
Nevada	NV	0	40	83	2	0	0	13	0	16	0	154
New Hampshire	NH	3	8	19	4	0	0	7	0	8	0	49
New Jersey	NJ	5	111	344	17	1	1	86	12	45	4	626
New Mexico	NM	2	25	33	5	1	2	16	0	10	0	94
New York	NY	61	286	1,384	89	13	3	454	83	267	19	2,659
North Carolina	NC	15	146	187	19	4	0	73	12	54	18	528
North Dakota	ND	0	28	8	0	0	0	0	0	6	0	42
Ohio	OH	23	190	455	53	11	0	174	12	62	33	1,013
Oklahoma	OK	3	82	40	6	0	0	33	0	21	6	191
Oregon	OR	7	38	75	5	1	0	19	0	13	0	158
Pennsylvania	PA	32	300	604	58	8	1	151	28	80	18	1,280
Puerto Rico	PR	3	27	84	3	1	0	32	6	12	2	170
Rhode Island	RI	6	15	66	6	0	0	16	0	9	4	122
South Carolina	SC	5	73	62	11	0	0	40	0	25	9	225
South Dakota	SD	0	18	8	0	0	0	6	0	7	0	39
Tennessee	TN	9	74	124	14	5	0	64	4	26	18	338
Texas	TX	48	295	483	64	12	0	229	34	112	20	1,297
Utah	UT	4	28	32	6	1	0	18	6	9	3	107
Vermont	VT	2	6	15	4	0	0	7	0	5	0	39
Virginia	VA	10	119	157	15	1	0	79	14	48	4	447
Washington	WA	4	145	95	9	3	0	48	3	20	0	327
West Virginia	WV	2	55	56	9	0	3	17	0	15	6	163
Wisconsin	WI	11	104	87	10	2	0	44	9	25	8	300
Wyoming	WY	0	14	0	0	0	0	0	0	0	0	14

Abbreviations: GME, graduate medical education; D, Dermatology; FM, Family medicine; IM, Internal medicine; N, Neurology; CHN, Child neurology; ONM, Osteopathic neuromusculoskeletal medicine; PD, Pediatrics; PM, Physical medicine and rehabilitation; P, Psychiatry; IP, Internal medicine/Pediatrics.

TABLE C.29

Surgical Specialty Residents Entering the GME Pipeline by Specialty and State

State Name	State Abbreviation	NS	OBG	OPH	ORS	OTO	PS	PSI	GS	VSI	TSI	U	Total
OVERALL	-	230	1,400	497	837	340	75	170	1,478	61	36	343	5,467
Alabama	AL	3	12	5	9	4	2	0	18	1	0	4	58
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	5	21	4	10	3	0	1	27	1	0	5	77
Arkansas	AR	1	5	3	5	3	0	0	5	1	0	2	25
California	CA	23	118	45	77	30	4	20	114	5	5	27	468
Colorado	CO	2	14	5	7	4	2	2	23	0	0	3	62
Connecticut	CT	1	33	5	10	5	0	3	24	1	2	6	90
Delaware	DE	0	6	0	0	0	0	0	7	0	0	0	13
District of Columbia	DC	3	21	13	12	5	0	4	19	1	0	5	83
Florida	FL	8	54	19	26	9	5	6	73	2	0	12	214
Georgia	GA	4	30	9	16	7	2	2	32	1	1	6	110
Hawaii	HI	0	10	0	5	2	0	0	9	0	0	0	26
Idaho	ID	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	IL	14	60	23	36	15	3	7	52	2	1	16	229
Indiana	IN	3	5	6	6	3	2	2	13	1	1	4	46
Iowa	IA	2	5	5	6	5	1	0	14	1	1	3	43
Kansas	KS	2	8	3	8	4	0	2	16	0	0	4	47
Kentucky	KY	4	11	7	10	5	3	2	16	0	1	5	64
Louisiana	LA	6	27	16	12	10	3	2	25	2	0	8	111
Maine	ME	0	4	0	0	0	0	0	4	1	0	1	10
Maryland	MD	8	25	13	20	11	1	4	29	0	1	7	119
Massachusetts	MA	6	38	16	26	10	4	6	55	5	2	12	180
Michigan	MI	10	99	26	58	19	5	6	93	2	2	20	340
Minnesota	MN	5	14	9	21	9	0	6	22	1	0	9	96
Mississippi	MS	1	5	4	4	3	1	1	9	0	0	2	30
Missouri	MO	4	31	16	24	11	0	7	22	2	0	6	123
Montana	MT	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	2	8	2	5	3	1	0	9	0	0	3	33
Nevada	NV	0	10	0	4	1	0	1	9	0	0	0	25
New Hampshire	NH	1	4	0	4	1	1	1	4	1	0	2	19
New Jersey	NJ	2	54	5	22	2	1	2	52	2	0	6	148
New Mexico	NM	1	6	0	5	1	0	1	6	0	0	2	22
New York	NY	23	168	67	91	32	3	18	161	9	6	42	620
North Carolina	NC	8	38	14	22	11	0	7	40	0	2	10	152
North Dakota	ND	0	0	0	3	0	0	0	5	0	0	0	8
Ohio	OH	9	86	24	54	19	4	8	78	5	3	17	307
Oklahoma	OK	2	17	5	6	2	1	0	13	0	0	3	49
Oregon	OR	4	7	5	5	3	0	3	15	0	0	3	45
Pennsylvania	PA	18	92	30	59	25	9	10	102	5	4	22	376
Puerto Rico	PR	1	12	4	4	2	0	0	8	0	0	3	34
Rhode Island	RI	2	8	3	6	0	0	2	7	0	0	2	30
South Carolina	SC	2	15	7	11	4	1	2	22	1	1	3	69
South Dakota	SD	0	0	0	0	0	0	0	3	0	0	0	3
Tennessee	TN	5	32	10	16	9	5	2	35	0	0	10	124
Texas	TX	16	105	39	56	22	8	13	94	5	1	24	383
Utah	UT	3	6	4	6	3	2	1	6	0	0	3	34
Vermont	VT	1	3	0	3	1	0	0	4	0	0	1	13
Virginia	VA	6	35	8	17	8	1	6	28	0	1	5	115
Washington	WA	3	11	7	11	6	0	4	21	1	1	6	71
West Virginia	WV	1	9	4	8	2	0	1	15	1	0	3	44
Wisconsin	WI	5	18	7	11	6	0	5	20	1	0	6	79
Wyoming	WY	0	0	0	0	0	0	0	0	0	0	0	0

Abbreviations: GME, graduate medical education; NS, Neurological surgery; OBG, Obstetrics and gynecology; OPH, Ophthalmology; ORS, Orthopaedic surgery; OTO, Otolaryngology - head and neck surgery; PS, Plastic surgery; PSI, Plastic surgery - integrated; GS, Surgery; VSI, Vascular surgery - integrated; TSI, Thoracic surgery - integrated; U, Urology.

TABLE C.30

Number of Residents Entering GME and the GME Pipeline by Specialty

Specialty	PGY1 Residents	PGY1 Residents as % of Total	PGY1 Residents with No Prior Training	PGY1 Residents with No Prior Training as % of Total	Entering Pipeline Residents	Entering Pipeline Residents as % of Total
OVERALL	33,397	100.0%	32,348	100.0%	32,603	100.0%
Anesthesiology	1,150	3.4%	1,096	3.4%	1,545	4.7%
Dermatology	14	0.0%	7	0.0%	535	1.6%
Emergency medicine	2,522	7.6%	2,396	7.4%	2,536	7.8%
Family medicine	4,563	13.7%	4,405	13.6%	4,563	14.0%
Internal medicine	11,114	33.3%	10,847	33.5%	8,971	27.5%
Medical genetics and genomics	1	0.0%	0	0.0%	28	0.1%
Neurological surgery	230	0.7%	215	0.7%	230	0.7%
Neurology	412	1.2%	391	1.2%	859	2.6%
Child neurology	0	0.0%	0	0.0%	134	0.4%
Nuclear medicine	0	0.0%	0	0.0%	32	0.1%
Obstetrics and gynecology	1,419	4.2%	1,392	4.3%	1,400	4.3%
Ophthalmology	0	0.0%	0	0.0%	497	1.5%
Orthopaedic surgery	837	2.5%	808	2.5%	837	2.6%
Osteopathic neuromusculoskeletal medicine	0	0.0%	0	0.0%	15	0.0%
Otolaryngology - head and neck surgery	340	1.0%	335	1.0%	340	1.0%
Pathology-anatomic and clinical	620	1.9%	580	1.8%	620	1.9%
Pediatrics	3,175	9.5%	3,129	9.7%	3,105	9.5%
Physical medicine and rehabilitation	120	0.4%	112	0.3%	401	1.2%
Plastic surgery	0	0.0%	0	0.0%	75	0.2%
Plastic surgery - integrated	170	0.5%	162	0.5%	170	0.5%
Preventive medicine	8	0.0%	0	0.0%	193	0.6%
Psychiatry	1,766	5.3%	1,725	5.3%	1,766	5.4%
Radiation oncology	0	0.0%	0	0.0%	196	0.6%
Radiology-diagnostic	0	0.0%	0	0.0%	1,131	3.5%
Interventional radiology - integrated	0	0.0%	0	0.0%	118	0.4%
Surgery	2,919	8.7%	2,791	8.6%	1,478	4.5%
Vascular surgery - integrated	61	0.2%	56	0.2%	61	0.2%
Thoracic surgery - integrated	36	0.1%	35	0.1%	36	0.1%
Urology	0	0.0%	0	0.0%	343	1.1%
Transitional year	1,532	4.6%	1,480	4.6%	0	0.0%
Internal medicine/Pediatrics	388	1.2%	386	1.2%	388	1.2%

Abbreviations: GME, graduate medical education; PGY1, post graduate year 1.

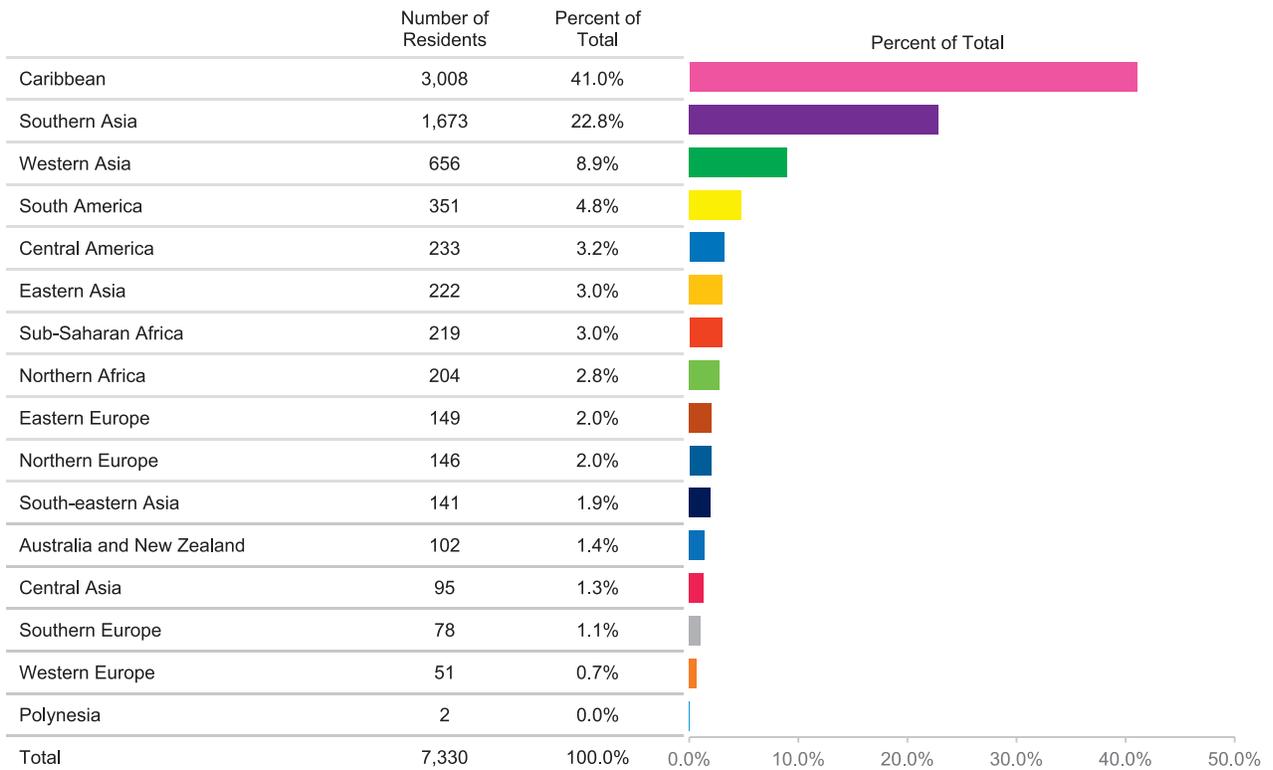
TABLE C.31

Number of Residents Entering GME and the GME Pipeline by State

State Name	PGY1 Residents	PGY1 Residents as % of Total	PGY1 Residents with No Prior Training	PGY1 Residents with No Prior Training as % of Total	Entering Pipeline Residents	Entering Pipeline Residents as % of Total
OVERALL	33,397	100.0%	32,348	100.0%	32,603	100.0%
Alabama	372	1.1%	369	1.1%	371	1.1%
Alaska	12	0.0%	12	0.0%	12	0.0%
Arizona	459	1.4%	447	1.4%	450	1.4%
Arkansas	224	0.7%	210	0.6%	224	0.7%
California	2,954	8.8%	2,855	8.8%	2,919	9.0%
Colorado	376	1.1%	371	1.1%	362	1.1%
Connecticut	555	1.7%	542	1.7%	549	1.7%
Delaware	95	0.3%	91	0.3%	97	0.3%
District of Columbia	366	1.1%	357	1.1%	364	1.1%
Florida	1,780	5.3%	1,718	5.3%	1,667	5.1%
Georgia	712	2.1%	693	2.1%	685	2.1%
Hawaii	129	0.4%	122	0.4%	109	0.3%
Idaho	56	0.2%	56	0.2%	52	0.2%
Illinois	1,613	4.8%	1,569	4.9%	1,566	4.8%
Indiana	365	1.1%	357	1.1%	353	1.1%
Iowa	243	0.7%	239	0.7%	244	0.7%
Kansas	187	0.6%	184	0.6%	191	0.6%
Kentucky	337	1.0%	328	1.0%	335	1.0%
Louisiana	518	1.6%	499	1.5%	516	1.6%
Maine	91	0.3%	89	0.3%	93	0.3%
Maryland	684	2.0%	661	2.0%	670	2.1%
Massachusetts	1,134	3.4%	1,123	3.5%	1,150	3.5%
Michigan	1,784	5.3%	1,719	5.3%	1,733	5.3%
Minnesota	479	1.4%	470	1.5%	510	1.6%
Mississippi	211	0.6%	208	0.6%	187	0.6%
Missouri	652	2.0%	634	2.0%	670	2.1%
Montana	30	0.1%	28	0.1%	30	0.1%
Nebraska	193	0.6%	187	0.6%	193	0.6%
Nevada	242	0.7%	232	0.7%	203	0.6%
New Hampshire	87	0.3%	83	0.3%	98	0.3%
New Jersey	973	2.9%	948	2.9%	935	2.9%
New Mexico	151	0.5%	142	0.4%	148	0.5%
New York	4,273	12.8%	4,140	12.8%	4,087	12.5%
North Carolina	879	2.6%	842	2.6%	860	2.6%
North Dakota	61	0.2%	58	0.2%	50	0.2%
Ohio	1,703	5.1%	1,649	5.1%	1,637	5.0%
Oklahoma	306	0.9%	295	0.9%	306	0.9%
Oregon	236	0.7%	232	0.7%	236	0.7%
Pennsylvania	2,091	6.3%	2,025	6.3%	2,082	6.4%
Puerto Rico	272	0.8%	251	0.8%	221	0.7%
Rhode Island	186	0.6%	182	0.6%	197	0.6%
South Carolina	397	1.2%	385	1.2%	369	1.1%
South Dakota	53	0.2%	51	0.2%	44	0.1%
Tennessee	581	1.7%	560	1.7%	577	1.8%
Texas	2,052	6.1%	1,969	6.1%	2,092	6.4%
Utah	169	0.5%	166	0.5%	173	0.5%
Vermont	64	0.2%	64	0.2%	69	0.2%
Virginia	729	2.2%	705	2.2%	683	2.1%
Washington	527	1.6%	505	1.6%	500	1.5%
West Virginia	266	0.8%	257	0.8%	246	0.8%
Wisconsin	474	1.4%	455	1.4%	474	1.5%
Wyoming	14	0.0%	14	0.0%	14	0.0%

Abbreviations: GME, graduate medical education; PGY1, post graduate year 1.

FIGURE C.32

Number of Residents who are International Medical School Graduates Entering the GME Pipeline by Region, 2018-2019


Abbreviations: GME, graduate medical education.



Graduating Residents and Residents Leaving Prior to Completion

This section summarizes the characteristics of both graduating residents who successfully completed all accredited training, and residents who left their program prior to successful completion. Resident completion status for the 2017-2018 academic year was reported during the fall of the 2018-2019 academic year, therefore, the following data includes only those residents who graduated or left their programs between September 1, 2017 and August 31, 2018.

Graduating Residents

Of the 44,043 residents graduating from ACGME-accredited programs in the 2017-2018 academic year, 62.3% graduated from a medical program, 22.8% graduated from a hospital-based program, and 14.9% graduated from a surgical program. From the 2008-2009 academic year to the 2017-2018 academic year, there was a 26.3% increase in graduating residents (a 23.1% increase in specialty program graduates and a 34.9% increase in subspecialty program graduates). The specialties with the highest number of graduating residents in the 2017-2018 academic year include:

- Internal medicine (8,311)
- Family medicine (4,036)
- Pediatrics (3,004)

International medical school graduates account for 11,052 (25.1%) of all graduating residents.

Residents Completing Preliminary Training and Transitional Year Graduates

There were 3,579 residents who completed preliminary training, and 1,402 residents graduating from transitional year programs, during the 2017-2018 academic year, for a total of 4,981 residents completing the necessary prerequisite training for specialty programs that require a clinical base year. Of the 3,579 preliminary training graduates, 2,133 (59.6%) were in internal medicine, 1,348 (37.7%) were in surgery, 81 (2.3%) were in pediatrics, and 17 (0.5%) were in obstetrics and gynecology. Over the last

10 years, the total number of preliminary graduates has fluctuated, with a high of 3,854 in the 2008-2009 academic year, and a low of 3,118 in 2011-2012. The number of transitional year graduates has remained fairly constant, with approximately 1,200 residents completing transitional year programs every year.

Geographic Distribution of Graduates

There were approximately 13.33 graduating residents per 100,000 population, including Puerto Rico, during the 2017-2018 academic year (9.52 specialty graduates and 3.81 subspecialty graduates). The following states have the highest total number of graduating residents:

- New York (5,617)
- California (3,937)
- Pennsylvania (2,934)
- Texas (2,865)

The concentration of specialty graduates ranges from 1.63 per 100,000 population in Alaska to 50.11 per 100,000 population in the District of Columbia.

Residents Leaving Prior to Completion

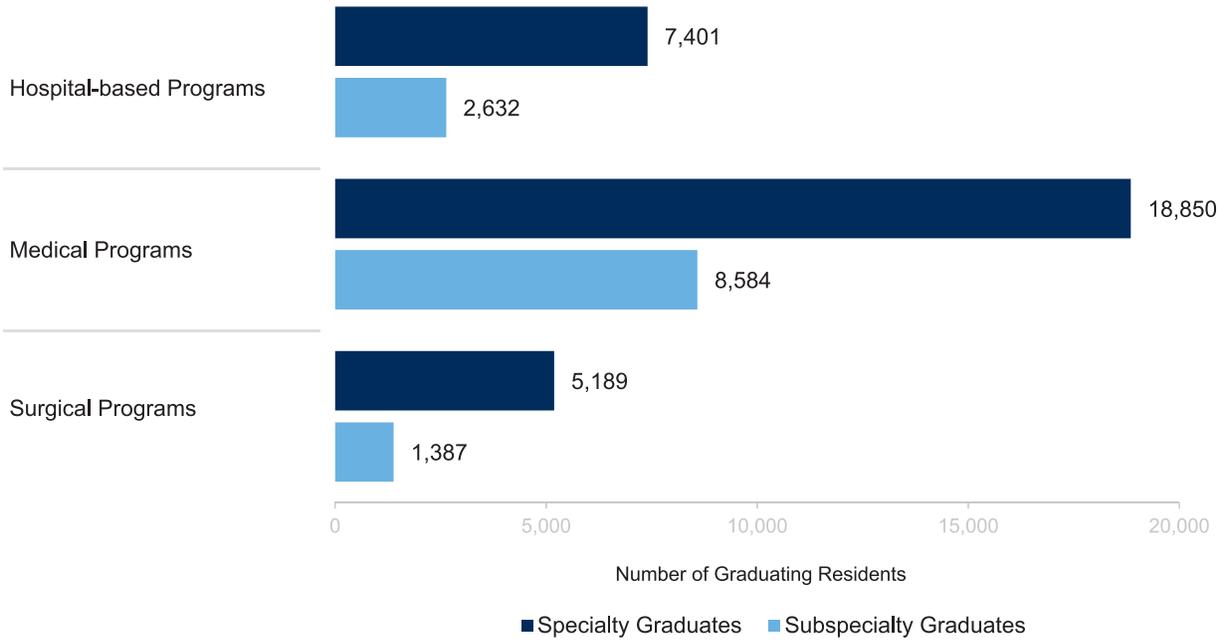
In the 2017-2018 academic year, 2,314 left their programs prior to successful completion with statuses of either deceased (1.2%), dismissed (11.8%), transferred (49.8%), unsuccessfully completed program (0.6%), or withdrawn (36.6%). The following specialties have the highest number of transferring residents:

- Psychiatry (347)
- Surgery (143)
- Internal medicine (111)

Overall, of the 1,099 transfers that occurred among residents in specialty programs during the 2017-2018 academic year, 460 (41.9%) occurred during the first year of the program, 228 (20.7%) occurred during the second year of the program, 366 (33.3%) occurred during the third year of the program, and 45 (4.1%) occurred in the fourth, fifth, or sixth year of the program. ♪

FIGURE D.1

Number of Graduating Residents by Specialty Group, 2017-2018 AY



Note: Total number of graduating residents = 44,043.
Abbreviations: AY, academic year.

FIGURE D.2

Number of Graduating Residents by Academic Year, 2008-2009 to 2017-2018

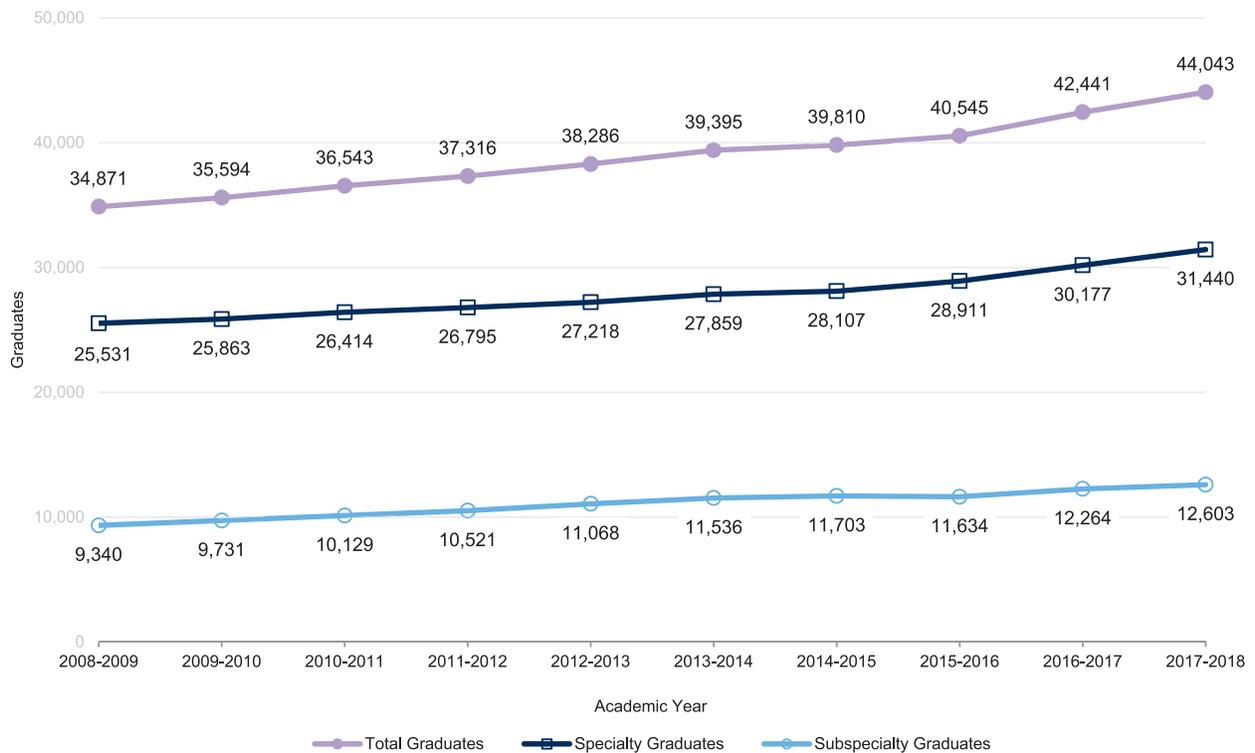
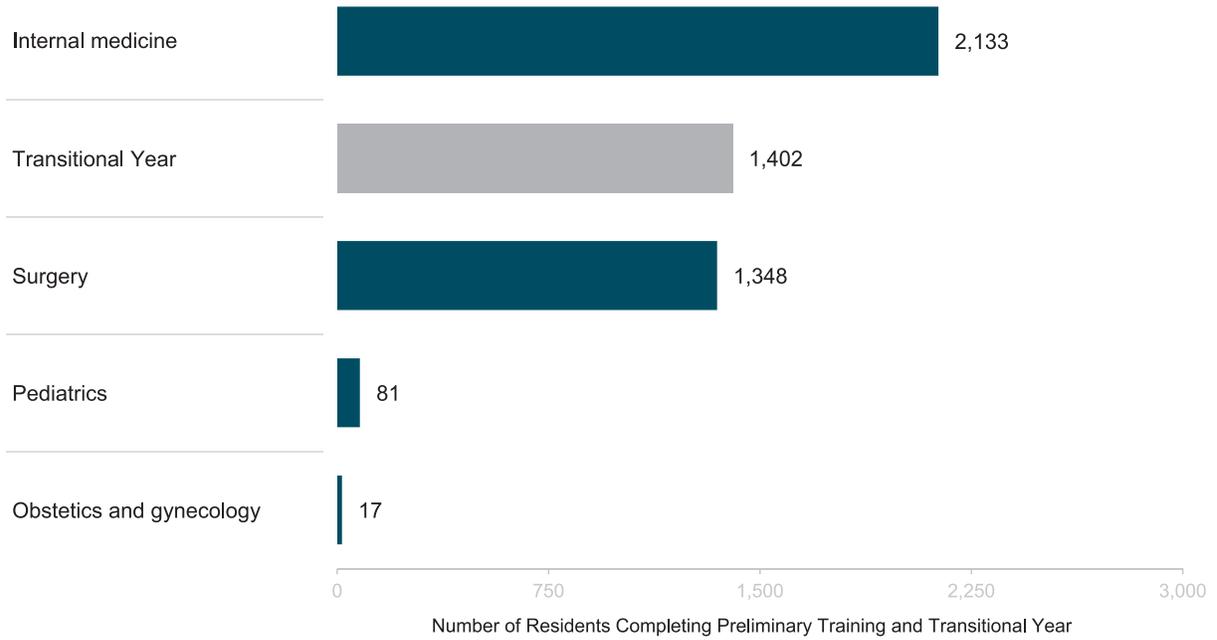


FIGURE D.3

Number of Residents Completing Preliminary Training and Transitional Year by Specialty, 2017-2018 AY



Notes: Total number of residents completing preliminary training = 3,579. Total number of residents completing transitional year programs = 1,402. Abbreviations: AY, academic year

FIGURE D.4

Number of Residents Completing Preliminary Training and Transitional Year by Academic Year, 2008-2009 to 2017-2018

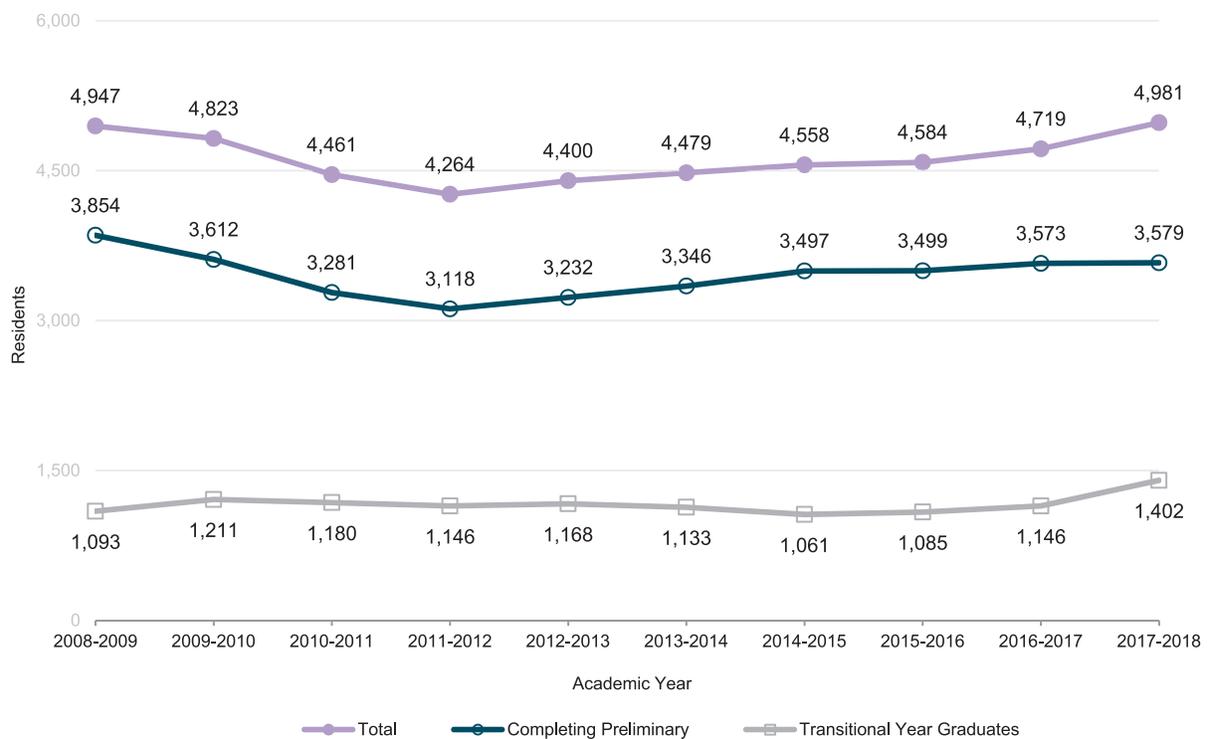


TABLE D.5				
Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2017-2018 AY				
Specialty	Total Graduates	Percent of Total Graduates	Number of Residents Completing Preliminary Training	Percent of Total Residents Completing Preliminary Training
OVERALL	44,043	100.0%	3,579	100.0%
TOTAL PIPELINE	29,700	67.4%	3,579	100.0%
Allergy and immunology	142	0.3%	0	0.0%
Anesthesiology	1,674	3.8%	0	0.0%
- Adult cardiothoracic anesthesiology	208	0.5%	0	0.0%
- Clinical informatics	1	0.0%	0	0.0%
- Critical care medicine	188	0.4%	0	0.0%
- Regional anesthesiology and acute pain medicine	56	0.1%	0	0.0%
- Obstetric anesthesiology	42	0.1%	0	0.0%
- Pain medicine (multidisciplinary)	370	0.8%	0	0.0%
- Pediatric anesthesiology	230	0.5%	0	0.0%
Colon and rectal surgery	96	0.2%	0	0.0%
Dermatology	500	1.1%	0	0.0%
- Dermatopathology (multidisciplinary)	72	0.2%	0	0.0%
- Micrographic surgery and dermatologic oncology	83	0.2%	0	0.0%
Emergency medicine	2,134	4.8%	0	0.0%
- Clinical informatics	2	0.0%	0	0.0%
- Emergency medical services	49	0.1%	0	0.0%
- Medical toxicology	29	0.1%	0	0.0%
- Pediatric emergency medicine	38	0.1%	0	0.0%
- Sports medicine	17	0.0%	0	0.0%
- Undersea and hyperbaric medicine	8	0.0%	0	0.0%
Family medicine	4,036	9.2%	0	0.0%
- Clinical informatics	5	0.0%	0	0.0%
- Geriatric medicine	47	0.1%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	345	0.8%	0	0.0%
- Sports medicine	232	0.5%	0	0.0%
Internal medicine	8,311	18.9%	2,133	59.6%
- Adult congenital heart disease	9	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	101	0.2%	0	0.0%
- Cardiovascular disease	970	2.2%	0	0.0%
- Clinical cardiac electrophysiology	51	0.1%	0	0.0%
- Clinical informatics	16	0.0%	0	0.0%
- Critical care medicine	140	0.3%	0	0.0%
- Endocrinology, diabetes, and metabolism	316	0.7%	0	0.0%
- Gastroenterology	561	1.3%	0	0.0%
- Geriatric medicine	271	0.6%	0	0.0%
- Hematology	9	0.0%	0	0.0%
- Hematology and medical oncology	572	1.3%	0	0.0%
- Infectious disease	340	0.8%	0	0.0%
- Interventional cardiology	322	0.7%	0	0.0%
- Nephrology	416	0.9%	0	0.0%
- Medical oncology	20	0.0%	0	0.0%
- Pulmonary disease	33	0.1%	0	0.0%
- Pulmonary disease and critical care medicine	622	1.4%	0	0.0%
- Rheumatology	238	0.5%	0	0.0%
- Sleep medicine (multidisciplinary)	164	0.4%	0	0.0%
- Transplant hepatology	49	0.1%	0	0.0%
Medical genetics and genomics	32	0.1%	0	0.0%
- Medical biochemical genetics	12	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	57	0.1%	0	0.0%
Neurological surgery	192	0.4%	0	0.0%
- Endovascular surgical neuroradiology	3	0.0%	0	0.0%

TABLE D.5 Continued

Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2017-2018 AY

Specialty	Total Graduates	Percent of Total Graduates	Number of Residents Completing Preliminary Training	Percent of Total Residents Completing Preliminary Training
Neurology	751	1.7%	0	0.0%
- Brain injury medicine	1	0.0%	0	0.0%
- Clinical neurophysiology	175	0.4%	0	0.0%
- Epilepsy	104	0.2%	0	0.0%
- Endovascular surgical neuroradiology	1	0.0%	0	0.0%
- Neurodevelopmental disabilities	8	0.0%	0	0.0%
- Neuromuscular medicine	57	0.1%	0	0.0%
- Vascular neurology	114	0.3%	0	0.0%
Child neurology	122	0.3%	0	0.0%
Nuclear medicine	35	0.1%	0	0.0%
Obstetrics and gynecology	1,333	3.0%	17	0.5%
- Female pelvic medicine and reconstructive surgery	48	0.1%	0	0.0%
- Gynecologic oncology	59	0.1%	0	0.0%
- Maternal-fetal medicine	103	0.2%	0	0.0%
- Reproductive endocrinology and infertility	49	0.1%	0	0.0%
Ophthalmology	499	1.1%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	3	0.0%	0	0.0%
Orthopaedic surgery	797	1.8%	0	0.0%
- Adult reconstructive orthopaedics	40	0.1%	0	0.0%
- Foot and ankle orthopaedics	14	0.0%	0	0.0%
- Hand surgery	152	0.3%	0	0.0%
- Musculoskeletal oncology	18	0.0%	0	0.0%
- Orthopaedic sports medicine	202	0.5%	0	0.0%
- Orthopaedic surgery of the spine	32	0.1%	0	0.0%
- Orthopaedic trauma	18	0.0%	0	0.0%
- Pediatric orthopaedics	38	0.1%	0	0.0%
Osteopathic neuromusculoskeletal medicine	23	0.1%	0	0.0%
Otolaryngology - head and neck surgery	311	0.7%	0	0.0%
- Neurotology	14	0.0%	0	0.0%
- Pediatric otolaryngology	37	0.1%	0	0.0%
Pathology-anatomic and clinical	590	1.3%	0	0.0%
- Blood banking/transfusion medicine	54	0.1%	0	0.0%
- Clinical informatics	7	0.0%	0	0.0%
- Chemical pathology	1	0.0%	0	0.0%
- Cytopathology	139	0.3%	0	0.0%
- Forensic pathology	44	0.1%	0	0.0%
- Hematopathology	127	0.3%	0	0.0%
- Medical microbiology	12	0.0%	0	0.0%
- Neuropathology	28	0.1%	0	0.0%
- Pediatric pathology	17	0.0%	0	0.0%
- Selective pathology	171	0.4%	0	0.0%
Pediatrics	3,004	6.8%	81	2.3%
- Adolescent medicine	30	0.1%	0	0.0%
- Child abuse pediatrics	16	0.0%	0	0.0%
- Clinical informatics	5	0.0%	0	0.0%
- Developmental-behavioral pediatrics	40	0.1%	0	0.0%
- Neonatal-perinatal medicine	257	0.6%	0	0.0%
- Pediatric cardiology	142	0.3%	0	0.0%
- Pediatric critical care medicine	172	0.4%	0	0.0%
- Pediatric emergency medicine	119	0.3%	0	0.0%
- Pediatric endocrinology	78	0.2%	0	0.0%
- Pediatric gastroenterology	99	0.2%	0	0.0%
- Pediatric hematology/oncology	168	0.4%	0	0.0%
- Pediatric infectious diseases	45	0.1%	0	0.0%

TABLE D.5 Continued

Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2017-2018 AY

Specialty	Total Graduates	Percent of Total Graduates	Number of Residents Completing Preliminary Training	Percent of Total Residents Completing Preliminary Training
- Pediatric nephrology	33	0.1%	0	0.0%
- Pediatric pulmonology	48	0.1%	0	0.0%
- Pediatric rheumatology	26	0.1%	0	0.0%
- Pediatric sports medicine	26	0.1%	0	0.0%
- Pediatric transplant hepatology	12	0.0%	0	0.0%
Physical medicine and rehabilitation	402	0.9%	0	0.0%
- Brain injury medicine	14	0.0%	0	0.0%
- Neuromuscular medicine	0	0.0%	0	0.0%
- Spinal cord injury medicine	21	0.0%	0	0.0%
- Pediatric rehabilitation	12	0.0%	0	0.0%
- Sports medicine	27	0.1%	0	0.0%
Plastic surgery	98	0.2%	0	0.0%
Plastic surgery - integrated	102	0.2%	0	0.0%
- Craniofacial surgery	3	0.0%	0	0.0%
- Hand surgery	23	0.1%	0	0.0%
Preventive medicine	181	0.4%	0	0.0%
- Medical toxicology	2	0.0%	0	0.0%
- Undersea and hyperbaric medicine	2	0.0%	0	0.0%
Psychiatry	1,199	2.7%	0	0.0%
- Addiction medicine (multidisciplinary)	13	0.0%	0	0.0%
- Addiction psychiatry	74	0.2%	0	0.0%
- Child and adolescent psychiatry	418	0.9%	0	0.0%
- Forensic psychiatry	81	0.2%	0	0.0%
- Geriatric psychiatry	55	0.1%	0	0.0%
- Consultation-liaison psychiatry	89	0.2%	0	0.0%
Radiation oncology	189	0.4%	0	0.0%
Radiology-diagnostic	1,162	2.6%	0	0.0%
- Abdominal radiology	44	0.1%	0	0.0%
- Endovascular surgical neuroradiology	5	0.0%	0	0.0%
- Musculoskeletal radiology	32	0.1%	0	0.0%
- Neuroradiology	278	0.6%	0	0.0%
- Nuclear radiology	11	0.0%	0	0.0%
- Pediatric radiology	57	0.1%	0	0.0%
- Vascular and interventional radiology	294	0.7%	0	0.0%
Interventional radiology - integrated	2	0.0%	0	0.0%
Surgery	1,288	2.9%	1,348	37.7%
- Complex general surgical oncology	53	0.1%	0	0.0%
- Hand surgery	8	0.0%	0	0.0%
- Pediatric surgery	38	0.1%	0	0.0%
- Surgical critical care	257	0.6%	0	0.0%
- Vascular surgery	127	0.3%	0	0.0%
Vascular surgery - integrated	38	0.1%	0	0.0%
Thoracic surgery	100	0.2%	0	0.0%
- Congenital cardiac surgery	11	0.0%	0	0.0%
Thoracic surgery - integrated	20	0.0%	0	0.0%
Urology	315	0.7%	0	0.0%
- Female pelvic medicine and reconstructive surgery	13	0.0%	0	0.0%
- Pediatric urology	24	0.1%	0	0.0%
Transitional year	1,402	3.2%	0	0.0%
Internal medicine/Pediatrics	360	0.8%	0	0.0%

Note: Pipeline specialties are highlighted.
Abbreviations: AY, academic year.

TABLE D.6

Number of Graduating Residents by Specialty and Subspecialty and Medical School Type, 2017-2018 AY

Specialty	Total Graduates	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
OVERALL	44,043	26,423	60.0%	11,052	25.1%	6,469	14.7%	98	0.2%	1	0.0%
TOTAL PIPELINE	29,700	17,999	60.6%	6,836	23.0%	4,850	16.3%	14	0.0%	1	0.0%
Allergy and immunology	142	103	72.5%	27	19.0%	12	8.5%	0	0.0%	0	0.0%
Anesthesiology	1,674	1,243	74.3%	208	12.4%	223	13.3%	0	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	208	149	71.6%	27	13.0%	31	14.9%	1	0.5%	0	0.0%
- Clinical informatics	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	188	135	71.8%	35	18.6%	18	9.6%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	56	42	75.0%	8	14.3%	5	8.9%	1	1.8%	0	0.0%
- Obstetric anesthesiology	42	35	83.3%	5	11.9%	1	2.4%	1	2.4%	0	0.0%
- Pain medicine (multidisciplinary)	370	255	68.9%	55	14.9%	58	15.7%	2	0.5%	0	0.0%
- Pediatric anesthesiology	230	175	76.1%	26	11.3%	25	10.9%	4	1.7%	0	0.0%
Colon and rectal surgery	96	72	75.0%	18	18.8%	5	5.2%	1	1.0%	0	0.0%
Dermatology	500	430	86.0%	13	2.6%	57	11.4%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	72	50	69.4%	16	22.2%	5	6.9%	1	1.4%	0	0.0%
- Micrographic surgery and dermatologic oncology	83	75	90.4%	3	3.6%	5	6.0%	0	0.0%	0	0.0%
Emergency medicine	2,134	1,537	72.0%	111	5.2%	485	22.7%	1	0.0%	0	0.0%
- Clinical informatics	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	49	37	75.5%	9	18.4%	3	6.1%	0	0.0%	0	0.0%
- Medical toxicology	29	19	65.5%	8	27.6%	2	6.9%	0	0.0%	0	0.0%
- Pediatric emergency medicine	38	21	55.3%	10	26.3%	7	18.4%	0	0.0%	0	0.0%
- Sports medicine	17	8	47.1%	3	17.6%	6	35.3%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	8	3	37.5%	3	37.5%	1	12.5%	1	12.5%	0	0.0%
Family medicine	4,036	1,702	42.2%	1,094	27.1%	1,237	30.6%	3	0.1%	0	0.0%
- Clinical informatics	5	5	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	47	20	42.6%	20	42.6%	7	14.9%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	345	221	64.1%	86	24.9%	36	10.4%	2	0.6%	0	0.0%
- Sports medicine	232	105	45.3%	45	19.4%	82	35.3%	0	0.0%	0	0.0%
Internal medicine	8,311	3,795	45.7%	3,250	39.1%	1,262	15.2%	4	0.0%	0	0.0%
- Adult congenital heart disease	9	6	66.7%	2	22.2%	1	11.1%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	101	56	55.4%	34	33.7%	9	8.9%	2	2.0%	0	0.0%
- Cardiovascular disease	970	477	49.2%	402	41.4%	91	9.4%	0	0.0%	0	0.0%
- Clinical cardiac electrophysiology	51	27	52.9%	23	45.1%	1	2.0%	0	0.0%	0	0.0%
- Clinical informatics	16	14	87.5%	2	12.5%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	140	43	30.7%	76	54.3%	21	15.0%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	316	138	43.7%	156	49.4%	22	7.0%	0	0.0%	0	0.0%
- Gastroenterology	561	343	61.1%	168	29.9%	49	8.7%	1	0.2%	0	0.0%
- Geriatric medicine	271	100	36.9%	144	53.1%	27	10.0%	0	0.0%	0	0.0%
- Hematology	9	6	66.7%	3	33.3%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	572	310	54.2%	229	40.0%	32	5.6%	1	0.2%	0	0.0%
- Infectious disease	340	168	49.4%	140	41.2%	31	9.1%	1	0.3%	0	0.0%
- Interventional cardiology	322	134	41.6%	164	50.9%	23	7.1%	1	0.3%	0	0.0%
- Nephrology	416	103	24.8%	275	66.1%	38	9.1%	0	0.0%	0	0.0%
- Medical oncology	20	12	60.0%	6	30.0%	2	10.0%	0	0.0%	0	0.0%
- Pulmonary disease	33	4	12.1%	26	78.8%	3	9.1%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	622	285	45.8%	262	42.1%	75	12.1%	0	0.0%	0	0.0%
- Rheumatology	238	102	42.9%	110	46.2%	25	10.5%	1	0.4%	0	0.0%
- Sleep medicine (multidisciplinary)	164	60	36.6%	81	49.4%	23	14.0%	0	0.0%	0	0.0%
- Transplant hepatology	49	32	65.3%	14	28.6%	2	4.1%	1	2.0%	0	0.0%
Medical genetics and genomics	32	14	43.8%	16	50.0%	2	6.3%	0	0.0%	0	0.0%
- Medical biochemical genetics	12	7	58.3%	5	41.7%	0	0.0%	0	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	57	26	45.6%	28	49.1%	2	3.5%	1	1.8%	0	0.0%
Neurological surgery	192	171	89.1%	15	7.8%	6	3.1%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

TABLE D.6 Continued

Number of Graduating Residents by Specialty and Subspecialty and Medical School Type, 2017-2018 AY

Specialty	Total Graduates	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
Neurology	751	404	53.8%	264	35.2%	83	11.1%	0	0.0%	0	0.0%
- Brain injury medicine	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	175	84	48.0%	68	38.9%	19	10.9%	4	2.3%	0	0.0%
- Epilepsy	104	57	54.8%	40	38.5%	5	4.8%	2	1.9%	0	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	8	8	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	57	28	49.1%	25	43.9%	3	5.3%	1	1.8%	0	0.0%
- Vascular neurology	114	44	38.6%	62	54.4%	7	6.1%	1	0.9%	0	0.0%
Child neurology	122	84	68.9%	32	26.2%	6	4.9%	0	0.0%	0	0.0%
Nuclear medicine	35	14	40.0%	19	54.3%	2	5.7%	0	0.0%	0	0.0%
Obstetrics and gynecology	1,333	986	74.0%	135	10.1%	212	15.9%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	48	36	75.0%	5	10.4%	7	14.6%	0	0.0%	0	0.0%
- Gynecologic oncology	59	56	94.9%	1	1.7%	2	3.4%	0	0.0%	0	0.0%
- Maternal-fetal medicine	103	76	73.8%	18	17.5%	9	8.7%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	49	39	79.6%	6	12.2%	4	8.2%	0	0.0%	0	0.0%
Ophthalmology	499	449	90.0%	24	4.8%	24	4.8%	1	0.2%	1	0.2%
- Ophthalmic plastic and reconstructive surgery	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	797	697	87.5%	21	2.6%	79	9.9%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	40	32	80.0%	2	5.0%	4	10.0%	2	5.0%	0	0.0%
- Foot and ankle orthopaedics	14	9	64.3%	1	7.1%	2	14.3%	2	14.3%	0	0.0%
- Hand surgery	152	142	93.4%	3	2.0%	4	2.6%	3	2.0%	0	0.0%
- Musculoskeletal oncology	18	13	72.2%	4	22.2%	0	0.0%	1	5.6%	0	0.0%
- Orthopaedic sports medicine	202	165	81.7%	11	5.4%	21	10.4%	5	2.5%	0	0.0%
- Orthopaedic surgery of the spine	32	27	84.4%	3	9.4%	2	6.3%	0	0.0%	0	0.0%
- Orthopaedic trauma	18	15	83.3%	1	5.6%	0	0.0%	2	11.1%	0	0.0%
- Pediatric orthopaedics	38	27	71.1%	8	21.1%	1	2.6%	2	5.3%	0	0.0%
Osteopathic neuromusculoskeletal medicine	23	0	0.0%	0	0.0%	23	100.0%	0	0.0%	0	0.0%
Otolaryngology - head and neck surgery	311	285	91.6%	7	2.3%	19	6.1%	0	0.0%	0	0.0%
- Neurotology	14	14	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	37	33	89.2%	2	5.4%	0	0.0%	2	5.4%	0	0.0%
Pathology-anatomic and clinical	590	307	52.0%	226	38.3%	56	9.5%	1	0.2%	0	0.0%
- Blood banking/transfusion medicine	54	28	51.9%	23	42.6%	3	5.6%	0	0.0%	0	0.0%
- Clinical informatics	7	4	57.1%	1	14.3%	2	28.6%	0	0.0%	0	0.0%
- Chemical pathology	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	139	61	43.9%	64	46.0%	14	10.1%	0	0.0%	0	0.0%
- Forensic pathology	44	23	52.3%	12	27.3%	8	18.2%	1	2.3%	0	0.0%
- Hematopathology	127	54	42.5%	63	49.6%	8	6.3%	2	1.6%	0	0.0%
- Medical microbiology	12	9	75.0%	0	0.0%	2	16.7%	1	8.3%	0	0.0%
- Neuropathology	28	18	64.3%	6	21.4%	4	14.3%	0	0.0%	0	0.0%
- Pediatric pathology	17	8	47.1%	7	41.2%	1	5.9%	1	5.9%	0	0.0%
- Selective pathology	171	68	39.8%	81	47.4%	17	9.9%	5	2.9%	0	0.0%
Pediatrics	3,004	2,053	68.3%	554	18.4%	396	13.2%	1	0.0%	0	0.0%
- Adolescent medicine	30	22	73.3%	5	16.7%	2	6.7%	1	3.3%	0	0.0%
- Child abuse pediatrics	16	14	87.5%	2	12.5%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics	5	4	80.0%	0	0.0%	1	20.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	40	21	52.5%	12	30.0%	7	17.5%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	257	156	60.7%	69	26.8%	32	12.5%	0	0.0%	0	0.0%
- Pediatric cardiology	142	94	66.2%	40	28.2%	8	5.6%	0	0.0%	0	0.0%
- Pediatric critical care medicine	172	124	72.1%	32	18.6%	16	9.3%	0	0.0%	0	0.0%
- Pediatric emergency medicine	119	84	70.6%	22	18.5%	13	10.9%	0	0.0%	0	0.0%
- Pediatric endocrinology	78	46	59.0%	28	35.9%	4	5.1%	0	0.0%	0	0.0%
- Pediatric gastroenterology	99	62	62.6%	26	26.3%	11	11.1%	0	0.0%	0	0.0%
- Pediatric hematology/oncology	168	104	61.9%	35	20.8%	28	16.7%	1	0.6%	0	0.0%

TABLE D.6 Continued

Number of Graduating Residents by Specialty and Subspecialty and Medical School Type, 2017-2018 AY											
Specialty	Total Graduates	US LCME - Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
- Pediatric infectious diseases	45	26	57.8%	15	33.3%	4	8.9%	0	0.0%	0	0.0%
- Pediatric nephrology	33	12	36.4%	19	57.6%	2	6.1%	0	0.0%	0	0.0%
- Pediatric pulmonology	48	25	52.1%	20	41.7%	3	6.3%	0	0.0%	0	0.0%
- Pediatric rheumatology	26	14	53.8%	10	38.5%	2	7.7%	0	0.0%	0	0.0%
- Pediatric sports medicine	26	17	65.4%	4	15.4%	5	19.2%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	12	8	66.7%	4	33.3%	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	402	227	56.5%	50	12.4%	125	31.1%	0	0.0%	0	0.0%
- Brain injury medicine	14	6	42.9%	2	14.3%	5	35.7%	1	7.1%	0	0.0%
- Neuromuscular medicine	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Spinal cord injury medicine	21	12	57.1%	3	14.3%	6	28.6%	0	0.0%	0	0.0%
- Pediatric rehabilitation	12	6	50.0%	4	33.3%	2	16.7%	0	0.0%	0	0.0%
- Sports medicine	27	17	63.0%	2	7.4%	7	25.9%	1	3.7%	0	0.0%
Plastic surgery	98	76	77.6%	17	17.3%	5	5.1%	0	0.0%	0	0.0%
Plastic surgery - integrated	102	100	98.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%
- Craniofacial surgery	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	23	18	78.3%	0	0.0%	1	4.3%	4	17.4%	0	0.0%
Preventive medicine	181	123	68.0%	28	15.5%	30	16.6%	0	0.0%	0	0.0%
- Medical toxicology	2	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%
Psychiatry	1,199	668	55.7%	352	29.4%	176	14.7%	3	0.3%	0	0.0%
- Addiction medicine (multidisciplinary)	13	9	69.2%	2	15.4%	1	7.7%	1	7.7%	0	0.0%
- Addiction psychiatry	74	39	52.7%	31	41.9%	4	5.4%	0	0.0%	0	0.0%
- Child and adolescent psychiatry	418	218	52.2%	147	35.2%	53	12.7%	0	0.0%	0	0.0%
- Forensic psychiatry	81	51	63.0%	20	24.7%	9	11.1%	1	1.2%	0	0.0%
- Geriatric psychiatry	55	25	45.5%	26	47.3%	3	5.5%	1	1.8%	0	0.0%
- Consultation-liaison psychiatry	89	50	56.2%	27	30.3%	12	13.5%	0	0.0%	0	0.0%
Radiation oncology	189	178	94.2%	7	3.7%	4	2.1%	0	0.0%	0	0.0%
Radiology-diagnostic	1,162	907	78.1%	136	11.7%	119	10.2%	0	0.0%	0	0.0%
- Abdominal radiology	44	20	45.5%	18	40.9%	3	6.8%	3	6.8%	0	0.0%
- Endovascular surgical neuroradiology	5	3	60.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal radiology	32	27	84.4%	4	12.5%	0	0.0%	1	3.1%	0	0.0%
- Neuroradiology	278	212	76.3%	46	16.5%	18	6.5%	2	0.7%	0	0.0%
- Nuclear radiology	11	6	54.5%	5	45.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	57	41	71.9%	11	19.3%	5	8.8%	0	0.0%	0	0.0%
- Vascular and interventional radiology	294	237	80.6%	30	10.2%	26	8.8%	1	0.3%	0	0.0%
Interventional radiology - integrated	2	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Surgery	1,288	929	72.1%	198	15.4%	161	12.5%	0	0.0%	0	0.0%
- Complex general surgical oncology	53	40	75.5%	9	17.0%	3	5.7%	1	1.9%	0	0.0%
- Hand surgery	8	4	50.0%	1	12.5%	3	37.5%	0	0.0%	0	0.0%
- Pediatric surgery	38	34	89.5%	4	10.5%	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	257	204	79.4%	25	9.7%	27	10.5%	1	0.4%	0	0.0%
- Vascular surgery	127	86	67.7%	31	24.4%	9	7.1%	1	0.8%	0	0.0%
Vascular surgery - integrated	38	32	84.2%	4	10.5%	2	5.3%	0	0.0%	0	0.0%
Thoracic surgery	100	72	72.0%	22	22.0%	4	4.0%	2	2.0%	0	0.0%
- Congenital cardiac surgery	11	10	90.9%	1	9.1%	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery - integrated	20	18	90.0%	2	10.0%	0	0.0%	0	0.0%	0	0.0%
Urology	315	284	90.2%	12	3.8%	19	6.0%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	13	12	92.3%	0	0.0%	0	0.0%	1	7.7%	0	0.0%
- Pediatric urology	24	24	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Transitional year	1,402	932	66.5%	127	9.1%	343	24.5%	0	0.0%	0	0.0%
Internal medicine/Pediatrics	360	284	78.9%	39	10.8%	37	10.3%	0	0.0%	0	0.0%

Note: Pipeline specialties are highlighted.
Abbreviations: AY, academic year; LCME, Liaison Committee on Medical Education.

TABLE D.7
Number of Graduating Residents and Graduate Concentration per 100,000 Population by State, 2017-2018 AY

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Graduates	Percent of All Graduates	Graduates per 100,000 Pop
OVERALL	-	330,362,587	44,043	100.0%	13.33
Alabama	AL	4,887,871	473	1.1%	9.68
Alaska	AK	737,438	13	0.0%	1.76
Arizona	AZ	7,171,646	569	1.3%	7.93
Arkansas	AR	3,013,825	251	0.6%	8.33
California	CA	39,557,045	3,937	8.9%	9.95
Colorado	CO	5,695,564	503	1.1%	8.83
Connecticut	CT	3,572,665	785	1.8%	21.97
Delaware	DE	967,171	119	0.3%	12.30
District of Columbia	DC	702,455	519	1.2%	73.88
Florida	FL	21,299,325	1,889	4.3%	8.87
Georgia	GA	10,519,475	866	2.0%	8.23
Hawaii	HI	1,420,491	132	0.3%	9.29
Idaho	ID	1,754,208	41	0.1%	2.34
Illinois	IL	12,741,080	2,138	4.9%	16.78
Indiana	IN	6,691,878	496	1.1%	7.41
Iowa	IA	3,156,145	326	0.7%	10.33
Kansas	KS	2,911,505	241	0.5%	8.28
Kentucky	KY	4,468,402	423	1.0%	9.47
Louisiana	LA	4,659,978	626	1.4%	13.43
Maine	ME	1,338,404	109	0.2%	8.14
Maryland	MD	6,042,718	1,107	2.5%	18.32
Massachusetts	MA	6,902,149	1,959	4.4%	28.38
Michigan	MI	9,995,915	2,238	5.1%	22.39
Minnesota	MN	5,611,179	790	1.8%	14.08
Mississippi	MS	2,986,530	250	0.6%	8.37
Missouri	MO	6,126,452	977	2.2%	15.95
Montana	MT	1,062,305	32	0.1%	3.01
Nebraska	NE	1,929,268	236	0.5%	12.23
Nevada	NV	3,034,392	178	0.4%	5.87
New Hampshire	NH	1,356,458	136	0.3%	10.03
New Jersey	NJ	8,908,520	1,067	2.4%	11.98
New Mexico	NM	2,095,428	215	0.5%	10.26
New York	NY	19,542,209	5,617	12.8%	28.74
North Carolina	NC	10,383,620	1,191	2.7%	11.47
North Dakota	ND	760,077	48	0.1%	6.32
Ohio	OH	11,689,442	2,280	5.2%	19.50
Oklahoma	OK	3,943,079	352	0.8%	8.93
Oregon	OR	4,190,713	347	0.8%	8.28
Pennsylvania	PA	12,807,060	2,934	6.7%	22.91
Puerto Rico	PR	3,195,153	304	0.7%	9.51
Rhode Island	RI	1,057,315	268	0.6%	25.35
South Carolina	SC	5,084,127	450	1.0%	8.85
South Dakota	SD	882,235	53	0.1%	6.01
Tennessee	TN	6,770,010	794	1.8%	11.73
Texas	TX	28,701,845	2,865	6.5%	9.98
Utah	UT	3,161,105	288	0.7%	9.11
Vermont	VT	626,299	101	0.2%	16.13
Virginia	VA	8,517,685	870	2.0%	10.21
Washington	WA	7,535,591	730	1.7%	9.69
West Virginia	WV	1,805,832	255	0.6%	14.12
Wisconsin	WI	5,813,568	641	1.5%	11.03
Wyoming	WY	577,737	14	0.0%	2.42

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.
 Abbreviations: AY, academic year.

TABLE D.8

Number of Specialty Graduates and Specialty Graduate Concentration per 100,000 Population by State, 2017-2018 AY

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Specialty Graduates	Percent of All Specialty Graduates	Specialty Graduates per 100,000 Pop
OVERALL	-	330,362,587	31,440	100.0%	9.52
Alabama	AL	4,887,871	349	1.1%	7.14
Alaska	AK	737,438	12	0.0%	1.63
Arizona	AZ	7,171,646	429	1.4%	5.98
Arkansas	AR	3,013,825	187	0.6%	6.20
California	CA	39,557,045	2,713	8.6%	6.86
Colorado	CO	5,695,564	339	1.1%	5.95
Connecticut	CT	3,572,665	548	1.7%	15.34
Delaware	DE	967,171	89	0.3%	9.20
District of Columbia	DC	702,455	352	1.1%	50.11
Florida	FL	21,299,325	1,400	4.5%	6.57
Georgia	GA	10,519,475	617	2.0%	5.87
Hawaii	HI	1,420,491	115	0.4%	8.10
Idaho	ID	1,754,208	40	0.1%	2.28
Illinois	IL	12,741,080	1,612	5.1%	12.65
Indiana	IN	6,691,878	384	1.2%	5.74
Iowa	IA	3,156,145	237	0.8%	7.51
Kansas	KS	2,911,505	191	0.6%	6.56
Kentucky	KY	4,468,402	304	1.0%	6.80
Louisiana	LA	4,659,978	480	1.5%	10.30
Maine	ME	1,338,404	85	0.3%	6.35
Maryland	MD	6,042,718	712	2.3%	11.78
Massachusetts	MA	6,902,149	1,222	3.9%	17.70
Michigan	MI	9,995,915	1,770	5.6%	17.71
Minnesota	MN	5,611,179	498	1.6%	8.88
Mississippi	MS	2,986,530	195	0.6%	6.53
Missouri	MO	6,126,452	664	2.1%	10.84
Montana	MT	1,062,305	31	0.1%	2.92
Nebraska	NE	1,929,268	184	0.6%	9.54
Nevada	NV	3,034,392	149	0.5%	4.91
New Hampshire	NH	1,356,458	92	0.3%	6.78
New Jersey	NJ	8,908,520	882	2.8%	9.90
New Mexico	NM	2,095,428	141	0.4%	6.73
New York	NY	19,542,209	3,992	12.7%	20.43
North Carolina	NC	10,383,620	787	2.5%	7.58
North Dakota	ND	760,077	45	0.1%	5.92
Ohio	OH	11,689,442	1,613	5.1%	13.80
Oklahoma	OK	3,943,079	297	0.9%	7.53
Oregon	OR	4,190,713	238	0.8%	5.68
Pennsylvania	PA	12,807,060	2,016	6.4%	15.74
Puerto Rico	PR	3,195,153	254	0.8%	7.95
Rhode Island	RI	1,057,315	180	0.6%	17.02
South Carolina	SC	5,084,127	336	1.1%	6.61
South Dakota	SD	882,235	46	0.1%	5.21
Tennessee	TN	6,770,010	554	1.8%	8.18
Texas	TX	28,701,845	1,945	6.2%	6.78
Utah	UT	3,161,105	180	0.6%	5.69
Vermont	VT	626,299	68	0.2%	10.86
Virginia	VA	8,517,685	654	2.1%	7.68
Washington	WA	7,535,591	515	1.6%	6.83
West Virginia	WV	1,805,832	225	0.7%	12.46
Wisconsin	WI	5,813,568	458	1.5%	7.88
Wyoming	WY	577,737	14	0.0%	2.42

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.
Abbreviations: AY, academic year.

TABLE D.9
Number of Subspecialty Graduates and Subspecialty Graduate Concentration per 100,000 Population by State, 2017-2018 AY

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Subspecialty Graduates	Percent of All Subspecialty Graduates	Subspecialty Graduates per 100,000 Pop
OVERALL	-	330,362,587	12,603	100.0%	3.81
Alabama	AL	4,887,871	124	1.0%	2.54
Alaska	AK	737,438	1	0.0%	0.14
Arizona	AZ	7,171,646	140	1.1%	1.95
Arkansas	AR	3,013,825	64	0.5%	2.12
California	CA	39,557,045	1,224	9.7%	3.09
Colorado	CO	5,695,564	164	1.3%	2.88
Connecticut	CT	3,572,665	237	1.9%	6.63
Delaware	DE	967,171	30	0.2%	3.10
District of Columbia	DC	702,455	167	1.3%	23.77
Florida	FL	21,299,325	489	3.9%	2.30
Georgia	GA	10,519,475	249	2.0%	2.37
Hawaii	HI	1,420,491	17	0.1%	1.20
Idaho	ID	1,754,208	1	0.0%	0.06
Illinois	IL	12,741,080	526	4.2%	4.13
Indiana	IN	6,691,878	112	0.9%	1.67
Iowa	IA	3,156,145	89	0.7%	2.82
Kansas	KS	2,911,505	50	0.4%	1.72
Kentucky	KY	4,468,402	119	0.9%	2.66
Louisiana	LA	4,659,978	146	1.2%	3.13
Maine	ME	1,338,404	24	0.2%	1.79
Maryland	MD	6,042,718	395	3.1%	6.54
Massachusetts	MA	6,902,149	737	5.8%	10.68
Michigan	MI	9,995,915	468	3.7%	4.68
Minnesota	MN	5,611,179	292	2.3%	5.20
Mississippi	MS	2,986,530	55	0.4%	1.84
Missouri	MO	6,126,452	313	2.5%	5.11
Montana	MT	1,062,305	1	0.0%	0.09
Nebraska	NE	1,929,268	52	0.4%	2.70
Nevada	NV	3,034,392	29	0.2%	0.96
New Hampshire	NH	1,356,458	44	0.3%	3.24
New Jersey	NJ	8,908,520	185	1.5%	2.08
New Mexico	NM	2,095,428	74	0.6%	3.53
New York	NY	19,542,209	1,625	12.9%	8.32
North Carolina	NC	10,383,620	404	3.2%	3.89
North Dakota	ND	760,077	3	0.0%	0.39
Ohio	OH	11,689,442	667	5.3%	5.71
Oklahoma	OK	3,943,079	55	0.4%	1.39
Oregon	OR	4,190,713	109	0.9%	2.60
Pennsylvania	PA	12,807,060	918	7.3%	7.17
Puerto Rico	PR	3,195,153	50	0.4%	1.56
Rhode Island	RI	1,057,315	88	0.7%	8.32
South Carolina	SC	5,084,127	114	0.9%	2.24
South Dakota	SD	882,235	7	0.1%	0.79
Tennessee	TN	6,770,010	240	1.9%	3.55
Texas	TX	28,701,845	920	7.3%	3.21
Utah	UT	3,161,105	108	0.9%	3.42
Vermont	VT	626,299	33	0.3%	5.27
Virginia	VA	8,517,685	216	1.7%	2.54
Washington	WA	7,535,591	215	1.7%	2.85
West Virginia	WV	1,805,832	30	0.2%	1.66
Wisconsin	WI	5,813,568	183	1.5%	3.15
Wyoming	WY	577,737	0	0.0%	0.00

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.
 Abbreviations: AY, academic year.

TABLE D.10

Number of Pipeline Graduates and Pipeline Graduate Concentration per 100,000 Population by State, 2017-2018 AY

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Pipeline Graduates	Percent of All Pipeline Graduates	Pipeline Graduates per 100,000 Pop
OVERALL	-	330,362,587	29,700	100.0%	8.99
Alabama	AL	4,887,871	328	1.1%	6.71
Alaska	AK	737,438	12	0.0%	1.63
Arizona	AZ	7,171,646	405	1.4%	5.65
Arkansas	AR	3,013,825	182	0.6%	6.04
California	CA	39,557,045	2,583	8.7%	6.53
Colorado	CO	5,695,564	308	1.0%	5.41
Connecticut	CT	3,572,665	537	1.8%	15.03
Delaware	DE	967,171	83	0.3%	8.58
District of Columbia	DC	702,455	351	1.2%	49.97
Florida	FL	21,299,325	1,262	4.2%	5.93
Georgia	GA	10,519,475	550	1.9%	5.23
Hawaii	HI	1,420,491	101	0.3%	7.11
Idaho	ID	1,754,208	40	0.1%	2.28
Illinois	IL	12,741,080	1,532	5.2%	12.02
Indiana	IN	6,691,878	338	1.1%	5.05
Iowa	IA	3,156,145	224	0.8%	7.10
Kansas	KS	2,911,505	188	0.6%	6.46
Kentucky	KY	4,468,402	300	1.0%	6.71
Louisiana	LA	4,659,978	471	1.6%	10.11
Maine	ME	1,338,404	85	0.3%	6.35
Maryland	MD	6,042,718	657	2.2%	10.87
Massachusetts	MA	6,902,149	1,154	3.9%	16.72
Michigan	MI	9,995,915	1,576	5.3%	15.77
Minnesota	MN	5,611,179	465	1.6%	8.29
Mississippi	MS	2,986,530	184	0.6%	6.16
Missouri	MO	6,126,452	644	2.2%	10.51
Montana	MT	1,062,305	31	0.1%	2.92
Nebraska	NE	1,929,268	182	0.6%	9.43
Nevada	NV	3,034,392	137	0.5%	4.51
New Hampshire	NH	1,356,458	92	0.3%	6.78
New Jersey	NJ	8,908,520	870	2.9%	9.77
New Mexico	NM	2,095,428	135	0.5%	6.44
New York	NY	19,542,209	3,838	12.9%	19.64
North Carolina	NC	10,383,620	749	2.5%	7.21
North Dakota	ND	760,077	37	0.1%	4.87
Ohio	OH	11,689,442	1,523	5.1%	13.03
Oklahoma	OK	3,943,079	291	1.0%	7.38
Oregon	OR	4,190,713	235	0.8%	5.61
Pennsylvania	PA	12,807,060	1,918	6.5%	14.98
Puerto Rico	PR	3,195,153	215	0.7%	6.73
Rhode Island	RI	1,057,315	178	0.6%	16.84
South Carolina	SC	5,084,127	312	1.1%	6.14
South Dakota	SD	882,235	40	0.1%	4.53
Tennessee	TN	6,770,010	529	1.8%	7.81
Texas	TX	28,701,845	1,869	6.3%	6.51
Utah	UT	3,161,105	167	0.6%	5.28
Vermont	VT	626,299	68	0.2%	10.86
Virginia	VA	8,517,685	613	2.1%	7.20
Washington	WA	7,535,591	468	1.6%	6.21
West Virginia	WV	1,805,832	213	0.7%	11.80
Wisconsin	WI	5,813,568	416	1.4%	7.16
Wyoming	WY	577,737	14	0.0%	2.42

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.
Abbreviations: AY, academic year.

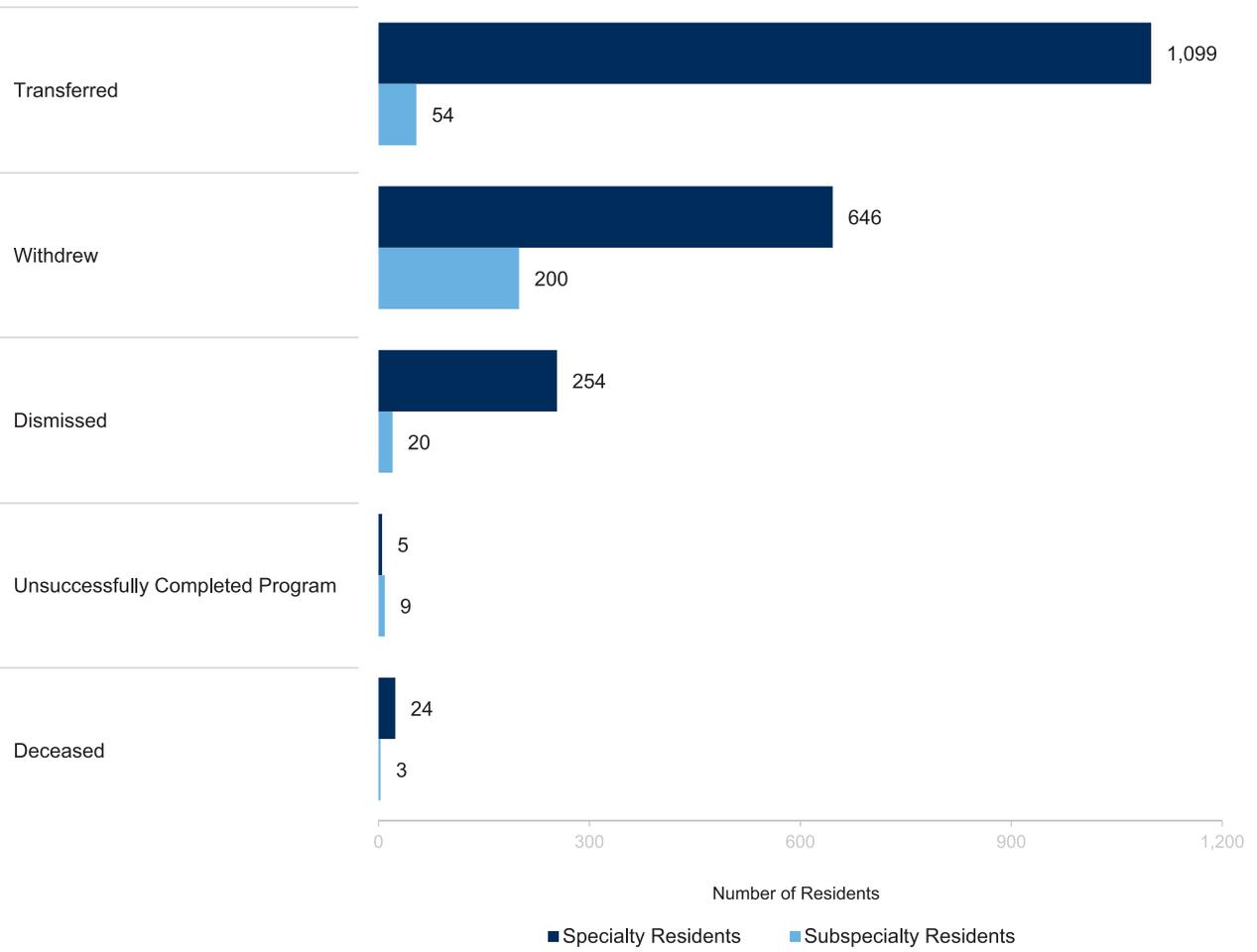
TABLE D.11
Number of Graduating Residents by State and Medical School Type, 2017-2018 AY

State Name	State Abbreviation	Total Graduates	Medical School Type				
			US LCME-Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
OVERALL	-	44,043	26,423	11,052	6,469	98	1
Alabama	AL	473	330	108	35	0	0
Alaska	AK	13	9	0	4	0	0
Arizona	AZ	569	325	145	99	0	0
Arkansas	AR	251	145	76	30	0	0
California	CA	3,937	3,076	448	395	18	0
Colorado	CO	503	394	27	82	0	0
Connecticut	CT	785	425	275	81	4	0
Delaware	DE	119	67	25	27	0	0
District of Columbia	DC	519	330	162	26	1	0
Florida	FL	1,889	902	576	409	2	0
Georgia	GA	866	591	203	72	0	0
Hawaii	HI	132	73	22	36	1	0
Idaho	ID	41	23	7	11	0	0
Illinois	IL	2,138	1,260	599	276	3	0
Indiana	IN	496	341	80	75	0	0
Iowa	IA	326	164	84	78	0	0
Kansas	KS	241	136	54	51	0	0
Kentucky	KY	423	242	106	75	0	0
Louisiana	LA	626	386	199	41	0	0
Maine	ME	109	55	17	35	2	0
Maryland	MD	1,107	791	218	95	3	0
Massachusetts	MA	1,959	1,414	432	94	19	0
Michigan	MI	2,238	923	700	612	2	1
Minnesota	MN	790	544	166	76	4	0
Mississippi	MS	250	137	42	71	0	0
Missouri	MO	977	596	251	128	2	0
Montana	MT	32	17	6	9	0	0
Nebraska	NE	236	138	64	34	0	0
Nevada	NV	178	53	75	50	0	0
New Hampshire	NH	136	93	33	10	0	0
New Jersey	NJ	1,067	277	507	283	0	0
New Mexico	NM	215	139	41	35	0	0
New York	NY	5,617	2,724	2,277	600	16	0
North Carolina	NC	1,191	892	142	154	3	0
North Dakota	ND	48	20	28	0	0	0
Ohio	OH	2,280	1,215	573	491	1	0
Oklahoma	OK	352	140	84	128	0	0
Oregon	OR	347	252	32	63	0	0
Pennsylvania	PA	2,934	1,650	683	596	5	0
Puerto Rico	PR	304	211	93	0	0	0
Rhode Island	RI	268	192	49	26	1	0
South Carolina	SC	450	324	65	61	0	0
South Dakota	SD	53	26	14	13	0	0
Tennessee	TN	794	558	170	66	0	0
Texas	TX	2,865	1,850	635	376	4	0
Utah	UT	288	236	33	18	1	0
Vermont	VT	101	74	20	7	0	0
Virginia	VA	870	541	140	189	0	0
Washington	WA	730	568	60	97	5	0
West Virginia	WV	255	121	74	60	0	0
Wisconsin	WI	641	432	126	82	1	0
Wyoming	WY	14	1	6	7	0	0

Abbreviations: AY, academic year; LCME, Liaison Committee on Medical Education.

FIGURE D.12

Number of Residents Leaving Prior to Completion of a Program by Status, 2017-2018 AY



Abbreviations: AY, academic year.

TABLE D.13
Number of Residents Leaving Prior to Completion of a Program by Specialty and Subspecialty and Status, 2017-2018 AY

Specialty	Number of Residents Not Graduating	Resident Status				
		Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
OVERALL	2,314	1,153	846	274	14	27
TOTAL PIPELINE	1,986	1,083	624	250	5	24
Allergy and immunology	3	1	1	1	0	0
Anesthesiology	83	21	44	13	1	4
- Adult cardiothoracic anesthesiology	3	0	2	1	0	0
- Clinical informatics	1	0	1	0	0	0
- Critical care medicine	4	0	4	0	0	0
- Regional anesthesiology and acute pain medicine	2	0	2	0	0	0
- Obstetric anesthesiology	0	0	0	0	0	0
- Pain medicine (multidisciplinary)	1	0	1	0	0	0
- Pediatric anesthesiology	5	0	4	1	0	0
Colon and rectal surgery	1	0	1	0	0	0
Dermatology	11	9	0	2	0	0
- Dermatopathology (multidisciplinary)	0	0	0	0	0	0
- Micrographic surgery and dermatologic oncology	0	0	0	0	0	0
Emergency medicine	54	27	21	6	0	0
- Clinical informatics	1	0	0	0	1	0
- Emergency medical services	1	0	1	0	0	0
- Medical toxicology	3	0	3	0	0	0
- Pediatric emergency medicine	2	0	2	0	0	0
- Sports medicine	0	0	0	0	0	0
- Undersea and hyperbaric medicine	0	0	0	0	0	0
Family medicine	293	101	133	51	3	5
- Clinical informatics	0	0	0	0	0	0
- Geriatric medicine	1	0	1	0	0	0
- Hospice and palliative medicine (multidisciplinary)	3	0	3	0	0	0
- Sports medicine	1	0	1	0	0	0
Internal medicine	269	111	94	60	1	3
- Adult congenital heart disease	1	0	1	0	0	0
- Advanced heart failure and transplant cardiology	0	0	0	0	0	0
- Cardiovascular disease	11	2	9	0	0	0
- Clinical cardiac electrophysiology	6	2	3	0	1	0
- Clinical informatics	2	0	2	0	0	0
- Critical care medicine	5	4	1	0	0	0
- Endocrinology, diabetes, and metabolism	8	1	6	0	0	1
- Gastroenterology	7	0	6	1	0	0
- Geriatric medicine	6	0	4	1	1	0
- Hematology	0	0	0	0	0	0
- Hematology and medical oncology	6	1	5	0	0	0
- Infectious disease	13	3	9	1	0	0
- Interventional cardiology	3	0	2	0	1	0
- Nephrology	30	9	19	2	0	0
- Medical oncology	1	0	1	0	0	0
- Pulmonary disease	4	4	0	0	0	0
- Pulmonary disease and critical care medicine	13	2	11	0	0	0
- Rheumatology	2	1	1	0	0	0
- Sleep medicine (multidisciplinary)	2	0	0	2	0	0
- Transplant hepatology	0	0	0	0	0	0
Medical genetics and genomics	3	2	0	1	0	0
- Medical biochemical genetics	0	0	0	0	0	0
- Molecular genetic pathology (multidisciplinary)	1	0	1	0	0	0
Neurological surgery	29	11	14	3	0	1
- Endovascular surgical neuroradiology	0	0	0	0	0	0

TABLE D.13 Continued

Number of Residents Leaving Prior to Completion of a Program by Specialty and Subspecialty and Status, 2017-2018 AY

Specialty	Number of Residents Not Graduating	Resident Status				
		Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
Neurology	40	25	10	4	0	1
- Brain injury medicine	0	0	0	0	0	0
- Clinical neurophysiology	0	0	0	0	0	0
- Epilepsy	1	0	1	0	0	0
- Endovascular surgical neuroradiology	0	0	0	0	0	0
- Neurodevelopmental disabilities	0	0	0	0	0	0
- Neuromuscular medicine	0	0	0	0	0	0
- Vascular neurology	1	0	1	0	0	0
Child neurology	1	0	1	0	0	0
Nuclear medicine	8	6	2	0	0	0
Obstetrics and gynecology	86	36	36	14	0	0
- Female pelvic medicine and reconstructive surgery	0	0	0	0	0	0
- Gynecologic oncology	2	0	1	1	0	0
- Maternal-fetal medicine	5	0	3	1	0	1
- Reproductive endocrinology and infertility	1	1	0	0	0	0
Ophthalmology	9	3	6	0	0	0
- Ophthalmic plastic and reconstructive surgery	0	0	0	0	0	0
Orthopaedic surgery	23	6	12	5	0	0
- Adult reconstructive orthopaedics	0	0	0	0	0	0
- Foot and ankle orthopaedics	0	0	0	0	0	0
- Hand surgery	0	0	0	0	0	0
- Musculoskeletal oncology	0	0	0	0	0	0
- Orthopaedic sports medicine	4	0	2	2	0	0
- Orthopaedic surgery of the spine	0	0	0	0	0	0
- Orthopaedic trauma	0	0	0	0	0	0
- Pediatric orthopaedics	1	0	1	0	0	0
Osteopathic neuromusculoskeletal medicine	2	1	1	0	0	0
Otolaryngology - head and neck surgery	13	7	3	3	0	0
- Neurotology	0	0	0	0	0	0
- Pediatric otolaryngology	0	0	0	0	0	0
Pathology-anatomic and clinical	59	28	19	11	0	1
- Blood banking/transfusion medicine	1	0	1	0	0	0
- Clinical informatics	1	1	0	0	0	0
- Chemical pathology	0	0	0	0	0	0
- Cytopathology	1	0	1	0	0	0
- Forensic pathology	0	0	0	0	0	0
- Hematopathology	2	0	2	0	0	0
- Medical microbiology	0	0	0	0	0	0
- Neuropathology	0	0	0	0	0	0
- Pediatric pathology	1	1	0	0	0	0
- Selective pathology	3	0	3	0	0	0
Pediatrics	110	56	38	14	0	2
- Adolescent medicine	1	0	1	0	0	0
- Child abuse pediatrics	4	1	2	1	0	0
- Clinical informatics	0	0	0	0	0	0
- Developmental-behavioral pediatrics	3	0	2	0	0	1
- Neonatal-perinatal medicine	6	0	6	0	0	0
- Pediatric cardiology	5	1	3	0	1	0
- Pediatric critical care medicine	11	1	9	1	0	0
- Pediatric emergency medicine	3	0	3	0	0	0
- Pediatric endocrinology	9	3	4	1	1	0
- Pediatric gastroenterology	6	3	3	0	0	0
- Pediatric hematology/oncology	9	1	8	0	0	0

TABLE D.13 Continued

Number of Residents Leaving Prior to Completion of a Program by Specialty and Subspecialty and Status, 2017-2018 AY

Specialty	Number of Residents Not Graduating	Resident Status				
		Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
- Pediatric infectious diseases	5	3	2	0	0	0
- Pediatric nephrology	1	0	1	0	0	0
- Pediatric pulmonology	2	0	2	0	0	0
- Pediatric rheumatology	1	0	1	0	0	0
- Pediatric sports medicine	0	0	0	0	0	0
- Pediatric transplant hepatology	0	0	0	0	0	0
Physical medicine and rehabilitation	19	7	9	3	0	0
- Brain injury medicine	0	0	0	0	0	0
- Neuromuscular medicine	0	0	0	0	0	0
- Spinal cord injury medicine	2	0	2	0	0	0
- Pediatric rehabilitation	0	0	0	0	0	0
- Sports medicine	0	0	0	0	0	0
Plastic surgery	5	0	5	0	0	0
Plastic surgery - integrated	15	5	7	3	0	0
- Craniofacial surgery	1	0	0	0	1	0
- Hand surgery	1	0	1	0	0	0
Preventive medicine	10	2	3	4	0	1
- Medical toxicology	0	0	0	0	0	0
- Undersea and hyperbaric medicine	0	0	0	0	0	0
Psychiatry	407	347	35	21	0	4
- Addiction medicine (multidisciplinary)	1	0	0	1	0	0
- Addiction psychiatry	1	0	1	0	0	0
- Child and adolescent psychiatry	24	9	14	1	0	0
- Forensic psychiatry	0	0	0	0	0	0
- Geriatric psychiatry	2	0	2	0	0	0
- Consultation-liaison psychiatry	1	0	1	0	0	0
Radiation oncology	9	4	3	2	0	0
Radiology-diagnostic	129	103	23	2	0	1
- Abdominal radiology	1	0	0	0	1	0
- Endovascular surgical neuroradiology	0	0	0	0	0	0
- Musculoskeletal radiology	0	0	0	0	0	0
- Neuroradiology	3	0	2	0	1	0
- Nuclear radiology	0	0	0	0	0	0
- Pediatric radiology	1	0	1	0	0	0
- Vascular and interventional radiology	1	0	1	0	0	0
Interventional radiology - integrated	3	3	0	0	0	0
Surgery	261	143	91	26	0	1
- Complex general surgical oncology	0	0	0	0	0	0
- Hand surgery	0	0	0	0	0	0
- Pediatric surgery	1	0	1	0	0	0
- Surgical critical care	4	0	3	1	0	0
- Vascular surgery	2	0	2	0	0	0
Vascular surgery - integrated	3	1	1	1	0	0
Thoracic surgery	6	0	5	1	0	0
- Congenital cardiac surgery	1	0	0	1	0	0
Thoracic surgery - integrated	5	3	2	0	0	0
Urology	10	2	8	0	0	0
- Female pelvic medicine and reconstructive surgery	0	0	0	0	0	0
- Pediatric urology	0	0	0	0	0	0
Transitional year	32	15	15	2	0	0
Internal medicine/Pediatrics	17	13	3	1	0	0

Note: Pipeline specialties are highlighted.
Abbreviations: AY, academic year.

TABLE D.14

Number of Transferring Residents by Specialty and Resident Year, 2017-2018 AY

Specialty	Number of Transferring Residents	Resident Year					
		1	2	3	4	5	6
OVERALL	1,099	460	228	366	44	1	
Allergy and immunology	1	1					
Anesthesiology	21	9	10	2			
Colon and rectal surgery	0						
Dermatology	9	3	6				
Emergency medicine	27	19	8				
Family medicine	101	87	13	1			
Internal medicine	111	88	21	2			
Medical genetics and genomics	2	1	1				
Neurological surgery	11	4	3	3		1	
Neurology	25	19	6				
Child neurology	0						
Nuclear medicine	6	3	2	1			
Obstetrics and gynecology	36	21	11	4			
Ophthalmology	3		3				
Orthopaedic surgery	6	1	4	1			
Osteopathic neuromusculoskeletal medicine	1	1					
Otolaryngology - head and neck surgery	7	3	2	2			
Pathology-anatomic and clinical	28	13	10	4	1		
Pediatrics	56	36	18	2			
Physical medicine and rehabilitation	7	2	5				
Plastic surgery	0						
Plastic surgery - integrated	5	2	1	2			
Preventive medicine	2	2					
Psychiatry	347	31	20	272	24		
Radiation oncology	4	2	2				
Radiology-diagnostic	103	35	32	26	10		
Interventional radiology - integrated	3		2	1			
Surgery	143	55	37	42	9		
Vascular surgery - integrated	1		1				
Thoracic surgery	0						
Thoracic surgery - integrated	3	1	2				
Urology	2	2					
Transitional year	15	15					
Internal medicine/Pediatrics	13	4	8	1			

Abbreviations: AY, academic year.

TABLE D.15

Number of Pipeline Graduates who Subspecialize, 2017-2018 AY

Specialty	Total Pipeline Graduates	Subspecialized	
		#	%
TOTAL PIPELINE	29,700	9,104	30.7%
Anesthesiology	1,674	820	49.0%
Dermatology	500	84	16.8%
Emergency medicine	2,134	167	7.8%
Family medicine	4,036	325	8.1%
Internal medicine	8,311	3,296	39.7%
Medical genetics and genomics	32	6	18.8%
Neurological surgery	192	4	2.1%
Neurology	751	362	48.2%
Child neurology	122	50	41.0%
Nuclear medicine	35	1	2.9%
Obstetrics and gynecology	1,333	243	18.2%
Ophthalmology	499	3	0.6%
Orthopaedic surgery	797	402	50.4%
Osteopathic neuromusculoskeletal medicine	23	2	8.7%
Otolaryngology - head and neck surgery	311	43	13.8%
Pathology-anatomic and clinical	590	401	68.0%
Pediatrics	3,004	1,051	35.0%
Physical medicine and rehabilitation	402	156	38.8%
Plastic surgery	98	12	12.2%
Plastic Surgery - integrated	102	28	27.5%
Preventive medicine	181	10	5.5%
Psychiatry	1,199	369	30.8%
Radiation oncology	189	0	0.0%
Radiology-diagnostic	1,162	563	48.5%
Interventional radiology - integrated	2	0	0.0%
Surgery	1,288	571	44.3%
Vascular surgery - integrated	38	1	2.6%
Thoracic surgery - integrated	20	2	10.0%
Urology	315	23	7.3%
Internal medicine/Pediatrics	360	109	30.3%

Abbreviations: AY, academic year.

E Sponsoring Institutions

This section describes characteristics of ACGME-accredited Sponsoring Institutions. It includes the distribution of accreditation status decisions, information on sponsor size, geographic location, institution type, and designated institutional official (DIO) changes that occurred throughout the 2018-2019 academic year.

Accredited Sponsors by Status

Of the 847 total number of ACGME-accredited Sponsoring Institutions, 127 (15.0%) are in the initial phase of accreditation, 704 (83.1%) have a status of Continued Accreditation, 12 (1.4%) have a status of Continued Accreditation with Warning, and 4 (0.5%) are on probation. Overall, there has been a 23.3% increase in number of sponsors since the 2012-2013 academic year (at that time the total number of Sponsoring Institutions was 687). Effective July 1, 2013, new policies required Sponsoring Institutions to become accredited prior to applying for program accreditation. Prior to that, the accreditation of the program and its sponsor occurred simultaneously. This change, combined with sponsors seeking accreditation through the transition to a single graduate medical education accreditation system, has led to the recent upward trend in total accredited Sponsoring Institutions.

Distribution by Sponsor Size

Sponsors with 1 program and those with 2-5 programs account for the majority of all Sponsoring Institutions (29.4% and 26.2%, respectively). The remaining Sponsoring Institutions with accredited programs all have more than 5 programs: 22.6% have between 6 and 25 programs; 10.8% have between 26 and 75 programs; 3.3% have between 76 and 100 programs; and 1.5% have more than 100 programs. There are 53 (6.3%) Sponsoring Institutions that currently do not have any accredited programs.

Geographic Distribution

There are ACGME-accredited Sponsoring Institutions in all 50 states, the District of Columbia, and Puerto Rico.

The following states have the highest total number of Sponsoring Institutions:

- California (97)
- New York (68)
- Florida (54)

The following states have the highest total number of multi-program Sponsoring Institutions:

- California (51)
- New York (49)
- Ohio (35)
- Pennsylvania (35)

Finally, the following states have the highest total number of single-program Sponsoring Institutions:

- California (38)
- Florida (18)
- New York (16)

Sponsors that do not yet have ACGME-accredited programs (53) are located in 25 states, with the highest number of these (8) located in California.

Distribution by Institution Type

The type of institution is self-reported by Sponsoring Institutions. Approximately half of Sponsoring Institutions with ACGME-accredited programs are General/Teaching Hospitals (379, 47.7%); the next largest group is Academic Medical Centers/Medical Schools, with 119 (15.0%) in this category. Though a much smaller percentage of total Sponsoring Institutions, Academic Medical Centers/Medical Schools account for 9.7% more programs than General/Teaching Hospitals; however, these have almost the same number of residents.

DIO Changes

Each year between 12% and 16% of Sponsoring Institutions have a change in leadership in the DIO role (excluding Sponsoring Institutions with no accredited programs and any sponsors newly accredited in the academic year). In the 2018-2019 academic year, 111 (14.2%) Sponsoring Institutions had a single DIO change and 11 (1.4%) had more than one DIO change. ♪

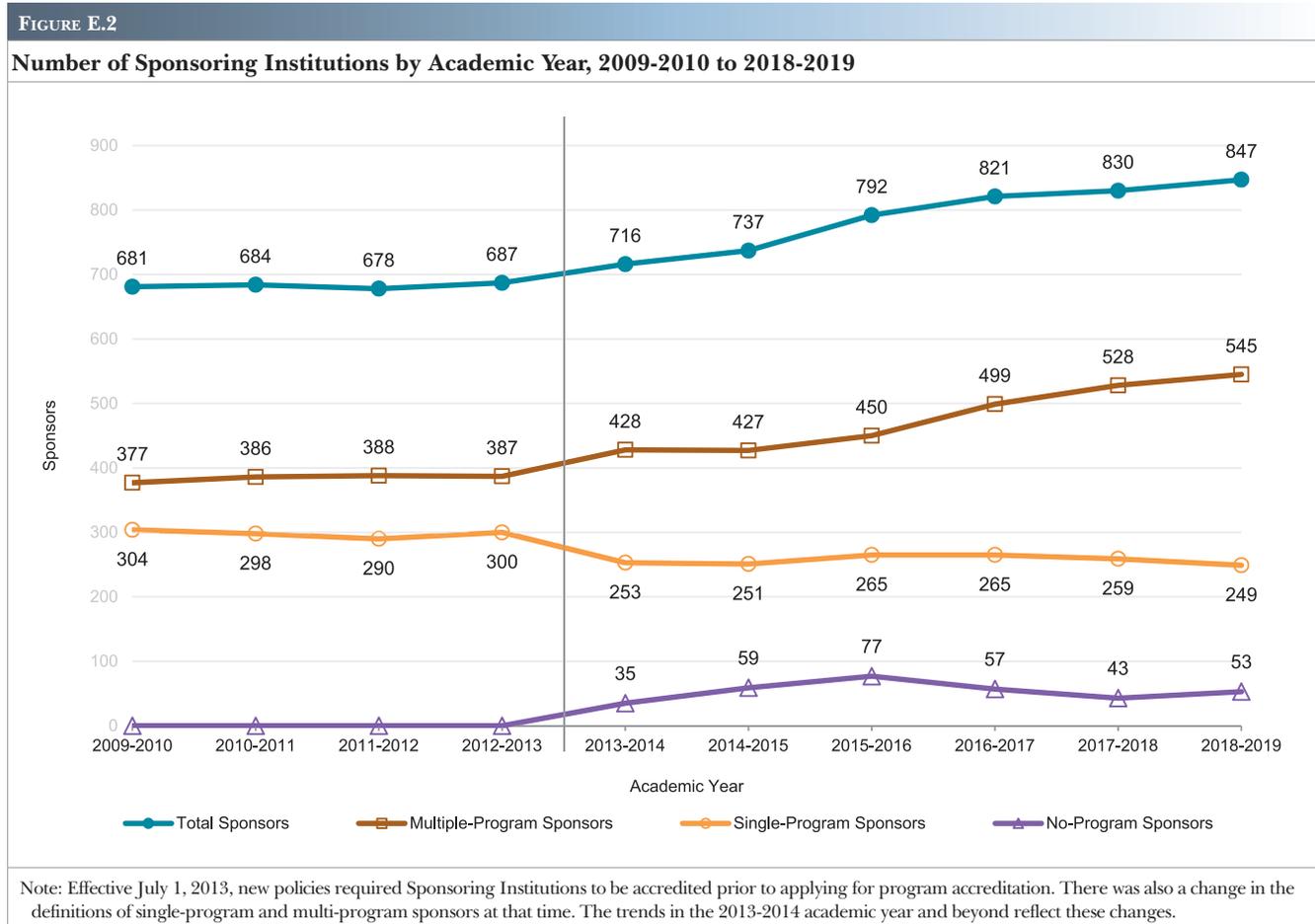
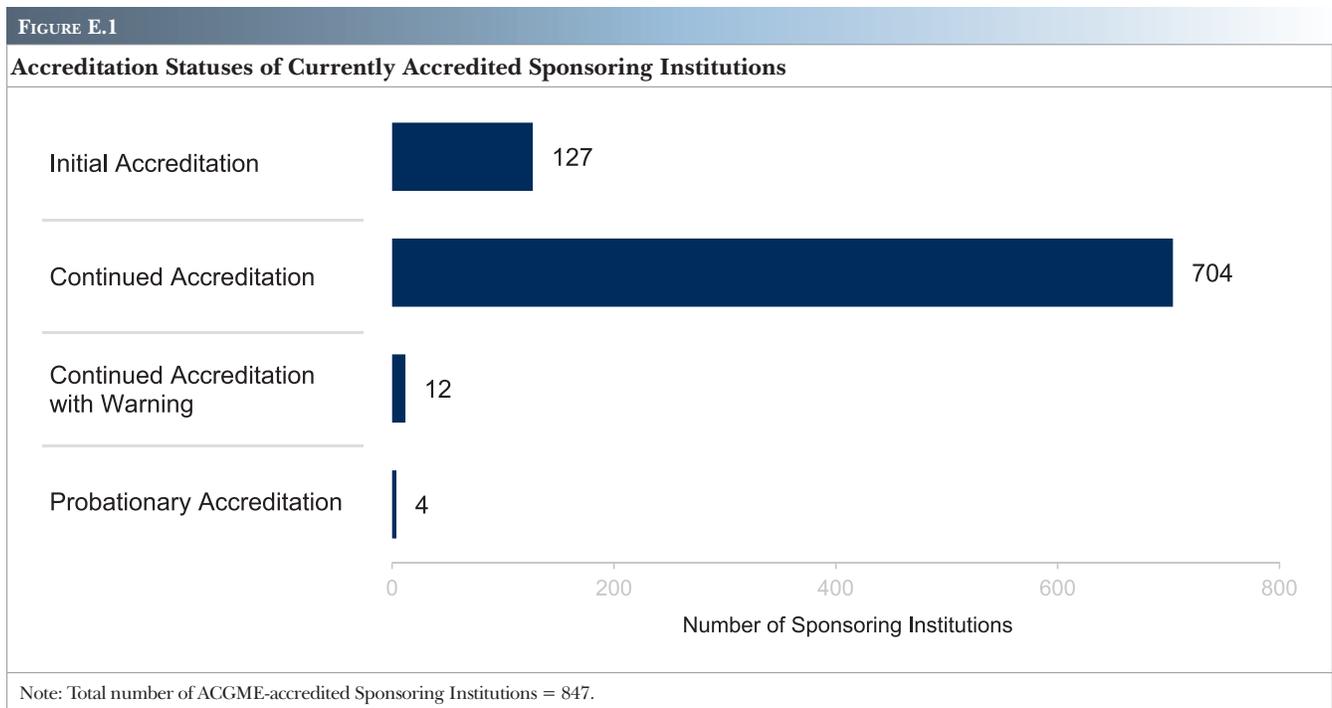


FIGURE E.3

Number of Sponsoring Institutions by Size of Sponsor

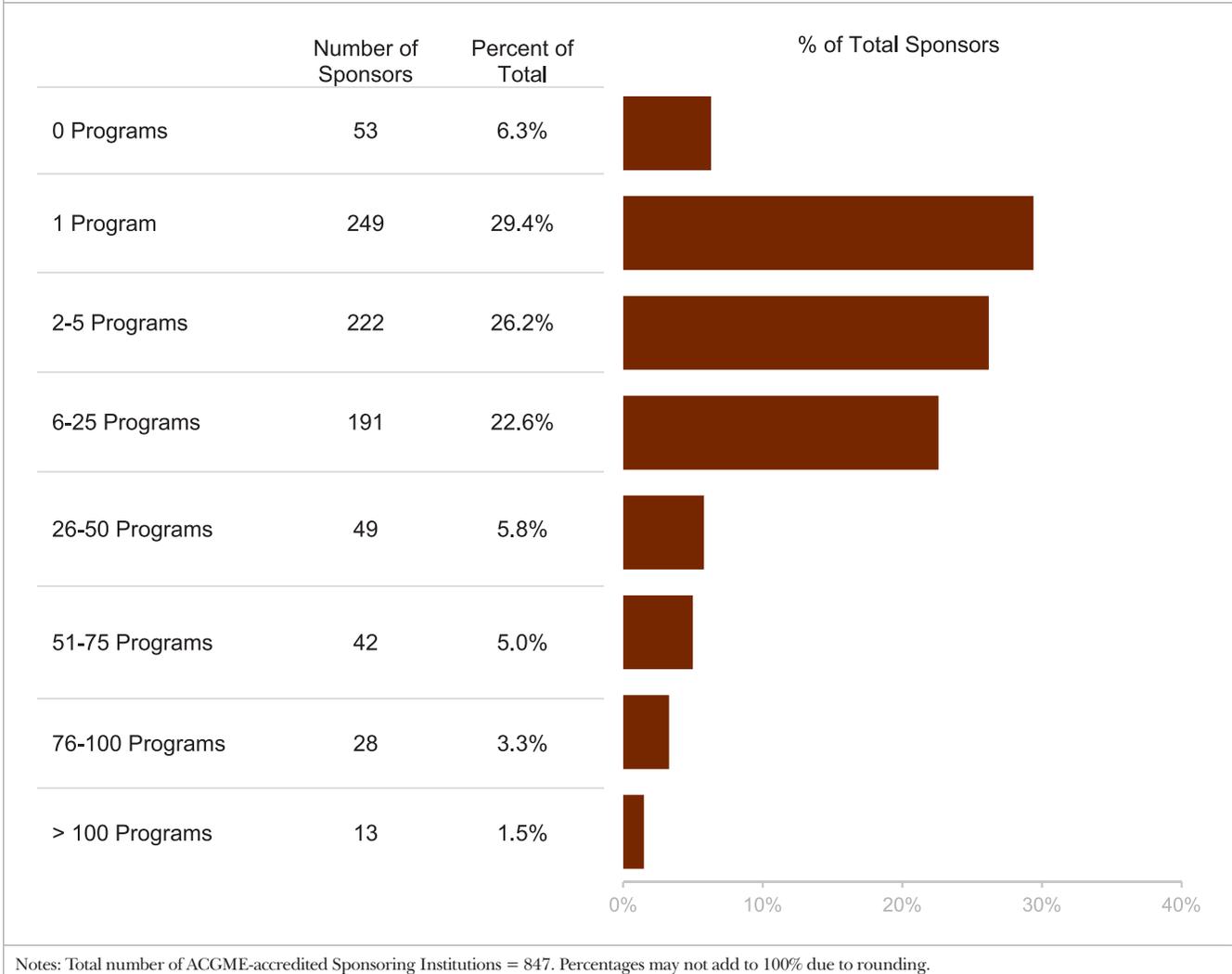


TABLE E.4					
Number of Sponsoring Institutions and Sponsoring Institution Concentration per 100,000 Population by State					
State Name	State Abbreviation	State Population - Census Estimate 2018	Total Sponsors	Percent of All Sponsors	Sponsors per 100,000 Pop
OVERALL	-	330,362,587	847	100.0%	0.26
Alabama	AL	4,887,871	18	2.1%	0.37
Alaska	AK	737,438	1	0.1%	0.14
Arizona	AZ	7,171,646	12	1.4%	0.17
Arkansas	AR	3,013,825	8	0.9%	0.27
California	CA	39,557,045	97	11.5%	0.25
Colorado	CO	5,695,564	14	1.7%	0.25
Connecticut	CT	3,572,665	18	2.1%	0.50
Delaware	DE	967,171	4	0.5%	0.41
District of Columbia	DC	702,455	5	0.6%	0.71
Florida	FL	21,299,325	54	6.4%	0.25
Georgia	GA	10,519,475	25	3.0%	0.24
Hawaii	HI	1,420,491	4	0.5%	0.28
Idaho	ID	1,754,208	4	0.5%	0.23
Illinois	IL	12,741,080	33	3.9%	0.26
Indiana	IN	6,691,878	11	1.3%	0.16
Iowa	IA	3,156,145	10	1.2%	0.32
Kansas	KS	2,911,505	2	0.2%	0.07
Kentucky	KY	4,468,402	6	0.7%	0.13
Louisiana	LA	4,659,978	9	1.1%	0.19
Maine	ME	1,338,404	4	0.5%	0.30
Maryland	MD	6,042,718	14	1.7%	0.23
Massachusetts	MA	6,902,149	25	3.0%	0.36
Michigan	MI	9,995,915	41	4.8%	0.41
Minnesota	MN	5,611,179	10	1.2%	0.18
Mississippi	MS	2,986,530	9	1.1%	0.30
Missouri	MO	6,126,452	14	1.7%	0.23
Montana	MT	1,062,305	3	0.4%	0.28
Nebraska	NE	1,929,268	4	0.5%	0.21
Nevada	NV	3,034,392	6	0.7%	0.20
New Hampshire	NH	1,356,458	3	0.4%	0.22
New Jersey	NJ	8,908,520	28	3.3%	0.31
New Mexico	NM	2,095,428	8	0.9%	0.38
New York	NY	19,542,209	68	8.0%	0.35
North Carolina	NC	10,383,620	16	1.9%	0.15
North Dakota	ND	760,077	2	0.2%	0.26
Ohio	OH	11,689,442	45	5.3%	0.38
Oklahoma	OK	3,943,079	9	1.1%	0.23
Oregon	OR	4,190,713	5	0.6%	0.12
Pennsylvania	PA	12,807,060	47	5.5%	0.37
Puerto Rico	PR	3,195,153	12	1.4%	0.38
Rhode Island	RI	1,057,315	6	0.7%	0.57
South Carolina	SC	5,084,127	12	1.4%	0.24
South Dakota	SD	882,235	3	0.4%	0.34
Tennessee	TN	6,770,010	9	1.1%	0.13
Texas	TX	28,701,845	44	5.2%	0.15
Utah	UT	3,161,105	6	0.7%	0.19
Vermont	VT	626,299	1	0.1%	0.16
Virginia	VA	8,517,685	19	2.2%	0.22
Washington	WA	7,535,591	23	2.7%	0.31
West Virginia	WV	1,805,832	8	0.9%	0.44
Wisconsin	WI	5,813,568	7	0.8%	0.12
Wyoming	WY	577,737	1	0.1%	0.17

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE E.5

Number of Multiple-Program Sponsoring Institutions and Multiple-Program Sponsoring Institution Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	Total Multiple-Program Sponsors	Percent of All Multiple-Program Sponsors	Multiple-Program Sponsors per 100,000 Pop
OVERALL	-	330,362,587	545	100.0%	0.16
Alabama	AL	4,887,871	7	1.3%	0.14
Alaska	AK	737,438	1	0.2%	0.14
Arizona	AZ	7,171,646	8	1.5%	0.11
Arkansas	AR	3,013,825	4	0.7%	0.13
California	CA	39,557,045	51	9.4%	0.13
Colorado	CO	5,695,564	8	1.5%	0.14
Connecticut	CT	3,572,665	12	2.2%	0.34
Delaware	DE	967,171	1	0.2%	0.10
District of Columbia	DC	702,455	4	0.7%	0.57
Florida	FL	21,299,325	31	5.7%	0.15
Georgia	GA	10,519,475	14	2.6%	0.13
Hawaii	HI	1,420,491	2	0.4%	0.14
Idaho	ID	1,754,208	2	0.4%	0.11
Illinois	IL	12,741,080	24	4.4%	0.19
Indiana	IN	6,691,878	6	1.1%	0.09
Iowa	IA	3,156,145	5	0.9%	0.16
Kansas	KS	2,911,505	2	0.4%	0.07
Kentucky	KY	4,468,402	4	0.7%	0.09
Louisiana	LA	4,659,978	6	1.1%	0.13
Maine	ME	1,338,404	3	0.6%	0.22
Maryland	MD	6,042,718	12	2.2%	0.20
Massachusetts	MA	6,902,149	18	3.3%	0.26
Michigan	MI	9,995,915	33	6.1%	0.33
Minnesota	MN	5,611,179	5	0.9%	0.09
Mississippi	MS	2,986,530	4	0.7%	0.13
Missouri	MO	6,126,452	9	1.7%	0.15
Montana	MT	1,062,305	1	0.2%	0.09
Nebraska	NE	1,929,268	2	0.4%	0.10
Nevada	NV	3,034,392	4	0.7%	0.13
New Hampshire	NH	1,356,458	1	0.2%	0.07
New Jersey	NJ	8,908,520	18	3.3%	0.20
New Mexico	NM	2,095,428	2	0.4%	0.10
New York	NY	19,542,209	49	9.0%	0.25
North Carolina	NC	10,383,620	13	2.4%	0.13
North Dakota	ND	760,077	2	0.4%	0.26
Ohio	OH	11,689,442	35	6.4%	0.30
Oklahoma	OK	3,943,079	6	1.1%	0.15
Oregon	OR	4,190,713	3	0.6%	0.07
Pennsylvania	PA	12,807,060	35	6.4%	0.27
Puerto Rico	PR	3,195,153	8	1.5%	0.25
Rhode Island	RI	1,057,315	5	0.9%	0.47
South Carolina	SC	5,084,127	8	1.5%	0.16
South Dakota	SD	882,235	2	0.4%	0.23
Tennessee	TN	6,770,010	7	1.3%	0.10
Texas	TX	28,701,845	30	5.5%	0.10
Utah	UT	3,161,105	2	0.4%	0.06
Vermont	VT	626,299	1	0.2%	0.16
Virginia	VA	8,517,685	12	2.2%	0.14
Washington	WA	7,535,591	10	1.8%	0.13
West Virginia	WV	1,805,832	5	0.9%	0.28
Wisconsin	WI	5,813,568	7	1.3%	0.12
Wyoming	WY	577,737	1	0.2%	0.17

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE E.6					
Number of Single-Program Sponsoring Institutions and Single-Program Sponsoring Institution Concentration per 100,000 Population by State					
State Name	State Abbreviation	State Population - Census Estimate 2018	Total Single-Program Sponsors	Percent of All Sponsors	Single-Program Sponsors per 100,000 Pop
OVERALL	-	330,362,587	249	100.0%	0.08
Alabama	AL	4,887,871	6	2.4%	0.12
Alaska	AK	737,438	0	0.0%	0.00
Arizona	AZ	7,171,646	2	0.8%	0.03
Arkansas	AR	3,013,825	2	0.8%	0.07
California	CA	39,557,045	38	15.3%	0.10
Colorado	CO	5,695,564	5	2.0%	0.09
Connecticut	CT	3,572,665	4	1.6%	0.11
Delaware	DE	967,171	2	0.8%	0.21
District of Columbia	DC	702,455	1	0.4%	0.14
Florida	FL	21,299,325	18	7.2%	0.08
Georgia	GA	10,519,475	11	4.4%	0.10
Hawaii	HI	1,420,491	2	0.8%	0.14
Idaho	ID	1,754,208	2	0.8%	0.11
Illinois	IL	12,741,080	8	3.2%	0.06
Indiana	IN	6,691,878	5	2.0%	0.07
Iowa	IA	3,156,145	5	2.0%	0.16
Kansas	KS	2,911,505	0	0.0%	0.00
Kentucky	KY	4,468,402	2	0.8%	0.04
Louisiana	LA	4,659,978	3	1.2%	0.06
Maine	ME	1,338,404	1	0.4%	0.07
Maryland	MD	6,042,718	2	0.8%	0.03
Massachusetts	MA	6,902,149	7	2.8%	0.10
Michigan	MI	9,995,915	6	2.4%	0.06
Minnesota	MN	5,611,179	4	1.6%	0.07
Mississippi	MS	2,986,530	4	1.6%	0.13
Missouri	MO	6,126,452	4	1.6%	0.07
Montana	MT	1,062,305	2	0.8%	0.19
Nebraska	NE	1,929,268	2	0.8%	0.10
Nevada	NV	3,034,392	2	0.8%	0.07
New Hampshire	NH	1,356,458	1	0.4%	0.07
New Jersey	NJ	8,908,520	8	3.2%	0.09
New Mexico	NM	2,095,428	3	1.2%	0.14
New York	NY	19,542,209	16	6.4%	0.08
North Carolina	NC	10,383,620	3	1.2%	0.03
North Dakota	ND	760,077	0	0.0%	0.00
Ohio	OH	11,689,442	8	3.2%	0.07
Oklahoma	OK	3,943,079	3	1.2%	0.08
Oregon	OR	4,190,713	1	0.4%	0.02
Pennsylvania	PA	12,807,060	10	4.0%	0.08
Puerto Rico	PR	3,195,153	4	1.6%	0.13
Rhode Island	RI	1,057,315	1	0.4%	0.09
South Carolina	SC	5,084,127	3	1.2%	0.06
South Dakota	SD	882,235	1	0.4%	0.11
Tennessee	TN	6,770,010	0	0.0%	0.00
Texas	TX	28,701,845	12	4.8%	0.04
Utah	UT	3,161,105	4	1.6%	0.13
Vermont	VT	626,299	0	0.0%	0.00
Virginia	VA	8,517,685	6	2.4%	0.07
Washington	WA	7,535,591	12	4.8%	0.16
West Virginia	WV	1,805,832	3	1.2%	0.17
Wisconsin	WI	5,813,568	0	0.0%	0.00
Wyoming	WY	577,737	0	0.0%	0.00

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

TABLE E.7

Number of No-Program Sponsoring Institutions and No-Program Sponsoring Institution Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2018	No-Program Sponsors	Percent of All No-Program Sponsors	No-Program Sponsors per 100,000 Pop
OVERALL	-	330,362,587	53	100.0%	0.02
Alabama	AL	4,887,871	5	9.4%	0.10
Alaska	AK	737,438	0	0.0%	0.00
Arizona	AZ	7,171,646	2	3.8%	0.03
Arkansas	AR	3,013,825	2	3.8%	0.07
California	CA	39,557,045	8	15.1%	0.02
Colorado	CO	5,695,564	1	1.9%	0.02
Connecticut	CT	3,572,665	2	3.8%	0.06
Delaware	DE	967,171	1	1.9%	0.10
District of Columbia	DC	702,455	0	0.0%	0.00
Florida	FL	21,299,325	5	9.4%	0.02
Georgia	GA	10,519,475	0	0.0%	0.00
Hawaii	HI	1,420,491	0	0.0%	0.00
Idaho	ID	1,754,208	0	0.0%	0.00
Illinois	IL	12,741,080	1	1.9%	0.01
Indiana	IN	6,691,878	0	0.0%	0.00
Iowa	IA	3,156,145	0	0.0%	0.00
Kansas	KS	2,911,505	0	0.0%	0.00
Kentucky	KY	4,468,402	0	0.0%	0.00
Louisiana	LA	4,659,978	0	0.0%	0.00
Maine	ME	1,338,404	0	0.0%	0.00
Maryland	MD	6,042,718	0	0.0%	0.00
Massachusetts	MA	6,902,149	0	0.0%	0.00
Michigan	MI	9,995,915	2	3.8%	0.02
Minnesota	MN	5,611,179	1	1.9%	0.02
Mississippi	MS	2,986,530	1	1.9%	0.03
Missouri	MO	6,126,452	1	1.9%	0.02
Montana	MT	1,062,305	0	0.0%	0.00
Nebraska	NE	1,929,268	0	0.0%	0.00
Nevada	NV	3,034,392	0	0.0%	0.00
New Hampshire	NH	1,356,458	1	1.9%	0.07
New Jersey	NJ	8,908,520	2	3.8%	0.02
New Mexico	NM	2,095,428	3	5.7%	0.14
New York	NY	19,542,209	3	5.7%	0.02
North Carolina	NC	10,383,620	0	0.0%	0.00
North Dakota	ND	760,077	0	0.0%	0.00
Ohio	OH	11,689,442	2	3.8%	0.02
Oklahoma	OK	3,943,079	0	0.0%	0.00
Oregon	OR	4,190,713	1	1.9%	0.02
Pennsylvania	PA	12,807,060	2	3.8%	0.02
Puerto Rico	PR	3,195,153	0	0.0%	0.00
Rhode Island	RI	1,057,315	0	0.0%	0.00
South Carolina	SC	5,084,127	1	1.9%	0.02
South Dakota	SD	882,235	0	0.0%	0.00
Tennessee	TN	6,770,010	2	3.8%	0.03
Texas	TX	28,701,845	2	3.8%	0.01
Utah	UT	3,161,105	0	0.0%	0.00
Vermont	VT	626,299	0	0.0%	0.00
Virginia	VA	8,517,685	1	1.9%	0.01
Washington	WA	7,535,591	1	1.9%	0.01
West Virginia	WV	1,805,832	0	0.0%	0.00
Wisconsin	WI	5,813,568	0	0.0%	0.00
Wyoming	WY	577,737	0	0.0%	0.00

Source: U.S. Census Bureau, Population Division. Annual Population Estimates, Estimated Components of Resident Population Change, and Rates of the Components of Resident Population Change for the United States, States, and Puerto Rico: April 1, 2010 to July 1, 2018. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2018/counties/totals/co-est2018-alldata.csv>. Published March, 2019. Accessed July 12, 2019.

FIGURE E.8

Number of Sponsoring Institutions by Institution Type

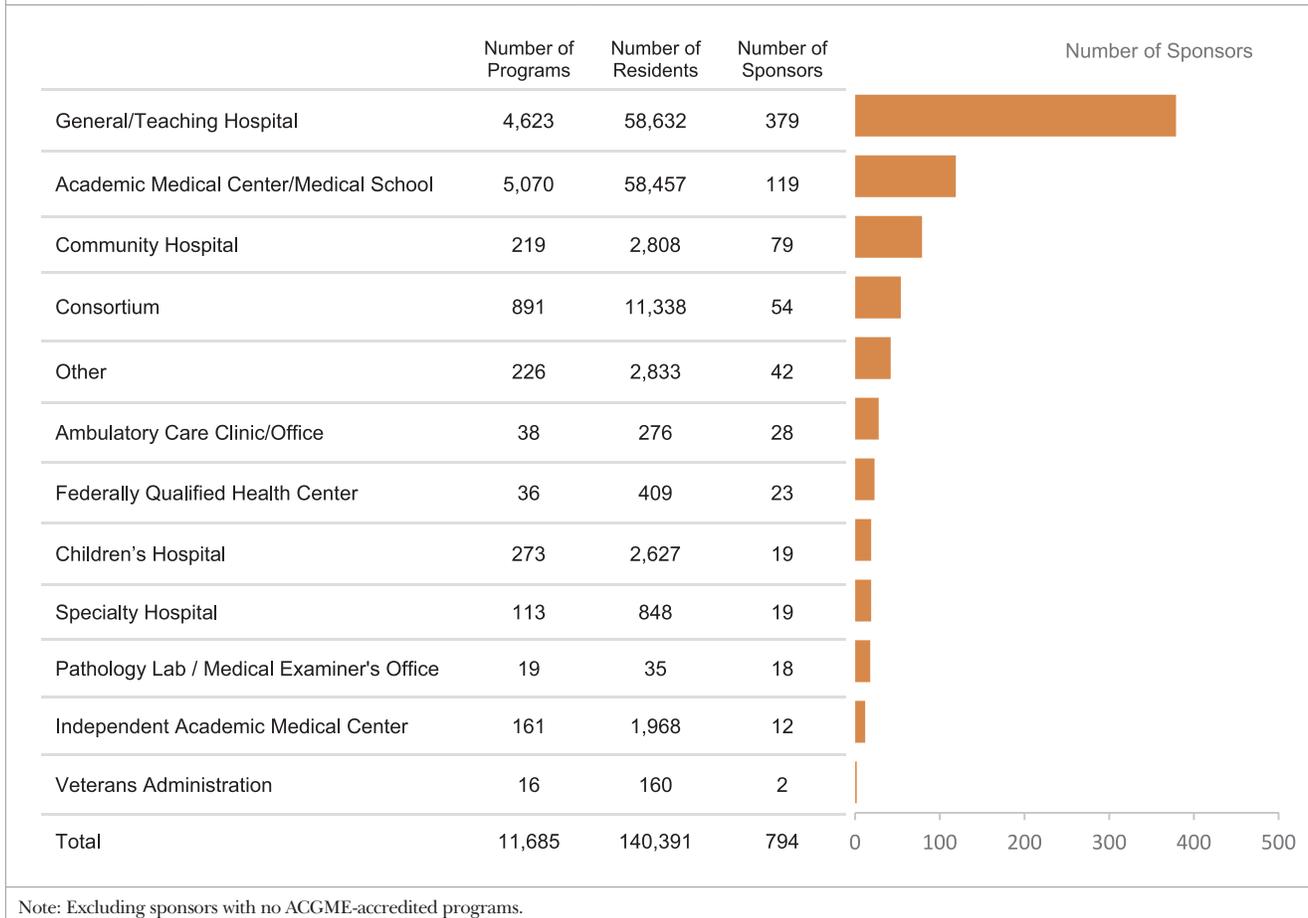
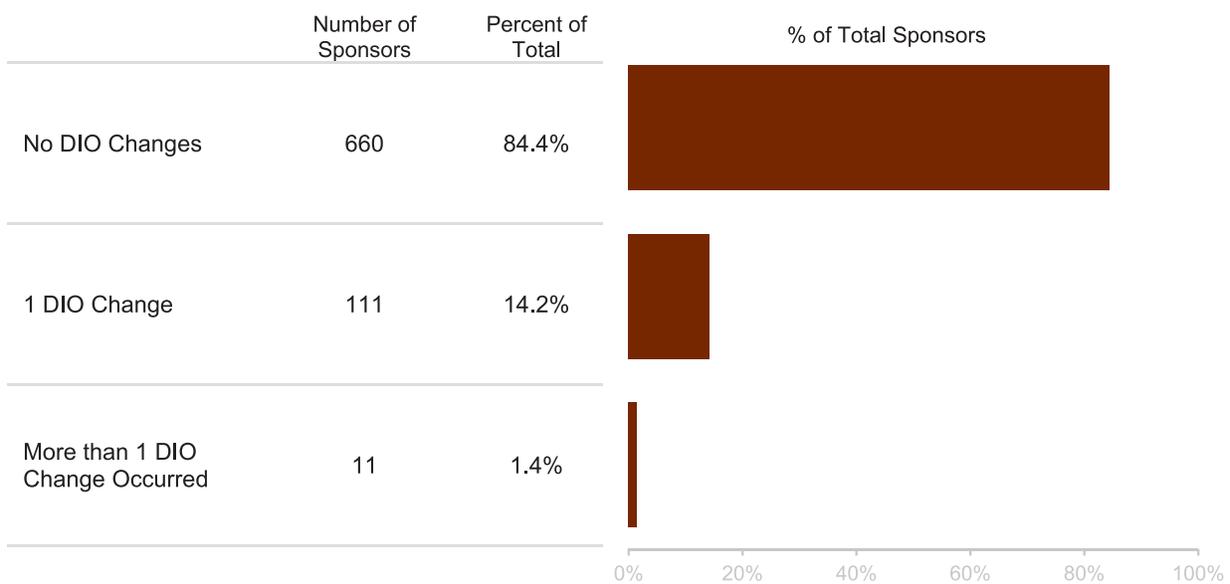


FIGURE E.9

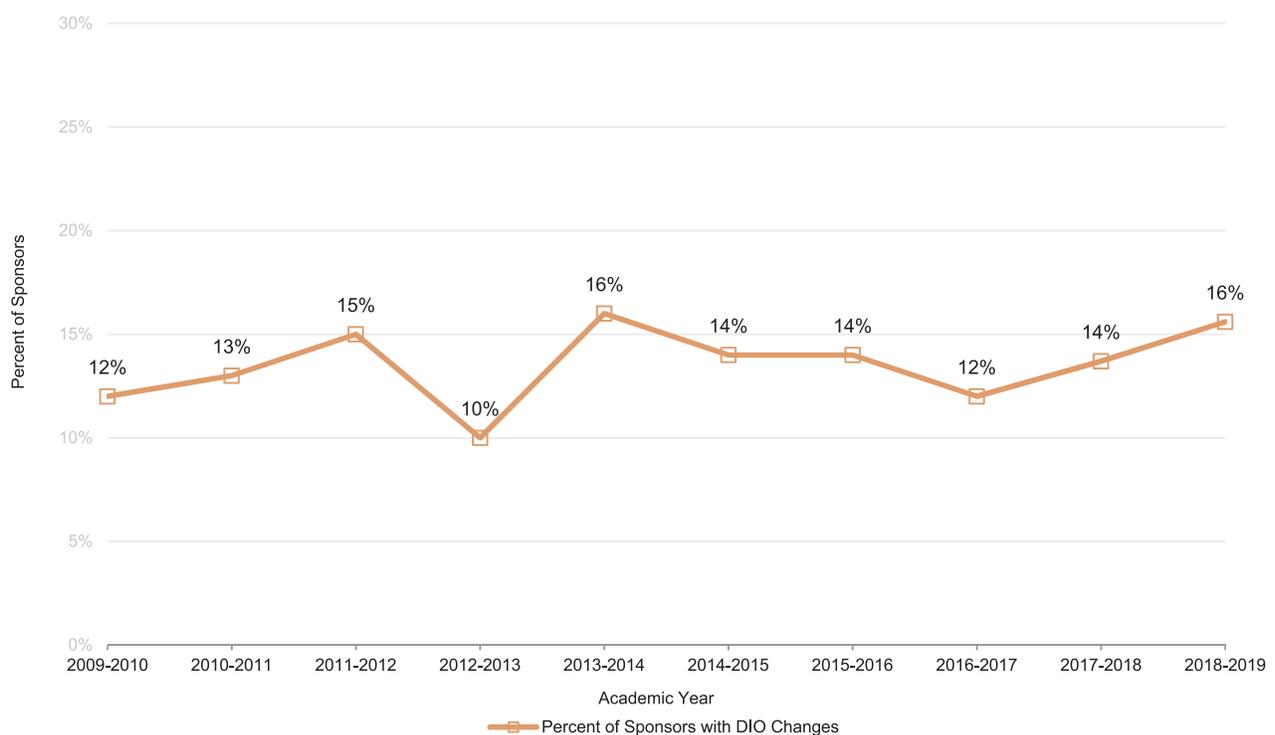
Number of Sponsoring Institutions with DIO Changes



Notes: Excluding sponsors with no ACGME-accredited programs and any sponsors newly accredited in the 2018-2019 academic year. Total number of sponsors included = 782. Percentages may not add to 100% due to rounding.
Abbreviations: DIO, designated institutional official.

FIGURE E.10

Percent of Sponsoring Institutions with at Least One DIO Change by Academic Year, 2009-2010 to 2018-2019



Note: Excluding sponsors with no ACGME-accredited programs and any sponsors newly accredited in the academic year. Total number of sponsors included = 782.
Abbreviations: DIO, designated institutional official

F

Participating Sites

This section includes information and trends on the number of unique participating sites to which residents rotate. The total and average number of sites used by programs in each specialty and subspecialty are also reported.

Distribution by Institution Type

There was a total of 7,229 unique participating sites at which residents rotated during the 2018-2019 academic year. The highest number of sites were in the following categories:

- Ambulatory Care Clinic/Office (2,675)
- General/Teaching Hospital (1,608)
- Other (820)

Since the 2009-2010 academic year, there has been a 96.4% increase in the total number of sites listed by programs as places of rotation. This increase is primarily driven by increases in the following institution type groupings during that time:

- Ambulatory Care Clinic/FQHC (382.0% increase)
- General Teaching/Community Hospital (55.8% increase)
- Specialty Hospital (49.9% increase)

The number of Academic Medical Centers listed as participating sites also increased by 98.9%. With only 181 unique sites in this category in the 2018-2019 academic year, however, this change had a relatively small impact on the overall increase in participating sites.

Number of Sites per Program

Overall, the average number of participating sites listed per program is 3.1. Among pipeline specialty programs,

the average number of participating sites per program is 4.0. The pipeline specialties with the highest average number of participating sites include:

- Preventive medicine (7.0)
- Orthopaedic surgery (5.3)
- Physical medicine and rehabilitation (5.3)
- Plastic surgery – integrated (5.3)
- Psychiatry (5.3)

The pipeline specialties with the highest maximum number of participating sites per program include:

- Family medicine (34)
- Preventive medicine (24)
- Internal medicine (20)
- Internal medicine/Pediatrics (19)

The subspecialty with the highest average number of participating sites per program is ophthalmic plastic and reconstructive surgery, which, along with the family medicine subspecialty of sports medicine, has the highest maximum number of participating sites per program at 17.

Number of Sites by Specialty and Subspecialty

The specialties with the highest number of unique participating sites to which residents rotate include:

- Family medicine (2,157)
- Internal medicine (1,374)
- Psychiatry (1,207)
- Surgery (1,066)

Sponsors account for 7.9% of all participating sites with 572 Sponsoring Institutions listed as participating sites to which residents rotate. ♪

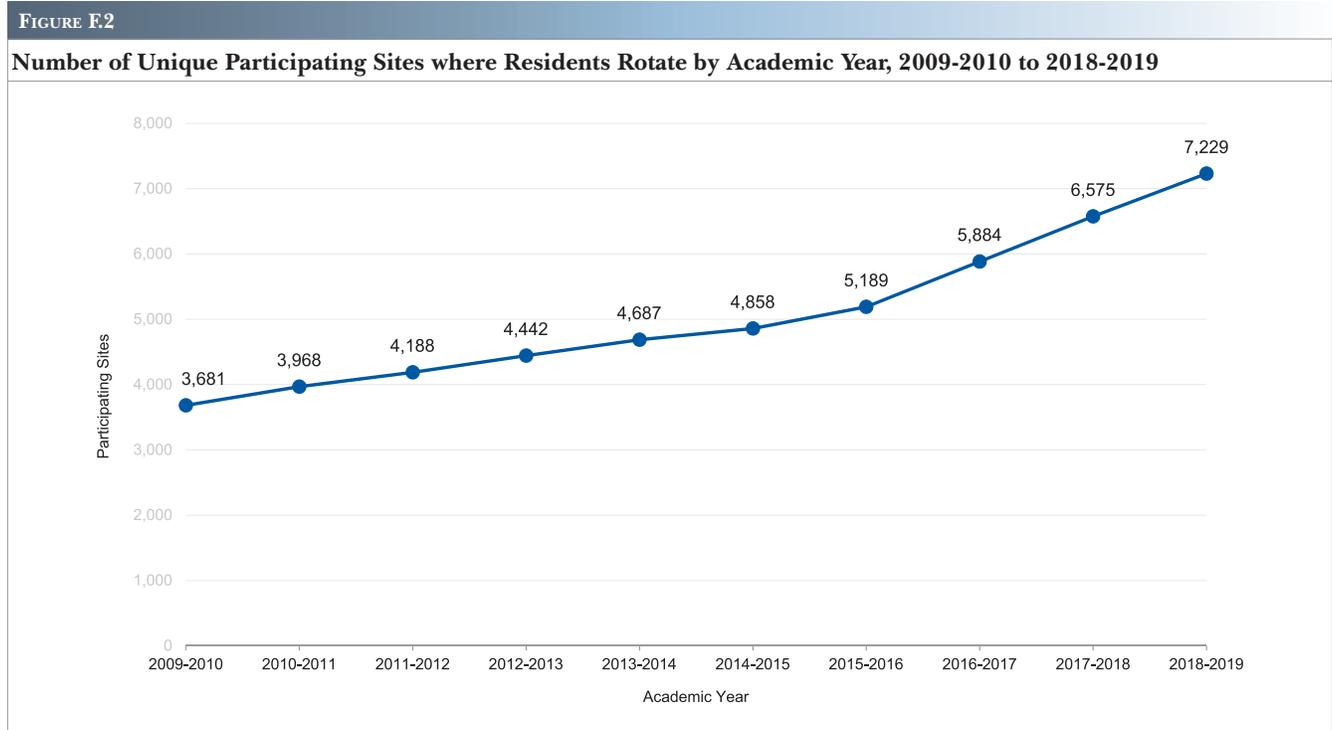
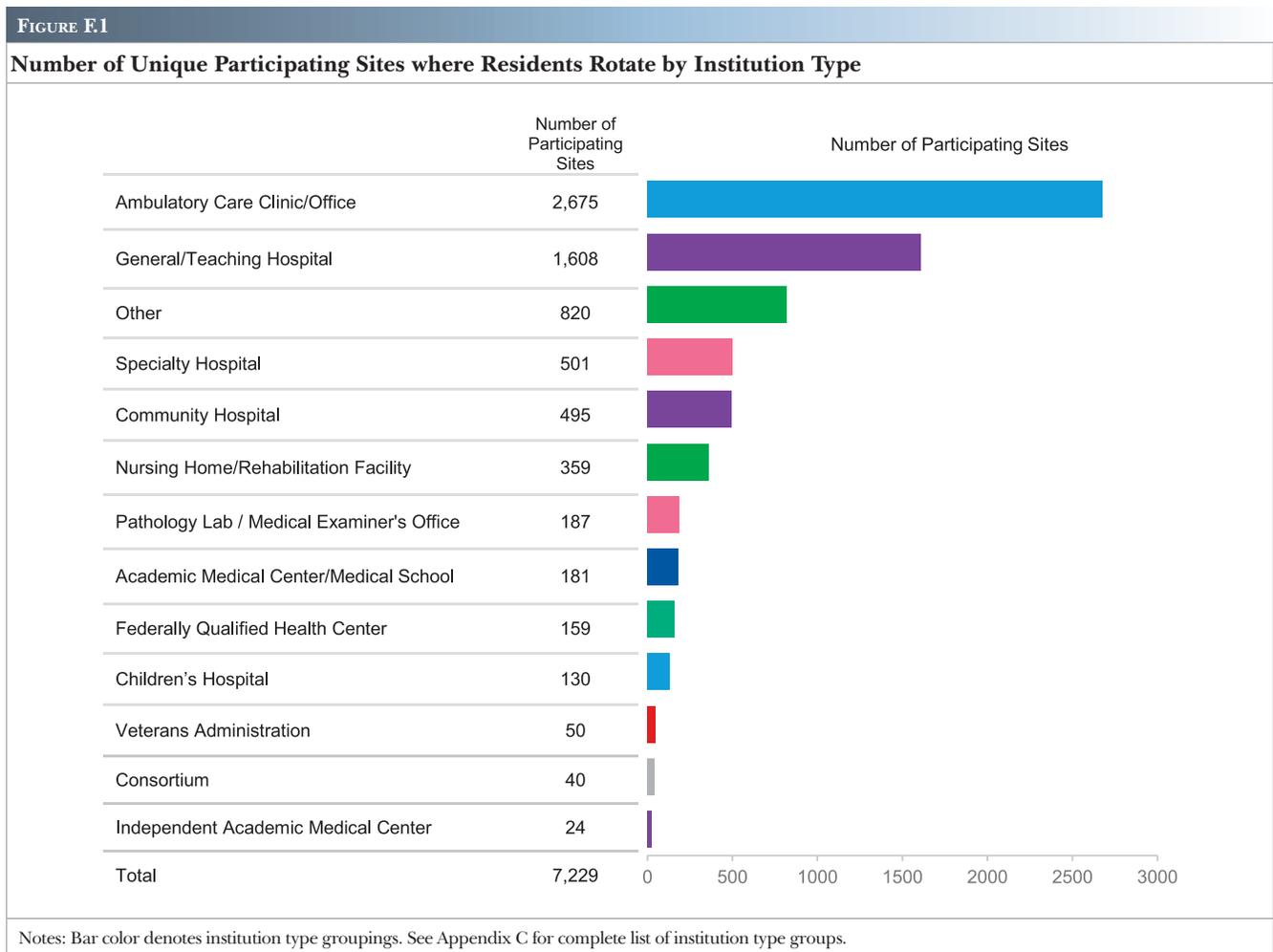
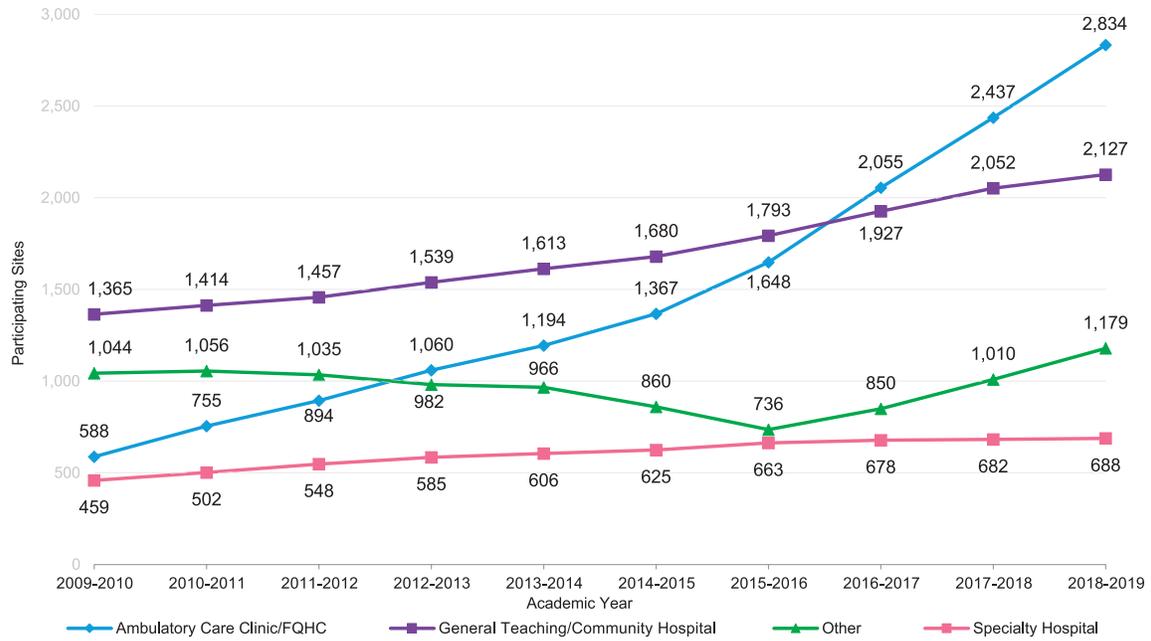


FIGURE F.3

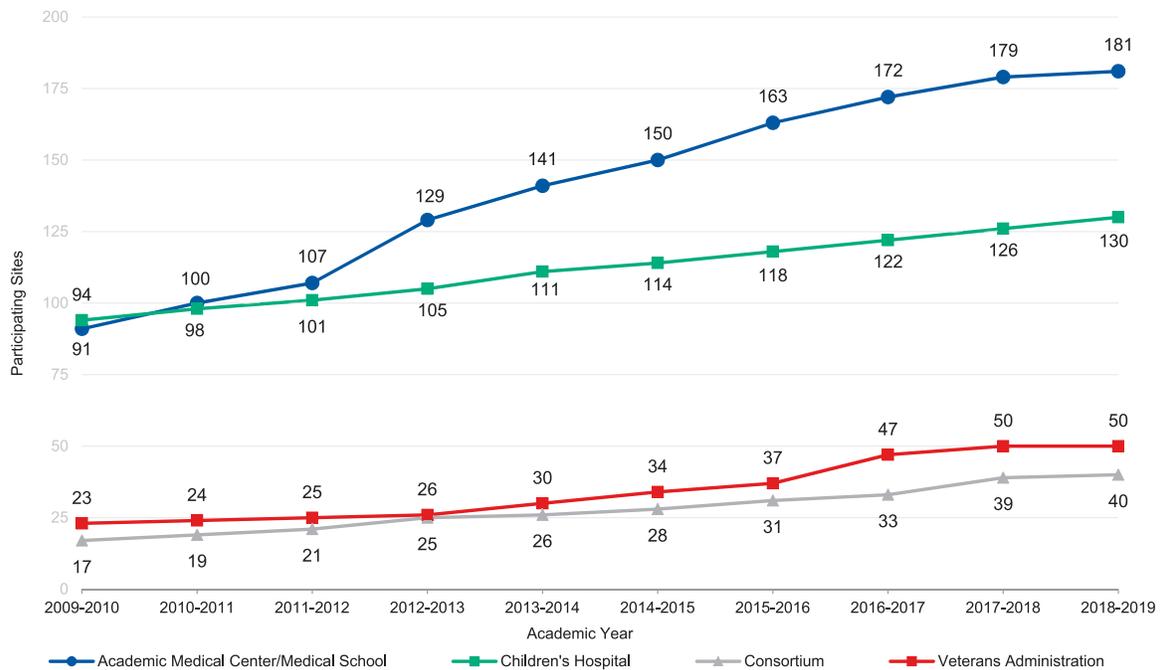
Number of Participating Sites where Residents Rotate by Institution Type Groups (Largest Groups Only) and Academic Year, 2009-2010 to 2018-2019



Note: See Appendix C for list of institution type groups.
Abbreviation: FQHC, Federally Qualified Health Center.

FIGURE F.4

Number of Participating Sites where Residents Rotate by Institution Type Groups (Smallest Groups Only) and Academic Year, 2009-2010 to 2018-2019



Note: See Appendix C for list of institution type groups.

TABLE F.5					
Mean Number of Participating Sites per Program where Residents Rotate by Specialty and Subspecialty					
Specialty	Total Programs	Number of Participating Sites per Program			
		AVG	STD	MIN	MAX
OVERALL	11,685	3.1	2.2	1	34
TOTAL PIPELINE	4,842	4.0	2.6	1	34
Allergy and immunology	78	2.7	1.4	1	6
Anesthesiology	155	4.0	1.8	1	10
- Adult cardiothoracic anesthesiology	69	1.9	1.0	1	5
- Clinical informatics	1	1.0	0.0	1	1
- Critical care medicine	64	1.8	0.9	1	4
- Regional anesthesiology and acute pain medicine	29	2.0	1.4	1	6
- Obstetric anesthesiology	37	1.4	0.7	1	3
- Pain medicine (multidisciplinary)	104	2.6	1.3	1	8
- Pediatric anesthesiology	61	1.5	0.9	1	4
Colon and rectal surgery	63	2.9	1.8	1	10
Dermatology	142	4.1	2.6	1	13
- Dermatopathology (multidisciplinary)	55	2.0	1.1	1	5
- Micrographic surgery and dermatologic oncology	77	2.1	1.4	1	9
Emergency medicine	247	4.0	2.0	1	12
- Clinical informatics	4	4.5	2.6	2	8
- Emergency medical services	65	3.3	2.8	1	13
- Medical toxicology	27	3.0	1.2	1	6
- Pediatric emergency medicine	26	2.7	1.0	1	4
- Sports medicine	9	4.0	3.6	1	12
- Undersea and hyperbaric medicine	7	1.4	0.5	1	2
Family medicine	671	4.1	3.6	1	34
- Clinical informatics	3	2.3	1.2	1	4
- Geriatric medicine	48	4.0	2.6	1	13
- Hospice and palliative medicine (multidisciplinary)	149	4.4	1.9	1	14
- Sports medicine	143	3.8	3.0	1	17
Internal medicine	545	3.0	2.5	1	20
- Adult congenital heart disease	21	1.8	0.7	1	3
- Advanced heart failure and transplant cardiology	76	1.4	0.6	1	3
- Cardiovascular disease	245	2.6	1.3	1	9
- Clinical cardiac electrophysiology	110	1.6	0.8	1	5
- Clinical informatics	16	1.8	1.2	1	5
- Critical care medicine	43	2.6	1.3	1	7
- Endocrinology, diabetes, and metabolism	149	2.7	1.3	1	8
- Gastroenterology	202	2.9	1.3	1	7
- Geriatric medicine	108	3.6	1.8	1	9
- Hematology	2	2.5	0.5	2	3
- Hematology and medical oncology	157	2.8	1.3	1	8
- Infectious disease	149	2.8	1.2	1	6
- Interventional cardiology	164	1.7	1.0	1	8
- Nephrology	149	2.8	1.2	1	7
- Medical oncology	8	2.4	1.0	1	4
- Pulmonary disease	23	2.5	1.0	1	4
- Pulmonary disease and critical care medicine	178	3.2	1.6	1	9
- Rheumatology	122	2.6	1.2	1	7
- Sleep medicine (multidisciplinary)	86	2.5	1.0	1	5
- Transplant hepatology	52	1.3	0.5	1	2
Medical genetics and genomics	46	3.3	2.0	1	8
- Medical biochemical genetics	19	2.2	1.2	1	5
- Molecular genetic pathology (multidisciplinary)	42	2.0	1.2	1	6
Neurological surgery	115	3.5	1.6	1	11
- Endovascular surgical neuroradiology	2	2.0	1.0	1	3

TABLE F.5 *Continued*

Mean Number of Participating Sites per Program where Residents Rotate by Specialty and Subspecialty					
Specialty	Total Programs	Number of Participating Sites per Program			
		AVG	STD	MIN	MAX
Neurology	159	3.4	1.8	1	14
- Brain injury medicine	1	1.0	0.0	1	1
- Clinical neurophysiology	91	2.2	1.1	1	6
- Epilepsy	77	2.0	0.9	1	4
- Endovascular surgical neuroradiology	2	1.5	0.5	1	2
- Neurodevelopmental disabilities	8	4.4	1.1	3	6
- Neuromuscular medicine	49	2.2	1.0	1	5
- Vascular neurology	99	1.7	0.9	1	4
Child neurology	74	2.9	1.3	1	6
Nuclear medicine	39	2.5	1.3	1	6
Obstetrics and gynecology	282	3.6	2.1	1	12
- Female pelvic medicine and reconstructive surgery	53	2.5	1.1	1	5
- Gynecologic oncology	59	2.1	1.0	1	5
- Maternal-fetal medicine	93	2.0	1.0	1	5
- Reproductive endocrinology and infertility	50	2.5	1.6	1	6
Ophthalmology	123	3.9	1.9	1	12
- Ophthalmic plastic and reconstructive surgery	4	6.8	6.0	2	17
Orthopaedic surgery	185	5.3	2.4	1	14
- Adult reconstructive orthopaedics	24	2.3	1.3	1	5
- Foot and ankle orthopaedics	7	2.3	1.3	1	4
- Hand surgery	72	3.7	2.2	1	11
- Musculoskeletal oncology	12	2.2	1.0	1	4
- Orthopaedic sports medicine	92	2.9	2.2	1	15
- Orthopaedic surgery of the spine	17	2.2	1.2	1	5
- Orthopaedic trauma	11	1.6	1.2	1	5
- Pediatric orthopaedics	26	1.5	0.8	1	3
Osteopathic neuromusculoskeletal medicine	19	4.4	3.0	1	12
Otolaryngology - head and neck surgery	122	4.2	2.0	1	9
- Neurotology	24	2.4	1.3	1	5
- Pediatric otolaryngology	29	1.3	0.5	1	2
Pathology-anatomic and clinical	143	4.1	1.9	1	10
- Blood banking/transfusion medicine	51	3.1	1.5	1	7
- Clinical informatics	8	2.3	1.8	1	6
- Chemical pathology	4	1.3	0.4	1	2
- Cytopathology	94	1.4	0.6	1	3
- Forensic pathology	43	1.2	0.6	1	4
- Hematopathology	87	1.9	1.0	1	5
- Medical microbiology	15	1.9	1.0	1	4
- Neuropathology	36	2.1	1.2	1	6
- Pediatric pathology	27	2.4	1.1	1	5
- Selective pathology	91	1.4	0.6	1	3
Pediatrics	212	2.8	1.8	1	14
- Adolescent medicine	30	2.7	2.3	1	10
- Child abuse pediatrics	31	2.6	1.3	1	6
- Clinical informatics	5	2.4	1.2	1	4
- Developmental-behavioral pediatrics	43	2.0	1.2	1	5
- Neonatal-perinatal medicine	102	2.2	1.0	1	6
- Pediatric cardiology	62	1.5	0.8	1	5
- Pediatric critical care medicine	72	1.5	0.8	1	4
- Pediatric emergency medicine	52	2.9	0.9	1	4
- Pediatric endocrinology	73	1.6	0.7	1	3
- Pediatric gastroenterology	65	1.6	0.7	1	3
- Pediatric hematology/oncology	74	1.8	0.9	1	4

TABLE F.5 <i>Continued</i>					
Mean Number of Participating Sites per Program where Residents Rotate by Specialty and Subspecialty					
Specialty	Total Programs	Number of Participating Sites per Program			
		AVG	STD	MIN	MAX
- Pediatric infectious diseases	65	2.1	1.2	1	7
- Pediatric nephrology	46	1.5	0.9	1	5
- Pediatric pulmonology	54	1.5	0.8	1	5
- Pediatric rheumatology	35	1.7	0.7	1	3
- Pediatric sports medicine	17	2.9	1.8	1	7
- Pediatric transplant hepatology	15	1.7	0.5	1	2
Physical medicine and rehabilitation	91	5.3	2.6	1	16
- Brain injury medicine	20	2.6	0.7	2	4
- Neuromuscular medicine	1	2.0	0.0	2	2
- Spinal cord injury medicine	24	2.9	0.7	2	4
- Pediatric rehabilitation	20	2.1	1.0	1	5
- Sports medicine	19	2.9	1.4	1	6
Plastic surgery	55	5.2	2.3	1	13
Plastic surgery - integrated	81	5.3	2.4	2	12
- Craniofacial surgery	8	2.0	1.2	1	5
- Hand surgery	17	3.3	1.7	1	7
Preventive medicine	75	7.0	4.5	1	24
- Medical toxicology	1	4.0	0.0	4	4
- Undersea and hyperbaric medicine	1	2.0	0.0	2	2
Psychiatry	257	5.3	2.8	1	16
- Addiction medicine (multidisciplinary)	52	3.7	2.4	1	10
- Addiction psychiatry	50	3.2	1.5	1	8
- Child and adolescent psychiatry	140	4.5	2.8	1	14
- Forensic psychiatry	48	4.0	1.6	1	9
- Geriatric psychiatry	61	3.4	1.7	1	11
- Consultation-liaison psychiatry	62	2.2	1.0	1	6
Radiation oncology	94	2.8	1.4	1	7
Radiology-diagnostic	195	3.1	1.7	1	14
- Abdominal radiology	13	1.7	1.0	1	4
- Endovascular surgical neuroradiology	3	1.7	0.9	1	3
- Musculoskeletal radiology	16	1.6	0.9	1	4
- Neuroradiology	87	2.0	1.1	1	5
- Nuclear radiology	17	1.8	1.2	1	5
- Pediatric radiology	47	1.3	0.7	1	4
- Vascular and interventional radiology	93	2.2	1.3	1	8
Interventional radiology - integrated	84	3.0	1.4	1	9
Surgery	323	4.8	1.9	1	12
- Complex general surgical oncology	27	2.0	1.2	1	6
- Hand surgery	1	5.0	0.0	5	5
- Pediatric surgery	50	1.6	0.7	1	3
- Surgical critical care	136	1.7	0.9	1	5
- Vascular surgery	109	2.4	1.1	1	6
Vascular surgery - integrated	60	3.7	1.5	1	7
Thoracic surgery	72	2.6	1.3	1	6
- Congenital cardiac surgery	12	1.4	0.6	1	3
Thoracic surgery - integrated	27	4.4	1.9	2	8
Urology	142	3.8	1.4	1	8
- Female pelvic medicine and reconstructive surgery	14	2.2	1.5	1	6
- Pediatric urology	26	1.4	0.6	1	3
Transitional year	157	2.1	1.4	1	10
Internal medicine/Pediatrics	79	3.8	2.6	1	19

Note: Pipeline specialties are highlighted.

TABLE F.6

Total Number of Participating Sites and Number of Sponsoring Institutions where Residents Rotate by Specialty and Subspecialty

Specialty	Total Participating Sites	Sponsors	
		#	%
OVERALL	7,229	572	7.9%
TOTAL PIPELINE	5,390	512	9.5%
Allergy and immunology	187	37	19.8%
Anesthesiology	494	69	14.0%
- Adult cardiothoracic anesthesiology	123	37	30.1%
- Clinical informatics	1	1	100.0%
- Critical care medicine	115	32	27.8%
- Regional anesthesiology and acute pain medicine	54	15	27.8%
- Obstetric anesthesiology	52	19	36.5%
- Pain medicine (multidisciplinary)	246	54	22.0%
- Pediatric anesthesiology	85	21	24.7%
Colon and rectal surgery	174	34	19.5%
Dermatology	536	61	11.4%
- Dermatopathology (multidisciplinary)	106	27	25.5%
- Micrographic surgery and dermatologic oncology	159	38	23.9%
Emergency medicine	710	117	16.5%
- Clinical informatics	17	2	11.8%
- Emergency medical services	214	31	14.5%
- Medical toxicology	80	7	8.8%
- Pediatric emergency medicine	65	13	20.0%
- Sports medicine	36	0	0.0%
- Undersea and hyperbaric medicine	10	5	50.0%
Family medicine	2,157	311	14.4%
- Clinical informatics	7	2	28.6%
- Geriatric medicine	186	26	14.0%
- Hospice and palliative medicine (multidisciplinary)	560	73	13.0%
- Sports medicine	515	71	13.8%
Internal medicine	1,374	283	20.6%
- Adult congenital heart disease	37	9	24.3%
- Advanced heart failure and transplant cardiology	103	34	33.0%
- Cardiovascular disease	522	107	20.5%
- Clinical cardiac electrophysiology	178	53	29.8%
- Clinical informatics	29	8	27.6%
- Critical care medicine	102	21	20.6%
- Endocrinology, diabetes, and metabolism	364	67	18.4%
- Gastroenterology	484	95	19.6%
- Geriatric medicine	378	48	12.7%
- Hematology	5	1	20.0%
- Hematology and medical oncology	370	76	20.5%
- Infectious disease	362	66	18.2%
- Interventional cardiology	273	73	26.7%
- Nephrology	368	72	19.6%
- Medical oncology	19	2	10.5%
- Pulmonary disease	56	15	26.8%
- Pulmonary disease and critical care medicine	472	86	18.2%
- Rheumatology	302	55	18.2%
- Sleep medicine (multidisciplinary)	203	38	18.7%
- Transplant hepatology	69	24	34.8%
Medical genetics and genomics	134	24	17.9%
- Medical biochemical genetics	40	10	25.0%
- Molecular genetic pathology (multidisciplinary)	77	20	26.0%
Neurological surgery	349	51	14.6%
- Endovascular surgical neuroradiology	4	0	0.0%

TABLE F.6 Continued

Total Number of Participating Sites and Number of Sponsoring Institutions where Residents Rotate by Specialty and Subspecialty

Specialty	Total Participating Sites	Sponsors	
		#	%
Neurology	480	67	14.0%
- Brain injury medicine	1	0	0.0%
- Clinical neurophysiology	187	41	21.9%
- Epilepsy	127	31	24.4%
- Endovascular surgical neuroradiology	3	0	0.0%
- Neurodevelopmental disabilities	35	4	11.4%
- Neuromuscular medicine	105	27	25.7%
- Vascular neurology	170	46	27.1%
Child neurology	203	34	16.7%
Nuclear medicine	93	17	18.3%
Obstetrics and gynecology	895	150	16.8%
- Female pelvic medicine and reconstructive surgery	130	27	20.8%
- Gynecologic oncology	122	27	22.1%
- Maternal-fetal medicine	187	41	21.9%
- Reproductive endocrinology and infertility	125	23	18.4%
Ophthalmology	428	49	11.4%
- Ophthalmic plastic and reconstructive surgery	27	1	3.7%
Orthopaedic surgery	767	86	11.2%
- Adult reconstructive orthopaedics	52	8	15.4%
- Foot and ankle orthopaedics	16	5	31.3%
- Hand surgery	243	33	13.6%
- Musculoskeletal oncology	26	7	26.9%
- Orthopaedic sports medicine	260	50	19.2%
- Orthopaedic surgery of the spine	37	10	27.0%
- Orthopaedic trauma	18	6	33.3%
- Pediatric orthopaedics	40	12	30.0%
Osteopathic neuromusculoskeletal medicine	77	8	10.4%
Otolaryngology - head and neck surgery	443	52	11.7%
- Neurotology	57	13	22.8%
- Pediatric otolaryngology	38	13	34.2%
Pathology-anatomic and clinical	470	66	14.0%
- Blood banking/transfusion medicine	146	29	19.9%
- Clinical informatics	18	3	16.7%
- Chemical pathology	5	3	60.0%
- Cytopathology	126	44	34.9%
- Forensic pathology	53	22	41.5%
- Hematopathology	147	42	28.6%
- Medical microbiology	28	9	32.1%
- Neuropathology	71	17	23.9%
- Pediatric pathology	63	13	20.6%
- Selective pathology	68	19	27.9%
Pediatrics	486	108	22.2%
- Adolescent medicine	81	12	14.8%
- Child abuse pediatrics	80	13	16.3%
- Clinical informatics	12	4	33.3%
- Developmental-behavioral pediatrics	81	22	27.2%
- Neonatal-perinatal medicine	207	45	21.7%
- Pediatric cardiology	91	27	29.7%
- Pediatric critical care medicine	96	33	34.4%
- Pediatric emergency medicine	137	22	16.1%
- Pediatric endocrinology	113	33	29.2%
- Pediatric gastroenterology	97	28	28.9%
- Pediatric hematology/oncology	123	32	26.0%

TABLE F.6 *Continued***Total Number of Participating Sites and Number of Sponsoring Institutions where Residents Rotate by Specialty and Subspecialty**

Specialty	Total Participating Sites	Sponsors	
		#	%
- Pediatric infectious diseases	127	29	22.8%
- Pediatric nephrology	67	19	28.4%
- Pediatric pulmonology	81	25	30.9%
- Pediatric rheumatology	58	12	20.7%
- Pediatric sports medicine	49	11	22.4%
- Pediatric transplant hepatology	25	5	20.0%
Physical medicine and rehabilitation	432	40	9.3%
- Brain injury medicine	51	6	11.8%
- Neuromuscular medicine	2	0	0.0%
- Spinal cord injury medicine	66	8	12.1%
- Pediatric rehabilitation	42	6	14.3%
- Sports medicine	53	2	3.8%
Plastic surgery	260	24	9.2%
Plastic surgery - integrated	395	34	8.6%
- Craniofacial surgery	16	3	18.8%
- Hand surgery	56	8	14.3%
Preventive medicine	435	34	7.8%
- Medical toxicology	4	1	25.0%
- Undersea and hyperbaric medicine	2	1	50.0%
Psychiatry	1,207	128	10.6%
- Addiction medicine (multidisciplinary)	189	26	13.8%
- Addiction psychiatry	154	19	12.3%
- Child and adolescent psychiatry	597	59	9.9%
- Forensic psychiatry	182	18	9.9%
- Geriatric psychiatry	205	22	10.7%
- Consultation-liaison psychiatry	131	31	23.7%
Radiation oncology	232	42	18.1%
Radiology-diagnostic	472	93	19.7%
- Abdominal radiology	22	6	27.3%
- Endovascular surgical neuroradiology	5	2	40.0%
- Musculoskeletal radiology	26	9	34.6%
- Neuroradiology	165	40	24.2%
- Nuclear radiology	30	11	36.7%
- Pediatric radiology	61	20	32.8%
- Vascular and interventional radiology	198	43	21.7%
Interventional radiology - integrated	236	38	16.1%
Surgery	1,066	162	15.2%
- Complex general surgical oncology	52	12	23.1%
- Hand surgery	5	0	0.0%
- Pediatric surgery	78	17	21.8%
- Surgical critical care	209	63	30.1%
- Vascular surgery	256	50	19.5%
Vascular surgery - integrated	214	27	12.6%
Thoracic surgery	175	38	21.7%
- Congenital cardiac surgery	17	5	29.4%
Thoracic surgery - integrated	118	14	11.9%
Urology	477	66	13.8%
- Female pelvic medicine and reconstructive surgery	31	8	25.8%
- Pediatric urology	36	9	25.0%
Transitional year	313	89	28.4%
Internal medicine/Pediatrics	292	34	11.6%

Notes: The same institution can be counted by programs across specialties. Pipeline specialties are highlighted.



Program Directors and Faculty

This section includes information and trends regarding program director turnover, tenure, and hours spent in key areas related to the program. Statistics on the total number of faculty members, faculty members per program, and the hours faculty members spend in key areas are also included.

Program Director Changes

A total of 664 specialty programs (12.7%) and 759 subspecialty programs (11.8%) had at least one program director change. Of these, a small number (38 specialty programs and 36 subspecialty programs) had more than one program director change during the academic year. Overall, 1,498 distinct program director changes occurred in 1,423 programs. The specialties with the highest percentage of program director turnover include:

- Osteopathic neuromusculoskeletal medicine (21.1%)
- Pathology-anatomic and clinical (18.2%)
- Plastic surgery – integrated (16.0%)
- Preventive medicine (16.0%)
- The specialties with the highest total number of program director changes include:
 - Family medicine (102)
 - Internal medicine (68)
 - Surgery (51)

The specialties with the lowest percentage of program director turnover include:

- Internal medicine/Pediatrics (5.1%)
- Medical genetics and genomics (6.5%)
- Allergy and immunology (7.7%)

Historically, between 11% and 14% of programs have a change in the program director role each year.

Program Director Tenure

On average, program directors of ACGME-accredited specialty programs spend approximately seven years in this role. Among all past program directors in specialty programs since July 1, 2009, allergy and immunology program directors have had the highest average tenure at 9.8 years, while interventional radiology - integrated program directors have had the lowest tenure at 1.2 years.

Program Director Years Teaching in Specialty

In general, new program directors have spent less time teaching in their specialty than program directors who

are not new to their role (continuing program directors). The mean length in years that new program directors have taught in their specialty is 12.5 years among medical specialty programs, 10.6 years among hospital-based specialty programs, and 13.2 years among surgical specialty programs. In each group, the years that subspecialty program directors have taught in their subspecialty is 11.1 years, 10.2 years, and 13.5 years in medical, hospital-based, and surgical subspecialty programs, respectively. The mean length in years that continuing program directors have taught in their specialty is 18.1 years among medical specialty programs, 15.7 years among hospital-based specialty programs, and 17.6 years among surgical specialty programs.

Physician Faculty

A total of 184,747 physician faculty members were listed as active at the time of the Academic Year 2018-2019 snapshot. Note that these are not necessarily distinct people, as an individual may be listed as a faculty member for multiple programs. The average number of physician faculty members listed per program was 15.8 overall. The specialties with the highest average number of faculty members per program include:

- Anesthesiology (58.7)
- Pediatrics (45.5)
- Radiology – diagnostic (35.8)
- The subspecialties with the highest average number of faculty members per program include:
 - Pediatric emergency medicine (19.0)
 - Pediatric cardiology (18.4)
 - Neurodevelopmental disabilities (15.8)

Core Faculty

A total of 67,166 core faculty members were listed as active in specialty programs at the time of the Academic Year 2018-2019 snapshot. The specialties with the highest average number of core faculty members per program include:

- Anesthesiology (26.4)
- Pediatrics (24.2)
- Radiology – diagnostic (22.7)

A small number of programs had over 100 core faculty members listed on their Faculty Roster. ♪

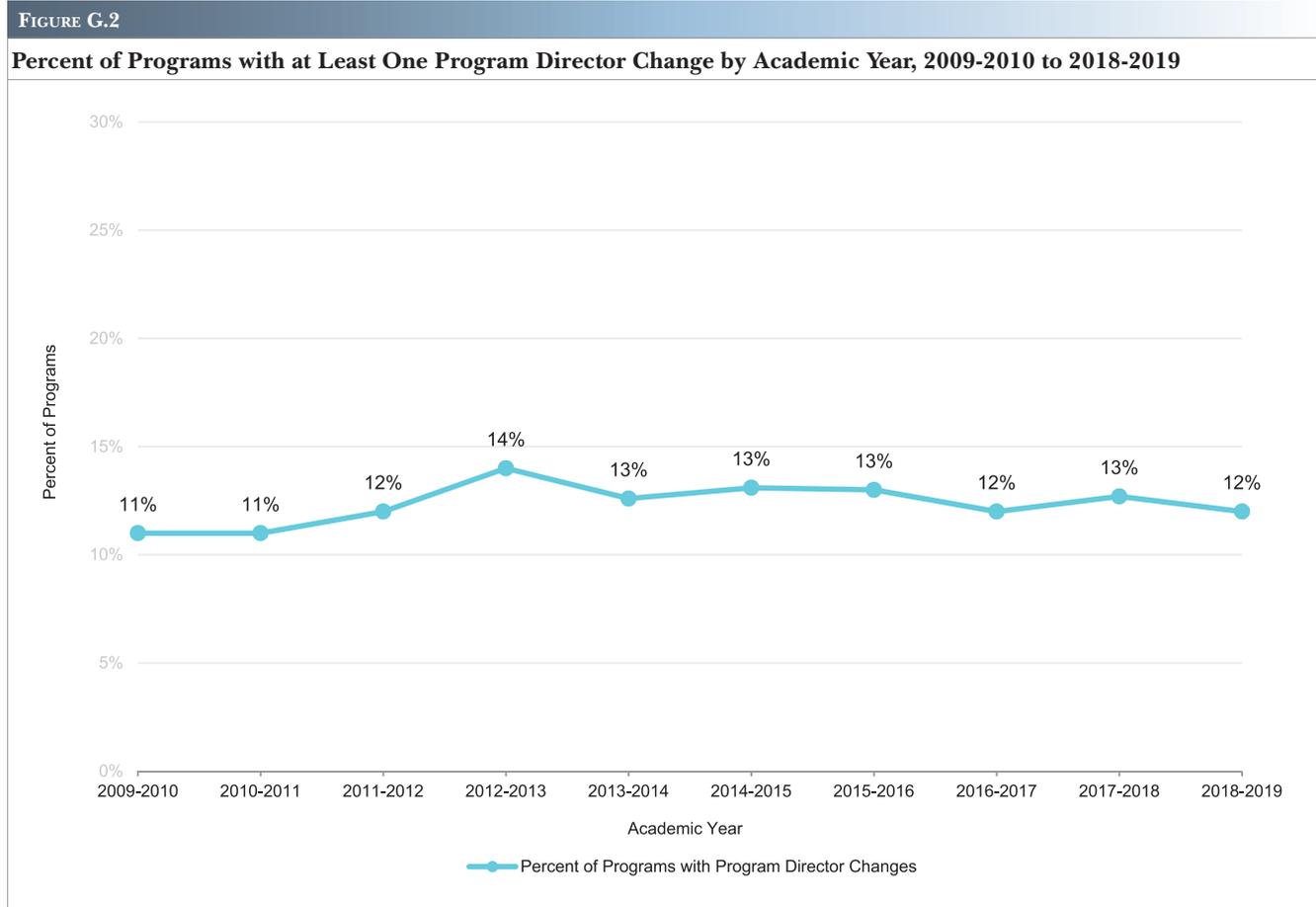
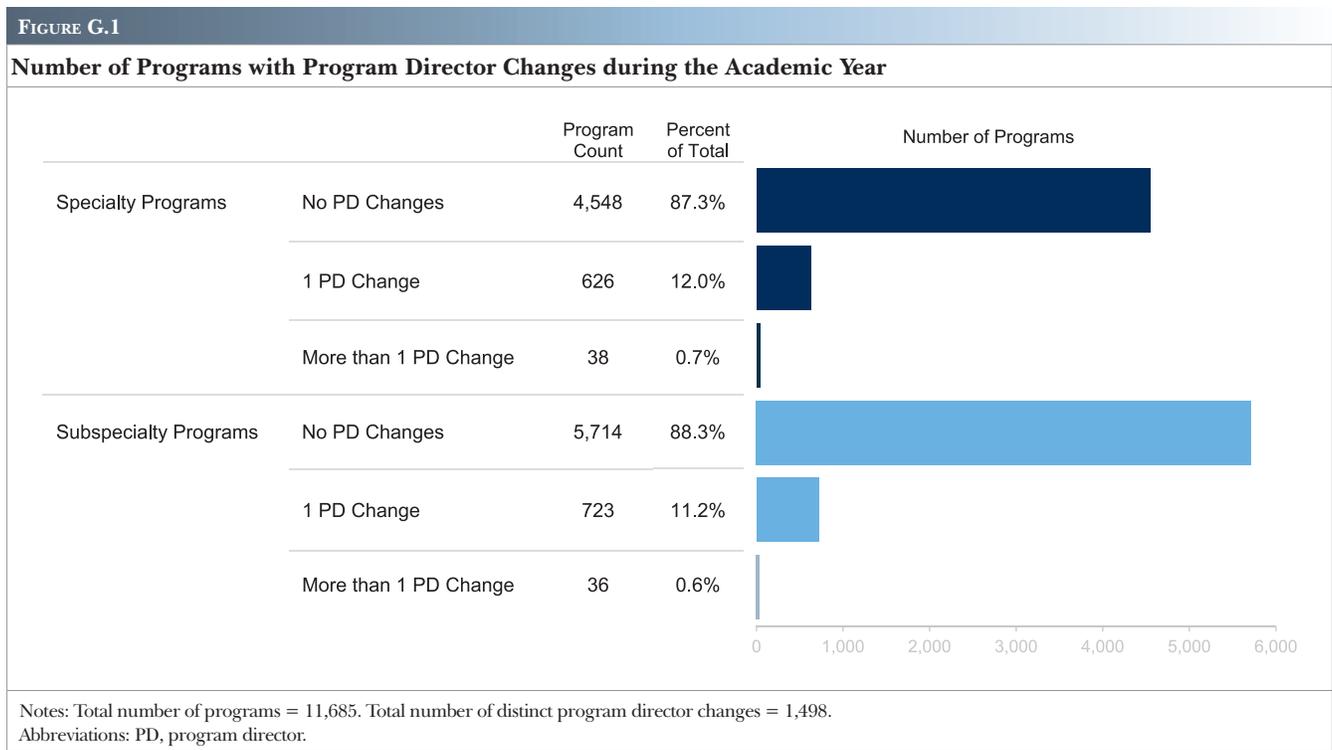


TABLE G.3

Number of Programs with New Program Directors and Number of Distinct Program Director Changes during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Programs with New PDs		Number of Distinct PD Changes
		#	%	
OVERALL	11,685	1,423	12.2%	1,498
TOTAL PIPELINE	4,842	622	12.8%	658
Allergy and immunology	78	6	7.7%	6
Anesthesiology	155	18	11.6%	20
- Adult cardiothoracic anesthesiology	69	12	17.4%	12
- Clinical informatics	1	0	0.0%	0
- Critical care medicine	64	14	21.9%	14
- Regional anesthesiology and acute pain medicine	29	0	0.0%	0
- Obstetric anesthesiology	37	4	10.8%	4
- Pain medicine (multidisciplinary)	104	12	11.5%	12
- Pediatric anesthesiology	61	11	18.0%	11
Colon and rectal surgery	63	7	11.1%	7
Dermatology	142	13	9.2%	13
- Dermatopathology (multidisciplinary)	55	1	1.8%	1
- Micrographic surgery and dermatologic oncology	77	5	6.5%	5
Emergency medicine	247	33	13.4%	33
- Clinical informatics	4	0	0.0%	0
- Emergency medical services	65	7	10.8%	7
- Medical toxicology	27	2	7.4%	2
- Pediatric emergency medicine	26	1	3.8%	1
- Sports medicine	9	0	0.0%	0
- Undersea and hyperbaric medicine	7	1	14.3%	1
Family medicine	671	95	14.2%	102
- Clinical informatics	3	0	0.0%	0
- Geriatric medicine	48	3	6.3%	3
- Hospice and palliative medicine (multidisciplinary)	149	15	10.1%	15
- Sports medicine	143	17	11.9%	19
Internal medicine	545	62	11.4%	68
- Adult congenital heart disease	21	1	4.8%	1
- Advanced heart failure and transplant cardiology	76	10	13.2%	12
- Cardiovascular disease	245	34	13.9%	34
- Clinical cardiac electrophysiology	110	12	10.9%	14
- Clinical informatics	16	1	6.3%	1
- Critical care medicine	43	3	7.0%	3
- Endocrinology, diabetes, and metabolism	149	15	10.1%	15
- Gastroenterology	202	25	12.4%	26
- Geriatric medicine	108	10	9.3%	10
- Hematology	2	0	0.0%	0
- Hematology and medical oncology	157	20	12.7%	21
- Infectious disease	149	21	14.1%	21
- Interventional cardiology	164	15	9.1%	16
- Nephrology	149	18	12.1%	19
- Medical oncology	8	0	0.0%	0
- Pulmonary disease	23	1	4.3%	1
- Pulmonary disease and critical care medicine	178	20	11.2%	21
- Rheumatology	122	16	13.1%	17
- Sleep medicine (multidisciplinary)	86	10	11.6%	10
- Transplant hepatology	52	8	15.4%	8
Medical genetics and genomics	46	3	6.5%	5
- Medical biochemical genetics	19	1	5.3%	1
- Molecular genetic pathology (multidisciplinary)	42	0	0.0%	0
Neurological surgery	115	11	9.6%	11
- Endovascular surgical neuroradiology	2	0	0.0%	0

TABLE G.3 Continued

Number of Programs with New Program Directors and Number of Distinct Program Director Changes during the Academic Year by Specialty and Subspecialty

Specialty	Total Programs	Programs with New PDs		Number of Distinct PD Changes
		#	%	
Neurology	159	14	8.8%	14
- Brain injury medicine	1	0	0.0%	0
- Clinical neurophysiology	91	12	13.2%	13
- Epilepsy	77	9	11.7%	9
- Endovascular surgical neuroradiology	2	0	0.0%	0
- Neurodevelopmental disabilities	8	0	0.0%	0
- Neuromuscular medicine	49	8	16.3%	9
- Vascular neurology	99	15	15.2%	15
Child neurology	74	9	12.2%	9
Nuclear medicine	39	5	12.8%	5
Obstetrics and gynecology	282	43	15.2%	44
- Female pelvic medicine and reconstructive surgery	53	6	11.3%	6
- Gynecologic oncology	59	6	10.2%	7
- Maternal-fetal medicine	93	14	15.1%	14
- Reproductive endocrinology and infertility	50	6	12.0%	7
Ophthalmology	123	15	12.2%	17
- Ophthalmic plastic and reconstructive surgery	4	0	0.0%	0
Orthopaedic surgery	185	22	11.9%	22
- Adult reconstructive orthopaedics	24	2	8.3%	3
- Foot and ankle orthopaedics	7	1	14.3%	1
- Hand surgery	72	8	11.1%	8
- Musculoskeletal oncology	12	2	16.7%	2
- Orthopaedic sports medicine	92	5	5.4%	5
- Orthopaedic surgery of the spine	17	1	5.9%	1
- Orthopaedic trauma	11	3	27.3%	3
- Pediatric orthopaedics	26	2	7.7%	2
Osteopathic neuromusculoskeletal medicine	19	4	21.1%	5
Otolaryngology - head and neck surgery	122	17	13.9%	18
- Neurotology	24	1	4.2%	1
- Pediatric otolaryngology	29	3	10.3%	3
Pathology-anatomic and clinical	143	26	18.2%	26
- Blood banking/transfusion medicine	51	10	19.6%	10
- Clinical informatics	8	0	0.0%	0
- Chemical pathology	4	0	0.0%	0
- Cytopathology	94	8	8.5%	8
- Forensic pathology	43	8	18.6%	8
- Hematopathology	87	6	6.9%	6
- Medical microbiology	15	0	0.0%	0
- Neuropathology	36	4	11.1%	4
- Pediatric pathology	27	3	11.1%	3
- Selective pathology	91	12	13.2%	12
Pediatrics	212	30	14.2%	34
- Adolescent medicine	30	4	13.3%	4
- Child abuse pediatrics	31	2	6.5%	2
- Clinical informatics	5	1	20.0%	1
- Developmental-behavioral pediatrics	43	6	14.0%	6
- Neonatal-perinatal medicine	102	9	8.8%	9
- Pediatric cardiology	62	14	22.6%	16
- Pediatric critical care medicine	72	12	16.7%	12
- Pediatric emergency medicine	52	3	5.8%	3
- Pediatric endocrinology	73	9	12.3%	9
- Pediatric gastroenterology	65	4	6.2%	4
- Pediatric hematology/oncology	74	15	20.3%	17

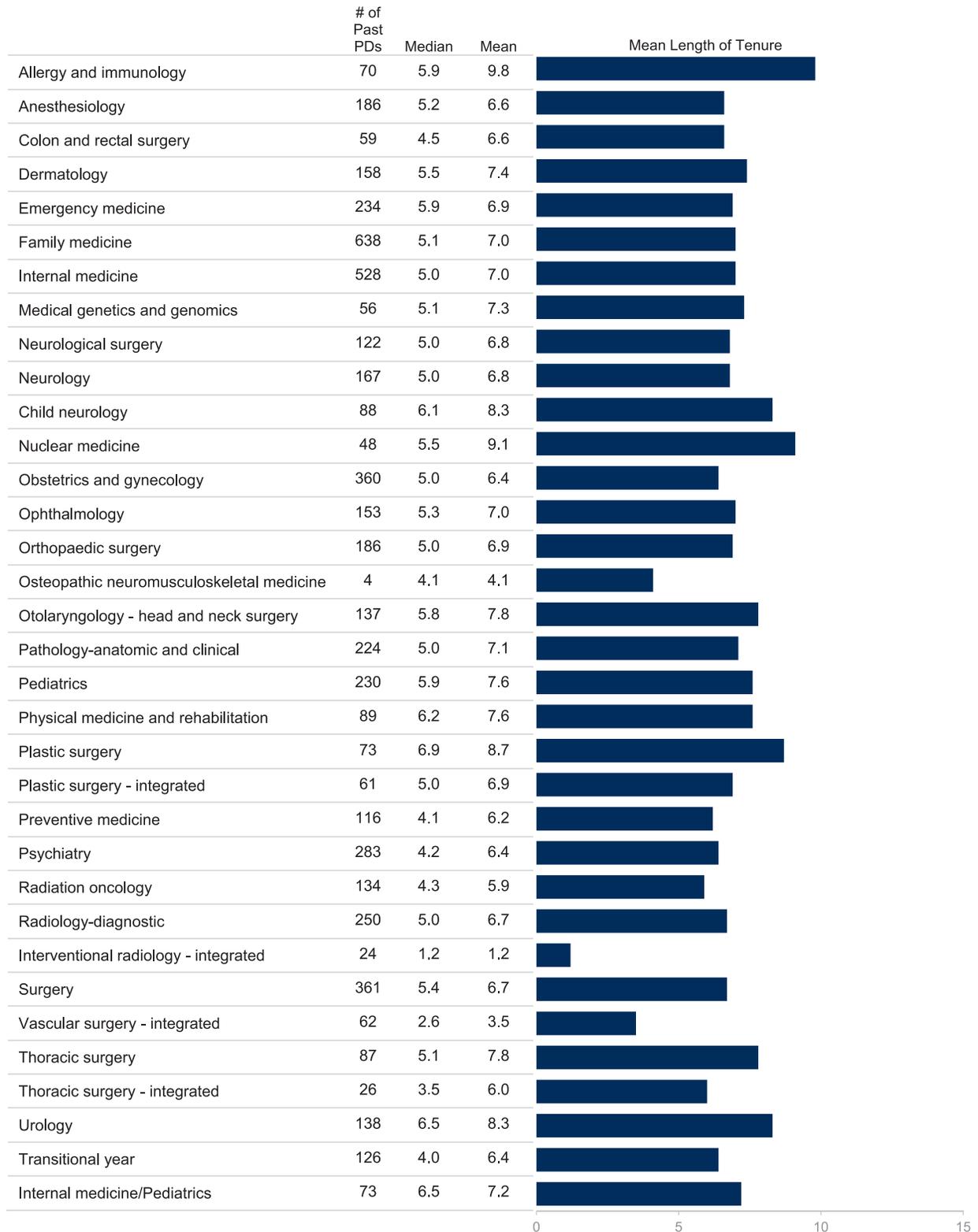
TABLE G.3 *Continued***Number of Programs with New Program Directors and Number of Distinct Program Director Changes during the Academic Year by Specialty and Subspecialty**

Specialty	Total Programs	Programs with New PDs		Number of Distinct PD Changes
		#	%	
- Pediatric infectious diseases	65	8	12.3%	9
- Pediatric nephrology	46	3	6.5%	3
- Pediatric pulmonology	54	8	14.8%	10
- Pediatric rheumatology	35	5	14.3%	5
- Pediatric sports medicine	17	0	0.0%	0
- Pediatric transplant hepatology	15	2	13.3%	2
Physical medicine and rehabilitation	91	13	14.3%	13
- Brain injury medicine	20	0	0.0%	0
- Neuromuscular medicine	1	0	0.0%	0
- Spinal cord injury medicine	24	3	12.5%	3
- Pediatric rehabilitation	20	2	10.0%	3
- Sports medicine	19	5	26.3%	6
Plastic surgery	55	7	12.7%	7
Plastic surgery - integrated	81	13	16.0%	13
- Craniofacial surgery	8	0	0.0%	0
- Hand surgery	17	2	11.8%	2
Preventive medicine	75	12	16.0%	12
- Medical toxicology	1	0	0.0%	0
- Undersea and hyperbaric medicine	1	0	0.0%	0
Psychiatry	257	34	13.2%	39
- Addiction medicine (multidisciplinary)	52	5	9.6%	5
- Addiction psychiatry	50	7	14.0%	8
- Child and adolescent psychiatry	140	20	14.3%	20
- Forensic psychiatry	48	6	12.5%	7
- Geriatric psychiatry	61	5	8.2%	5
- Consultation-liaison psychiatry	62	9	14.5%	9
Radiation oncology	94	9	9.6%	9
Radiology-diagnostic	195	27	13.8%	28
- Abdominal radiology	13	4	30.8%	4
- Endovascular surgical neuroradiology	3	1	33.3%	1
- Musculoskeletal radiology	16	1	6.3%	1
- Neuroradiology	87	8	9.2%	8
- Nuclear radiology	17	5	29.4%	6
- Pediatric radiology	47	6	12.8%	7
- Vascular and interventional radiology	93	13	14.0%	14
Interventional radiology - integrated	84	11	13.1%	12
Surgery	323	50	15.5%	51
- Complex general surgical oncology	27	4	14.8%	4
- Hand surgery	1	0	0.0%	0
- Pediatric surgery	50	4	8.0%	4
- Surgical critical care	136	19	14.0%	20
- Vascular surgery	109	16	14.7%	18
Vascular surgery - integrated	60	6	10.0%	7
Thoracic surgery	72	11	15.3%	12
- Congenital cardiac surgery	12	3	25.0%	5
Thoracic surgery - integrated	27	3	11.1%	3
Urology	142	13	9.2%	14
- Female pelvic medicine and reconstructive surgery	14	3	21.4%	3
- Pediatric urology	26	2	7.7%	2
Transitional year	157	18	11.5%	20
Internal medicine/Pediatrics	79	4	5.1%	4

Notes: Total number of distinct program director changes = 1,498 (703 in specialty programs and 795 in subspecialty programs). Pipeline specialties are highlighted. Abbreviations: PD, program director.

FIGURE G.4

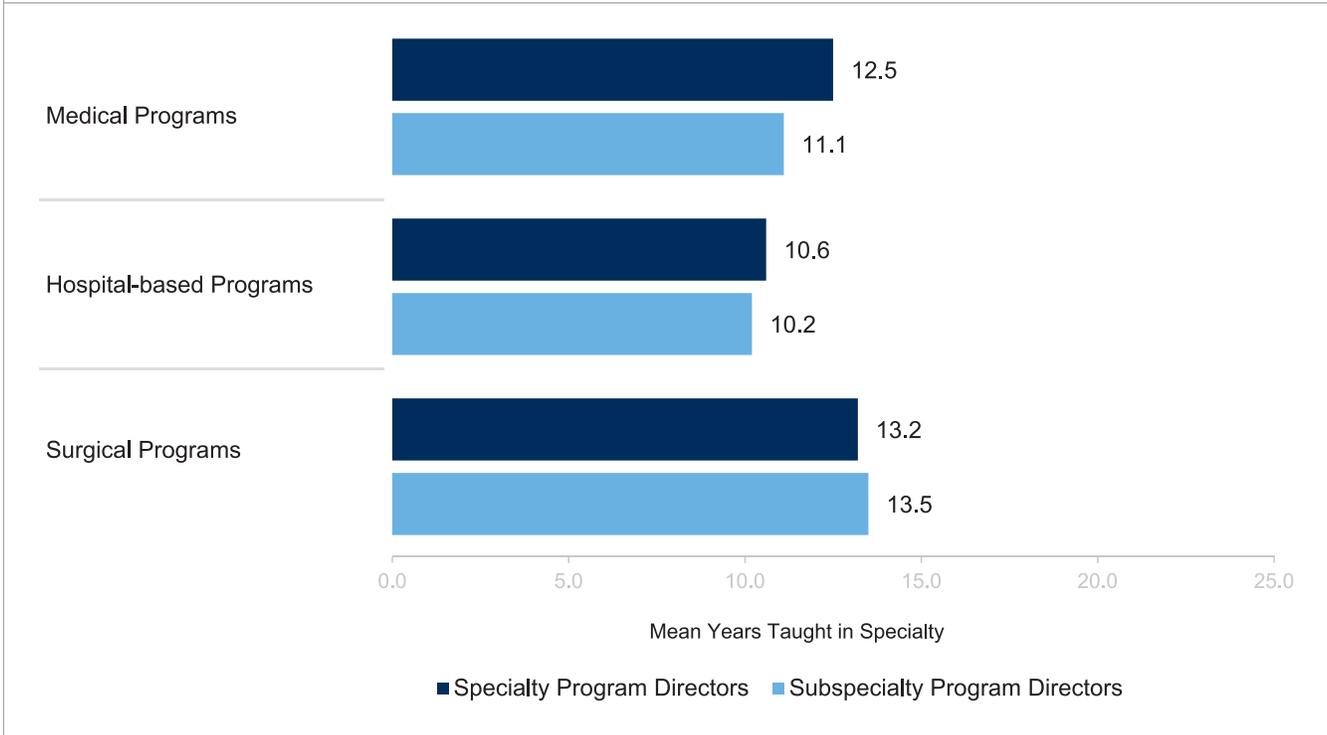
Mean Length in Years of Past Program Director Tenure by Specialty



Notes: Data are based on program director changes since 7/1/2009 (n = 5,551). Overall mean length in tenure = 6.9 years. Abbreviations: PD, program director.

FIGURE G.5

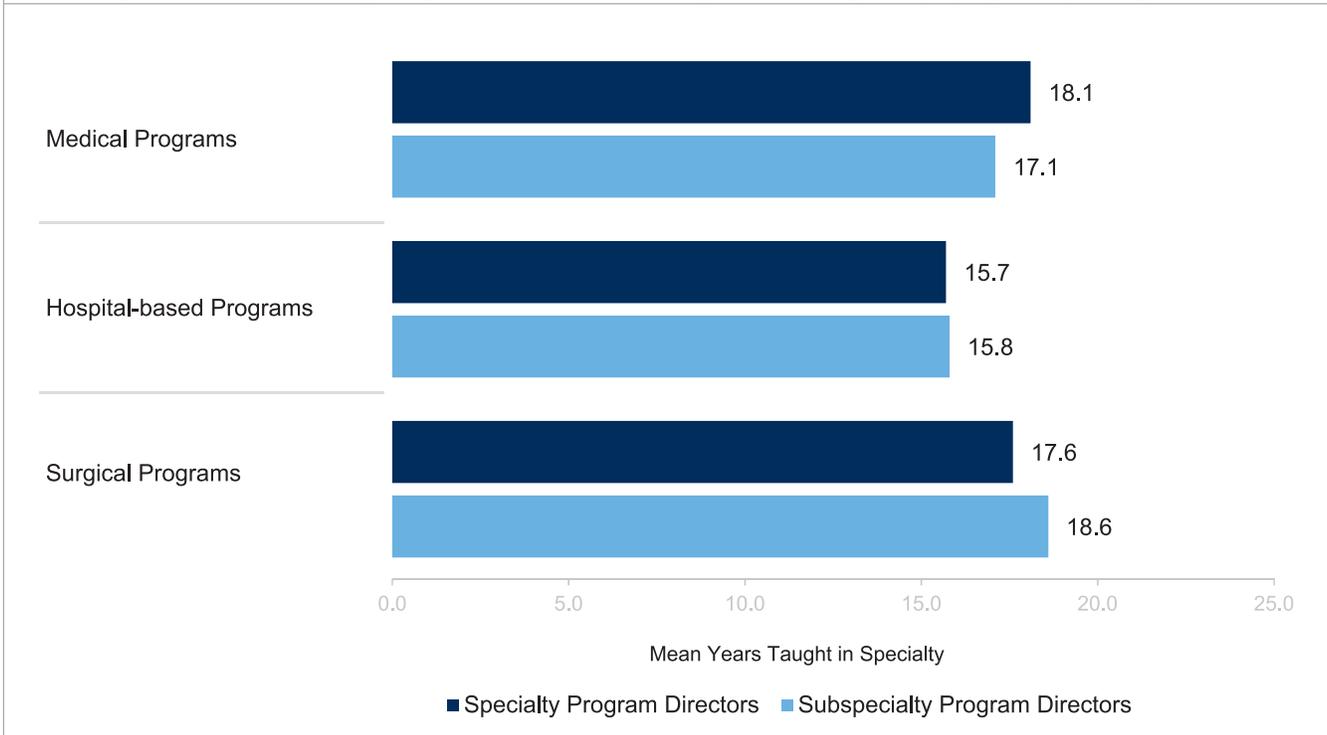
Mean Length in Years New Program Directors Have Taught in Their Specialty by Specialty Group



Notes: Total number of new program directors in specialty programs = 867. Total number of new program directors in subspecialty programs = 1,063.

FIGURE G.6

Mean Length in Years Continuing Program Directors Have Taught in Their Specialty by Specialty Group



Notes: Total number of continuing program directors in specialty programs = 4,345. Total number of continuing program directors in subspecialty programs = 5,410.

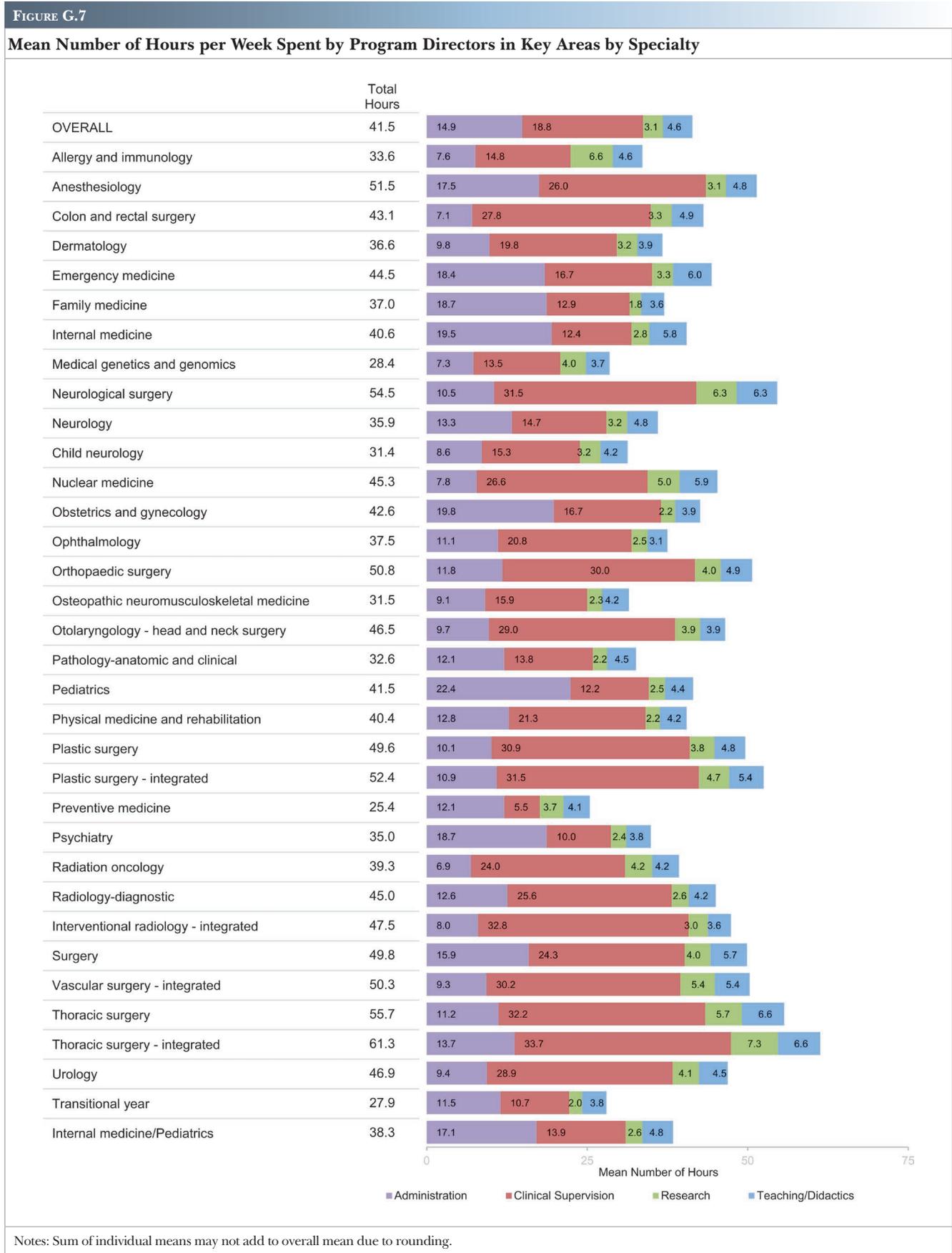


TABLE G.8

Number of Physician Faculty and Mean Number of Physician Faculty per Program by Specialty and Subspecialty

Specialty	Total Programs	Total Number of Physician Faculty	Mean	MIN	MAX
OVERALL	11,685	184,747	15.8	0	269
TOTAL PIPELINE	4,842	125,092	25.8	1	269
Allergy and immunology	78	807	10.3	2	30
Anesthesiology	155	9,097	58.7	8	191
- Adult cardiothoracic anesthesiology	69	844	12.2	4	33
- Clinical informatics	1	7	7.0	7	7
- Critical care medicine	64	846	13.2	3	32
- Regional anesthesiology and acute pain medicine	29	311	10.7	5	32
- Obstetric anesthesiology	37	346	9.4	3	24
- Pain medicine (multidisciplinary)	104	897	8.6	2	22
- Pediatric anesthesiology	61	933	15.3	4	37
Colon and rectal surgery	63	412	6.5	2	19
Dermatology	142	2,283	16.1	3	68
- Dermatopathology (multidisciplinary)	55	383	7.0	2	23
- Micrographic surgery and dermatologic oncology	77	306	4.0	0	13
Emergency medicine	247	5,228	21.2	4	134
- Clinical informatics	4	36	9.0	5	14
- Emergency medical services	65	231	3.6	2	10
- Medical toxicology	27	136	5.0	2	12
- Pediatric emergency medicine	26	266	10.2	2	30
- Sports medicine	9	46	5.1	1	10
- Undersea and hyperbaric medicine	7	21	3.0	1	6
Family medicine	671	17,855	26.6	3	144
- Clinical informatics	3	25	8.3	5	10
- Geriatric medicine	48	417	8.7	2	21
- Hospice and palliative medicine (multidisciplinary)	149	1,249	8.4	1	28
- Sports medicine	143	1,142	8.0	1	28
Internal medicine	545	11,119	20.4	3	169
- Adult congenital heart disease	21	103	4.9	1	16
- Advanced heart failure and transplant cardiology	76	403	5.3	1	14
- Cardiovascular disease	245	3,232	13.2	3	45
- Clinical cardiac electrophysiology	110	535	4.9	0	19
- Clinical informatics	16	121	7.6	3	12
- Critical care medicine	43	449	10.4	3	34
- Endocrinology, diabetes, and metabolism	149	1,093	7.3	1	22
- Gastroenterology	202	2,233	11.1	2	47
- Geriatric medicine	108	670	6.2	1	18
- Hematology	2	20	10.0	8	12
- Hematology and medical oncology	157	2,122	13.5	2	58
- Infectious disease	149	1,333	8.9	2	38
- Interventional cardiology	164	785	4.8	1	18
- Nephrology	149	1,320	8.9	2	30
- Medical oncology	8	74	9.3	3	17
- Pulmonary disease	23	141	6.1	2	15
- Pulmonary disease and critical care medicine	178	2,303	12.9	3	38
- Rheumatology	122	836	6.9	1	23
- Sleep medicine (multidisciplinary)	86	461	5.4	1	16
- Transplant hepatology	52	280	5.4	1	11
Medical genetics and genomics	46	497	10.8	2	57
- Medical biochemical genetics	19	98	5.2	2	12
- Molecular genetic pathology (multidisciplinary)	42	228	5.4	0	13
Neurological surgery	115	2,013	17.5	5	47
- Endovascular surgical neuroradiology	2	3	1.5	1	2

TABLE G.8 Continued

Number of Physician Faculty and Mean Number of Physician Faculty per Program by Specialty and Subspecialty

Specialty	Total Programs	Total Number of Physician Faculty	Mean	MIN	MAX
Neurology	159	4,793	30.1	5	97
- Brain injury medicine	1	2	2.0	2	2
- Clinical neurophysiology	91	850	9.3	2	28
- Epilepsy	77	617	8.0	2	22
- Endovascular surgical neuroradiology	2	8	4.0	3	5
- Neurodevelopmental disabilities	8	126	15.8	4	25
- Neuromuscular medicine	49	297	6.1	1	12
- Vascular neurology	99	625	6.3	0	21
Child neurology	74	1,148	15.5	3	50
Nuclear medicine	39	231	5.9	2	14
Obstetrics and gynecology	282	8,617	30.6	6	123
- Female pelvic medicine and reconstructive surgery	53	356	6.7	3	15
- Gynecologic oncology	59	564	9.6	2	25
- Maternal-fetal medicine	93	1,202	12.9	1	29
- Reproductive endocrinology and infertility	50	388	7.8	2	25
Ophthalmology	123	3,333	27.1	7	66
- Ophthalmic plastic and reconstructive surgery	4	18	4.5	1	7
Orthopaedic surgery	185	5,796	31.3	8	99
- Adult reconstructive orthopaedics	24	140	5.8	1	21
- Foot and ankle orthopaedics	7	29	4.1	2	8
- Hand surgery	72	473	6.6	2	20
- Musculoskeletal oncology	12	31	2.6	1	5
- Orthopaedic sports medicine	92	590	6.4	1	24
- Orthopaedic surgery of the spine	17	102	6.0	2	17
- Orthopaedic trauma	11	53	4.8	2	9
- Pediatric orthopaedics	26	246	9.5	2	23
Osteopathic neuromusculoskeletal medicine	19	115	6.1	1	20
Otolaryngology - head and neck surgery	122	2,672	21.9	8	49
- Neurotology	24	129	5.4	2	12
- Pediatric otolaryngology	29	232	8.0	3	15
Pathology-anatomic and clinical	143	4,178	29.2	6	90
- Blood banking/transfusion medicine	51	279	5.5	1	14
- Clinical informatics	8	57	7.1	5	9
- Chemical pathology	4	9	2.3	0	5
- Cytopathology	94	512	5.4	1	14
- Forensic pathology	43	260	6.0	2	18
- Hematopathology	87	532	6.1	2	17
- Medical microbiology	15	42	2.8	0	9
- Neuropathology	36	143	4.0	1	10
- Pediatric pathology	27	214	7.9	0	21
- Selective pathology	91	667	7.3	0	31
Pediatrics	212	9,642	45.5	15	269
- Adolescent medicine	30	172	5.7	1	18
- Child abuse pediatrics	31	102	3.3	1	9
- Clinical informatics	5	37	7.4	2	14
- Developmental-behavioral pediatrics	43	265	6.2	1	19
- Neonatal-perinatal medicine	102	1,556	15.3	3	48
- Pediatric cardiology	62	1,138	18.4	3	68
- Pediatric critical care medicine	72	1,003	13.9	5	72
- Pediatric emergency medicine	52	987	19.0	5	47
- Pediatric endocrinology	73	564	7.7	1	30
- Pediatric gastroenterology	65	625	9.6	3	27
- Pediatric hematology/oncology	74	1,136	15.4	5	50

TABLE G.8 *Continued***Number of Physician Faculty and Mean Number of Physician Faculty per Program by Specialty and Subspecialty**

Specialty	Total Programs	Total Number of Physician Faculty	Mean	MIN	MAX
- Pediatric infectious diseases	65	481	7.4	2	21
- Pediatric nephrology	46	279	6.1	1	16
- Pediatric pulmonology	54	452	8.4	3	22
- Pediatric rheumatology	35	167	4.8	1	11
- Pediatric sports medicine	17	116	6.8	2	17
- Pediatric transplant hepatology	15	82	5.5	3	12
Physical medicine and rehabilitation	91	1,917	21.1	3	53
- Brain injury medicine	20	96	4.8	1	12
- Neuromuscular medicine	1	5	5.0	5	5
- Spinal cord injury medicine	24	149	6.2	1	19
- Pediatric rehabilitation	20	117	5.8	2	13
- Sports medicine	19	122	6.4	2	13
Plastic surgery	55	791	14.4	4	37
Plastic surgery - integrated	81	1,724	21.3	3	69
- Craniofacial surgery	8	24	3.0	2	5
- Hand surgery	17	99	5.8	2	11
Preventive medicine	75	724	9.7	1	37
- Medical toxicology	1	5	5.0	5	5
- Undersea and hyperbaric medicine	1	4	4.0	4	4
Psychiatry	257	5,793	22.5	5	87
- Addiction medicine (multidisciplinary)	52	418	8.0	2	15
- Addiction psychiatry	50	301	6.0	2	14
- Child and adolescent psychiatry	140	1,301	9.3	2	35
- Forensic psychiatry	48	245	5.1	0	12
- Geriatric psychiatry	61	342	5.6	1	14
- Consultation-liaison psychiatry	62	366	5.9	1	19
Radiation oncology	94	1,094	11.6	4	58
Radiology-diagnostic	195	6,989	35.8	6	144
- Abdominal radiology	13	150	11.5	3	18
- Endovascular surgical neuroradiology	3	10	3.3	2	5
- Musculoskeletal radiology	16	109	6.8	2	17
- Neuroradiology	87	817	9.4	2	32
- Nuclear radiology	17	81	4.8	1	14
- Pediatric radiology	47	521	11.1	2	38
- Vascular and interventional radiology	93	707	7.6	1	21
Interventional radiology - integrated	84	2,034	24.2	3	78
Surgery	323	10,982	34.0	5	139
- Complex general surgical oncology	27	386	14.3	5	26
- Hand surgery	1	9	9.0	9	9
- Pediatric surgery	50	467	9.3	3	21
- Surgical critical care	136	1,267	9.3	2	25
- Vascular surgery	109	771	7.1	2	17
Vascular surgery - integrated	60	772	12.9	3	38
Thoracic surgery	72	982	13.6	4	53
- Congenital cardiac surgery	12	46	3.8	2	8
Thoracic surgery - integrated	27	598	22.1	7	82
Urology	142	2,461	17.3	4	47
- Female pelvic medicine and reconstructive surgery	14	97	6.9	3	12
- Pediatric urology	26	128	4.9	2	11
Transitional year	157	2,054	13.1	3	85
Internal medicine/Pediatrics	79	596	7.5	1	21

Notes: Excluding program directors. Total number of physician faculty does not represent the count of distinct people as individuals may be listed in more than one program. Total number of distinct physician faculty across all programs=152,091. Pipeline specialties are highlighted.

TABLE G.9

Total Number of Core Faculty and Core Faculty per Program by Specialty

Specialty	Total Programs	Total Number of Core Faculty	Mean	MIN	MAX
OVERALL	5,212	67,166	12.9	0	105
Allergy and immunology	78	393	5.0	1	14
Anesthesiology	155	4,094	26.4	1	105
Colon and rectal surgery	63	304	4.8	1	14
Dermatology	142	1,222	8.6	1	24
Emergency medicine	247	3,281	13.3	2	70
Family medicine	671	4,577	6.8	0	28
Internal medicine	545	6,400	11.7	3	79
Medical genetics and genomics	46	217	4.7	1	14
Neurological surgery	115	1,409	12.3	2	29
Neurology	159	2,359	14.8	2	58
Child neurology	74	697	9.4	1	34
Nuclear medicine	39	176	4.5	1	14
Obstetrics and gynecology	282	4,707	16.7	2	60
Ophthalmology	123	1,619	13.2	1	32
Orthopaedic surgery	185	3,530	19.1	4	57
Osteopathic neuromusculoskeletal medicine	19	38	2.0	0	7
Otolaryngology - head and neck surgery	122	1,748	14.3	3	40
Pathology-anatomic and clinical	143	2,227	15.6	2	47
Pediatrics	212	5,134	24.2	4	71
Physical medicine and rehabilitation	91	1,218	13.4	3	32
Plastic surgery	55	512	9.3	3	36
Plastic surgery - integrated	81	813	10.0	3	36
Preventive medicine	75	288	3.8	0	12
Psychiatry	257	2,878	11.2	0	49
Radiation oncology	94	858	9.1	4	44
Radiology-diagnostic	195	4,427	22.7	6	85
Interventional radiology - integrated	84	1,448	17.2	3	46
Surgery	323	5,909	18.3	1	73
Vascular surgery - integrated	60	493	8.2	3	31
Thoracic surgery	72	788	10.9	2	30
Thoracic surgery - integrated	27	329	12.2	2	29
Urology	142	1,571	11.1	2	34
Transitional year	157	1,088	6.9	0	45
Internal medicine/Pediatrics	79	414	5.2	0	18

Notes: Excluding program directors. Total number of core faculty does not represent the count of distinct people as individuals may be listed in more than one program. Total number of distinct core faculty in specialty programs = 63,607.

FIGURE G.10

Specialties Organized by Largest Mean Number of Core Faculty per Program

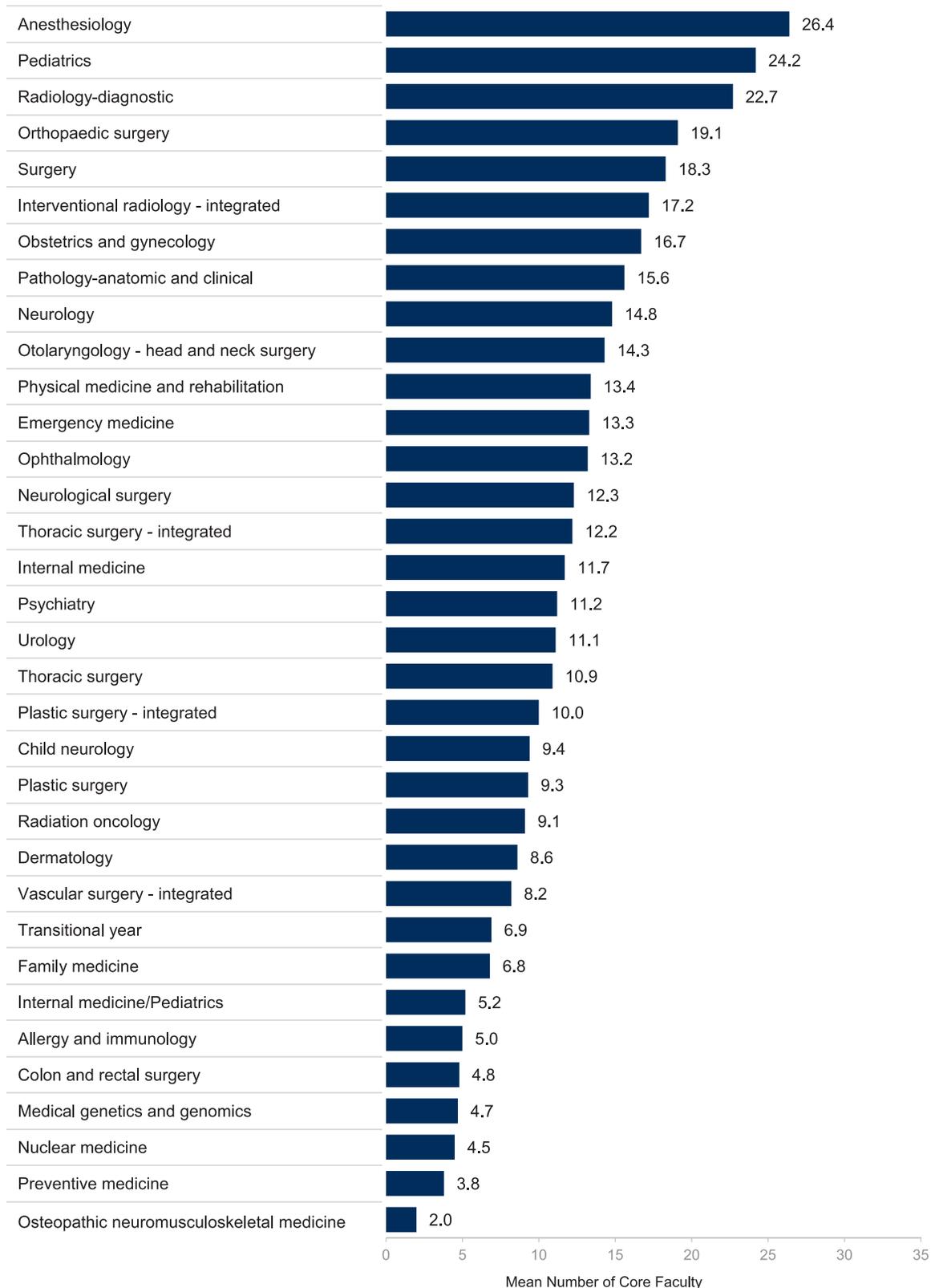
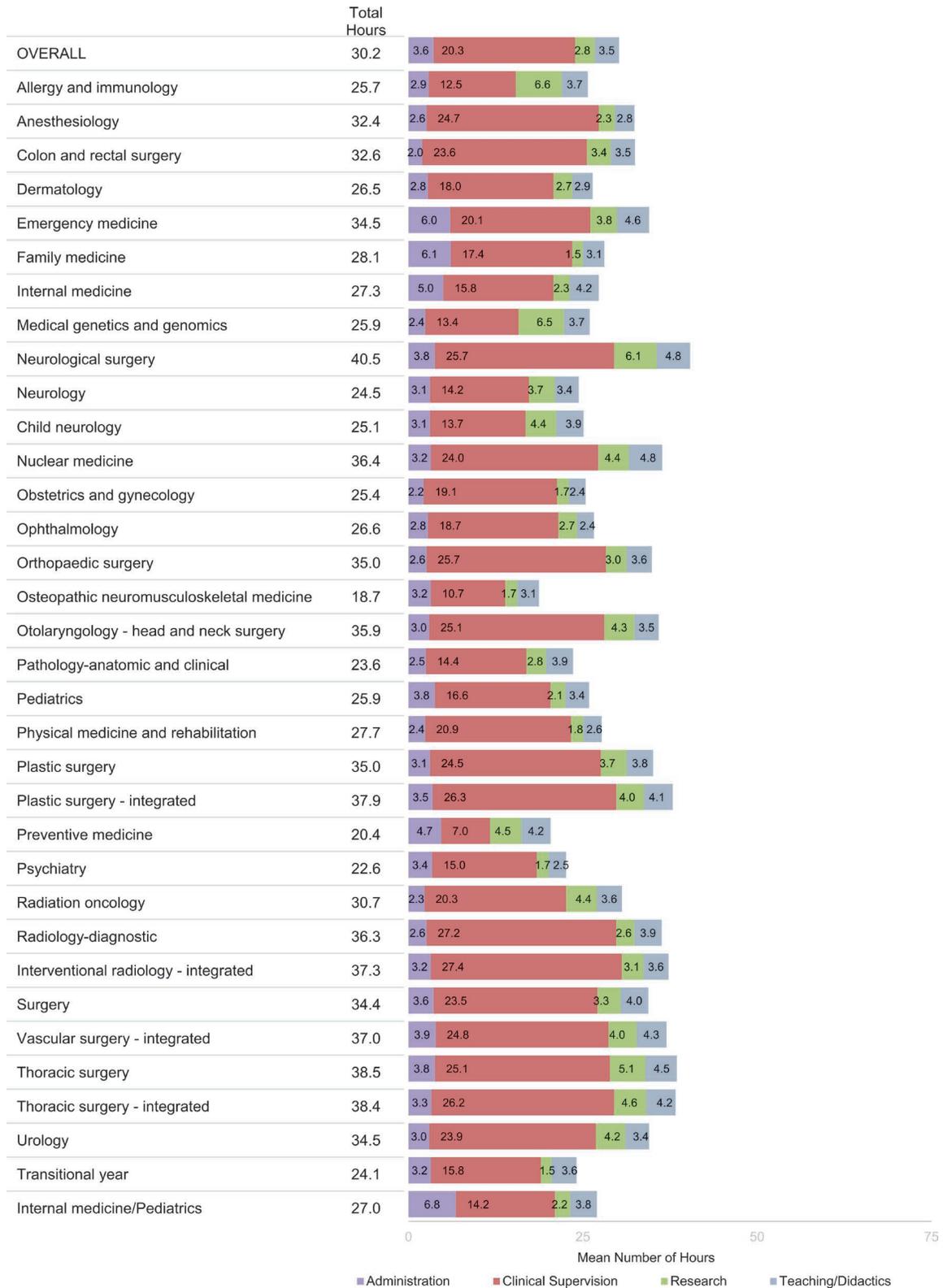


FIGURE G.11

Mean Number of Hours per Week Core Faculty Spent in Key Areas by Specialty



Notes: Sum of individual means may not add to overall mean due to rounding.



Program Activities

This section summarizes resident participation in patient safety and quality improvement programs, use of electronic medical records, and use of ambulatory and/or non-hospital settings by specialty and subspecialty programs during the 2018-2019 academic year.

Patient Safety and Quality Improvement

The vast majority of specialty and subspecialty programs reported that all residents participated in patient safety in at least one year of their educational program (98.5% and 99.1% of programs respectively). The percentage of programs reporting that 100% of residents participated in interprofessional clinical quality improvement programs in at least one year of the educational program was slightly less: 97.3% and 98.5% of specialty and subspecialty programs, respectively. Overall, the percentage of programs reporting that none of their residents participated in patient safety and interprofessional clinical quality improvement programs was less than 1%.

Use of Ambulatory and/or Non-Hospital Settings

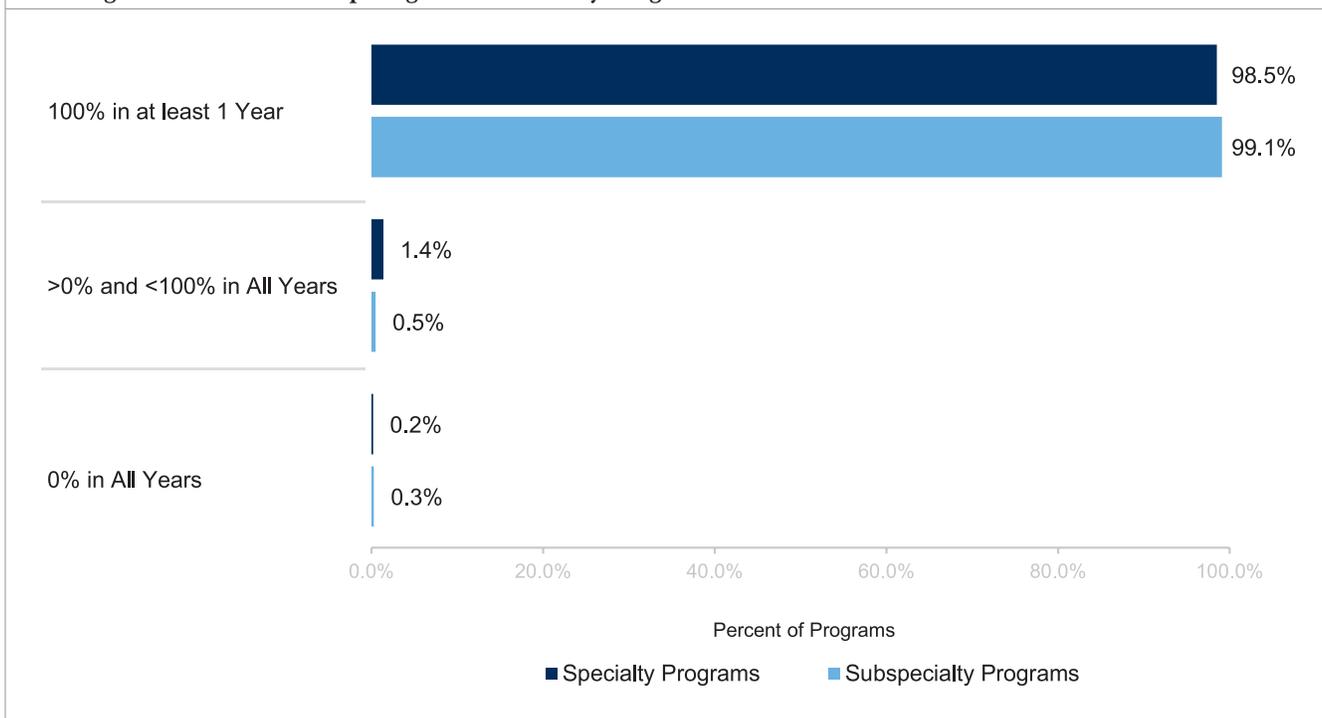
Across all programs, 92.2% of programs reported using ambulatory and/or non-hospital settings. The following ambulatory and/or non-hospital settings were used by the highest percentage of specialty programs:

- Ambulatory/outpatient settings (73.7%)
- Hospital-based continuity clinic (60.9%)
- Faculty ambulatory practice (58.5%)
- Private physician's offices (53.4%)

The percentage of programs using each type of setting varies significantly across pipeline specialties. For example, of those programs that use ambulatory/non-hospital settings, 13.0% of pathology-anatomic and clinical programs reported using a hospital-based continuity clinic while 93.0% of child neurology programs reported using a hospital-based continuity clinic. ↘

FIGURE H.1

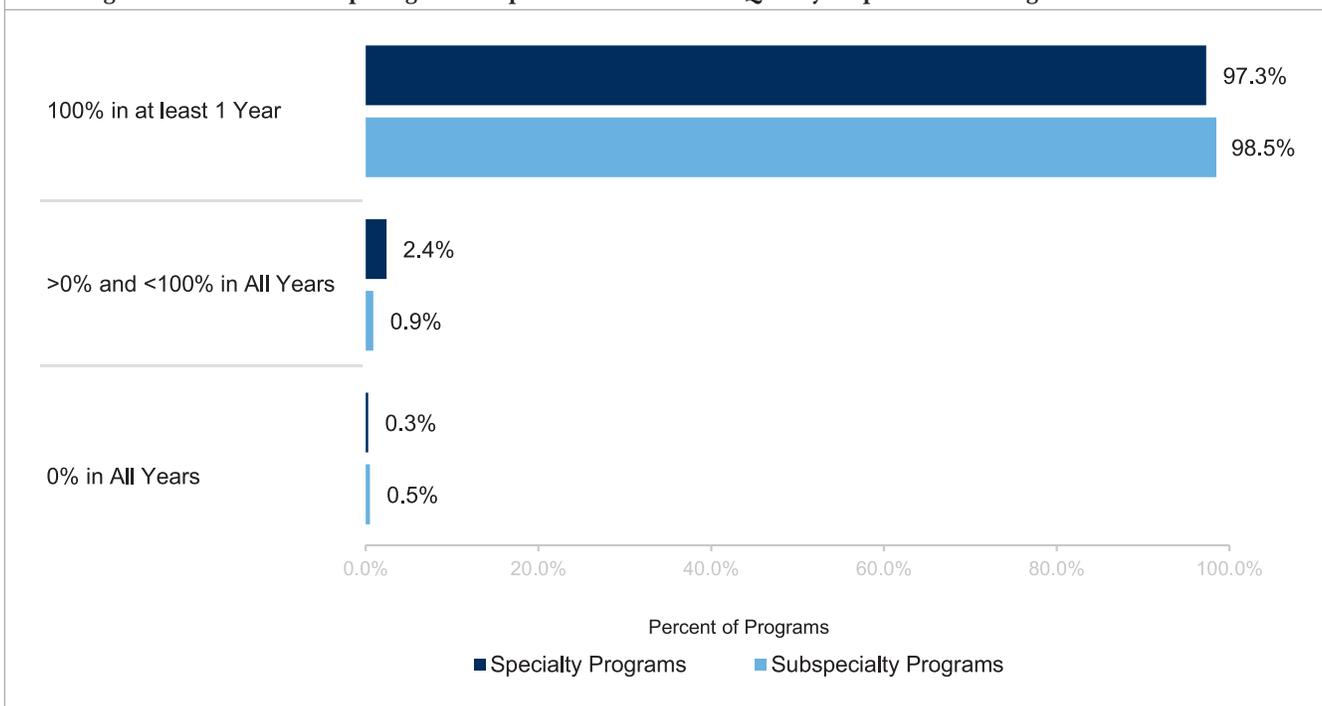
Percentage of Residents Participating in Patient Safety Programs



Notes: Excluding programs with 0 residents on duty. Not all accredited programs completed these data. Total number of specialty programs = 4,823. Total number of subspecialty programs = 5,530.

FIGURE H.2

Percentage of Residents Participating in Interprofessional Clinical Quality Improvement Programs



Notes: Excluding programs with 0 residents on duty. Not all accredited programs completed these data. Total number of specialty programs = 4,823. Total number of subspecialty programs = 5,530.

TABLE H.3

Percentage of Residents Participating in Patient Safety Programs and Interprofessional Clinical Quality Improvement Programs by Specialty and Subspecialty

Specialty	Total Programs	Patient Safety Programs			Interprofessional Clinical Quality Improvement Programs		
		100% in at least 1 Year	>0% and <100% in All Years	0% in All Years	100% in at least 1 Year	>0% and <100% in All Years	0% in All Years
OVERALL	10,353	98.8%	0.9%	0.3%	98.0%	1.6%	0.4%
TOTAL PIPELINE	4,616	98.4%	1.4%	0.2%	97.2%	2.4%	0.3%
Allergy and immunology	77	100.0%	0.0%	0.0%	98.7%	1.3%	0.0%
Anesthesiology	151	97.4%	2.6%	0.0%	98.7%	1.3%	0.0%
- Adult cardiothoracic anesthesiology	64	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Clinical informatics	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Critical care medicine	49	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Regional anesthesiology and acute pain medicine	19	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Obstetric anesthesiology	27	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pain medicine (multidisciplinary)	98	100.0%	0.0%	0.0%	99.0%	1.0%	0.0%
- Pediatric anesthesiology	52	96.2%	3.8%	0.0%	98.1%	1.9%	0.0%
Colon and rectal surgery	60	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Dermatology	140	99.3%	0.7%	0.0%	97.9%	2.1%	0.0%
- Dermatopathology (multidisciplinary)	47	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Micrographic surgery and dermatologic oncology	63	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Emergency medicine	235	98.7%	1.3%	0.0%	96.2%	3.8%	0.0%
- Clinical informatics	4	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Emergency medical services	41	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Medical toxicology	24	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric emergency medicine	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Sports medicine	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Undersea and hyperbaric medicine	4	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Family medicine	630	99.2%	0.6%	0.2%	99.2%	0.3%	0.5%
- Clinical informatics	3	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Geriatric medicine	27	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hospice and palliative medicine (multidisciplinary)	126	98.4%	1.6%	0.0%	98.4%	1.6%	0.0%
- Sports medicine	127	99.2%	0.8%	0.0%	98.4%	0.0%	1.6%
Internal medicine	525	97.0%	3.0%	0.0%	95.4%	4.6%	0.0%
- Adult congenital heart disease	16	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Advanced heart failure and transplant cardiology	60	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Cardiovascular disease	234	99.6%	0.4%	0.0%	94.4%	5.1%	0.4%
- Clinical cardiac electrophysiology	88	98.9%	1.1%	0.0%	100.0%	0.0%	0.0%
- Clinical informatics	12	91.7%	8.3%	0.0%	100.0%	0.0%	0.0%
- Critical care medicine	37	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Endocrinology, diabetes, and metabolism	140	97.1%	2.9%	0.0%	98.6%	0.7%	0.7%
- Gastroenterology	194	99.0%	0.5%	0.5%	97.9%	1.5%	0.5%
- Geriatric medicine	88	98.9%	1.1%	0.0%	100.0%	0.0%	0.0%
- Hematology	2	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hematology and medical oncology	147	99.3%	0.7%	0.0%	98.6%	1.4%	0.0%
- Infectious disease	140	98.6%	1.4%	0.0%	98.6%	1.4%	0.0%
- Interventional cardiology	155	99.4%	0.0%	0.6%	99.4%	0.6%	0.0%
- Nephrology	142	99.3%	0.7%	0.0%	99.3%	0.7%	0.0%
- Medical oncology	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pulmonary disease	20	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pulmonary disease and critical care medicine	166	98.2%	1.2%	0.6%	95.8%	3.6%	0.6%
- Rheumatology	118	100.0%	0.0%	0.0%	97.5%	2.5%	0.0%
- Sleep medicine (multidisciplinary)	78	100.0%	0.0%	0.0%	98.7%	1.3%	0.0%
- Transplant hepatology	30	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Medical genetics and genomics	30	100.0%	0.0%	0.0%	96.7%	0.0%	3.3%
- Medical biochemical genetics	10	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Molecular genetic pathology (multidisciplinary)	35	100.0%	0.0%	0.0%	97.1%	0.0%	2.9%
Neurological surgery	114	99.1%	0.9%	0.0%	99.1%	0.9%	0.0%
- Endovascular surgical neuroradiology	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%

TABLE H.3 *Continued*

Percentage of Residents Participating in Patient Safety Programs and Interprofessional Clinical Quality Improvement Programs by Specialty and Subspecialty

Specialty	Total Programs	Patient Safety Programs			Interprofessional Clinical Quality Improvement Programs		
		100% in at least 1 Year	>0% and <100% in All Years	0% in All Years	100% in at least 1 Year	>0% and <100% in All Years	0% in All Years
Neurology	152	97.4%	2.0%	0.7%	95.4%	3.9%	0.7%
- Brain injury medicine	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Clinical neurophysiology	73	98.6%	1.4%	0.0%	97.3%	1.4%	1.4%
- Epilepsy	53	98.1%	1.9%	0.0%	98.1%	0.0%	1.9%
- Endovascular surgical neuroradiology	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neurodevelopmental disabilities	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neuromuscular medicine	37	100.0%	0.0%	0.0%	97.3%	0.0%	2.7%
- Vascular neurology	69	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Child neurology	73	98.6%	0.0%	1.4%	98.6%	0.0%	1.4%
Nuclear medicine	29	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Obstetrics and gynecology	275	99.6%	0.4%	0.0%	98.2%	1.8%	0.0%
- Female pelvic medicine and reconstructive surgery	51	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Gynecologic oncology	54	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Maternal-fetal medicine	89	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Reproductive endocrinology and infertility	48	97.9%	0.0%	2.1%	97.9%	2.1%	0.0%
Ophthalmology	120	96.7%	3.3%	0.0%	94.2%	4.2%	1.7%
- Ophthalmic plastic and reconstructive surgery	4	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Orthopaedic surgery	183	98.4%	1.6%	0.0%	96.2%	2.7%	1.1%
- Adult reconstructive orthopaedics	22	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Foot and ankle orthopaedics	6	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hand surgery	64	98.4%	0.0%	1.6%	98.4%	0.0%	1.6%
- Musculoskeletal oncology	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Orthopaedic sports medicine	80	98.8%	0.0%	1.3%	98.8%	0.0%	1.3%
- Orthopaedic surgery of the spine	15	100.0%	0.0%	0.0%	93.3%	0.0%	6.7%
- Orthopaedic trauma	10	100.0%	0.0%	0.0%	90.0%	0.0%	10.0%
- Pediatric orthopaedics	19	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Osteopathic neuromusculoskeletal medicine	14	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Otolaryngology - head and neck surgery	119	98.3%	1.7%	0.0%	97.5%	1.7%	0.8%
- Neurotology	21	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric otolaryngology	22	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Pathology-anatomic and clinical	143	97.2%	2.1%	0.7%	96.5%	3.5%	0.0%
- Blood banking/transfusion medicine	40	97.5%	0.0%	2.5%	100.0%	0.0%	0.0%
- Clinical informatics	5	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Chemical pathology	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Cytopathology	82	97.6%	0.0%	2.4%	98.8%	0.0%	1.2%
- Forensic pathology	27	85.2%	0.0%	14.8%	81.5%	0.0%	18.5%
- Hematopathology	78	98.7%	0.0%	1.3%	98.7%	0.0%	1.3%
- Medical microbiology	11	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neuropathology	25	96.0%	0.0%	4.0%	100.0%	0.0%	0.0%
- Pediatric pathology	18	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Selective pathology	75	96.0%	1.3%	2.7%	94.7%	1.3%	4.0%
Pediatrics	210	98.6%	1.4%	0.0%	98.1%	1.9%	0.0%
- Adolescent medicine	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Child abuse pediatrics	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Clinical informatics	4	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Developmental-behavioral pediatrics	35	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neonatal-perinatal medicine	99	100.0%	0.0%	0.0%	99.0%	1.0%	0.0%
- Pediatric cardiology	59	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric critical care medicine	66	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric emergency medicine	52	98.1%	1.9%	0.0%	100.0%	0.0%	0.0%
- Pediatric endocrinology	65	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric gastroenterology	61	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric hematology/oncology	71	98.6%	1.4%	0.0%	95.8%	4.2%	0.0%

TABLE H.3 *Continued***Percentage of Residents Participating in Patient Safety Programs and Interprofessional Clinical Quality Improvement Programs by Specialty and Subspecialty**

Specialty	Total Programs	Patient Safety Programs			Interprofessional Clinical Quality Improvement Programs		
		100% in at least 1 Year	>0% and <100% in All Years	0% in All Years	100% in at least 1 Year	>0% and <100% in All Years	0% in All Years
- Pediatric infectious diseases	56	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric nephrology	36	97.2%	2.8%	0.0%	100.0%	0.0%	0.0%
- Pediatric pulmonology	48	100.0%	0.0%	0.0%	97.9%	0.0%	2.1%
- Pediatric rheumatology	29	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric sports medicine	15	100.0%	0.0%	0.0%	93.3%	6.7%	0.0%
- Pediatric transplant hepatology	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Physical medicine and rehabilitation	87	97.7%	2.3%	0.0%	96.6%	2.3%	1.1%
- Brain injury medicine	13	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neuromuscular medicine	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Spinal cord injury medicine	15	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric rehabilitation	20	100.0%	0.0%	0.0%	95.0%	0.0%	5.0%
- Sports medicine	19	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Plastic surgery	51	100.0%	0.0%	0.0%	96.1%	3.9%	0.0%
Plastic surgery - integrated	77	97.4%	1.3%	1.3%	96.1%	2.6%	1.3%
- Craniofacial surgery	7	85.7%	14.3%	0.0%	100.0%	0.0%	0.0%
- Hand surgery	16	93.8%	6.3%	0.0%	100.0%	0.0%	0.0%
Preventive medicine	68	98.5%	0.0%	1.5%	100.0%	0.0%	0.0%
- Medical toxicology	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Undersea and hyperbaric medicine	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Psychiatry	240	98.3%	1.3%	0.4%	95.8%	2.9%	1.3%
- Addiction medicine (multidisciplinary)	18	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Addiction psychiatry	36	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Child and adolescent psychiatry	130	100.0%	0.0%	0.0%	96.2%	3.8%	0.0%
- Forensic psychiatry	30	96.7%	0.0%	3.3%	96.7%	0.0%	3.3%
- Geriatric psychiatry	33	97.0%	0.0%	3.0%	100.0%	0.0%	0.0%
- Consultation-liaison psychiatry	37	100.0%	0.0%	0.0%	97.3%	0.0%	2.7%
Radiation oncology	92	98.9%	1.1%	0.0%	98.9%	1.1%	0.0%
Radiology-diagnostic	193	97.4%	2.6%	0.0%	92.2%	7.8%	0.0%
- Abdominal radiology	11	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Endovascular surgical neuroradiology	3	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Musculoskeletal radiology	15	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neuroradiology	69	100.0%	0.0%	0.0%	98.6%	0.0%	1.4%
- Nuclear radiology	10	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric radiology	22	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Vascular and interventional radiology	90	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Interventional radiology - integrated	59	98.3%	1.7%	0.0%	98.3%	1.7%	0.0%
Surgery	309	98.1%	1.6%	0.3%	97.4%	2.6%	0.0%
- Complex general surgical oncology	24	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hand surgery	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric surgery	49	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Surgical critical care	118	99.2%	0.8%	0.0%	98.3%	1.7%	0.0%
- Vascular surgery	100	100.0%	0.0%	0.0%	99.0%	1.0%	0.0%
Vascular surgery - integrated	54	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Thoracic surgery	70	100.0%	0.0%	0.0%	98.6%	1.4%	0.0%
- Congenital cardiac surgery	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Thoracic surgery - integrated	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Urology	139	100.0%	0.0%	0.0%	99.3%	0.7%	0.0%
- Female pelvic medicine and reconstructive surgery	12	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric urology	19	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Transitional year	0	N/A	N/A	N/A	N/A	N/A	N/A
Internal medicine/Pediatrics	78	100.0%	0.0%	0.0%	98.7%	1.3%	0.0%

Notes: Pipeline specialties are highlighted. Excluding programs with 0 residents on duty. Not all accredited programs completed these data. Total number of specialty programs = 4,823. Total number of subspecialty programs = 5,530.

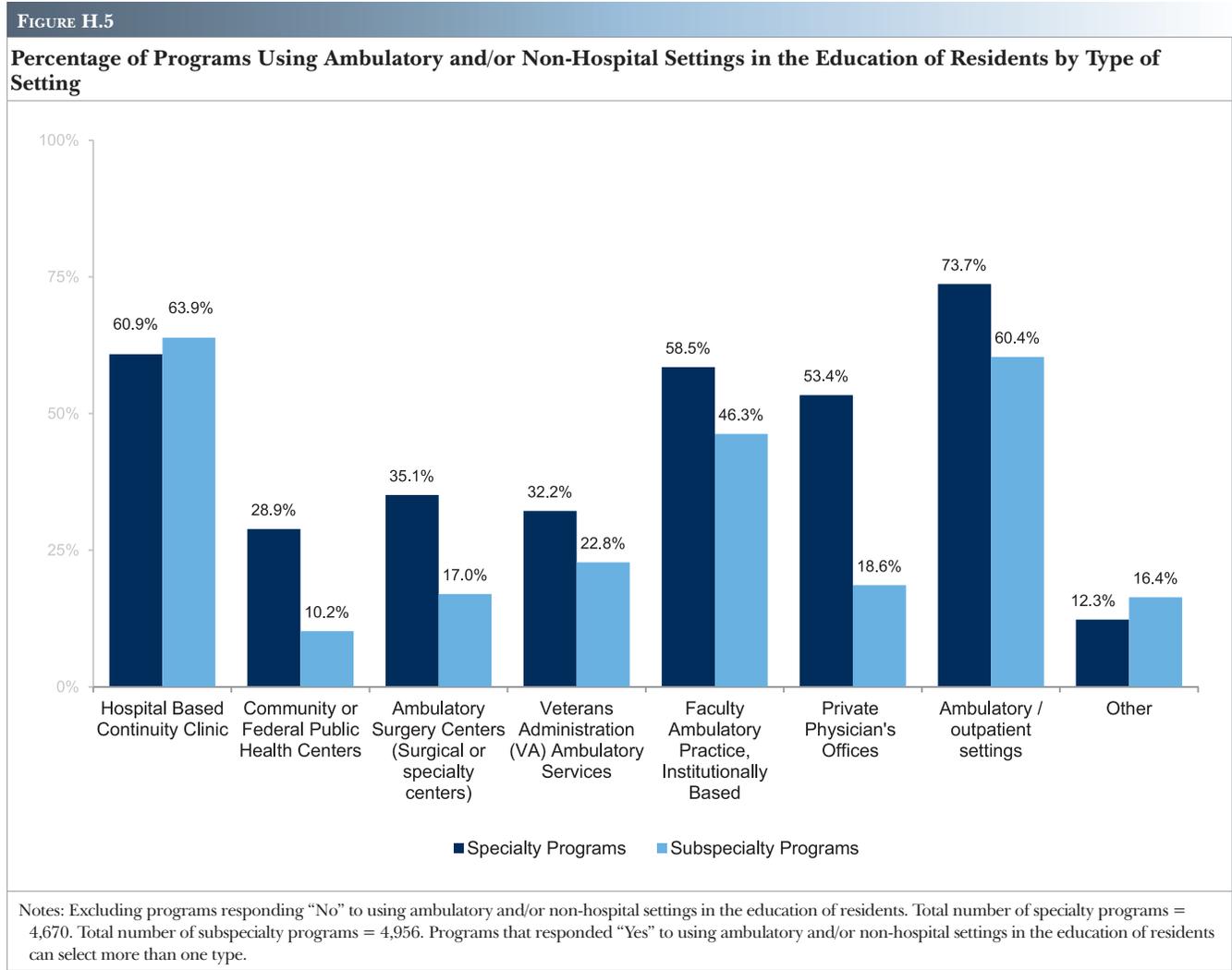
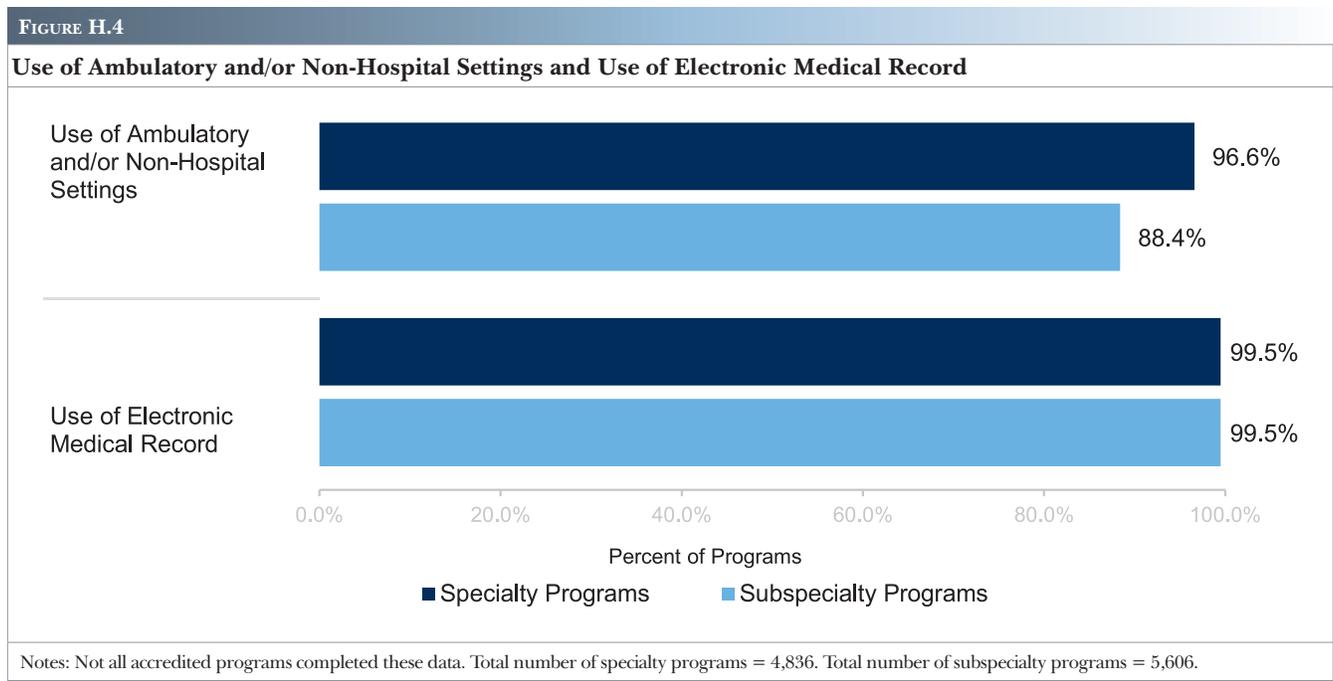


TABLE H.6

Use of Ambulatory and/or Non-Hospital Settings and Use of Electronic Medical Record by Specialty and Subspecialty

Specialty	Total Programs	Use Ambulatory and/or Non-Hospital Settings				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
OVERALL	10,442	9,626	92.2%	816	7.8%	10,387	99.5%	55	0.5%
TOTAL PIPELINE	4,629	4,470	96.6%	159	3.4%	4,603	99.4%	26	0.6%
Allergy and immunology	77	75	97.4%	2	2.6%	77	100.0%	0	0.0%
Anesthesiology	151	142	94.0%	9	6.0%	148	98.0%	3	2.0%
- Adult cardiothoracic anesthesiology	65	12	18.5%	53	81.5%	64	98.5%	1	1.5%
- Clinical informatics	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Critical care medicine	50	1	2.0%	49	98.0%	50	100.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	19	17	89.5%	2	10.5%	19	100.0%	0	0.0%
- Obstetric anesthesiology	29	21	72.4%	8	27.6%	29	100.0%	0	0.0%
- Pain medicine (multidisciplinary)	100	99	99.0%	1	1.0%	100	100.0%	0	0.0%
- Pediatric anesthesiology	53	41	77.4%	12	22.6%	53	100.0%	0	0.0%
Colon and rectal surgery	60	59	98.3%	1	1.7%	60	100.0%	0	0.0%
Dermatology	140	140	100.0%	0	0.0%	140	100.0%	0	0.0%
- Dermatopathology (multidisciplinary)	48	43	89.6%	5	10.4%	48	100.0%	0	0.0%
- Micrographic surgery and dermatologic oncology	65	64	98.5%	1	1.5%	62	95.4%	3	4.6%
Emergency medicine	235	179	76.2%	56	23.8%	235	100.0%	0	0.0%
- Clinical informatics	4	3	75.0%	1	25.0%	4	100.0%	0	0.0%
- Emergency medical services	45	43	95.6%	2	4.4%	45	100.0%	0	0.0%
- Medical toxicology	24	24	100.0%	0	0.0%	24	100.0%	0	0.0%
- Pediatric emergency medicine	26	24	92.3%	2	7.7%	26	100.0%	0	0.0%
- Sports medicine	8	8	100.0%	0	0.0%	8	100.0%	0	0.0%
- Undersea and hyperbaric medicine	5	5	100.0%	0	0.0%	5	100.0%	0	0.0%
Family medicine	633	633	100.0%	0	0.0%	630	99.5%	3	0.5%
- Clinical informatics	3	3	100.0%	0	0.0%	3	100.0%	0	0.0%
- Geriatric medicine	29	29	100.0%	0	0.0%	29	100.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	127	127	100.0%	0	0.0%	127	100.0%	0	0.0%
- Sports medicine	130	130	100.0%	0	0.0%	128	98.5%	2	1.5%
Internal medicine	525	525	100.0%	0	0.0%	522	99.4%	3	0.6%
- Adult congenital heart disease	16	16	100.0%	0	0.0%	16	100.0%	0	0.0%
- Advanced heart failure and transplant cardiology	61	61	100.0%	0	0.0%	61	100.0%	0	0.0%
- Cardiovascular disease	234	232	99.1%	2	0.9%	234	100.0%	0	0.0%
- Clinical cardiac electrophysiology	91	89	97.8%	2	2.2%	91	100.0%	0	0.0%
- Clinical informatics	12	12	100.0%	0	0.0%	12	100.0%	0	0.0%
- Critical care medicine	37	8	21.6%	29	78.4%	37	100.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	140	140	100.0%	0	0.0%	139	99.3%	1	0.7%
- Gastroenterology	194	194	100.0%	0	0.0%	193	99.5%	1	0.5%
- Geriatric medicine	90	90	100.0%	0	0.0%	90	100.0%	0	0.0%
- Hematology	2	2	100.0%	0	0.0%	2	100.0%	0	0.0%
- Hematology and medical oncology	147	147	100.0%	0	0.0%	146	99.3%	1	0.7%
- Infectious disease	140	140	100.0%	0	0.0%	139	99.3%	1	0.7%
- Interventional cardiology	155	148	95.5%	7	4.5%	155	100.0%	0	0.0%
- Nephrology	142	142	100.0%	0	0.0%	142	100.0%	0	0.0%
- Medical oncology	8	8	100.0%	0	0.0%	8	100.0%	0	0.0%
- Pulmonary disease	20	19	95.0%	1	5.0%	20	100.0%	0	0.0%
- Pulmonary disease and critical care medicine	167	167	100.0%	0	0.0%	167	100.0%	0	0.0%
- Rheumatology	119	118	99.2%	1	0.8%	119	100.0%	0	0.0%
- Sleep medicine (multidisciplinary)	80	79	98.8%	1	1.3%	80	100.0%	0	0.0%
- Transplant hepatology	32	31	96.9%	1	3.1%	32	100.0%	0	0.0%
Medical genetics and genomics	30	30	100.0%	0	0.0%	30	100.0%	0	0.0%
- Medical biochemical genetics	10	10	100.0%	0	0.0%	10	100.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	38	25	65.8%	13	34.2%	38	100.0%	0	0.0%
Neurological surgery	114	113	99.1%	1	0.9%	113	99.1%	1	0.9%
- Endovascular surgical neuroradiology	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%

TABLE H.6 Continued

Use of Ambulatory and/or Non-Hospital Settings and Use of Electronic Medical Record by Specialty and Subspecialty

Specialty	Total Programs	Use Ambulatory and/or Non-Hospital Settings				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
Neurology	153	153	100.0%	0	0.0%	152	99.3%	1	0.7%
- Brain injury medicine	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Clinical neurophysiology	74	72	97.3%	2	2.7%	74	100.0%	0	0.0%
- Epilepsy	53	52	98.1%	1	1.9%	53	100.0%	0	0.0%
- Endovascular surgical neuroradiology	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Neurodevelopmental disabilities	7	7	100.0%	0	0.0%	7	100.0%	0	0.0%
- Neuromuscular medicine	38	37	97.4%	1	2.6%	37	97.4%	1	2.6%
- Vascular neurology	71	70	98.6%	1	1.4%	71	100.0%	0	0.0%
Child neurology	73	71	97.3%	2	2.7%	72	98.6%	1	1.4%
Nuclear medicine	29	18	62.1%	11	37.9%	28	96.6%	1	3.4%
Obstetrics and gynecology	275	274	99.6%	1	0.4%	275	100.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	51	51	100.0%	0	0.0%	51	100.0%	0	0.0%
- Gynecologic oncology	55	53	96.4%	2	3.6%	55	100.0%	0	0.0%
- Maternal-fetal medicine	89	88	98.9%	1	1.1%	89	100.0%	0	0.0%
- Reproductive endocrinology and infertility	48	48	100.0%	0	0.0%	48	100.0%	0	0.0%
Ophthalmology	120	119	99.2%	1	0.8%	119	99.2%	1	0.8%
- Ophthalmic plastic and reconstructive surgery	4	4	100.0%	0	0.0%	4	100.0%	0	0.0%
Orthopaedic surgery	184	182	98.9%	2	1.1%	182	98.9%	2	1.1%
- Adult reconstructive orthopaedics	22	20	90.9%	2	9.1%	22	100.0%	0	0.0%
- Foot and ankle orthopaedics	6	6	100.0%	0	0.0%	6	100.0%	0	0.0%
- Hand surgery	66	65	98.5%	1	1.5%	66	100.0%	0	0.0%
- Musculoskeletal oncology	8	7	87.5%	1	12.5%	8	100.0%	0	0.0%
- Orthopaedic sports medicine	81	80	98.8%	1	1.2%	81	100.0%	0	0.0%
- Orthopaedic surgery of the spine	15	15	100.0%	0	0.0%	15	100.0%	0	0.0%
- Orthopaedic trauma	10	10	100.0%	0	0.0%	10	100.0%	0	0.0%
- Pediatric orthopaedics	19	15	78.9%	4	21.1%	19	100.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	14	14	100.0%	0	0.0%	14	100.0%	0	0.0%
Otolaryngology - head and neck surgery	119	118	99.2%	1	0.8%	118	99.2%	1	0.8%
- Neurotology	22	21	95.5%	1	4.5%	22	100.0%	0	0.0%
- Pediatric otolaryngology	23	23	100.0%	0	0.0%	23	100.0%	0	0.0%
Pathology-anatomic and clinical	143	115	80.4%	28	19.6%	143	100.0%	0	0.0%
- Blood banking/transfusion medicine	42	35	83.3%	7	16.7%	41	97.6%	1	2.4%
- Clinical informatics	5	4	80.0%	1	20.0%	5	100.0%	0	0.0%
- Chemical pathology	1	0	0.0%	1	100.0%	1	100.0%	0	0.0%
- Cytopathology	83	50	60.2%	33	39.8%	83	100.0%	0	0.0%
- Forensic pathology	27	12	44.4%	15	55.6%	21	77.8%	6	22.2%
- Hematopathology	78	33	42.3%	45	57.7%	78	100.0%	0	0.0%
- Medical microbiology	12	5	41.7%	7	58.3%	12	100.0%	0	0.0%
- Neuropathology	26	8	30.8%	18	69.2%	26	100.0%	0	0.0%
- Pediatric pathology	19	7	36.8%	12	63.2%	19	100.0%	0	0.0%
- Selective pathology	76	25	32.9%	51	67.1%	76	100.0%	0	0.0%
Pediatrics	210	209	99.5%	1	0.5%	209	99.5%	1	0.5%
- Adolescent medicine	27	27	100.0%	0	0.0%	27	100.0%	0	0.0%
- Child abuse pediatrics	26	26	100.0%	0	0.0%	26	100.0%	0	0.0%
- Clinical informatics	5	5	100.0%	0	0.0%	5	100.0%	0	0.0%
- Developmental-behavioral pediatrics	35	35	100.0%	0	0.0%	35	100.0%	0	0.0%
- Neonatal-perinatal medicine	99	98	99.0%	1	1.0%	98	99.0%	1	1.0%
- Pediatric cardiology	59	58	98.3%	1	1.7%	59	100.0%	0	0.0%
- Pediatric critical care medicine	66	6	9.1%	60	90.9%	65	98.5%	1	1.5%
- Pediatric emergency medicine	52	44	84.6%	8	15.4%	52	100.0%	0	0.0%
- Pediatric endocrinology	65	63	96.9%	2	3.1%	65	100.0%	0	0.0%
- Pediatric gastroenterology	61	58	95.1%	3	4.9%	61	100.0%	0	0.0%
- Pediatric hematology/oncology	72	70	97.2%	2	2.8%	72	100.0%	0	0.0%

TABLE H.6 *Continued***Use of Ambulatory and/or Non-Hospital Settings and Use of Electronic Medical Record by Specialty and Subspecialty**

Specialty	Total Programs	Use Ambulatory and/or Non-Hospital Settings				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
- Pediatric infectious diseases	58	57	98.3%	1	1.7%	58	100.0%	0	0.0%
- Pediatric nephrology	37	37	100.0%	0	0.0%	37	100.0%	0	0.0%
- Pediatric pulmonology	48	48	100.0%	0	0.0%	48	100.0%	0	0.0%
- Pediatric rheumatology	29	29	100.0%	0	0.0%	29	100.0%	0	0.0%
- Pediatric sports medicine	15	15	100.0%	0	0.0%	15	100.0%	0	0.0%
- Pediatric transplant hepatology	9	8	88.9%	1	11.1%	9	100.0%	0	0.0%
Physical medicine and rehabilitation	87	87	100.0%	0	0.0%	86	98.9%	1	1.1%
- Brain injury medicine	14	14	100.0%	0	0.0%	14	100.0%	0	0.0%
- Neuromuscular medicine	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Spinal cord injury medicine	15	12	80.0%	3	20.0%	15	100.0%	0	0.0%
- Pediatric rehabilitation	20	20	100.0%	0	0.0%	20	100.0%	0	0.0%
- Sports medicine	19	19	100.0%	0	0.0%	18	94.7%	1	5.3%
Plastic surgery	51	51	100.0%	0	0.0%	51	100.0%	0	0.0%
Plastic surgery - integrated	78	77	98.7%	1	1.3%	78	100.0%	0	0.0%
- Craniofacial surgery	7	5	71.4%	2	28.6%	7	100.0%	0	0.0%
- Hand surgery	16	16	100.0%	0	0.0%	16	100.0%	0	0.0%
Preventive medicine	68	68	100.0%	0	0.0%	67	98.5%	1	1.5%
- Medical toxicology	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Undersea and hyperbaric medicine	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
Psychiatry	240	238	99.2%	2	0.8%	238	99.2%	2	0.8%
- Addiction medicine (multidisciplinary)	18	18	100.0%	0	0.0%	18	100.0%	0	0.0%
- Addiction psychiatry	38	37	97.4%	1	2.6%	38	100.0%	0	0.0%
- Child and adolescent psychiatry	130	130	100.0%	0	0.0%	128	98.5%	2	1.5%
- Forensic psychiatry	33	33	100.0%	0	0.0%	27	81.8%	6	18.2%
- Geriatric psychiatry	35	35	100.0%	0	0.0%	35	100.0%	0	0.0%
- Consultation-liaison psychiatry	38	38	100.0%	0	0.0%	38	100.0%	0	0.0%
Radiation oncology	92	88	95.7%	4	4.3%	92	100.0%	0	0.0%
Radiology-diagnostic	193	165	85.5%	28	14.5%	192	99.5%	1	0.5%
- Abdominal radiology	11	6	54.5%	5	45.5%	11	100.0%	0	0.0%
- Endovascular surgical neuroradiology	3	2	66.7%	1	33.3%	3	100.0%	0	0.0%
- Musculoskeletal radiology	15	13	86.7%	2	13.3%	15	100.0%	0	0.0%
- Neuroradiology	71	51	71.8%	20	28.2%	71	100.0%	0	0.0%
- Nuclear radiology	10	5	50.0%	5	50.0%	10	100.0%	0	0.0%
- Pediatric radiology	24	16	66.7%	8	33.3%	24	100.0%	0	0.0%
- Vascular and interventional radiology	90	82	91.1%	8	8.9%	90	100.0%	0	0.0%
Interventional radiology - integrated	66	63	95.5%	3	4.5%	66	100.0%	0	0.0%
Surgery	309	305	98.7%	4	1.3%	308	99.7%	1	0.3%
- Complex general surgical oncology	24	24	100.0%	0	0.0%	24	100.0%	0	0.0%
- Hand surgery	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Pediatric surgery	49	45	91.8%	4	8.2%	49	100.0%	0	0.0%
- Surgical critical care	120	20	16.7%	100	83.3%	120	100.0%	0	0.0%
- Vascular surgery	100	94	94.0%	6	6.0%	100	100.0%	0	0.0%
Vascular surgery - integrated	54	53	98.1%	1	1.9%	54	100.0%	0	0.0%
Thoracic surgery	70	66	94.3%	4	5.7%	70	100.0%	0	0.0%
- Congenital cardiac surgery	8	3	37.5%	5	62.5%	8	100.0%	0	0.0%
Thoracic surgery - integrated	26	25	96.2%	1	3.8%	26	100.0%	0	0.0%
Urology	139	137	98.6%	2	1.4%	138	99.3%	1	0.7%
- Female pelvic medicine and reconstructive surgery	12	12	100.0%	0	0.0%	12	100.0%	0	0.0%
- Pediatric urology	19	19	100.0%	0	0.0%	19	100.0%	0	0.0%
Transitional year	0	0	N/A	0	N/A	0	N/A	0	N/A
Internal medicine/Pediatrics	78	78	100.0%	0	0.0%	77	98.7%	1	1.3%

Notes: Pipeline specialties are highlighted. Not all accredited programs completed these data. Total number of specialty programs = 4,836. Total number of subspecialty programs = 5,606.

TABLE H.7

Use of Ambulatory and/or Non-Hospital Settings by Type of Setting (Most Common Selections) by Pipeline Specialty

Pipeline Specialty	Total Programs Using Ambulatory and/or Non-Hospital Settings	Type of Setting							
		Ambulatory / Outpatient Settings		Hospital Based Continuity Clinic		Faculty Ambulatory Practice		Private Physician's Office	
		#	%	#	%	#	%	#	%
TOTAL PIPELINE	4,470	3,327	74.4%	2,722	60.9%	2,624	58.7%	2,421	54.2%
Anesthesiology	142	100	70.4%	30	21.1%	46	32.4%	20	14.1%
Dermatology	140	106	75.7%	96	68.6%	93	66.4%	78	55.7%
Emergency medicine	179	68	38.0%	47	26.3%	50	27.9%	51	28.5%
Family medicine	633	585	92.4%	392	61.9%	311	49.1%	568	89.7%
Internal medicine	525	424	80.8%	405	77.1%	341	65.0%	371	70.7%
Medical genetics and genomics	30	22	73.3%	21	70.0%	15	50.0%	2	6.7%
Neurological surgery	113	63	55.8%	56	49.6%	75	66.4%	29	25.7%
Neurology	153	101	66.0%	129	84.3%	112	73.2%	52	34.0%
Child neurology	71	57	80.3%	66	93.0%	42	59.2%	8	11.3%
Nuclear medicine	18	13	72.2%	8	44.4%	6	33.3%	2	11.1%
Obstetrics and gynecology	274	199	72.6%	239	87.2%	217	79.2%	182	66.4%
Ophthalmology	119	84	70.6%	82	68.9%	83	69.7%	66	55.5%
Orthopaedic surgery	182	130	71.4%	93	51.1%	124	68.1%	121	66.5%
Osteopathic neuromusculoskeletal medicine	14	11	78.6%	3	21.4%	8	57.1%	14	100.0%
Otolaryngology - head and neck surgery	118	82	69.5%	59	50.0%	84	71.2%	58	49.2%
Pathology-anatomic and clinical	115	33	28.7%	15	13.0%	12	10.4%	17	14.8%
Pediatrics	209	187	89.5%	160	76.6%	148	70.8%	171	81.8%
Physical medicine and rehabilitation	87	79	90.8%	59	67.8%	73	83.9%	46	52.9%
Plastic surgery	51	43	84.3%	29	56.9%	34	66.7%	44	86.3%
Plastic surgery - integrated	77	56	72.7%	44	57.1%	55	71.4%	55	71.4%
Preventive medicine	68	63	92.6%	42	61.8%	49	72.1%	34	50.0%
Psychiatry	238	187	78.6%	165	69.3%	104	43.7%	59	24.8%
Radiation oncology	88	64	72.7%	37	42.0%	38	43.2%	8	9.1%
Radiology-diagnostic	165	127	77.0%	48	29.1%	56	33.9%	25	15.2%
Interventional radiology - integrated	63	42	66.7%	34	54.0%	20	31.7%	9	14.3%
Surgery	305	199	65.2%	184	60.3%	211	69.2%	193	63.3%
Vascular surgery - integrated	53	29	54.7%	24	45.3%	41	77.4%	20	37.7%
Thoracic surgery - integrated	25	12	48.0%	13	52.0%	19	76.0%	4	16.0%
Urology	137	88	64.2%	78	56.9%	99	72.3%	56	40.9%
Internal medicine/Pediatrics	78	73	93.6%	64	82.1%	58	74.4%	58	74.4%

Notes: Excluding programs responding "No" to using ambulatory and/or non-hospital settings in the education of residents. Programs that responded "Yes" to using ambulatory and/or non-hospital settings in the education of residents can select more than one type.

TABLE H.8

Use of Ambulatory and/or Non-Hospital Settings by Type of Setting (Least Common Selections) by Pipeline Specialty

Pipeline Specialty	Total Programs Using Ambulatory and/or Non-Hospital Settings	Type of Setting							
		Ambulatory Surgery Centers		VA Ambulatory Services		Community or Federal Public Health Centers		Other	
		#	%	#	%	#	%	#	%
TOTAL PIPELINE	4,470	1,591	35.6%	1,457	32.6%	1,339	30.0%	571	12.8%
Anesthesiology	142	103	72.5%	30	21.1%	2	1.4%	11	7.7%
Dermatology	140	35	25.0%	79	56.4%	38	27.1%	8	5.7%
Emergency medicine	179	26	14.5%	15	8.4%	13	7.3%	109	60.9%
Family medicine	633	269	42.5%	117	18.5%	411	64.9%	101	16.0%
Internal medicine	525	29	5.5%	164	31.2%	179	34.1%	39	7.4%
Medical genetics and genomics	30	1	3.3%	2	6.7%	7	23.3%	3	10.0%
Neurological surgery	113	30	26.5%	41	36.3%	5	4.4%	6	5.3%
Neurology	153	7	4.6%	76	49.7%	19	12.4%	7	4.6%
Child neurology	71	3	4.2%	33	46.5%	13	18.3%	1	1.4%
Nuclear medicine	18	0	0.0%	6	33.3%	1	5.6%	1	5.6%
Obstetrics and gynecology	274	160	58.4%	33	12.0%	87	31.8%	17	6.2%
Ophthalmology	119	93	78.2%	89	74.8%	20	16.8%	6	5.0%
Orthopaedic surgery	182	157	86.3%	61	33.5%	14	7.7%	10	5.5%
Osteopathic neuromusculoskeletal medicine	14	3	21.4%	1	7.1%	1	7.1%	0	0.0%
Otolaryngology - head and neck surgery	118	92	78.0%	62	52.5%	13	11.0%	1	0.8%
Pathology-anatomic and clinical	115	19	16.5%	21	18.3%	10	8.7%	84	73.0%
Pediatrics	209	29	13.9%	0	0.0%	133	63.6%	32	15.3%
Physical medicine and rehabilitation	87	41	47.1%	63	72.4%	13	14.9%	4	4.6%
Plastic surgery	51	45	88.2%	22	43.1%	4	7.8%	0	0.0%
Plastic surgery - integrated	77	69	89.6%	45	58.4%	8	10.4%	0	0.0%
Preventive medicine	68	7	10.3%	35	51.5%	47	69.1%	26	38.2%
Psychiatry	238	6	2.5%	140	58.8%	181	76.1%	46	19.3%
Radiation oncology	88	9	10.2%	22	25.0%	3	3.4%	4	4.5%
Radiology-diagnostic	165	30	18.2%	44	26.7%	14	8.5%	30	18.2%
Interventional radiology - integrated	63	10	15.9%	19	30.2%	4	6.3%	3	4.8%
Surgery	305	201	65.9%	86	28.2%	29	9.5%	10	3.3%
Vascular surgery - integrated	53	23	43.4%	30	56.6%	5	9.4%	0	0.0%
Thoracic surgery - integrated	25	6	24.0%	13	52.0%	2	8.0%	0	0.0%
Urology	137	81	59.1%	67	48.9%	17	12.4%	4	2.9%
Internal medicine/Pediatrics	78	7	9.0%	41	52.6%	46	59.0%	8	10.3%

Notes: Excluding programs responding "No" to using ambulatory and/or non-hospital settings in the education of residents. Programs that responded "Yes" to using ambulatory and/or non-hospital settings in the education of residents can select more than one type.

Appendix A

ACGME-Accredited Pipeline Specialties

Anesthesiology
Dermatology
Emergency medicine
Family medicine
Internal medicine
Medical genetics and genomics
Neurological surgery
Neurology
Child neurology
Nuclear medicine
Obstetrics and gynecology
Ophthalmology
Orthopaedic surgery
Osteopathic neuromusculoskeletal medicine
Otolaryngology - head and neck surgery
Pathology-anatomic and clinical
Pediatrics
Physical medicine and rehabilitation
Plastic surgery
Plastic surgery - integrated
Preventive medicine
Psychiatry
Radiation oncology
Radiology-diagnostic
Interventional radiology - integrated
Surgery
Vascular surgery - integrated
Thoracic surgery - integrated
Urology
Internal medicine/Pediatrics

Appendix B

Specialties and Subspecialties by Specialty Group

Hospital-based Specialties and Subspecialties

Anesthesiology

- Adult cardiothoracic anesthesiology
- Clinical informatics
- Critical care medicine
- Regional anesthesiology and acute pain medicine
- Obstetric anesthesiology
- Pain medicine (multidisciplinary)
- Pediatric anesthesiology

Emergency medicine

- Clinical informatics
- Emergency medical services
- Medical toxicology
- Pediatric emergency medicine
- Sports medicine
- Undersea and hyperbaric medicine

Medical genetics and genomics

- Medical biochemical genetics
- Molecular genetic pathology (multidisciplinary)

Nuclear medicine

Pathology-anatomic and clinical

- Blood banking/transfusion medicine
- Clinical informatics
- Chemical pathology
- Cytopathology
- Forensic pathology
- Hematopathology
- Medical microbiology
- Neuropathology
- Pediatric pathology
- Selective pathology

Preventive medicine

- Medical toxicology
- Undersea and hyperbaric medicine

Radiation oncology

Radiology-diagnostic

- Abdominal radiology
- Endovascular surgical neuroradiology
- Musculoskeletal radiology
- Neuroradiology
- Nuclear radiology
- Pediatric radiology
- Vascular and interventional radiology

Interventional radiology - integrated

Transitional year

Medical Specialties and Subspecialties

Allergy and immunology

Dermatology

- Dermatopathology (multidisciplinary)
- Micrographic surgery and dermatologic oncology

Family medicine

- Clinical informatics
- Geriatric medicine
- Hospice and palliative medicine (multidisciplinary)
- Sports medicine

Internal medicine

- Adult congenital heart disease
- Advanced heart failure and transplant cardiology
- Cardiovascular disease
- Clinical cardiac electrophysiology
- Clinical informatics
- Critical care medicine
- Endocrinology, diabetes, and metabolism
- Gastroenterology
- Geriatric medicine
- Hematology
- Hematology and medical oncology
- Infectious disease
- Interventional cardiology
- Nephrology
- Medical oncology
- Pulmonary disease
- Pulmonary disease and critical care medicine
- Rheumatology
- Sleep medicine (multidisciplinary)
- Transplant hepatology

Neurology

- Brain injury medicine
- Clinical neurophysiology
- Epilepsy
- Endovascular surgical neuroradiology
- Neurodevelopmental disabilities
- Neuromuscular medicine
- Vascular neurology

Child neurology

Osteopathic neuromusculoskeletal medicine

Pediatrics

- Adolescent medicine
- Child abuse pediatrics
- Clinical informatics
- Developmental-behavioral pediatrics
- Neonatal-perinatal medicine
- Pediatric cardiology
- Pediatric critical care medicine
- Pediatric emergency medicine
- Pediatric endocrinology
- Pediatric gastroenterology
- Pediatric hematology/oncology
- Pediatric infectious diseases
- Pediatric nephrology
- Pediatric pulmonology
- Pediatric rheumatology
- Pediatric sports medicine
- Pediatric transplant hepatology

Physical medicine and rehabilitation

- Brain injury medicine

- Neuromuscular medicine
- Spinal cord injury medicine
- Pediatric rehabilitation
- Sports medicine

Psychiatry

- Addiction medicine (multidisciplinary)
- Addiction psychiatry
- Child and adolescent psychiatry
- Forensic psychiatry
- Geriatric psychiatry
- Consultation-liaison psychiatry

Internal medicine/Pediatrics

Surgical Specialties and Subspecialties

Colon and rectal surgery

Neurological surgery

- Endovascular surgical neuroradiology

Obstetrics and gynecology

- Female pelvic medicine and reconstructive surgery
- Gynecologic oncology
- Maternal-fetal medicine
- Reproductive endocrinology and infertility

Ophthalmology

- Ophthalmic plastic and reconstructive surgery

Orthopaedic surgery

- Adult reconstructive orthopaedics
- Foot and ankle orthopaedics
- Hand surgery
- Musculoskeletal oncology
- Orthopaedic sports medicine
- Orthopaedic surgery of the spine
- Orthopaedic trauma
- Pediatric orthopaedics

Otolaryngology - head and neck surgery

- Neurotology
- Pediatric otolaryngology

Plastic surgery

Plastic surgery - integrated

- Craniofacial surgery
- Hand surgery

Surgery

- Complex general surgical oncology
- Hand surgery
- Pediatric surgery
- Surgical critical care
- Vascular surgery

Vascular surgery - integrated

Thoracic surgery

- Congenital cardiac surgery

Thoracic surgery - integrated

Urology

- Female pelvic medicine and reconstructive surgery
- Pediatric urology

Appendix C

Institution Type Groups

- Academic Medical Center/Medical School
- Ambulatory Care Clinic/Federally Qualified Health Center (FQHC)
 - Ambulatory Care Clinic/Office
 - Federally Qualified Health Center (FQHC)
- Children's Hospital
- Consortium
- General Teaching/Community Hospital
 - General/Teaching Hospital
 - Community Hospital
 - Independent Academic Medical Center
- Other
 - Other
 - Nursing Home/Rehabilitation Facility
- Specialty Hospital
 - Specialty Hospital
 - Pathology Lab / Medical Examiner's Office
- Veterans Administration



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