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# DATA RESOURCE BOOK

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Data Resource Book  
Academic Year 2016-2017

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



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# Introduction

## Overview

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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](mailto:databook@acgme.org).

## Accreditation Data System

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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 (DFA) and the staff of the Review Committees in the Department of Accreditation Services (DAS) 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 new 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 participation, participating sites, and other major program changes. Sponsoring Institutions are also scheduled to participate and must respond to institutional review questions and 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

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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 2015-2016 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. Additional terms are defined in the ACGME Glossary of Terms, found on the ACGME website.*

**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 were admitted to the United States by US Immigration authorities.

**Osteopathic Recognition:** Osteopathic Recognition is the status conferred by the Osteopathic Principles Committee upon an ACGME-accredited program that provides osteopathic-focused education and has demonstrated substantial compliance with the Osteopathic Recognition Requirements.

**Participating Site:** An organization, institution, or other facility providing required educational experiences or educational assignments/rotations for residents in a program.

**PGY-1 Position:** 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:** Pipeline specialties are those specialties that lead to initial 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 Year:** Refers to the current year of education within a specific program; this designation may or may not correspond to a resident's or fellow's post-graduate year level.

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

**Review Committee:** A specialty-specific, group of volunteer members, including a resident/fellow representative, a public representative, and non-voting representative(s) of the applicable specialty board(s) that sets accreditation requirements; provides peer evaluation of Sponsoring Institutions or programs, as applicable, to assess compliance with these requirements; and confers an accreditation status on each Sponsoring Institution or program following that evaluation.

**Resident:** For the purposes of this publication, 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 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, 2017 will be excluded from the count of accredited programs for Academic Year 2016-2017 in this edition of the *Data Resource Book*.



# A

# 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 2007-2008 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 the programs that have achieved Osteopathic Recognition.

## Accredited Programs by Status

Of the 10,672 total number of accredited programs, 9,344 (4,037 specialty programs and 5,307 subspecialty programs) had a status of Continued Accreditation, accounting for 87.6% of programs. Only 151 programs (1.4%) had a status of Continued Accreditation with Warning, and an even smaller number, 24 (0.2%), had a status of Probationary Accreditation. Remaining programs had a status of either Initial Accreditation (10.5%) 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 (19.0%)
- Thoracic surgery (8.7%)
- Plastic surgery (7.4%)
- Ophthalmology (6.9%)

Surgery had the highest number of programs on probation, with 4 out of 278 (1.4%) programs being issued Probationary Accreditation. Other specialties with more than one program on probation include pathology - anatomic and clinical (3), neurological surgery (2), and thoracic surgery (2).

## Trends in Accredited Programs

The net growth in accredited programs from the 2015-2016 academic year to the 2016-2017 academic year was more than double the net growth observed in any single-year period over the last 10 years. This was primarily due to the accreditation of new subspecialties in obstetrics and gynecology and 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:

- Internal medicine (84 – 31 previously AOA-approved)
- Family medicine (80 – 22 previously AOA-approved)
- Emergency medicine (52 – 21 previously AOA-approved)
- Psychiatry (42 – 10 previously AOA-approved)

The growth in the number of pipeline specialty programs was also affected by the recent accreditation of the specialty of interventional radiology - integrated (65 programs) and the reclassification of child neurology (74 programs), previously a subspecialty of neurology, as a pipeline specialty in the 2016-2017 academic year.

## Newly Accredited Programs

A total of 752 programs were newly accredited during the 2016-2017 academic year. Of the newly accredited programs, 331 (44.0%) are medical programs, 177 (23.5%) are hospital-based programs, and 244 (32.4%) are surgical programs. In both the 2015-2016 and 2016-2017 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:

- Internal medicine (49)
- Family medicine (48)
- Interventional radiology – integrated (41)

Maternal-fetal medicine, gynecologic oncology, and reproductive endocrinology and infertility (all subspecialties of obstetrics and gynecology) had the highest number of new programs among all subspecialties; with 73, 48, and 41 programs, respectively, accounting for 21.6% of all newly accredited programs added this year. There are 21 subspecialties newly accredited by the ACGME in the past 5 years. New programs in these 21 subspecialties account for more than half of all new subspecialty programs.

## Withdrawn Programs

Withdrawn programs are reported in three categories: those withdrawn prior to the end of the 2016-2017 academic year (which are not included in the population of accredited programs); those withdrawn at the end of the 2016-2017 academic year; and those with a future effective withdrawal date. At the time of this report, the following specialties each had 2 withdrawn programs during the academic year: dermatology; emergency medicine; family medicine; pediatrics; and the transitional year. The subspecialty with the highest number of withdrawn programs was clinical neurophysiology, with 3 programs withdrawn in the 2016-2017 academic year.

## Accredited Training Length

The majority of core programs take 3 or 4 years to complete. Neurological surgery programs have the longest

training length among core programs at 7 years. Among subspecialty programs, 55.4% are 1 year in length, with the remaining programs requiring 2 or more years of training to complete. The internal medicine subspecialties of advanced heart failure and transplant cardiology, clinical cardiac electrophysiology, interventional cardiology, transplant hepatology all require the completion of another subspecialty program prior to entering training. 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 training before entry.

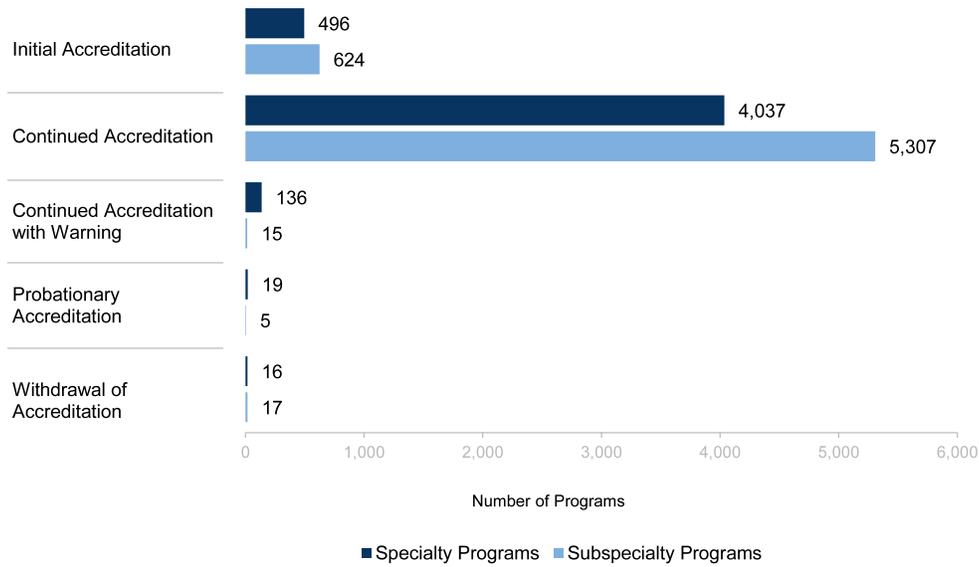
### **Osteopathic Recognition**

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The 2016-2017 academic year is the second year that the ACGME has recognized osteopathic training in ACGME-accredited programs. Of the 79 programs with Osteopathic Recognition, 54 (68.4%) are family medicine programs and 16 (20.3%) are internal medicine programs. ↗

FIGURE A.1

Accreditation Statuses of Currently Accredited Programs



Notes: Total number of accredited programs = 10,672. Excluding programs withdrawn prior to the end of the academic year (n=11).

FIGURE A.2

Number of Accredited Programs by Academic Year, 2007-2008 to 2016-2017

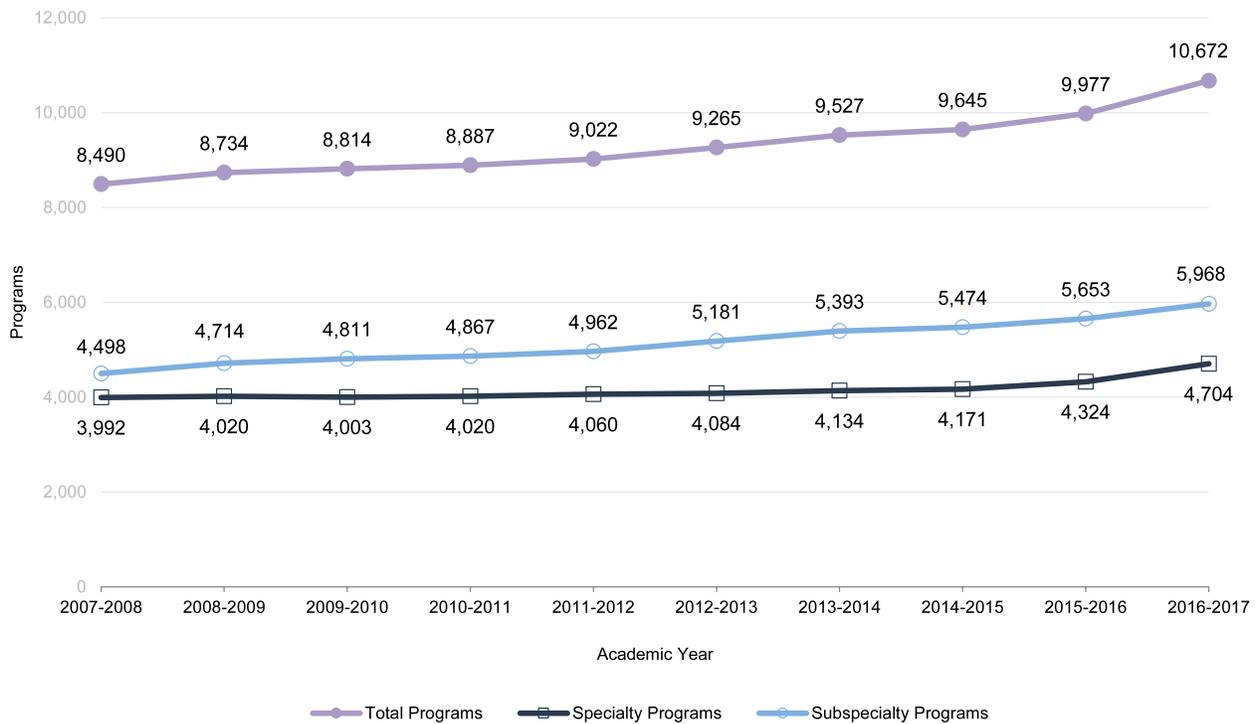


TABLE A.3											
Accreditation Statuses of Currently Accredited Programs by Specialty and Subspecialty											
Specialty	Total Programs	Accreditation Status									
		Initial Accreditation		Continued Accreditation		Continued Accreditation with Warning		Probationary Accreditation		Withdrawal of Accreditation	
		#	%	#	%	#	%	#	%	#	%
OVERALL	10,672	1,120	10.5%	9,344	87.6%	151	1.4%	24	0.2%	33	0.3%
TOTAL PIPELINE	4,383	459	10.5%	3,777	86.2%	117	2.7%	16	0.4%	14	0.3%
Allergy and immunology	79	5	6.3%	74	93.7%	0	0.0%	0	0.0%	0	0.0%
Anesthesiology	147	14	9.5%	129	87.8%	4	2.7%	0	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	66	5	7.6%	61	92.4%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Anesthesiology)	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	57	3	5.3%	53	93.0%	1	1.8%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	9	9	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Obstetric anesthesiology	32	5	15.6%	27	84.4%	0	0.0%	0	0.0%	0	0.0%
- Pain medicine (multidisciplinary)	101	4	4.0%	96	95.0%	1	1.0%	0	0.0%	0	0.0%
- Pediatric anesthesiology	58	5	8.6%	53	91.4%	0	0.0%	0	0.0%	0	0.0%
Colon and rectal surgery	58	4	6.9%	42	72.4%	11	19.0%	1	1.7%	0	0.0%
Dermatology	128	12	9.4%	112	87.5%	1	0.8%	1	0.8%	2	1.6%
- Dermatopathology (multidisciplinary)	53	0	0.0%	53	100.0%	0	0.0%	0	0.0%	0	0.0%
- Micrographic surgery and dermatologic oncology	75	12	16.0%	63	84.0%	0	0.0%	0	0.0%	0	0.0%
Emergency medicine	212	44	20.8%	160	75.5%	6	2.8%	0	0.0%	2	0.9%
- Clinical informatics (Emergency medicine)	4	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	55	16	29.1%	39	70.9%	0	0.0%	0	0.0%	0	0.0%
- Medical toxicology	27	1	3.7%	26	96.3%	0	0.0%	0	0.0%	0	0.0%
- Pediatric emergency medicine	26	4	15.4%	22	84.6%	0	0.0%	0	0.0%	0	0.0%
- Sports medicine	7	0	0.0%	7	100.0%	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	540	66	12.2%	454	84.1%	18	3.3%	0	0.0%	2	0.4%
- Clinical informatics (Family medicine)	2	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	44	4	9.1%	40	90.9%	0	0.0%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	130	26	20.0%	103	79.2%	0	0.0%	0	0.0%	1	0.8%
- Sports medicine	132	15	11.4%	117	88.6%	0	0.0%	0	0.0%	0	0.0%
Internal medicine	469	76	16.2%	386	82.3%	7	1.5%	0	0.0%	0	0.0%
- Adult congenital heart disease	10	10	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	71	11	15.5%	60	84.5%	0	0.0%	0	0.0%	0	0.0%
- Cardiovascular disease	210	19	9.0%	190	90.5%	0	0.0%	1	0.5%	0	0.0%
- Clinical cardiac electrophysiology	105	3	2.9%	102	97.1%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Internal medicine)	12	11	91.7%	1	8.3%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	34	2	5.9%	32	94.1%	0	0.0%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	141	6	4.3%	135	95.7%	0	0.0%	0	0.0%	0	0.0%
- Gastroenterology	175	12	6.9%	163	93.1%	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	106	5	4.7%	100	94.3%	0	0.0%	0	0.0%	1	0.9%
- Hematology	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	146	8	5.5%	138	94.5%	0	0.0%	0	0.0%	0	0.0%
- Infectious disease	146	0	0.0%	146	100.0%	0	0.0%	0	0.0%	0	0.0%
- Interventional cardiology	150	8	5.3%	142	94.7%	0	0.0%	0	0.0%	0	0.0%
- Nephrology	149	3	2.0%	146	98.0%	0	0.0%	0	0.0%	0	0.0%
- Medical oncology	6	0	0.0%	6	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease	20	3	15.0%	17	85.0%	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	151	9	6.0%	142	94.0%	0	0.0%	0	0.0%	0	0.0%
- Rheumatology	114	2	1.8%	112	98.2%	0	0.0%	0	0.0%	0	0.0%
- Sleep medicine (multidisciplinary)	84	3	3.6%	81	96.4%	0	0.0%	0	0.0%	0	0.0%
- Transplant hepatology	51	8	15.7%	42	82.4%	0	0.0%	0	0.0%	1	2.0%
Medical genetics and genomics	46	2	4.3%	40	87.0%	2	4.3%	1	2.2%	1	2.2%
- Medical biochemical genetics	16	4	25.0%	12	75.0%	0	0.0%	0	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	39	2	5.1%	37	94.9%	0	0.0%	0	0.0%	0	0.0%
Neurological surgery	110	5	4.5%	99	90.0%	3	2.7%	2	1.8%	1	0.9%
- 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	144	11	7.6%	130	90.3%	2	1.4%	1	0.7%	0	0.0%
- Brain injury medicine	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	94	2	2.1%	89	94.7%	2	2.1%	0	0.0%	1	1.1%
- Epilepsy	61	40	65.6%	21	34.4%	0	0.0%	0	0.0%	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	0	0.0%	8	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	46	3	6.5%	43	93.5%	0	0.0%	0	0.0%	0	0.0%
- Vascular neurology	93	10	10.8%	82	88.2%	0	0.0%	0	0.0%	1	1.1%
Child neurology	74	1	1.4%	73	98.6%	0	0.0%	0	0.0%	0	0.0%
Nuclear medicine	42	0	0.0%	41	97.6%	1	2.4%	0	0.0%	0	0.0%
Obstetrics and gynecology	269	26	9.7%	232	86.2%	10	3.7%	1	0.4%	0	0.0%
- Female pelvic medicine and reconstructive surgery	50	4	8.0%	46	92.0%	0	0.0%	0	0.0%	0	0.0%
- Gynecologic oncology	48	48	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Maternal-fetal medicine	73	73	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	41	41	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ophthalmology	116	1	0.9%	107	92.2%	8	6.9%	0	0.0%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	5	0	0.0%	5	100.0%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	168	13	7.7%	149	88.7%	6	3.6%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	23	2	8.7%	21	91.3%	0	0.0%	0	0.0%	0	0.0%
- Foot and ankle orthopaedics	6	0	0.0%	6	100.0%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	68	3	4.4%	63	92.6%	2	2.9%	0	0.0%	0	0.0%
- Musculoskeletal oncology	11	0	0.0%	11	100.0%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	97	6	6.2%	89	91.8%	2	2.1%	0	0.0%	0	0.0%
- Orthopaedic surgery of the spine	16	1	6.3%	15	93.8%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic trauma	9	0	0.0%	9	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric orthopaedics	25	0	0.0%	25	100.0%	0	0.0%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	4	4	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Otolaryngology	109	3	2.8%	105	96.3%	1	0.9%	0	0.0%	0	0.0%
- Neurotology	20	1	5.0%	19	95.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	22	2	9.1%	20	90.9%	0	0.0%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	142	1	0.7%	135	95.1%	3	2.1%	3	2.1%	0	0.0%
- Blood banking/transfusion medicine	49	3	6.1%	46	93.9%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Pathology)	5	4	80.0%	1	20.0%	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	92	1	1.1%	91	98.9%	0	0.0%	0	0.0%	0	0.0%
- Forensic pathology	40	4	10.0%	36	90.0%	0	0.0%	0	0.0%	0	0.0%
- Hematology	86	2	2.3%	83	96.5%	1	1.2%	0	0.0%	0	0.0%
- Medical microbiology	15	1	6.7%	14	93.3%	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	35	2	5.7%	32	91.4%	0	0.0%	0	0.0%	1	2.9%
- Pediatric pathology	26	0	0.0%	26	100.0%	0	0.0%	0	0.0%	0	0.0%
- Selective pathology	85	10	11.8%	74	87.1%	0	0.0%	0	0.0%	1	1.2%
Pediatrics	207	8	3.9%	197	95.2%	1	0.5%	0	0.0%	1	0.5%
- Adolescent medicine	29	1	3.4%	28	96.6%	0	0.0%	0	0.0%	0	0.0%
- Child abuse pediatrics	30	5	16.7%	25	83.3%	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Pediatrics)	5	3	60.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	39	2	5.1%	37	94.9%	0	0.0%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	99	1	1.0%	98	99.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric cardiology	59	0	0.0%	59	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric critical care medicine	67	3	4.5%	63	94.0%	0	0.0%	0	0.0%	1	1.5%
- Pediatric emergency medicine	52	1	1.9%	51	98.1%	0	0.0%	0	0.0%	0	0.0%
- Pediatric endocrinology	71	3	4.2%	68	95.8%	0	0.0%	0	0.0%	0	0.0%
- Pediatric gastroenterology	63	6	9.5%	57	90.5%	0	0.0%	0	0.0%	0	0.0%
- Pediatric hematology/oncology	73	3	4.1%	69	94.5%	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	64	3	4.7%	61	95.3%	0	0.0%	0	0.0%	0	0.0%
- Pediatric nephrology	44	0	0.0%	44	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric pulmonology	54	1	1.9%	52	96.3%	0	0.0%	0	0.0%	1	1.9%
- Pediatric rheumatology	36	0	0.0%	36	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	18	3	16.7%	15	83.3%	0	0.0%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	13	5	38.5%	8	61.5%	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	86	6	7.0%	78	90.7%	2	2.3%	0	0.0%	0	0.0%
- Brain injury medicine	13	8	61.5%	5	38.5%	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	22	3	13.6%	19	86.4%	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	68	0	0.0%	61	89.7%	5	7.4%	0	0.0%	2	2.9%
Plastic surgery - integrated	76	9	11.8%	64	84.2%	3	3.9%	0	0.0%	0	0.0%
- Craniofacial surgery	9	1	11.1%	7	77.8%	0	0.0%	0	0.0%	1	11.1%
- Hand surgery	16	0	0.0%	16	100.0%	0	0.0%	0	0.0%	0	0.0%
Preventive medicine	76	4	5.3%	70	92.1%	2	2.6%	0	0.0%	0	0.0%
- 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%	0	0.0%	1	100.0%	0	0.0%	0	0.0%
Psychiatry	226	33	14.6%	192	85.0%	1	0.4%	0	0.0%	0	0.0%
- Addiction psychiatry	47	4	8.5%	43	91.5%	0	0.0%	0	0.0%	0	0.0%
- Child and adolescent psychiatry	134	12	9.0%	121	90.3%	1	0.7%	0	0.0%	0	0.0%
- Forensic psychiatry	46	5	10.9%	41	89.1%	0	0.0%	0	0.0%	0	0.0%
- Geriatric psychiatry	59	3	5.1%	56	94.9%	0	0.0%	0	0.0%	0	0.0%
- Psychosomatic medicine	59	5	8.5%	53	89.8%	0	0.0%	0	0.0%	1	1.7%
Radiation oncology	92	3	3.3%	85	92.4%	3	3.3%	1	1.1%	0	0.0%
Radiology-diagnostic	194	10	5.2%	181	93.3%	1	0.5%	1	0.5%	1	0.5%
- Abdominal radiology	12	0	0.0%	12	100.0%	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	4	1	25.0%	2	50.0%	0	0.0%	0	0.0%	1	25.0%
- Musculoskeletal radiology	16	1	6.3%	15	93.8%	0	0.0%	0	0.0%	0	0.0%
- Neuroradiology	85	4	4.7%	81	95.3%	0	0.0%	0	0.0%	0	0.0%
- Nuclear radiology	18	0	0.0%	18	100.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	46	0	0.0%	45	97.8%	0	0.0%	0	0.0%	1	2.2%
- Vascular and interventional radiology	93	2	2.2%	91	97.8%	0	0.0%	0	0.0%	0	0.0%
Interventional radiology - integrated	65	65	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Surgery	278	25	9.0%	230	82.7%	18	6.5%	4	1.4%	1	0.4%
- Complex general surgical oncology	24	7	29.2%	17	70.8%	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	1	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
- Pediatric surgery	49	3	6.1%	46	93.9%	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	117	7	6.0%	109	93.2%	1	0.9%	0	0.0%	0	0.0%
- Vascular surgery	107	2	1.9%	100	93.5%	2	1.9%	1	0.9%	2	1.9%
Vascular surgery - integrated	53	4	7.5%	48	90.6%	1	1.9%	0	0.0%	0	0.0%
Thoracic surgery	69	7	10.1%	54	78.3%	6	8.7%	2	2.9%	0	0.0%
- Congenital cardiac surgery	13	1	7.7%	10	76.9%	0	0.0%	1	7.7%	1	7.7%
Thoracic surgery - integrated	27	1	3.7%	24	88.9%	0	0.0%	1	3.7%	1	3.7%
Urology	136	11	8.1%	117	86.0%	8	5.9%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	11	2	18.2%	9	81.8%	0	0.0%	0	0.0%	0	0.0%
- Pediatric urology	28	1	3.6%	25	89.3%	1	3.6%	0	0.0%	1	3.6%
Transitional year	115	21	18.3%	90	78.3%	2	1.7%	0	0.0%	2	1.7%
Internal medicine/Pediatrics	79	1	1.3%	78	98.7%	0	0.0%	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=11).

TABLE A.4

## Number of Programs by Specialty and Subspecialty and Academic Year, 2012-2013 to 2016-2017

Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	#	%
	#	#	#	#	#	#	%
OVERALL	9,265	9,527	9,645	9,977	10,672	1,407	15.2%
TOTAL PIPELINE	3,782	3,831	3,875	4,021	4,383	601	15.9%
Allergy and immunology	73	74	75	77	79	6	8.2%
Anesthesiology	132	133	133	135	147	15	11.4%
- Adult cardiothoracic anesthesiology	58	60	61	62	66	8	13.8%
- Clinical informatics (Anesthesiology) *				1	1	0	0.0%
- Critical care medicine	51	55	54	54	57	6	11.8%
- Regional anesthesiology and acute pain medicine *					9	N/A	N/A
- Obstetric anesthesiology *	13	27	27	28	32	19	146.2%
- Pain medicine (multidisciplinary)	97	97	97	100	101	4	4.1%
- Pediatric anesthesiology	46	51	53	56	58	12	26.1%
Colon and rectal surgery	55	55	55	57	58	3	5.5%
Dermatology	114	115	117	120	128	14	12.3%
- Dermatopathology (multidisciplinary)	53	54	53	53	53	0	0.0%
- Micrographic surgery and dermatologic oncology	54	63	63	69	75	21	38.9%
Emergency medicine	160	164	167	179	212	52	32.5%
- Clinical informatics (Emergency medicine) *			1	3	4	3	300.0%
- Emergency medical services *	10	31	42	50	55	45	450.0%
- Medical toxicology	27	26	25	26	27	0	0.0%
- Pediatric emergency medicine	20	21	22	22	26	6	30.0%
- Sports medicine	4	5	6	7	7	3	75.0%
- Undersea and hyperbaric medicine	6	6	6	7	7	1	16.7%
Family medicine	460	471	480	498	540	80	17.4%
- Clinical informatics (Family medicine) *				1	2	1	100.0%
- Geriatric medicine	41	42	40	41	44	3	7.3%
- Hospice and palliative medicine (multidisciplinary)	89	97	108	115	130	41	46.1%
- Sports medicine	113	124	125	127	132	19	16.8%
Internal medicine	385	390	396	421	469	84	21.8%
- Adult congenital heart disease *				7	10	3	42.9%
- Advanced heart failure and transplant cardiology *	25	57	62	68	71	46	184.0%
- Cardiovascular disease	187	191	192	193	210	23	12.3%
- Clinical cardiac electrophysiology	103	104	104	104	105	2	1.9%
- Clinical informatics (Internal medicine) *			1	8	12	11	1100.0%
- Critical care medicine	34	34	33	33	34	0	0.0%
- Endocrinology, diabetes, and metabolism	132	134	135	136	141	9	6.8%
- Gastroenterology	160	162	165	168	175	15	9.4%
- Geriatric medicine	104	105	105	105	106	2	1.9%
- Hematology	3	3	3	3	2	-1	-33.3%
- Hematology and medical oncology	135	136	139	144	146	11	8.1%
- Infectious disease	147	148	148	148	146	-1	-0.7%
- Interventional cardiology	141	142	142	145	150	9	6.4%
- Nephrology	147	147	147	147	149	2	1.4%
- Medical oncology	13	11	10	9	6	-7	-53.8%
- Pulmonary disease	21	20	20	18	20	-1	-4.8%
- Pulmonary disease and critical care medicine	138	141	142	147	151	13	9.4%
- Rheumatology	111	113	113	113	114	3	2.7%
- Sleep medicine (multidisciplinary)	74	79	83	83	84	10	13.5%
- Transplant hepatology	36	41	43	47	51	15	41.7%
Medical genetics and genomics	49	47	46	45	46	-3	-6.1%
- Medical biochemical genetics	11	12	11	14	16	5	45.5%
- Molecular genetic pathology (multidisciplinary)	34	36	37	39	39	5	14.7%
Neurological surgery	102	105	105	108	110	8	7.8%
- 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, 2012-2013 to 2016-2017							
Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	#	%
	#	#	#	#	#	#	%
Neurology	130	130	133	139	144	14	10.8%
- Brain injury medicine *					1	N/A	N/A
- Clinical neurophysiology	95	97	96	96	94	-1	-1.1%
- Epilepsy *			11	39	61	50	454.5%
- Endovascular surgical neuroradiology	2	2	1	1	1	-1	-50.0%
- Neurodevelopmental disabilities	9	9	8	8	8	-1	-11.1%
- Neuromuscular medicine	34	38	43	45	46	12	35.3%
- Vascular neurology	75	81	84	87	93	18	24.0%
Child neurology	70	73	73	73	74	4	5.7%
Nuclear medicine	50	47	43	43	42	-8	-16.0%
Obstetrics and gynecology	243	242	243	250	269	26	10.7%
- Female pelvic medicine and reconstructive surgery *	44	45	45	48	50	6	13.6%
- Gynecologic oncology *					48	N/A	N/A
- Maternal-fetal medicine *					73	N/A	N/A
- Reproductive endocrinology and infertility *					41	N/A	N/A
Ophthalmology	117	116	116	116	116	-1	-0.9%
- Ophthalmic plastic and reconstructive surgery	5	5	5	5	5	0	0.0%
Orthopaedic surgery	154	155	156	162	168	14	9.1%
- Adult reconstructive orthopaedics	21	21	21	23	23	2	9.5%
- Foot and ankle orthopaedics	8	7	7	6	6	-2	-25.0%
- Hand surgery	60	65	65	67	68	8	13.3%
- Musculoskeletal oncology	11	11	11	11	11	0	0.0%
- Orthopaedic sports medicine	96	95	95	94	97	1	1.0%
- Orthopaedic surgery of the spine	17	18	17	17	16	-1	-5.9%
- Orthopaedic trauma	10	10	9	9	9	-1	-10.0%
- Pediatric orthopaedics	24	26	25	25	25	1	4.2%
Osteopathic neuromusculoskeletal medicine *				1	4	3	300.0%
Otolaryngology	105	106	106	106	109	4	3.8%
- Neurotology	18	19	19	20	20	2	11.1%
- Pediatric otolaryngology	19	21	22	23	22	3	15.8%
Pathology-anatomic and clinical	143	142	142	142	142	-1	-0.7%
- Blood banking/transfusion medicine	48	48	47	48	49	1	2.1%
- Clinical informatics (Pathology) *				2	5	3	150.0%
- Chemical pathology	2	2	3	3	4	2	100.0%
- Cytopathology	92	93	91	91	92	0	0.0%
- Forensic pathology	34	35	36	39	40	6	17.6%
- Hematology	85	84	85	85	86	1	1.2%
- Medical microbiology	13	13	14	14	15	2	15.4%
- Neuropathology	33	33	32	33	35	2	6.1%
- Pediatric pathology	27	27	27	26	26	-1	-3.7%
- Selective pathology	69	77	80	79	85	16	23.2%
Pediatrics	199	199	199	204	207	8	4.0%
- Adolescent medicine	28	28	28	28	29	1	3.6%
- Child abuse pediatrics	22	25	26	28	30	8	36.4%
- Clinical informatics (Pediatrics) *			1	4	5	4	400.0%
- Developmental-behavioral pediatrics	36	35	37	38	39	3	8.3%
- Neonatal-perinatal medicine	97	97	98	98	99	2	2.1%
- Pediatric cardiology	55	56	57	59	59	4	7.3%
- Pediatric critical care medicine	62	64	64	67	67	5	8.1%
- Pediatric emergency medicine	51	51	51	52	52	1	2.0%
- Pediatric endocrinology	67	69	69	69	71	4	6.0%
- Pediatric gastroenterology	57	57	57	60	63	6	10.5%
- Pediatric hematology/oncology	68	67	70	72	73	5	7.4%

TABLE A.4 Continued

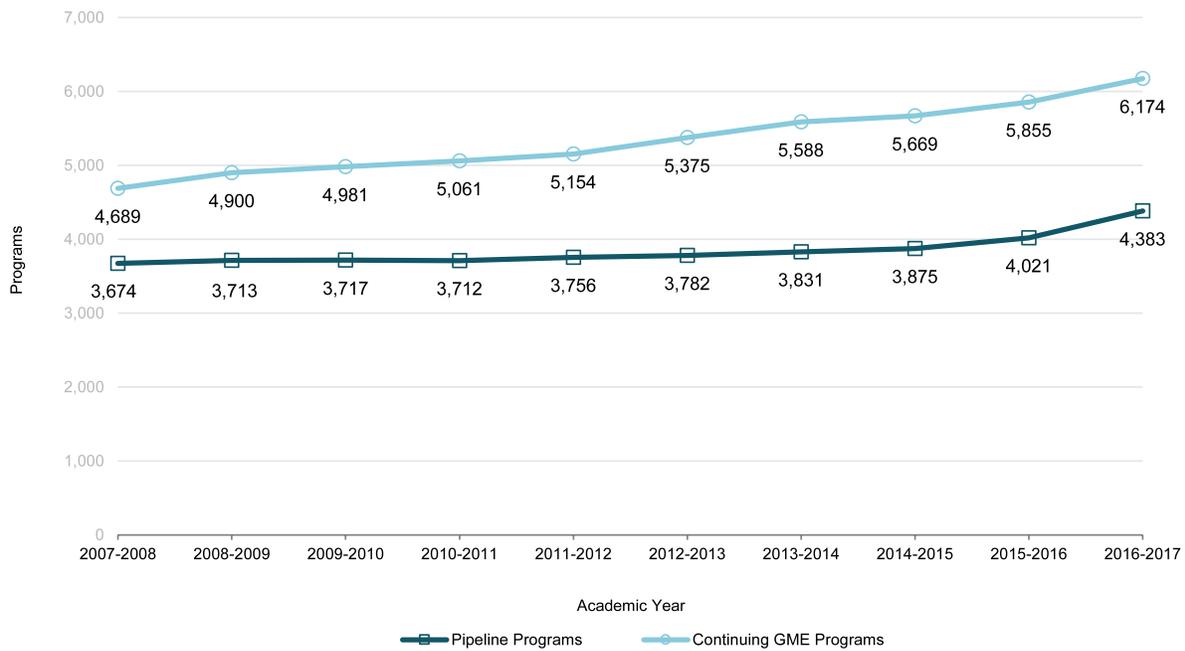
## Number of Programs by Specialty and Subspecialty and Academic Year, 2012-2013 to 2016-2017

Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	#	%
	#	#	#	#	#	#	%
- Pediatric infectious diseases	61	61	61	64	64	3	4.9%
- Pediatric nephrology	40	45	45	45	44	4	10.0%
- Pediatric pulmonology	50	52	52	54	54	4	8.0%
- Pediatric rheumatology	33	34	34	36	36	3	9.1%
- Pediatric sports medicine	14	14	14	17	18	4	28.6%
- Pediatric transplant hepatology	6	6	7	9	13	7	116.7%
Physical medicine and rehabilitation	77	77	78	83	86	9	11.7%
- Brain injury medicine *		3	4	8	13	10	333.3%
- Neuromuscular medicine *	1	1	1	1	1	0	0.0%
- Spinal cord injury medicine	18	18	19	20	22	4	22.2%
- Pediatric rehabilitation	16	17	17	19	20	4	25.0%
- Sports medicine	12	14	16	17	19	7	58.3%
Plastic surgery	71	71	71	68	68	-3	-4.2%
Plastic surgery - integrated	49	59	67	69	76	27	55.1%
- Craniofacial surgery	7	8	9	10	9	2	28.6%
- Hand surgery	16	15	16	16	16	0	0.0%
Preventive medicine	73	74	72	74	76	3	4.1%
- Medical toxicology	2	2	2	1	1	-1	-50.0%
- Undersea and hyperbaric medicine	2	2	2	1	1	-1	-50.0%
Psychiatry	184	188	193	203	226	42	22.8%
- Addiction psychiatry	45	46	45	45	47	2	4.4%
- Child and adolescent psychiatry	124	123	124	126	134	10	8.1%
- Forensic psychiatry	36	39	40	42	46	10	27.8%
- Geriatric psychiatry	55	56	55	56	59	4	7.3%
- Psychosomatic medicine	53	54	54	57	59	6	11.3%
Radiation oncology	87	88	89	91	92	5	5.7%
Radiology-diagnostic	186	185	185	188	194	8	4.3%
- Abdominal radiology	10	11	12	12	12	2	20.0%
- Endovascular surgical neuroradiology	3	3	3	3	4	1	33.3%
- Musculoskeletal radiology	14	14	15	15	16	2	14.3%
- Neuroradiology	85	85	84	86	85	0	0.0%
- Nuclear radiology	19	20	20	18	18	-1	-5.3%
- Pediatric radiology	46	47	46	46	46	0	0.0%
- Vascular and interventional radiology	92	92	94	95	93	1	1.1%
Interventional radiology - integrated *				24	65	41	170.8%
Surgery	250	254	256	261	278	28	11.2%
- Complex general surgical oncology *	16	19	19	22	24	8	50.0%
- Hand surgery	1	1	1	1	1	0	0.0%
- Pediatric surgery	44	45	46	47	49	5	11.4%
- Surgical critical care	107	110	112	113	117	10	9.3%
- Vascular surgery	104	106	106	106	107	3	2.9%
Vascular surgery - integrated	42	47	51	51	53	11	26.2%
Thoracic surgery	66	66	65	68	69	3	4.5%
- Congenital cardiac surgery	11	12	12	12	13	2	18.2%
Thoracic surgery - integrated	18	23	26	27	27	9	50.0%
Urology	123	124	126	134	136	13	10.6%
- Female pelvic medicine and reconstructive surgery *	9	9	9	10	11	2	22.2%
- Pediatric urology	25	28	28	28	28	3	12.0%
Transitional year	108	108	101	101	115	7	6.5%
Internal medicine/Pediatrics	79	79	79	79	79	0	0.0%

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

FIGURE A.5

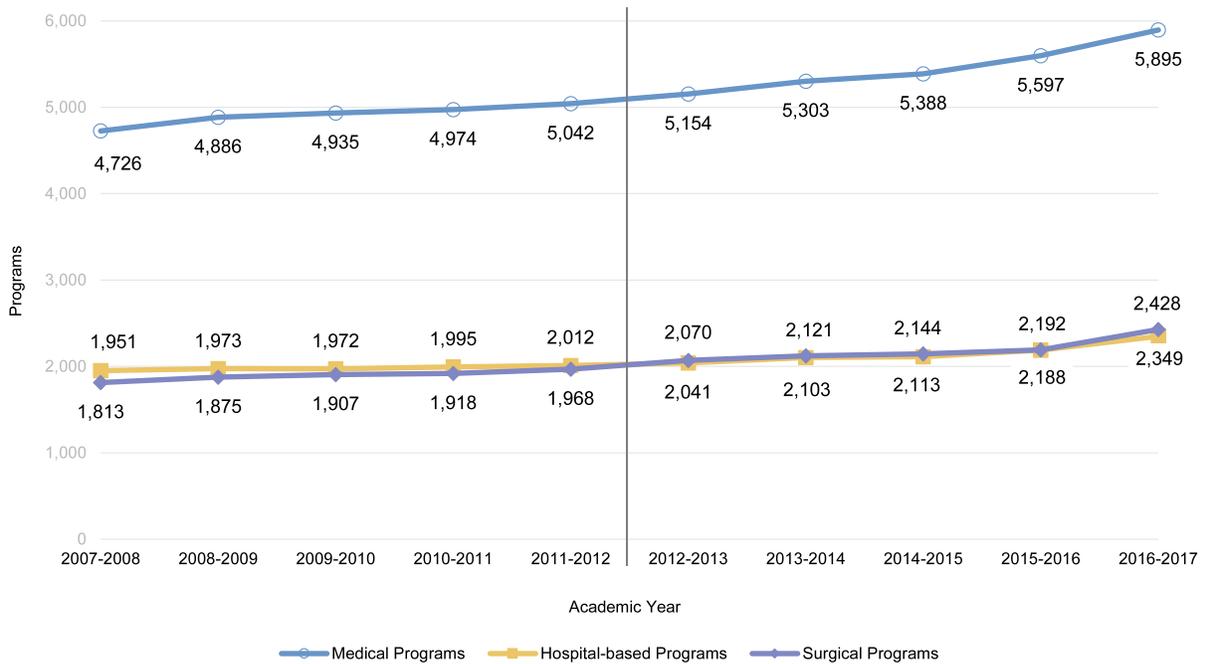
Number of Pipeline and Continuing GME Programs by Academic Year, 2007-2008 to 2016-2017



Note: Excluding transitional year programs.  
Abbreviation: GME, graduate medical education.

FIGURE A.6

Number of Programs by Specialty Group and Academic Year, 2007-2008 to 2016-2017



Notes: The number of surgical programs exceeds the number of hospital-based programs beginning in the 2012-2013 academic year primarily due to the accreditation of new subspecialty programs in female pelvic medicine and reconstructive surgery and complex surgical oncology. 'Surgical Programs' labels are displayed above the line beyond that point.

FIGURE A.7

Number of Newly Accredited Programs by Specialty Group

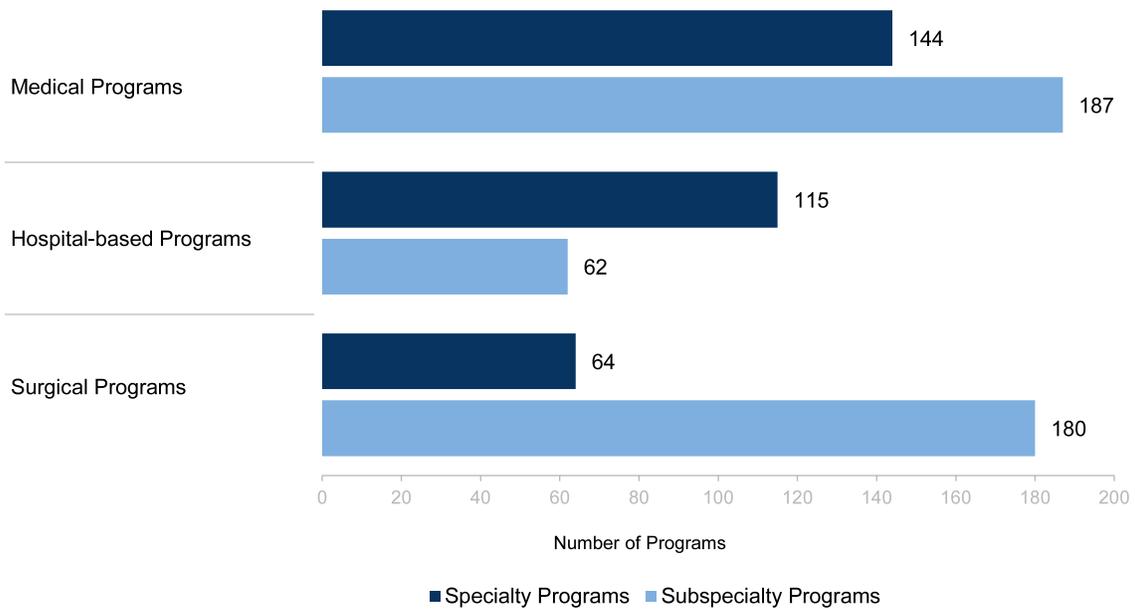
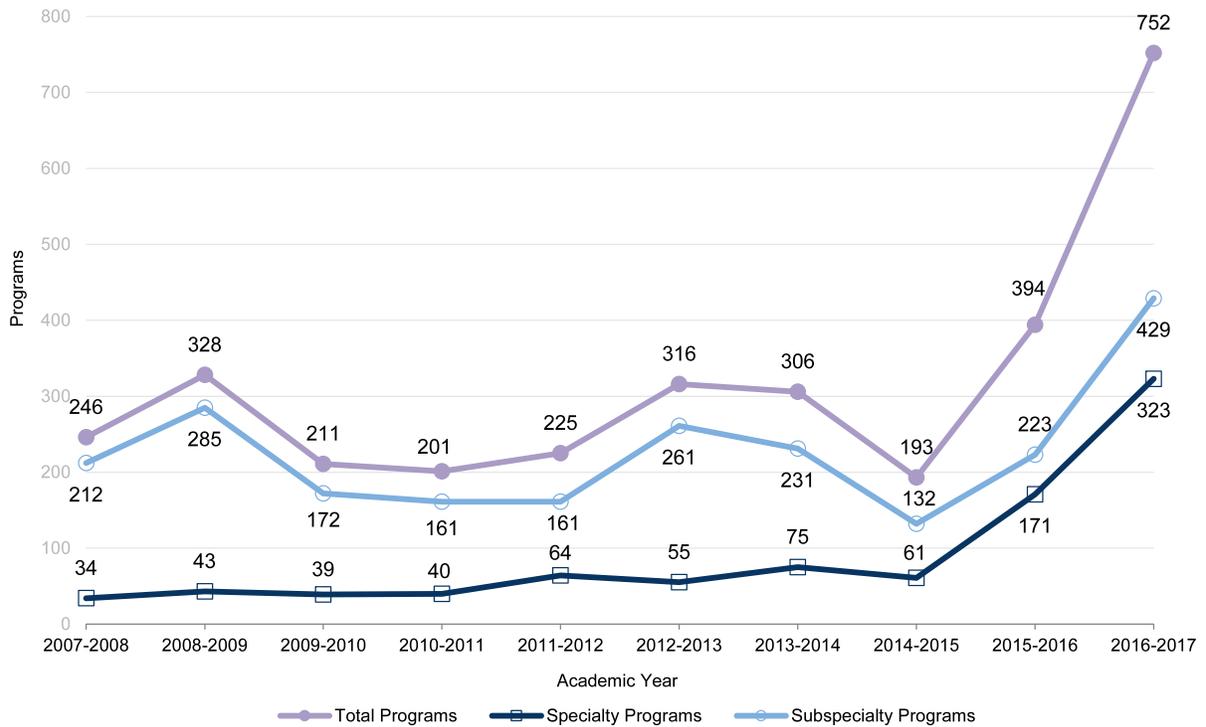


FIGURE A.8

Number of Newly Accredited Programs by Academic Year, 2007-2008 to 2016-2017



<b>TABLE A.9</b>				
<b>Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Programs</b>	<b>Newly Accredited Programs</b>	<b>Percentage of Specialty</b>	<b>Percent of All Newly Accredited Programs</b>
OVERALL	10,672	752	7.0%	100.0%
TOTAL PIPELINE	4,383	298	6.8%	39.6%
Allergy and immunology	79	3	3.8%	0.4%
Anesthesiology	147	12	8.2%	1.6%
- Adult cardiothoracic anesthesiology	66	4	6.1%	0.5%
- Clinical informatics (Anesthesiology) *	1	0	0.0%	0.0%
- Critical care medicine	57	3	5.3%	0.4%
- Regional anesthesiology and acute pain medicine *	9	9	100.0%	1.2%
- Obstetric anesthesiology *	32	4	12.5%	0.5%
- Pain medicine (multidisciplinary)	101	1	1.0%	0.1%
- Pediatric anesthesiology	58	2	3.4%	0.3%
Colon and rectal surgery	58	1	1.7%	0.1%
Dermatology	128	9	7.0%	1.2%
- Dermatopathology (multidisciplinary)	53	0	0.0%	0.0%
- Micrographic surgery and dermatologic oncology	75	7	9.3%	0.9%
Emergency medicine	212	32	15.1%	4.3%
- Clinical informatics (Emergency medicine) *	4	1	25.0%	0.1%
- Emergency medical services *	55	5	9.1%	0.7%
- Medical toxicology	27	1	3.7%	0.1%
- Pediatric emergency medicine	26	4	15.4%	0.5%
- Sports medicine	7	0	0.0%	0.0%
- Undersea and hyperbaric medicine	7	0	0.0%	0.0%
Family medicine	540	48	8.9%	6.4%
- Clinical informatics (Family medicine) *	2	1	50.0%	0.1%
- Geriatric medicine	44	3	6.8%	0.4%
- Hospice and palliative medicine (multidisciplinary)	130	16	12.3%	2.1%
- Sports medicine	132	8	6.1%	1.1%
Internal medicine	469	49	10.4%	6.5%
- Adult congenital heart disease *	10	3	30.0%	0.4%
- Advanced heart failure and transplant cardiology *	71	3	4.2%	0.4%
- Cardiovascular disease	210	17	8.1%	2.3%
- Clinical cardiac electrophysiology	105	3	2.9%	0.4%
- Clinical informatics (Internal medicine) *	12	4	33.3%	0.5%
- Critical care medicine	34	1	2.9%	0.1%
- Endocrinology, diabetes, and metabolism	141	5	3.5%	0.7%
- Gastroenterology	175	7	4.0%	0.9%
- Geriatric medicine	106	3	2.8%	0.4%
- Hematology	2	0	0.0%	0.0%
- Hematology and medical oncology	146	3	2.1%	0.4%
- Infectious disease	146	0	0.0%	0.0%
- Interventional cardiology	150	5	3.3%	0.7%
- Nephrology	149	2	1.3%	0.3%
- Medical oncology	6	0	0.0%	0.0%
- Pulmonary disease	20	3	15.0%	0.4%
- Pulmonary disease and critical care medicine	151	4	2.6%	0.5%
- Rheumatology	114	1	0.9%	0.1%
- Sleep medicine (multidisciplinary)	84	1	1.2%	0.1%
- Transplant hepatology	51	4	7.8%	0.5%
Medical genetics and genomics	46	2	4.3%	0.3%
- Medical biochemical genetics	16	2	12.5%	0.3%
- Molecular genetic pathology (multidisciplinary)	39	0	0.0%	0.0%
Neurological surgery	110	2	1.8%	0.3%
- Endovascular surgical neuroradiology	2	0	0.0%	0.0%

TABLE A.9 Continued

<b>Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Programs</b>	<b>Newly Accredited Programs</b>	<b>Percentage of Specialty</b>	<b>Percent of All Newly Accredited Programs</b>
Neurology	144	5	3.5%	0.7%
- Brain injury medicine *	1	1	100.0%	0.1%
- Clinical neurophysiology	94	1	1.1%	0.1%
- Epilepsy *	61	22	36.1%	2.9%
- Endovascular surgical neuroradiology	1	0	0.0%	0.0%
- Neurodevelopmental disabilities	8	0	0.0%	0.0%
- Neuromuscular medicine	46	2	4.3%	0.3%
- Vascular neurology	93	7	7.5%	0.9%
Child neurology	74	1	1.4%	0.1%
Nuclear medicine	42	0	0.0%	0.0%
Obstetrics and gynecology	269	19	7.1%	2.5%
- Female pelvic medicine and reconstructive surgery *	50	2	4.0%	0.3%
- Gynecologic oncology *	48	48	100.0%	6.4%
- Maternal-fetal medicine *	73	73	100.0%	9.7%
- Reproductive endocrinology and infertility *	41	41	100.0%	5.5%
Ophthalmology	116	1	0.9%	0.1%
- Ophthalmic plastic and reconstructive surgery	5	0	0.0%	0.0%
Orthopaedic surgery	168	5	3.0%	0.7%
- Adult reconstructive orthopaedics	23	1	4.3%	0.1%
- Foot and ankle orthopaedics	6	0	0.0%	0.0%
- Hand surgery	68	1	1.5%	0.1%
- Musculoskeletal oncology	11	0	0.0%	0.0%
- Orthopaedic sports medicine	97	3	3.1%	0.4%
- Orthopaedic surgery of the spine	16	0	0.0%	0.0%
- Orthopaedic trauma	9	0	0.0%	0.0%
- Pediatric orthopaedics	25	0	0.0%	0.0%
Osteopathic neuromusculoskeletal medicine *	4	3	75.0%	0.4%
Otolaryngology	109	3	2.8%	0.4%
- Neurotology	20	0	0.0%	0.0%
- Pediatric otolaryngology	22	0	0.0%	0.0%
Pathology-anatomic and clinical	142	1	0.7%	0.1%
- Blood banking/transfusion medicine	49	2	4.1%	0.3%
- Clinical informatics (Pathology) *	5	3	60.0%	0.4%
- Chemical pathology	4	1	25.0%	0.1%
- Cytopathology	92	1	1.1%	0.1%
- Forensic pathology	40	2	5.0%	0.3%
- Hematology	86	2	2.3%	0.3%
- Medical microbiology	15	1	6.7%	0.1%
- Neuropathology	35	2	5.7%	0.3%
- Pediatric pathology	26	0	0.0%	0.0%
- Selective pathology	85	8	9.4%	1.1%
Pediatrics	207	4	1.9%	0.5%
- Adolescent medicine	29	1	3.4%	0.1%
- Child abuse pediatrics	30	2	6.7%	0.3%
- Clinical informatics (Pediatrics) *	5	1	20.0%	0.1%
- Developmental-behavioral pediatrics	39	1	2.6%	0.1%
- Neonatal-perinatal medicine	99	1	1.0%	0.1%
- Pediatric cardiology	59	0	0.0%	0.0%
- Pediatric critical care medicine	67	0	0.0%	0.0%
- Pediatric emergency medicine	52	0	0.0%	0.0%
- Pediatric endocrinology	71	2	2.8%	0.3%
- Pediatric gastroenterology	63	4	6.3%	0.5%
- Pediatric hematology/oncology	73	1	1.4%	0.1%

<b>TABLE A.9 Continued</b>				
<b>Number of Newly Accredited Programs during the Academic Year by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Programs</b>	<b>Newly Accredited Programs</b>	<b>Percentage of Specialty</b>	<b>Percent of All Newly Accredited Programs</b>
- Pediatric infectious diseases	64	1	1.6%	0.1%
- Pediatric nephrology	44	0	0.0%	0.0%
- Pediatric pulmonology	54	1	1.9%	0.1%
- Pediatric rheumatology	36	0	0.0%	0.0%
- Pediatric sports medicine	18	1	5.6%	0.1%
- Pediatric transplant hepatology	13	4	30.8%	0.5%
Physical medicine and rehabilitation	86	3	3.5%	0.4%
- Brain injury medicine *	13	5	38.5%	0.7%
- Neuromuscular medicine *	1	0	0.0%	0.0%
- Spinal cord injury medicine	22	2	9.1%	0.3%
- Pediatric rehabilitation	20	1	5.0%	0.1%
- Sports medicine	19	2	10.5%	0.3%
Plastic surgery	68	0	0.0%	0.0%
Plastic surgery - integrated	76	7	9.2%	0.9%
- Craniofacial surgery	9	0	0.0%	0.0%
- Hand surgery	16	0	0.0%	0.0%
Preventive medicine	76	2	2.6%	0.3%
- Medical toxicology	1	0	0.0%	0.0%
- Undersea and hyperbaric medicine	1	0	0.0%	0.0%
Psychiatry	226	19	8.4%	2.5%
- Addiction psychiatry	47	2	4.3%	0.3%
- Child and adolescent psychiatry	134	10	7.5%	1.3%
- Forensic psychiatry	46	3	6.5%	0.4%
- Geriatric psychiatry	59	3	5.1%	0.4%
- Psychosomatic medicine	59	2	3.4%	0.3%
Radiation oncology	92	1	1.1%	0.1%
Radiology-diagnostic	194	6	3.1%	0.8%
- Abdominal radiology	12	0	0.0%	0.0%
- Endovascular surgical neuroradiology	4	1	25.0%	0.1%
- Musculoskeletal radiology	16	1	6.3%	0.1%
- Neuroradiology	85	1	1.2%	0.1%
- Nuclear radiology	18	0	0.0%	0.0%
- Pediatric radiology	46	0	0.0%	0.0%
- Vascular and interventional radiology	93	1	1.1%	0.1%
Interventional radiology - integrated *	65	41	63.1%	5.5%
Surgery	278	17	6.1%	2.3%
- Complex general surgical oncology *	24	2	8.3%	0.3%
- Hand surgery	1	0	0.0%	0.0%
- Pediatric surgery	49	2	4.1%	0.3%
- Surgical critical care	117	4	3.4%	0.5%
- Vascular surgery	107	1	0.9%	0.1%
Vascular surgery - integrated	53	2	3.8%	0.3%
Thoracic surgery	69	3	4.3%	0.4%
- Congenital cardiac surgery	13	1	7.7%	0.1%
Thoracic surgery - integrated	27	0	0.0%	0.0%
Urology	136	4	2.9%	0.5%
- Female pelvic medicine and reconstructive surgery *	11	1	9.1%	0.1%
- Pediatric urology	28	0	0.0%	0.0%
Transitional year	115	18	15.7%	2.4%
Internal medicine/Pediatrics	79	0	0.0%	0.0%

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	10,672	11	0.1%	31	0.3%	2	0.0%
TOTAL PIPELINE	4,383	3	0.1%	12	0.3%	2	0.0%
Allergy and immunology	79	0	0.0%	0	0.0%	0	0.0%
Anesthesiology	147	0	0.0%	0	0.0%	0	0.0%
- Adult cardiothoracic anesthesiology	66	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Anesthesiology)	1	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	57	0	0.0%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	9	0	0.0%	0	0.0%	0	0.0%
- Obstetric anesthesiology	32	0	0.0%	0	0.0%	0	0.0%
- Pain medicine (multidisciplinary)	101	0	0.0%	0	0.0%	0	0.0%
- Pediatric anesthesiology	58	0	0.0%	0	0.0%	0	0.0%
Colon and rectal surgery	58	0	0.0%	0	0.0%	0	0.0%
Dermatology	128	0	0.0%	2	1.6%	0	0.0%
- Dermatopathology (multidisciplinary)	53	0	0.0%	0	0.0%	0	0.0%
- Micrographic surgery and dermatologic oncology	75	0	0.0%	0	0.0%	0	0.0%
Emergency medicine	212	0	0.0%	2	0.9%	0	0.0%
- Clinical informatics (Emergency medicine)	4	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	55	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	7	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	540	0	0.0%	2	0.4%	0	0.0%
- Clinical informatics (Family medicine)	2	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	44	0	0.0%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	130	0	0.0%	1	0.8%	0	0.0%
- Sports medicine	132	1	0.8%	0	0.0%	0	0.0%
Internal medicine	469	0	0.0%	0	0.0%	0	0.0%
- Adult congenital heart disease	10	0	0.0%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	71	0	0.0%	0	0.0%	0	0.0%
- Cardiovascular disease	210	0	0.0%	0	0.0%	0	0.0%
- Clinical cardiac electrophysiology	105	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Internal medicine)	12	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	34	0	0.0%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	141	0	0.0%	0	0.0%	0	0.0%
- Gastroenterology	175	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	106	0	0.0%	1	0.9%	0	0.0%
- Hematology	2	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	146	1	0.7%	0	0.0%	0	0.0%
- Infectious disease	146	0	0.0%	0	0.0%	0	0.0%
- Interventional cardiology	150	0	0.0%	0	0.0%	0	0.0%
- Nephrology	149	0	0.0%	0	0.0%	0	0.0%
- Medical oncology	6	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease	20	0	0.0%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	151	0	0.0%	0	0.0%	0	0.0%
- Rheumatology	114	0	0.0%	0	0.0%	0	0.0%
- Sleep medicine (multidisciplinary)	84	0	0.0%	0	0.0%	0	0.0%
- Transplant hepatology	51	0	0.0%	1	2.0%	0	0.0%
Medical genetics and genomics	46	0	0.0%	1	2.2%	0	0.0%
- Medical biochemical genetics	16	0	0.0%	0	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	39	0	0.0%	0	0.0%	0	0.0%
Neurological surgery	110	0	0.0%	0	0.0%	1	0.9%
- 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	144	0	0.0%	0	0.0%	0	0.0%
- Brain injury medicine	1	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	94	2	2.1%	1	1.1%	0	0.0%
- Epilepsy	61	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	8	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	46	0	0.0%	0	0.0%	0	0.0%
- Vascular neurology	93	0	0.0%	1	1.1%	0	0.0%
Child neurology	74	0	0.0%	0	0.0%	0	0.0%
Nuclear medicine	42	0	0.0%	0	0.0%	0	0.0%
Obstetrics and gynecology	269	0	0.0%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	50	0	0.0%	0	0.0%	0	0.0%
- Gynecologic oncology	48	0	0.0%	0	0.0%	0	0.0%
- Maternal-fetal medicine	73	0	0.0%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	41	0	0.0%	0	0.0%	0	0.0%
Ophthalmology	116	1	0.9%	0	0.0%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	5	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	168	0	0.0%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	23	1	4.3%	0	0.0%	0	0.0%
- Foot and ankle orthopaedics	6	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	68	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal oncology	11	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	97	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic surgery of the spine	16	1	6.3%	0	0.0%	0	0.0%
- Orthopaedic trauma	9	0	0.0%	0	0.0%	0	0.0%
- Pediatric orthopaedics	25	0	0.0%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	4	0	0.0%	0	0.0%	0	0.0%
Otolaryngology	109	0	0.0%	0	0.0%	0	0.0%
- Neurotology	20	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	22	0	0.0%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	142	1	0.7%	0	0.0%	0	0.0%
- Blood banking/transfusion medicine	49	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Pathology)	5	0	0.0%	0	0.0%	0	0.0%
- Chemical pathology	4	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	92	0	0.0%	0	0.0%	0	0.0%
- Forensic pathology	40	0	0.0%	0	0.0%	0	0.0%
- Hematology	86	0	0.0%	0	0.0%	0	0.0%
- Medical microbiology	15	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	35	0	0.0%	1	2.9%	0	0.0%
- Pediatric pathology	26	0	0.0%	0	0.0%	0	0.0%
- Selective pathology	85	0	0.0%	1	1.2%	0	0.0%
Pediatrics	207	1	0.5%	1	0.5%	0	0.0%
- Adolescent medicine	29	0	0.0%	0	0.0%	0	0.0%
- Child abuse pediatrics	30	0	0.0%	0	0.0%	0	0.0%
- Clinical informatics (Pediatrics)	5	0	0.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	39	0	0.0%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	99	0	0.0%	0	0.0%	0	0.0%
- Pediatric cardiology	59	0	0.0%	0	0.0%	0	0.0%
- Pediatric critical care medicine	67	0	0.0%	1	1.5%	0	0.0%
- Pediatric emergency medicine	52	0	0.0%	0	0.0%	0	0.0%
- Pediatric endocrinology	71	0	0.0%	0	0.0%	0	0.0%
- Pediatric gastroenterology	63	0	0.0%	0	0.0%	0	0.0%
- Pediatric hematology/oncology	73	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	64	0	0.0%	0	0.0%	0	0.0%
- Pediatric nephrology	44	1	2.3%	0	0.0%	0	0.0%
- Pediatric pulmonology	54	0	0.0%	1	1.9%	0	0.0%
- Pediatric rheumatology	36	0	0.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	18	0	0.0%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	13	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	86	0	0.0%	0	0.0%	0	0.0%
- Brain injury medicine	13	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	22	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	68	0	0.0%	1	1.5%	1	1.5%
Plastic surgery - integrated	76	0	0.0%	0	0.0%	0	0.0%
- Craniofacial surgery	9	0	0.0%	1	11.1%	0	0.0%
- Hand surgery	16	0	0.0%	0	0.0%	0	0.0%
Preventive medicine	76	0	0.0%	0	0.0%	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	226	0	0.0%	0	0.0%	0	0.0%
- Addiction psychiatry	47	0	0.0%	0	0.0%	0	0.0%
- Child and adolescent psychiatry	134	1	0.7%	0	0.0%	0	0.0%
- Forensic psychiatry	46	0	0.0%	0	0.0%	0	0.0%
- Geriatric psychiatry	59	0	0.0%	0	0.0%	0	0.0%
- Psychosomatic medicine	59	0	0.0%	1	1.7%	0	0.0%
Radiation oncology	92	0	0.0%	0	0.0%	0	0.0%
Radiology-diagnostic	194	0	0.0%	1	0.5%	0	0.0%
- Abdominal radiology	12	0	0.0%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	4	0	0.0%	1	25.0%	0	0.0%
- Musculoskeletal radiology	16	0	0.0%	0	0.0%	0	0.0%
- Neuroradiology	85	0	0.0%	0	0.0%	0	0.0%
- Nuclear radiology	18	0	0.0%	0	0.0%	0	0.0%
- Pediatric radiology	46	0	0.0%	1	2.2%	0	0.0%
- Vascular and interventional radiology	93	0	0.0%	0	0.0%	0	0.0%
Interventional radiology - integrated	65	0	0.0%	0	0.0%	0	0.0%
Surgery	278	0	0.0%	1	0.4%	0	0.0%
- Complex general surgical oncology	24	0	0.0%	0	0.0%	0	0.0%
- Hand surgery	1	0	0.0%	0	0.0%	0	0.0%
- Pediatric surgery	49	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	117	0	0.0%	0	0.0%	0	0.0%
- Vascular surgery	107	0	0.0%	2	1.9%	0	0.0%
Vascular surgery - integrated	53	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery	69	0	0.0%	0	0.0%	0	0.0%
- Congenital cardiac surgery	13	0	0.0%	1	7.7%	0	0.0%
Thoracic surgery - integrated	27	0	0.0%	1	3.7%	0	0.0%
Urology	136	0	0.0%	0	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	11	0	0.0%	0	0.0%	0	0.0%
- Pediatric urology	28	0	0.0%	1	3.6%	0	0.0%
Transitional year	115	0	0.0%	2	1.7%	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=11).

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	79		79					
Anesthesiology	1/0	147			25	122			
- Adult cardiothoracic anesthesiology	4	66	66						
- Clinical informatics (Anesthesiology)	4	1		1					
- Critical care medicine	4	57	57						
- Regional anesthesiology and acute pain medicine	4	9	9						
- Obstetric anesthesiology	3/4	32	32						
- Pain medicine (multidisciplinary)	3/4	101	101						
- Pediatric anesthesiology	4	58	58						
Colon and rectal surgery	5	58	58						
Dermatology	1/0	128			123	5			
- Dermatopathology (multidisciplinary)	4	53	53						
- Micrographic surgery and dermatologic oncology	4	75	75						
Emergency medicine	0	212			157	55			
- Clinical informatics (Emergency medicine)	3	4		4					
- Emergency medical services	3	55	55						
- Medical toxicology	3	27		27					
- Pediatric emergency medicine	3	26			26				
- Sports medicine	3	7	7						
- Undersea and hyperbaric medicine	3	7	7						
Family medicine	0	540			529	11			
- Clinical informatics (Family medicine)	3	2		2					
- Geriatric medicine	3	44	44						
- Hospice and palliative medicine (multidisciplinary)	3	130	130						
- Sports medicine	3	132	132						
Internal medicine	0	469			469				
- Adult congenital heart disease	3	10		10					
- Advanced heart failure and transplant cardiology	6	71	71						
- Cardiovascular disease	3	210			210				
- Clinical cardiac electrophysiology	6	105	105						
- Clinical informatics (Internal medicine)	3	12		12					
- Critical care medicine	3	34		34					
- Endocrinology, diabetes, and metabolism	3	141		141					
- Gastroenterology	3	175			175				
- Geriatric medicine	3	106	106						
- Hematology	3	2		2					
- Hematology and medical oncology	3	146			146				
- Infectious disease	3	146		146					
- Interventional cardiology	6	150	150						
- Nephrology	3	149		149					
- Medical oncology	3	6		6					
- Pulmonary disease	3	20		20					
- Pulmonary disease and critical care medicine	3	151			151				
- Rheumatology	3	114		114					
- Sleep medicine (multidisciplinary)	3/4/5	84	84						
- Transplant hepatology	6	51	51						
Medical genetics and genomics	2/0	46		44		2			
- Medical biochemical genetics	4	16	16						
- Molecular genetic pathology (multidisciplinary)	4	39	39						
Neurological surgery	0	110							110
- 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	144			55	89			
- Brain injury medicine	3/4	1	1						
- Clinical neurophysiology	4	94	94						
- Epilepsy	3	61	61						
- Endovascular surgical neuroradiology	5	1	1						
- Neurodevelopmental disabilities	2	8				8			
- Neuromuscular medicine	4	46	46						
- Vascular neurology	4	93	93						
Child neurology	2	74			74				
Nuclear medicine	1	42			42				
Obstetrics and gynecology	0	269				269			
- Female pelvic medicine and reconstructive surgery	4	50			50				
- Gynecologic oncology	4	48			48				
- Maternal-fetal medicine	4	73			73				
- Reproductive endocrinology and infertility	4	41			41				
Ophthalmology	1	116			116				
- Ophthalmic plastic and reconstructive surgery	4	5		5					
Orthopaedic surgery	0	168					168		
- Adult reconstructive orthopaedics	5	23	23						
- Foot and ankle orthopaedics	5	6	6						
- Hand surgery	5	68	68						
- Musculoskeletal oncology	5	11	11						
- Orthopaedic sports medicine	5	97	97						
- Orthopaedic surgery of the spine	5	16	16						
- Orthopaedic trauma	5	9	9						
- Pediatric orthopaedics	5	25	25						
Osteopathic neuromusculoskeletal medicine	1	4		4					
Otolaryngology	0	109					109		
- Neurotology	5	20		20					
- Pediatric otolaryngology	5	22	22						
Pathology-anatomic and clinical	0	142			1	141			
- Blood banking/transfusion medicine	2	49	49						
- Clinical informatics (Pathology)	2	5		5					
- Chemical pathology	2	4	4						
- Cytopathology	2	92	92						
- Forensic pathology	2	40	40						
- Hematology	2	86	86						
- Medical microbiology	4	15	15						
- Neuropathology	2	35		35					
- Pediatric pathology	2	26	26						
- Selective pathology	2	85	85						
Pediatrics	0	207			207				
- Adolescent medicine	3	29			29				
- Child abuse pediatrics	3	30			30				
- Clinical informatics (Pediatrics)	3	5		5					
- Developmental-behavioral pediatrics	3	39			39				
- Neonatal-perinatal medicine	3	99			99				
- Pediatric cardiology	3	59			59				
- Pediatric critical care medicine	3	67			67				
- Pediatric emergency medicine	3	52			52				
- Pediatric endocrinology	3	71			71				
- Pediatric gastroenterology	3	63			63				
- Pediatric hematology/oncology	3	73			73				

**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	64			64				
- Pediatric nephrology	3	44			44				
- Pediatric pulmonology	3	54			54				
- Pediatric rheumatology	3	36			36				
- Pediatric sports medicine	3	18	18						
- Pediatric transplant hepatology	6	13	13						
Physical medicine and rehabilitation	1/0	86			50	36			
- Brain injury medicine	3/4	13	13						
- Neuromuscular medicine	3/4	1	1						
- Spinal cord injury medicine	3/4	22	22						
- Pediatric rehabilitation	4	20		20					
- Sports medicine	3/4	19	19						
Plastic surgery	3	68			68				
Plastic surgery - integrated	0	76						76	
- Craniofacial surgery	6	9	9						
- Hand surgery	5	16	16						
Preventive medicine	1/0	76	1	74	1				
- Medical toxicology	3	1		1					
- Undersea and hyperbaric medicine	3	1	1						
Psychiatry	0	226	1			225			
- Addiction psychiatry	4	47	46	1					
- Child and adolescent psychiatry	3	134		134					
- Forensic psychiatry	4	46	46						
- Geriatric psychiatry	4	59	58	1					
- Psychosomatic medicine	4	59	59						
Radiation oncology	1	92				92			
Radiology-diagnostic	1	194				193	1		
- Abdominal radiology	5	12	12						
- Endovascular surgical neuroradiology	5	4	4						
- Musculoskeletal radiology	5	16	16						
- Neuroradiology	5	85	85						
- Nuclear radiology	5	18	18						
- Pediatric radiology	5	46	46						
- Vascular and interventional radiology	5	93	93						
Interventional radiology - integrated	1	65					65		
Surgery	0	278					278		
- Complex general surgical oncology	5	24		24					
- Hand surgery	5	1	1						
- Pediatric surgery	5	49		49					
- Surgical critical care	3	117	117						
- Vascular surgery	5	107		107					
Vascular surgery - integrated	0	53					53		
Thoracic surgery	5	69		47	22				
- Congenital cardiac surgery	7	13	13						
Thoracic surgery - integrated	0	27						27	
Urology	1/2	136				135	1		
- Female pelvic medicine and reconstructive surgery	3/4	11			11				
- Pediatric urology	5	28	28						
Transitional year	0	115	115						
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**

<b>Specialty</b>	<b>Total Programs</b>	<b>Programs with Osteopathic Recognition</b>	<b>Percent of Specialty</b>	<b>Percent of All Programs with Osteopathic Recognition</b>
OVERALL	10,672	79	0.7%	100.0%
Anesthesiology	147	1	0.7%	1.3%
Dermatology	128	1	0.8%	1.3%
Emergency medicine	212	1	0.5%	1.3%
Family medicine	540	54	10.0%	68.4%
- Geriatric medicine	44	1	2.3%	1.3%
- Sports medicine	132	1	0.8%	1.3%
Internal medicine	469	16	3.4%	20.3%
Obstetrics and gynecology	269	1	0.4%	1.3%
Pediatrics	207	1	0.5%	1.3%
Transitional year	115	1	0.9%	1.3%
Internal medicine/Pediatrics	79	1	1.3%	1.3%



# 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

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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 2016, there are approximately 3.27 total programs (1.44 specialty, 1.83 subspecialty) per 100,000 population, including Puerto Rico. The following states have the highest total number of programs:

- New York (1,225)
- California (950)
- Pennsylvania (680)
- Texas (671)

States with the lowest number of programs include Montana (4), Wyoming (3), and Alaska (2). These patterns are consistent when looking at total programs, specialty programs, or 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

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

- Family medicine (11.5%)
- Internal medicine (10.0%)
- Surgery (5.9%)
- Obstetrics and gynecology (5.7%)

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

- Internal medicine (24.6%)
- Family medicine (10.5%)
- Pediatrics (8.5%)
- 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 56 residents per program, with at least 1 program having 181 active residents during the 2016-2017 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 22.7 in the 2016-2017 academic year. The average size of subspecialty programs has remained fairly constant over the last 10 years. In the 2016-2017 academic year, there were approximately 3.8 residents per program.

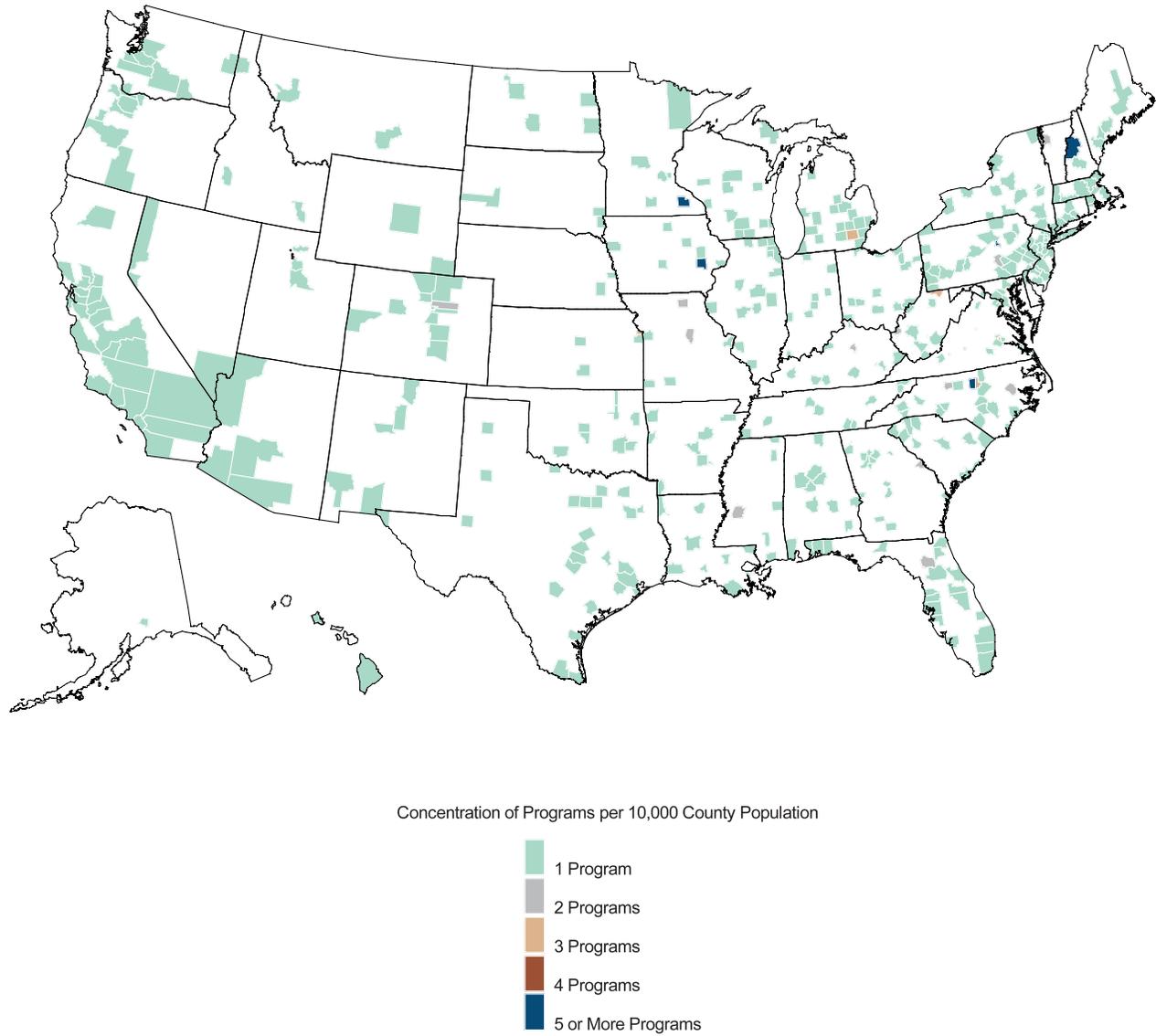
### Distributions by Specialty Group

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The distribution of programs by specialty group differs in specialty versus subspecialty programs. Of the total number of specialty programs, 43.3% of programs are in medical specialties, 32.7% are in surgical specialties, and 24% are in hospital-based specialties. Among subspecialty programs, 55.8% of programs are in medical subspecialties, 23.1% are in surgical subspecialties, and 21.1% 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. ♪

FIGURE B.1

Geographic Distribution of Programs



Sources: 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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/counties/totals/co-est2016-alldata.csv>. Published December, 2016. Accessed July 11, 2017; SAS Enterprise Guide Software, Version 7.1.

TABLE B.2

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

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Programs	Percent of All Programs	Programs per 100,000 Pop
OVERALL	--	326,538,820	10,672	100.0%	3.27
Alabama	AL	4,863,300	125	1.2%	2.57
Alaska	AK	741,894	2	0.0%	0.27
Arizona	AZ	6,931,071	153	1.4%	2.21
Arkansas	AR	2,988,248	69	0.6%	2.31
California	CA	39,250,017	950	8.9%	2.42
Colorado	CO	5,540,545	128	1.2%	2.31
Connecticut	CT	3,576,452	186	1.7%	5.20
Delaware	DE	952,065	35	0.3%	3.68
District of Columbia	DC	681,170	141	1.3%	20.70
Florida	FL	20,612,439	446	4.2%	2.16
Georgia	GA	10,310,371	207	1.9%	2.01
Hawaii	HI	1,428,557	32	0.3%	2.24
Idaho	ID	1,683,140	8	0.1%	0.48
Illinois	IL	12,801,539	482	4.5%	3.77
Indiana	IN	6,633,053	115	1.1%	1.73
Iowa	IA	3,134,693	97	0.9%	3.09
Kansas	KS	2,907,289	64	0.6%	2.20
Kentucky	KY	4,436,974	128	1.2%	2.88
Louisiana	LA	4,681,666	166	1.6%	3.55
Maine	ME	1,331,479	28	0.3%	2.10
Maryland	MD	6,016,447	257	2.4%	4.27
Massachusetts	MA	6,811,779	443	4.2%	6.50
Michigan	MI	9,928,300	490	4.6%	4.94
Minnesota	MN	5,519,952	218	2.0%	3.95
Mississippi	MS	2,988,726	66	0.6%	2.21
Missouri	MO	6,093,000	264	2.5%	4.33
Montana	MT	1,042,520	4	0.0%	0.38
Nebraska	NE	1,907,116	69	0.6%	3.62
Nevada	NV	2,940,058	33	0.3%	1.12
New Hampshire	NH	1,334,795	50	0.5%	3.75
New Jersey	NJ	8,944,469	230	2.2%	2.57
New Mexico	NM	2,081,015	60	0.6%	2.88
New York	NY	19,745,289	1,225	11.5%	6.20
North Carolina	NC	10,146,788	313	2.9%	3.08
North Dakota	ND	757,952	14	0.1%	1.85
Ohio	OH	11,614,373	559	5.2%	4.81
Oklahoma	OK	3,923,561	85	0.8%	2.17
Oregon	OR	4,093,465	90	0.8%	2.20
Pennsylvania	PA	12,784,227	680	6.4%	5.32
Puerto Rico	PR	3,411,307	74	0.7%	2.17
Rhode Island	RI	1,056,426	74	0.7%	7.00
South Carolina	SC	4,961,119	121	1.1%	2.44
South Dakota	SD	865,454	12	0.1%	1.39
Tennessee	TN	6,651,194	216	2.0%	3.25
Texas	TX	27,862,596	671	6.3%	2.41
Utah	UT	3,051,217	84	0.8%	2.75
Vermont	VT	624,594	40	0.4%	6.40
Virginia	VA	8,411,808	238	2.2%	2.83
Washington	WA	7,288,000	166	1.6%	2.28
West Virginia	WV	1,831,102	68	0.6%	3.71
Wisconsin	WI	5,778,708	193	1.8%	3.34
Wyoming	WY	585,501	3	0.0%	0.51

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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 2016	Specialty Programs	Percent of All Specialty Programs	Specialty Programs per 100,000 Pop
OVERALL	--	326,538,820	4,704	100.0%	1.44
Alabama	AL	4,863,300	53	1.1%	1.09
Alaska	AK	741,894	1	0.0%	0.13
Arizona	AZ	6,931,071	69	1.5%	1.00
Arkansas	AR	2,988,248	34	0.7%	1.14
California	CA	39,250,017	409	8.7%	1.04
Colorado	CO	5,540,545	53	1.1%	0.96
Connecticut	CT	3,576,452	72	1.5%	2.01
Delaware	DE	952,065	14	0.3%	1.47
District of Columbia	DC	681,170	55	1.2%	8.07
Florida	FL	20,612,439	211	4.5%	1.02
Georgia	GA	10,310,371	98	2.1%	0.95
Hawaii	HI	1,428,557	22	0.5%	1.54
Idaho	ID	1,683,140	6	0.1%	0.36
Illinois	IL	12,801,539	227	4.8%	1.77
Indiana	IN	6,633,053	49	1.0%	0.74
Iowa	IA	3,134,693	44	0.9%	1.40
Kansas	KS	2,907,289	35	0.7%	1.20
Kentucky	KY	4,436,974	54	1.1%	1.22
Louisiana	LA	4,681,666	89	1.9%	1.90
Maine	ME	1,331,479	17	0.4%	1.28
Maryland	MD	6,016,447	104	2.2%	1.73
Massachusetts	MA	6,811,779	159	3.4%	2.33
Michigan	MI	9,928,300	266	5.7%	2.68
Minnesota	MN	5,519,952	72	1.5%	1.30
Mississippi	MS	2,988,726	31	0.7%	1.04
Missouri	MO	6,093,000	100	2.1%	1.64
Montana	MT	1,042,520	3	0.1%	0.29
Nebraska	NE	1,907,116	32	0.7%	1.68
Nevada	NV	2,940,058	22	0.5%	0.75
New Hampshire	NH	1,334,795	21	0.4%	1.57
New Jersey	NJ	8,944,469	129	2.7%	1.44
New Mexico	NM	2,081,015	21	0.4%	1.01
New York	NY	19,745,289	521	11.1%	2.64
North Carolina	NC	10,146,788	123	2.6%	1.21
North Dakota	ND	757,952	11	0.2%	1.45
Ohio	OH	11,614,373	238	5.1%	2.05
Oklahoma	OK	3,923,561	46	1.0%	1.17
Oregon	OR	4,093,465	36	0.8%	0.88
Pennsylvania	PA	12,784,227	286	6.1%	2.24
Puerto Rico	PR	3,411,307	45	1.0%	1.32
Rhode Island	RI	1,056,426	26	0.6%	2.46
South Carolina	SC	4,961,119	62	1.3%	1.25
South Dakota	SD	865,454	8	0.2%	0.92
Tennessee	TN	6,651,194	92	2.0%	1.38
Texas	TX	27,862,596	283	6.0%	1.02
Utah	UT	3,051,217	32	0.7%	1.05
Vermont	VT	624,594	15	0.3%	2.40
Virginia	VA	8,411,808	104	2.2%	1.24
Washington	WA	7,288,000	76	1.6%	1.04
West Virginia	WV	1,831,102	43	0.9%	2.35
Wisconsin	WI	5,778,708	83	1.8%	1.44
Wyoming	WY	585,501	2	0.0%	0.34

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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 2016	Total Subspecialty Programs	Percent of All Subspecialty Programs	Subspecialty Programs per 100,000 Pop
OVERALL	--	326,538,820	5,968	100.0%	1.83
Alabama	AL	4,863,300	72	1.2%	1.48
Alaska	AK	741,894	1	0.0%	0.13
Arizona	AZ	6,931,071	84	1.4%	1.21
Arkansas	AR	2,988,248	35	0.6%	1.17
California	CA	39,250,017	541	9.1%	1.38
Colorado	CO	5,540,545	75	1.3%	1.35
Connecticut	CT	3,576,452	114	1.9%	3.19
Delaware	DE	952,065	21	0.4%	2.21
District of Columbia	DC	681,170	86	1.4%	12.63
Florida	FL	20,612,439	235	3.9%	1.14
Georgia	GA	10,310,371	109	1.8%	1.06
Hawaii	HI	1,428,557	10	0.2%	0.70
Idaho	ID	1,683,140	2	0.0%	0.12
Illinois	IL	12,801,539	255	4.3%	1.99
Indiana	IN	6,633,053	66	1.1%	1.00
Iowa	IA	3,134,693	53	0.9%	1.69
Kansas	KS	2,907,289	29	0.5%	1.00
Kentucky	KY	4,436,974	74	1.2%	1.67
Louisiana	LA	4,681,666	77	1.3%	1.64
Maine	ME	1,331,479	11	0.2%	0.83
Maryland	MD	6,016,447	153	2.6%	2.54
Massachusetts	MA	6,811,779	284	4.8%	4.17
Michigan	MI	9,928,300	224	3.8%	2.26
Minnesota	MN	5,519,952	146	2.4%	2.64
Mississippi	MS	2,988,726	35	0.6%	1.17
Missouri	MO	6,093,000	164	2.7%	2.69
Montana	MT	1,042,520	1	0.0%	0.10
Nebraska	NE	1,907,116	37	0.6%	1.94
Nevada	NV	2,940,058	11	0.2%	0.37
New Hampshire	NH	1,334,795	29	0.5%	2.17
New Jersey	NJ	8,944,469	101	1.7%	1.13
New Mexico	NM	2,081,015	39	0.7%	1.87
New York	NY	19,745,289	704	11.8%	3.57
North Carolina	NC	10,146,788	190	3.2%	1.87
North Dakota	ND	757,952	3	0.1%	0.40
Ohio	OH	11,614,373	321	5.4%	2.76
Oklahoma	OK	3,923,561	39	0.7%	0.99
Oregon	OR	4,093,465	54	0.9%	1.32
Pennsylvania	PA	12,784,227	394	6.6%	3.08
Puerto Rico	PR	3,411,307	29	0.5%	0.85
Rhode Island	RI	1,056,426	48	0.8%	4.54
South Carolina	SC	4,961,119	59	1.0%	1.19
South Dakota	SD	865,454	4	0.1%	0.46
Tennessee	TN	6,651,194	124	2.1%	1.86
Texas	TX	27,862,596	388	6.5%	1.39
Utah	UT	3,051,217	52	0.9%	1.70
Vermont	VT	624,594	25	0.4%	4.00
Virginia	VA	8,411,808	134	2.2%	1.59
Washington	WA	7,288,000	90	1.5%	1.23
West Virginia	WV	1,831,102	25	0.4%	1.37
Wisconsin	WI	5,778,708	110	1.8%	1.90
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

**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 2016	Total Pipeline Programs	Percent of All Pipeline Programs	Pipeline Programs per 100,000 Pop
OVERALL	--	326,538,820	4,383	100.0%	1.34
Alabama	AL	4,863,300	50	1.1%	1.03
Alaska	AK	741,894	1	0.0%	0.13
Arizona	AZ	6,931,071	64	1.5%	0.92
Arkansas	AR	2,988,248	33	0.8%	1.10
California	CA	39,250,017	380	8.7%	0.97
Colorado	CO	5,540,545	48	1.1%	0.87
Connecticut	CT	3,576,452	69	1.6%	1.93
Delaware	DE	952,065	12	0.3%	1.26
District of Columbia	DC	681,170	54	1.2%	7.93
Florida	FL	20,612,439	193	4.4%	0.94
Georgia	GA	10,310,371	89	2.0%	0.86
Hawaii	HI	1,428,557	20	0.5%	1.40
Idaho	ID	1,683,140	6	0.1%	0.36
Illinois	IL	12,801,539	212	4.8%	1.66
Indiana	IN	6,633,053	43	1.0%	0.65
Iowa	IA	3,134,693	40	0.9%	1.28
Kansas	KS	2,907,289	33	0.8%	1.14
Kentucky	KY	4,436,974	51	1.2%	1.15
Louisiana	LA	4,681,666	83	1.9%	1.77
Maine	ME	1,331,479	17	0.4%	1.28
Maryland	MD	6,016,447	95	2.2%	1.58
Massachusetts	MA	6,811,779	141	3.2%	2.07
Michigan	MI	9,928,300	242	5.5%	2.44
Minnesota	MN	5,519,952	66	1.5%	1.20
Mississippi	MS	2,988,726	29	0.7%	0.97
Missouri	MO	6,093,000	94	2.1%	1.54
Montana	MT	1,042,520	3	0.1%	0.29
Nebraska	NE	1,907,116	30	0.7%	1.57
Nevada	NV	2,940,058	21	0.5%	0.71
New Hampshire	NH	1,334,795	21	0.5%	1.57
New Jersey	NJ	8,944,469	126	2.9%	1.41
New Mexico	NM	2,081,015	21	0.5%	1.01
New York	NY	19,745,289	491	11.2%	2.49
North Carolina	NC	10,146,788	117	2.7%	1.15
North Dakota	ND	757,952	10	0.2%	1.32
Ohio	OH	11,614,373	217	5.0%	1.87
Oklahoma	OK	3,923,561	46	1.0%	1.17
Oregon	OR	4,093,465	34	0.8%	0.83
Pennsylvania	PA	12,784,227	266	6.1%	2.08
Puerto Rico	PR	3,411,307	40	0.9%	1.17
Rhode Island	RI	1,056,426	25	0.6%	2.37
South Carolina	SC	4,961,119	59	1.3%	1.19
South Dakota	SD	865,454	7	0.2%	0.81
Tennessee	TN	6,651,194	85	1.9%	1.28
Texas	TX	27,862,596	267	6.1%	0.96
Utah	UT	3,051,217	29	0.7%	0.95
Vermont	VT	624,594	15	0.3%	2.40
Virginia	VA	8,411,808	98	2.2%	1.17
Washington	WA	7,288,000	70	1.6%	0.96
West Virginia	WV	1,831,102	42	1.0%	2.29
Wisconsin	WI	5,778,708	76	1.7%	1.32
Wyoming	WY	585,501	2	0.0%	0.34

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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	-	147	212	46	42	142	76	92	194	65	115	1,131
Alabama	AL	1	1	1	1	3	2	1	3	1	1	15
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	2	3	0	0	1	0	2	4	1	2	15
Arkansas	AR	1	1	0	1	1	0	0	1	1	1	7
California	CA	13	17	5	7	11	8	12	16	6	8	103
Colorado	CO	1	1	1	0	2	2	1	1	1	1	11
Connecticut	CT	2	2	2	0	3	2	1	6	1	0	19
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	9	14	1	1	6	3	4	9	4	8	59
Georgia	GA	2	2	1	1	2	3	2	3	1	5	22
Hawaii	HI	0	0	0	0	1	0	0	1	0	2	4
Idaho	ID	0	0	0	0	0	0	0	0	0	0	0
Illinois	IL	7	9	0	2	6	2	4	11	4	6	51
Indiana	IN	1	1	1	1	1	0	1	1	0	3	10
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	0	12
Louisiana	LA	4	3	0	0	3	1	0	4	1	0	16
Maine	ME	1	1	0	0	0	1	0	1	1	0	5
Maryland	MD	3	2	2	3	4	6	3	3	0	3	29
Massachusetts	MA	9	5	2	1	7	3	2	10	3	6	48
Michigan	MI	6	22	2	2	5	1	4	11	3	15	71
Minnesota	MN	2	3	1	0	2	3	2	2	2	1	18
Mississippi	MS	1	1	1	0	1	0	1	1	0	0	6
Missouri	MO	5	4	1	3	4	0	1	4	1	1	24
Montana	MT	0	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	1	1	1	0	2	0	1	2	0	0	8
Nevada	NV	0	1	0	0	0	0	0	0	0	1	2
New Hampshire	NH	1	1	0	0	1	1	0	1	1	0	6
New Jersey	NJ	5	8	0	0	3	2	1	7	0	0	26
New Mexico	NM	1	1	0	0	1	1	0	1	0	0	5
New York	NY	16	27	4	6	17	8	13	24	9	7	131
North Carolina	NC	3	7	2	1	4	2	3	3	2	0	27
North Dakota	ND	0	0	0	0	0	0	0	0	0	1	1
Ohio	OH	9	12	3	1	7	4	4	8	1	9	58
Oklahoma	OK	2	3	1	1	1	0	1	3	0	0	12
Oregon	OR	1	1	1	1	1	1	1	1	1	0	9
Pennsylvania	PA	9	16	2	1	9	1	6	12	6	6	68
Puerto Rico	PR	1	2	0	1	1	0	0	1	0	4	10
Rhode Island	RI	0	2	0	0	1	0	0	1	1	0	5
South Carolina	SC	1	4	1	1	1	1	1	1	1	3	15
South Dakota	SD	0	0	0	0	1	0	0	0	0	1	2
Tennessee	TN	2	4	0	1	4	2	2	4	1	3	23
Texas	TX	8	11	3	2	9	7	6	10	3	4	63
Utah	UT	1	1	1	0	1	1	1	1	1	1	9
Vermont	VT	1	0	0	0	1	0	0	1	0	0	3
Virginia	VA	3	5	1	0	2	0	2	4	1	2	20
Washington	WA	2	2	1	1	2	3	1	4	1	3	20
West Virginia	WV	1	2	0	0	1	1	1	1	0	1	8
Wisconsin	WI	2	2	2	1	2	1	2	4	1	3	20
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	-	79	128	540	469	144	74	4	207	86	226	79	2,036
Alabama	AL	1	1	7	5	2	1	0	2	1	2	2	24
Alaska	AK	0	0	1	0	0	0	0	0	0	0	0	1
Arizona	AZ	2	3	7	7	4	1	0	2	0	3	1	30
Arkansas	AR	0	1	7	4	1	1	0	1	1	2	1	19
California	CA	10	11	55	36	12	8	0	16	5	20	4	177
Colorado	CO	3	1	14	4	2	1	0	1	1	1	1	29
Connecticut	CT	1	2	3	14	2	0	0	2	0	3	1	28
Delaware	DE	1	0	2	1	0	1	0	1	0	1	1	8
District of Columbia	DC	0	3	1	5	3	1	0	2	1	4	1	21
Florida	FL	3	8	16	31	7	2	0	11	3	10	2	93
Georgia	GA	2	2	14	13	2	2	0	5	1	4	0	45
Hawaii	HI	0	0	3	3	0	0	0	2	0	2	0	10
Idaho	ID	0	0	5	1	0	0	0	0	0	0	0	6
Illinois	IL	2	7	29	24	7	2	0	11	5	10	5	102
Indiana	IN	1	1	11	3	1	1	0	2	1	2	1	24
Iowa	IA	1	1	9	3	1	1	0	2	0	2	0	20
Kansas	KS	1	1	4	2	1	0	0	2	1	2	1	15
Kentucky	KY	0	1	7	2	2	2	0	2	2	2	2	22
Louisiana	LA	3	2	10	8	4	1	0	4	1	4	3	40
Maine	ME	0	0	4	1	0	0	0	1	0	1	1	8
Maryland	MD	3	3	4	11	3	2	0	4	3	4	2	39
Massachusetts	MA	4	4	5	16	5	4	0	5	2	11	4	60
Michigan	MI	3	6	29	32	7	2	3	9	6	9	6	112
Minnesota	MN	1	2	12	4	2	1	0	2	2	3	1	30
Mississippi	MS	1	1	3	4	1	1	0	1	0	1	1	14
Missouri	MO	3	3	7	8	4	3	0	4	2	5	2	41
Montana	MT	0	0	2	1	0	0	0	0	0	0	0	3
Nebraska	NE	0	0	5	2	1	0	0	1	0	1	1	11
Nevada	NV	0	0	5	4	1	0	0	1	0	2	0	13
New Hampshire	NH	0	1	1	1	1	0	0	1	0	1	0	6
New Jersey	NJ	1	3	16	20	4	1	0	9	2	8	2	66
New Mexico	NM	0	0	4	1	1	1	0	1	0	1	0	9
New York	NY	9	11	27	59	14	9	0	30	15	33	4	211
North Carolina	NC	3	4	14	8	3	3	0	5	3	6	3	52
North Dakota	ND	0	0	6	1	0	0	0	0	0	1	0	8
Ohio	OH	4	7	25	24	6	4	0	10	6	8	4	98
Oklahoma	OK	0	1	8	3	1	0	0	4	0	4	2	23
Oregon	OR	0	2	5	5	1	1	0	1	0	2	0	17
Pennsylvania	PA	4	8	32	29	11	3	0	8	6	11	4	116
Puerto Rico	PR	1	1	4	8	1	1	0	4	2	2	1	25
Rhode Island	RI	0	2	2	4	1	0	0	1	0	1	1	12
South Carolina	SC	0	1	10	4	2	1	0	3	0	3	2	26
South Dakota	SD	0	0	2	1	0	0	0	1	0	1	0	5
Tennessee	TN	2	2	11	7	2	2	0	4	1	4	2	37
Texas	TX	4	10	32	23	11	4	1	13	6	13	3	120
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	4	12	8	3	2	0	6	3	5	1	46
Washington	WA	1	1	20	4	2	1	0	2	1	2	0	34
West Virginia	WV	0	1	6	3	1	0	0	3	0	3	3	20
Wisconsin	WI	2	3	15	5	2	2	0	3	2	4	2	40
Wyoming	WY	0	0	2	0	0	0	0	0	0	0	0	2

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

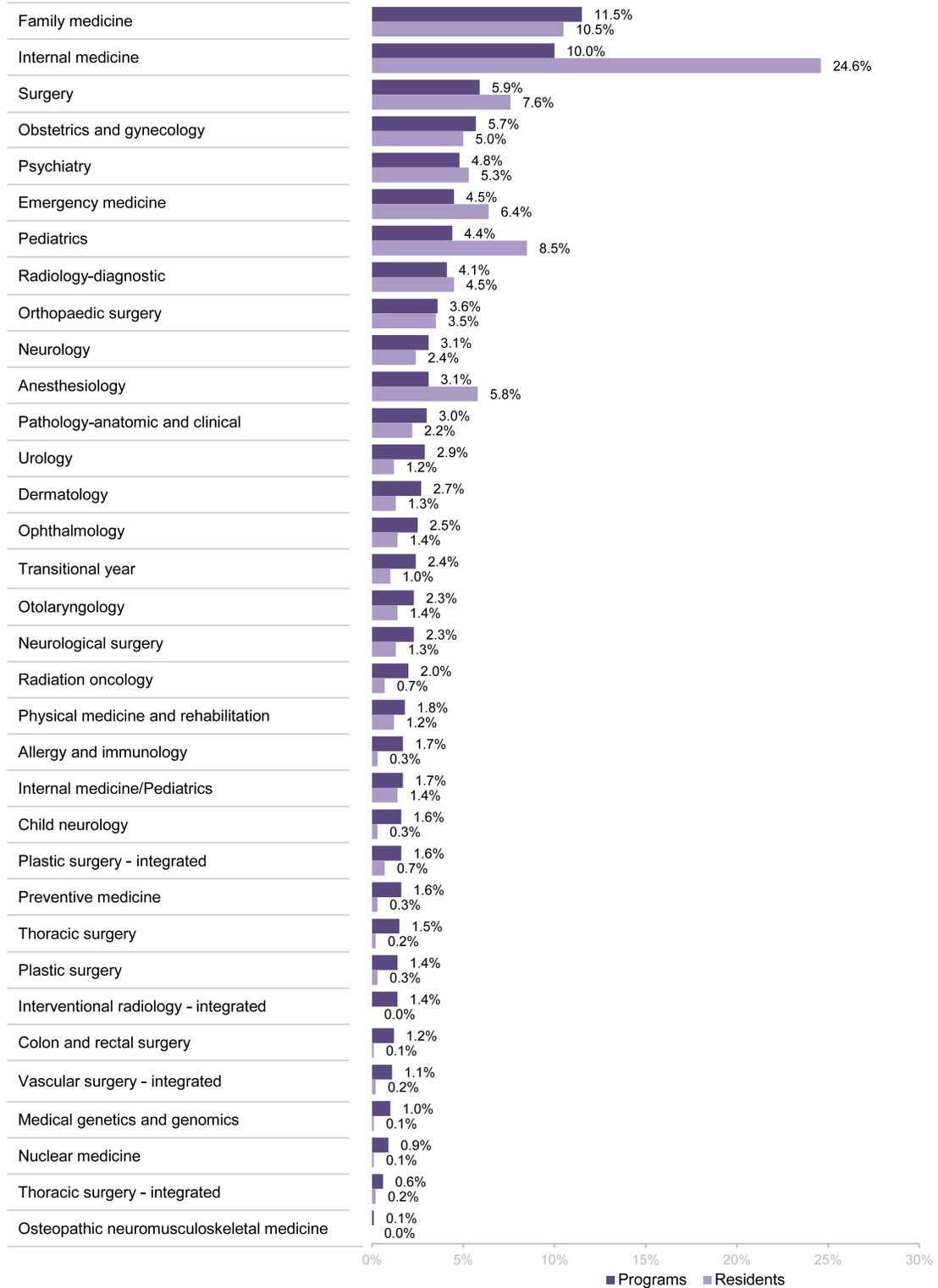
## Surgical Specialty Programs by Specialty and State

State Name	State Abbreviation	CRS	NS	OBG	OPH	ORS	OTO	PS	PSI	GS	VSI	TS	TSI	U	Total
OVERALL	-	58	110	269	116	168	109	68	76	278	53	69	27	136	1,537
Alabama	AL	0	1	2	1	2	1	1	0	3	1	1	0	1	14
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	0	2	3	2	3	2	1	1	6	1	1	0	2	24
Arkansas	AR	0	1	1	1	1	1	0	0	1	1	0	0	1	8
California	CA	3	9	22	10	14	10	5	8	22	4	8	3	11	129
Colorado	CO	0	1	2	1	1	1	1	1	3	0	1	0	1	13
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	4	1	0	0	2	22
Florida	FL	5	4	9	3	6	3	3	3	14	2	2	0	5	59
Georgia	GA	1	2	6	2	4	2	2	1	7	0	1	1	2	31
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	6	6	4	4	11	2	4	1	7	74
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	2	1	2	1	0	1	2	0	1	0	1	12
Kentucky	KY	1	2	2	2	2	2	1	1	2	0	2	1	2	20
Louisiana	LA	2	3	5	3	4	3	2	1	4	1	1	0	4	33
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	4	6	3	4	3	2	2	10	3	4	1	5	51
Michigan	MI	4	4	23	5	11	4	3	2	15	2	2	1	7	83
Minnesota	MN	2	2	2	2	2	2	2	2	3	1	2	0	2	24
Mississippi	MS	0	1	1	1	1	1	1	1	2	0	1	0	1	11
Missouri	MO	1	3	5	4	4	3	2	3	4	2	1	0	3	35
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	2	0	0	0	0	7
New Hampshire	NH	0	1	1	0	1	1	1	1	1	1	0	0	1	9
New Jersey	NJ	1	1	11	1	5	1	2	1	8	2	1	0	3	37
New Mexico	NM	0	1	1	0	1	1	0	1	1	0	0	0	1	7
New York	NY	7	11	35	17	19	11	6	8	31	8	7	4	15	179
North Carolina	NC	0	4	8	3	4	3	2	3	7	1	3	2	4	44
North Dakota	ND	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Ohio	OH	5	4	14	5	10	4	5	5	15	4	3	2	6	82
Oklahoma	OK	0	1	3	1	1	1	1	0	2	0	0	0	1	11
Oregon	OR	1	1	1	1	1	1	0	1	1	0	1	0	1	10
Pennsylvania	PA	5	7	17	7	11	6	4	4	22	4	5	2	8	102
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	1	1	1	0	0	0	1	9
South Carolina	SC	0	1	3	2	3	1	1	2	5	1	0	1	1	21
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	1	6	0	1	0	4	32
Texas	TX	3	7	18	8	13	8	4	4	16	4	5	1	9	100
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	2	3	6	0	2	1	3	38
Washington	WA	1	1	2	2	2	2	1	1	4	1	1	1	3	22
West Virginia	WV	0	1	3	1	2	1	0	1	3	1	0	0	2	15
Wisconsin	WI	1	2	3	2	2	2	0	2	4	1	1	1	2	23
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; 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

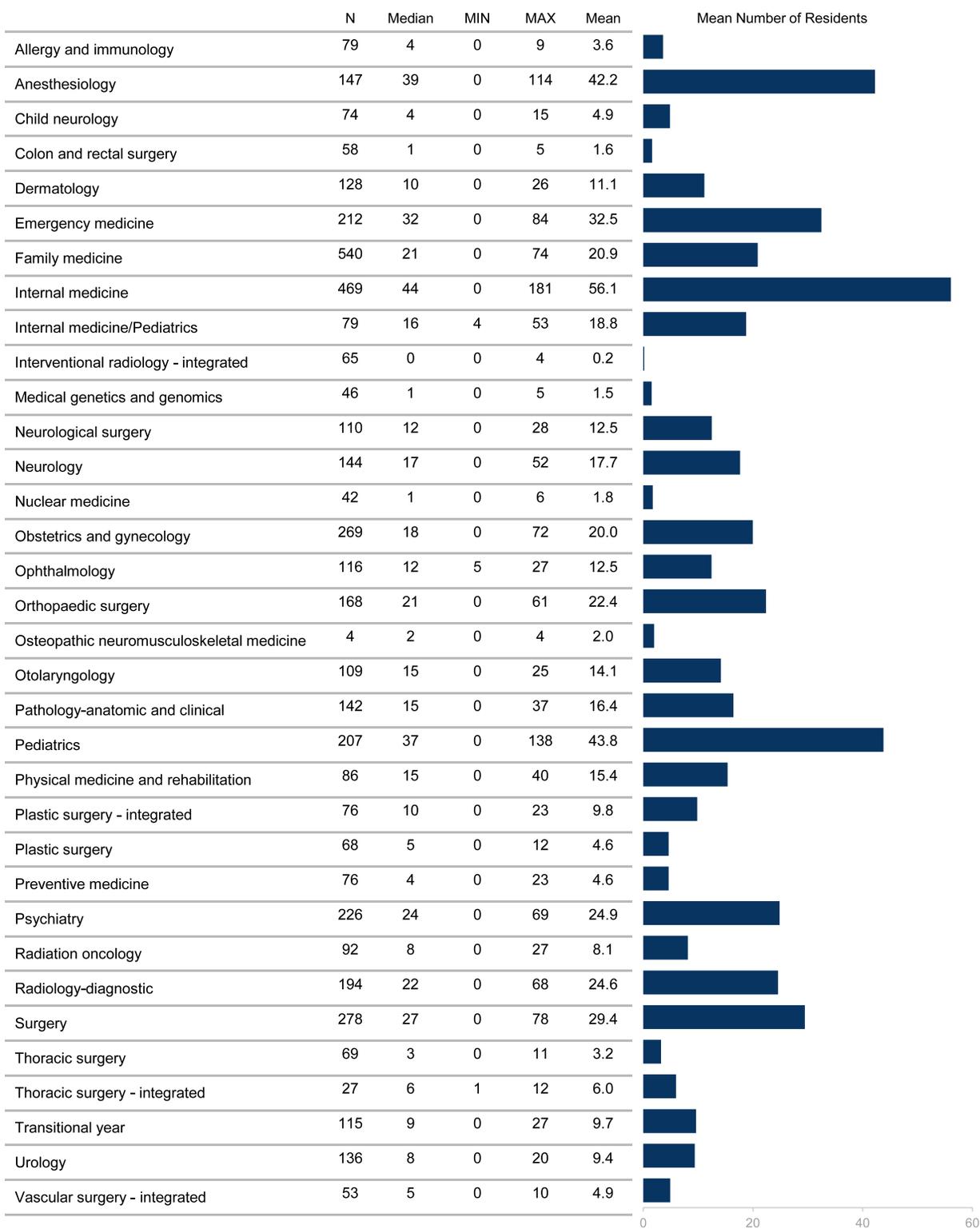
Percentage of Programs and Residents in Each Specialty



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 = 4,704. Total number of residents in specialties = 107,013.

FIGURE B.10

Mean Number of Residents per Program by Specialty



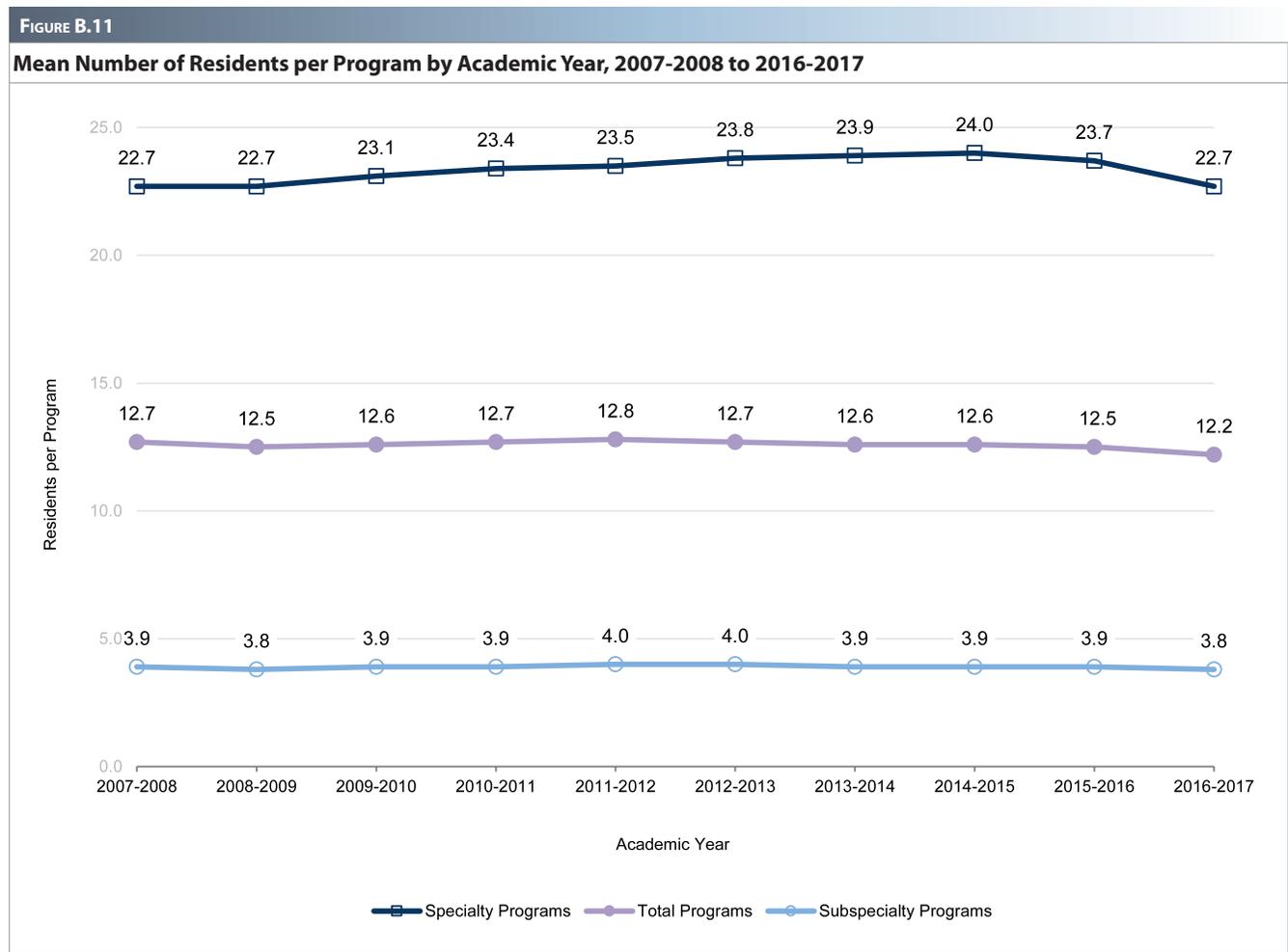
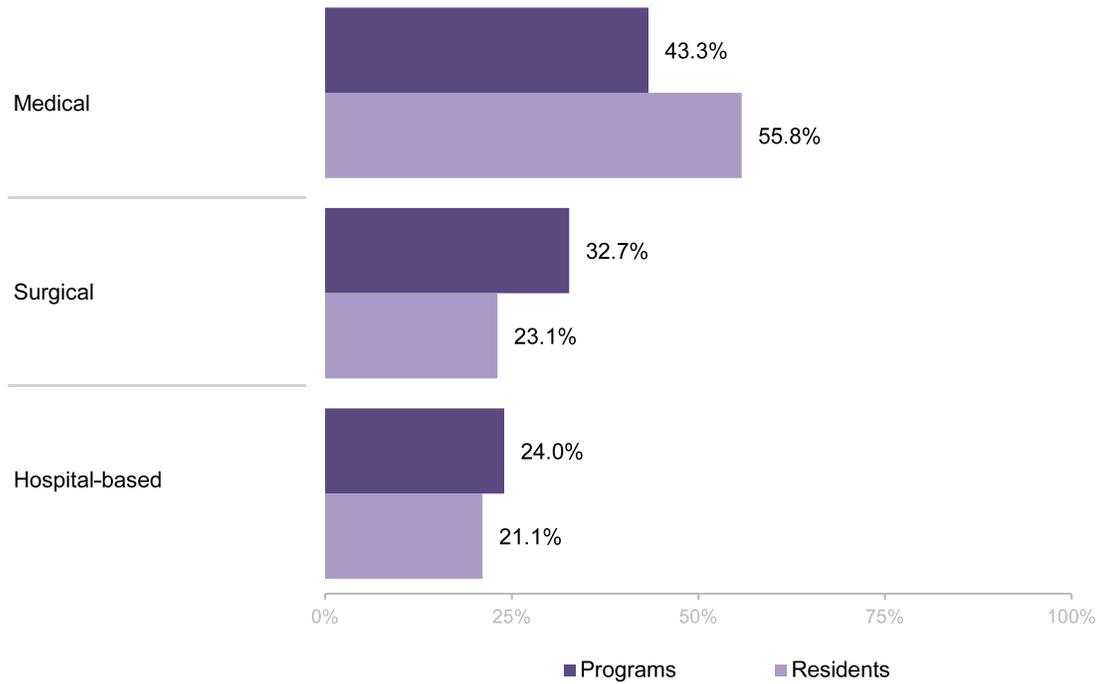


FIGURE B.12

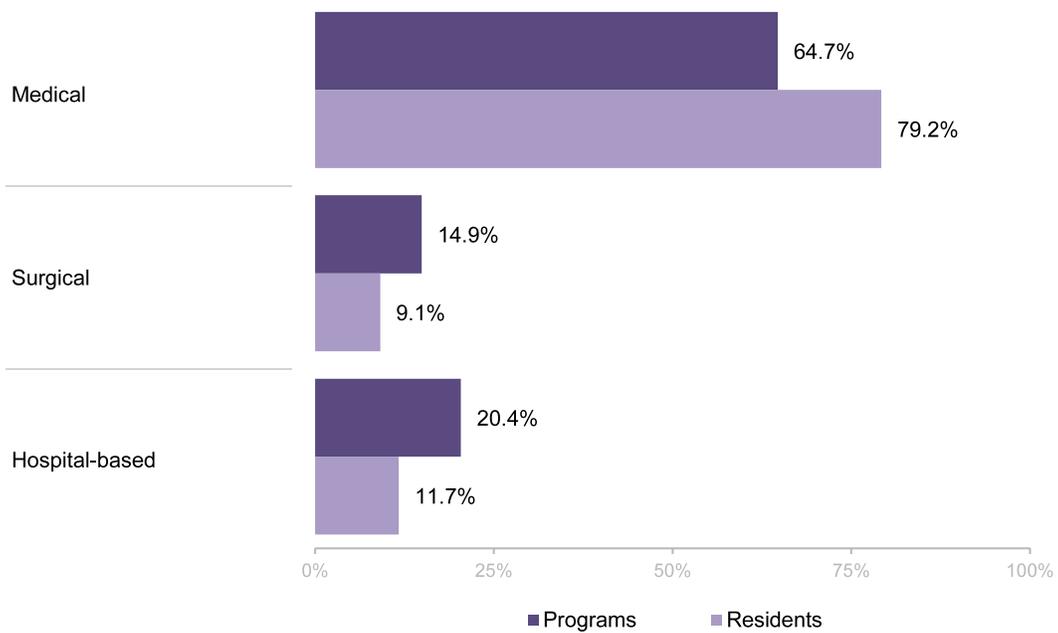
**Percent of Programs and Residents in Specialties by Specialty Group**



Notes: Total number of specialty programs = 4,704. Total number of residents in specialties = 107,013.

FIGURE B.13

**Percent of Programs and Residents in Subspecialties by Specialty Group**



Notes: Total number of subspecialty programs = 5,968. Total number of residents in subspecialties = 22,707.



# 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 2007-2008 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 (129,720), 107,013 (82.5%) are in specialty programs and 22,707 (17.5%) are in subspecialty programs. Only 0.2% (270) of the total number of active residents are part-time. In terms of trends, there has been a 16.9% increase in total active residents since 2007-2008, with growth in the number of specialty residents at 15.5% and growth in the number of subspecialty residents at 23.4% over the last 10 years. Among residents in specialty programs, 55.8% (59,690) are in medical specialties, 21.1% (22,565) are in hospital-based specialties, and 23.1% (24,758) are in surgical specialties. The specialties with the highest percentage of total active residents are:

- Internal medicine (20.3%)
- Family medicine (8.7%)
- Pediatrics (7.0%)
- Surgery (6.3%)

## Geographic Distribution

Based on the most recent US census estimate for 2016, there are approximately 39.73 active residents (32.77 specialty, 6.95 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 (17,115)
- California (11,627)
- Texas (8,601)
- Pennsylvania (8,330)

## Active Residents by Medical School Type

Of the 107,013 total active residents in specialty programs, 64.9% (69,432) are US allopathic medical school graduates, 22.3% (23,889) are international medical school graduates, and 12.7% (13,629) are osteopathic medical school graduates. There are also 62 Canadian medical school graduates and 1 resident for whom medical school type was unknown. The distribution by medical school type is slightly different in subspecialty programs (22,707 active residents), with 57.6% of active residents being graduates of US allopathic medical schools, 33.9% being graduates

of international medical schools, 8.1% being graduates of osteopathic medical schools, and less than 1% being Canadian medical school graduates. Over the last 10 years, there has been a 16.1% increase in US allopathic medical school graduates, a 7.2% increase in IMGs, and a 122.7% increase in osteopathic medical school graduates. The specialties with the highest percentage of IMGs include:

- Nuclear medicine (73.0%)
- Medical genetics and genomics (43.7%)
- Pathology – anatomic and clinical (39.8%)
- Internal medicine (39.4%)

While internal medicine has the fourth-highest percentage of IMGs, this specialty accounts for the highest number of IMGs (10,352) among all specialty programs.

## Active Residents by Sex and Ethnicity

Of the 129,720 active residents, 52.9% are male, 44.0% are female, and 3.1% are unreported. The specialties with the highest percentage of female residents include:

- Obstetrics and gynecology (81.6%)
- Allergy and immunology (69.7%)
- Medical genetics and genomics (67.6%)

The specialties with the lowest percentage of female residents include:

- Orthopaedic surgery (14.0%)
- Interventional radiology – integrated (15.4%)
- Neurological surgery (15.4%)

Overall, 43.1% of all active residents are white, non-Hispanic; 18.0% are Asian or Pacific Islander; 5.0% are Hispanic; 4.5% are black (non-Hispanic); and 0.2% are Native American/Alaskan. 5.2% of active residents were reported as “other,” and 24.0% were reported as “unknown.”

## Residents Entering the Pipeline

The total number of residents entering the pipeline reached 29,826 for the 2016-2017 academic year. Since 2007-2008, there has been a 19.0% increase in entering pipeline residents, with varying patterns in growth by medical school type (15.3% increase among US LCME-accredited medical school graduates, 1.6% increase among IMGs, and 120.0% increase among osteopathic medical school graduates). Among the 2016-2017 entering pipeline residents, 62.0% (18,501) are US LCME-accredited graduates, 24.2% (7,218) are IMGs, 13.7% (4,092) are osteopathic medical school graduates, and 0.1% (15) are Canadian medical school graduates. ♪

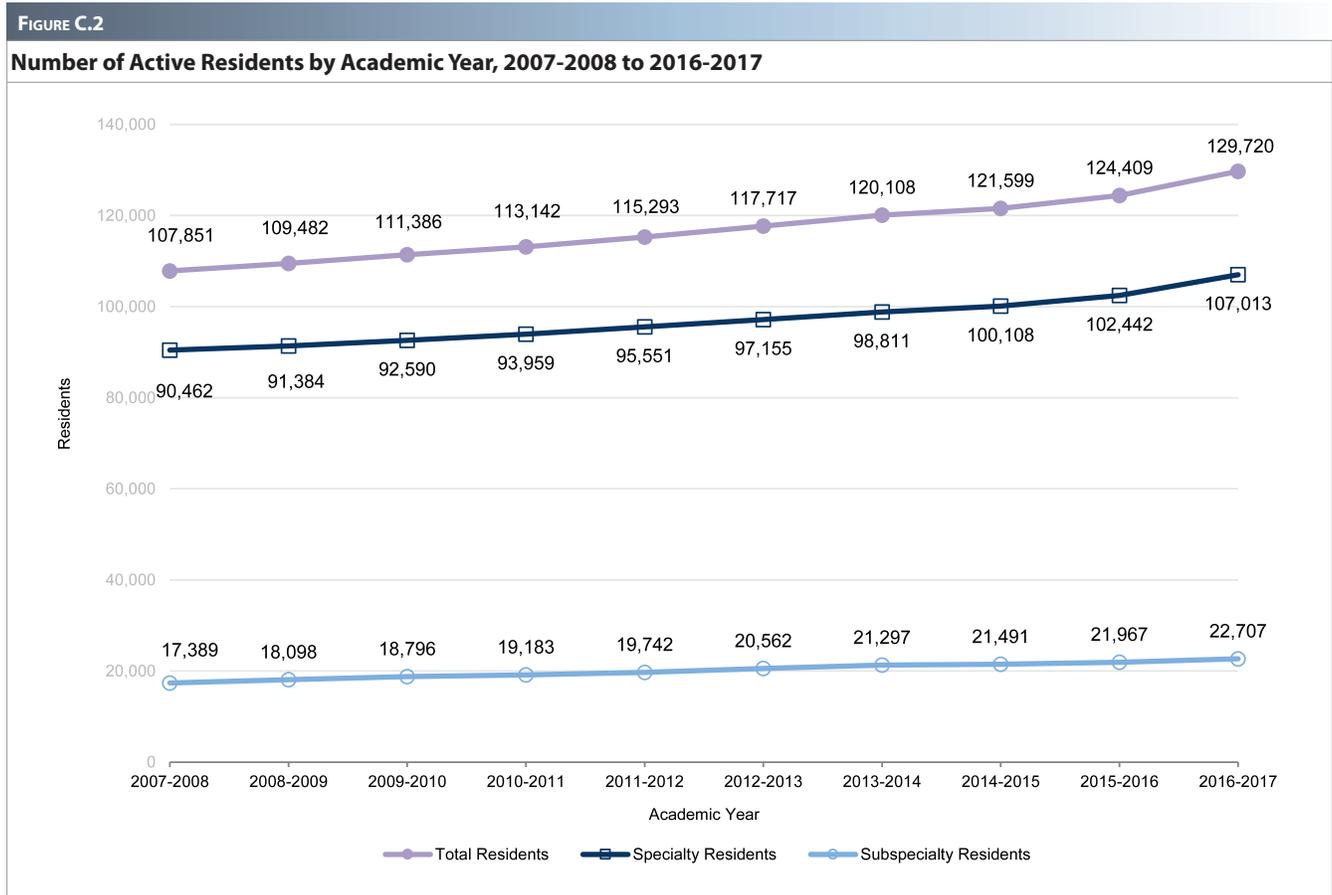
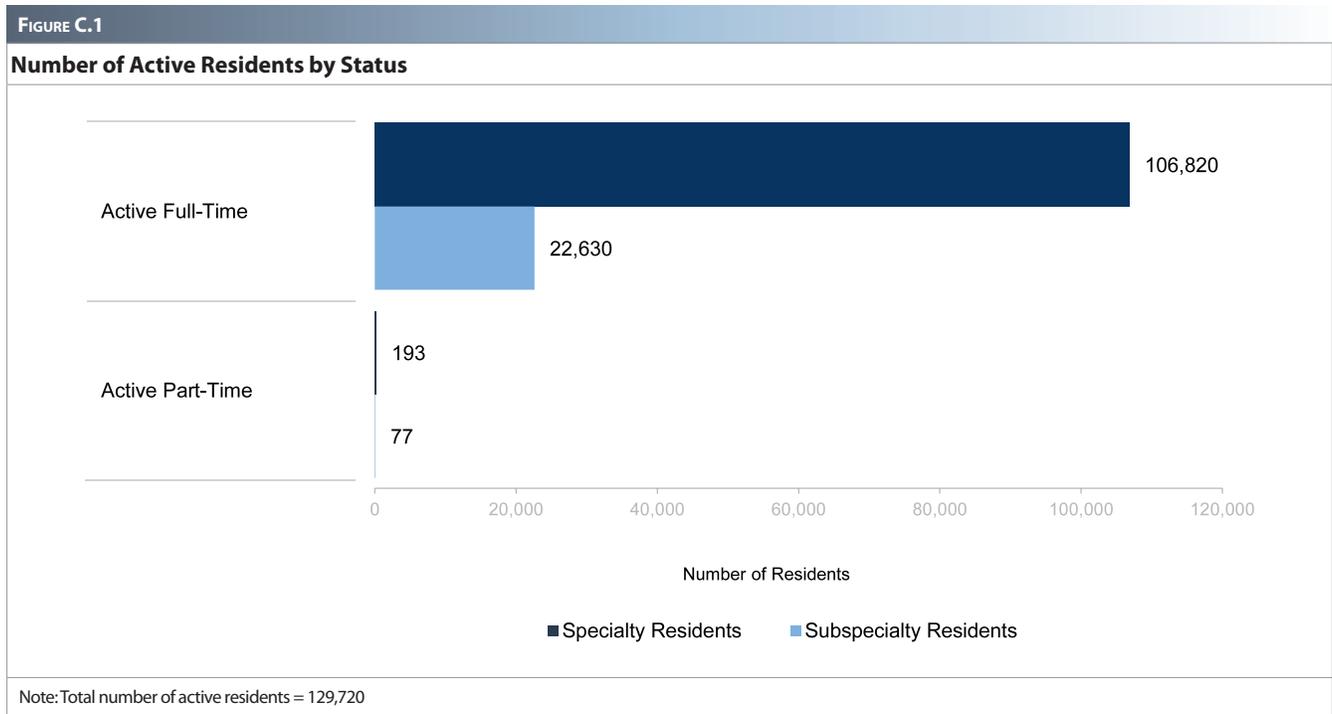
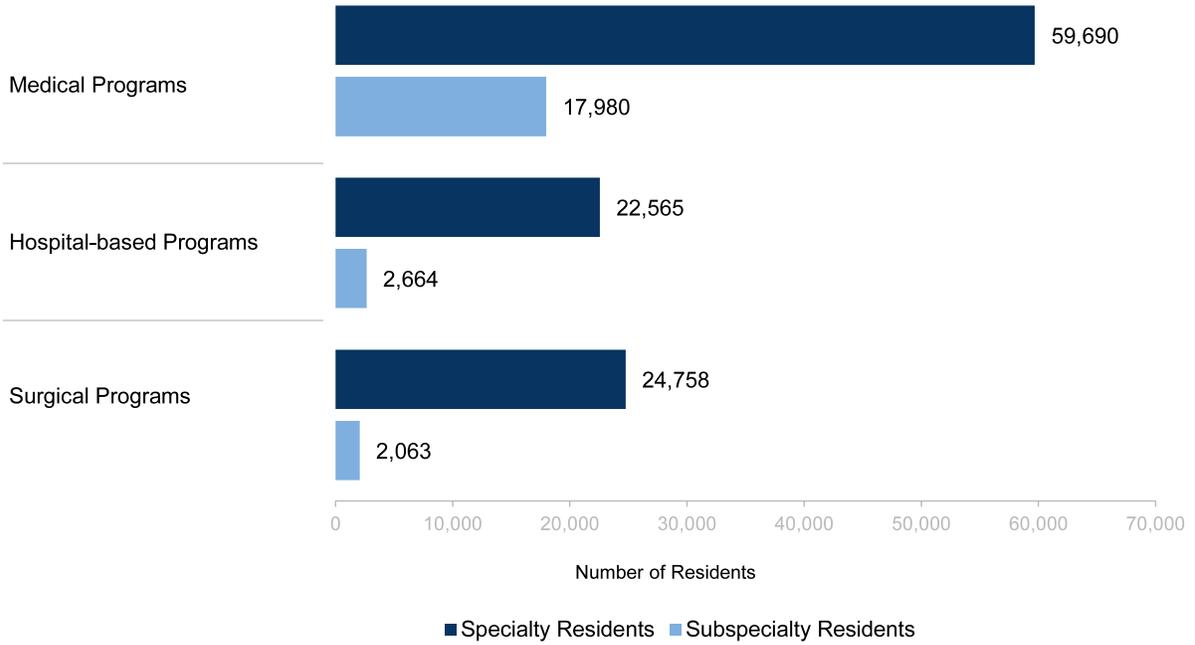


FIGURE C.3

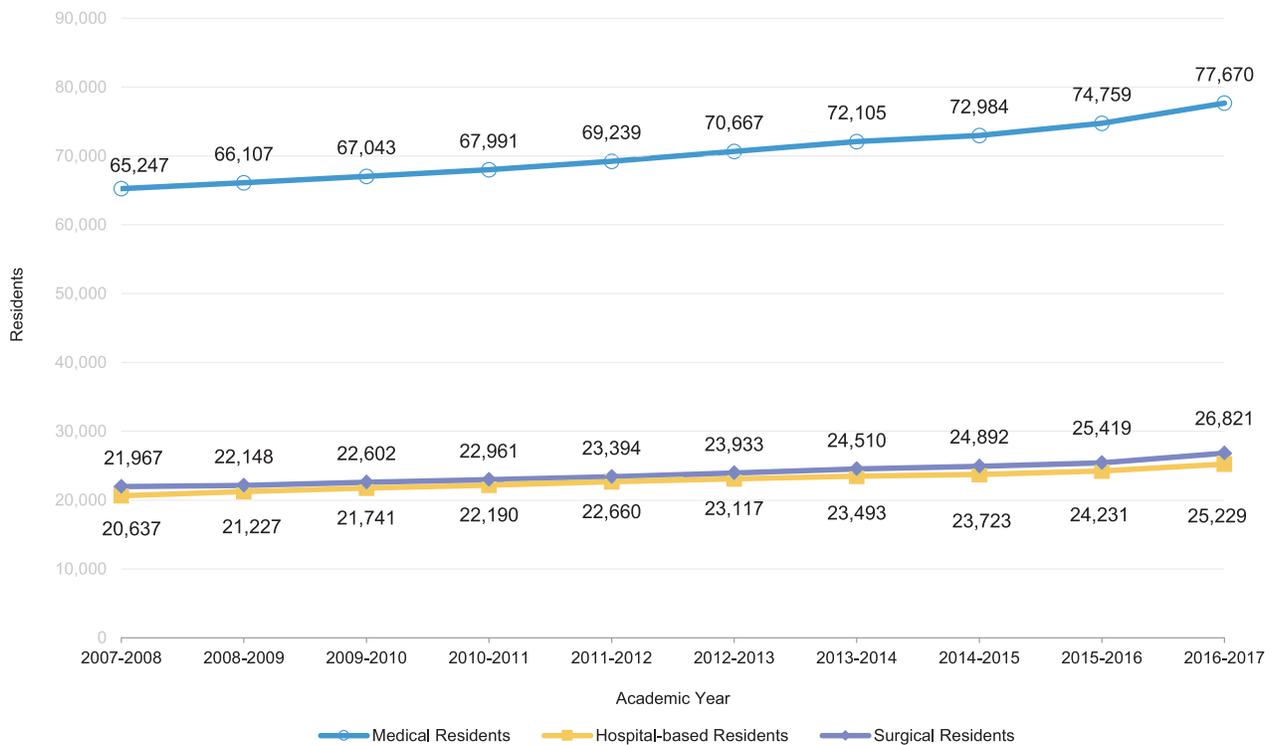
Number of Active Residents by Specialty Group



Notes: Total number of active residents in specialty programs = 107,013. Total number of active residents in subspecialty programs = 22,707.

FIGURE C.4

Number of Active Residents by Specialty Group and Academic Year, 2007-2008 to 2016-2017



Specialty	Total Residents	1		2		3		4	5	6	7
		Cat	Prel	Cat	Prel	Cat	Prel	Cat	Cat	Cat	Cat
		#	#	#	#	#	#	#	#	#	#
OVERALL	129,720	43,781	3,627	36,277	298	32,477	14	10,169	2,650	278	149
TOTAL PIPELINE	105,297	29,826	3,627	29,772	298	28,518	14	10,165	2,650	278	149
Allergy and immunology	287	143		144							
Anesthesiology	6,207	1,408		1,714		1,684		1,401			
- Adult cardiothoracic anesthesiology	193	193									
- Clinical informatics (Anesthesiology)	1	1									
- Critical care medicine	183	183									
- Regional anesthesiology and acute pain medicine	20	20									
- Obstetric anesthesiology	39	39									
- Pain medicine (multidisciplinary)	354	354									
- Pediatric anesthesiology	205	205									
Colon and rectal surgery	95	95									
Dermatology	1,424	472		486		462		4			
- Dermatopathology (multidisciplinary)	71	71									
- Micrographic surgery and dermatologic oncology	83	83									
Emergency medicine	6,885	2,186		2,084		2,057		558			
- Clinical informatics (Emergency medicine)	4	3		1							
- Emergency medical services	62	62									
- Medical toxicology	63	30		33							
- Pediatric emergency medicine	113	47		37		29					
- Sports medicine	14	14									
- Undersea and hyperbaric medicine	13	13									
Family medicine	11,277	3,875		3,770		3,586		46			
- Clinical informatics (Family medicine)	7	5		2							
- Geriatric medicine	44	44									
- Hospice and palliative medicine (multidisciplinary)	304	304									
- Sports medicine	217	217									
Internal medicine	26,301	8,246	2,174	8,132	12	7,733	4				
- Adult congenital heart disease	15	9		6							
- Advanced heart failure and transplant cardiology	94	94									
- Cardiovascular disease	2,746	959		915		872					
- Clinical cardiac electrophysiology	142	142									
- Clinical informatics (Internal medicine)	19	15		4							
- Critical care medicine	217	135		82							
- Endocrinology, diabetes, and metabolism	624	326		298							
- Gastroenterology	1,565	534		531		500					
- Geriatric medicine	260	260									
- Hematology	15	10		5							
- Hematology and medical oncology	1,713	587		569		557					
- Infectious disease	694	347		347							
- Interventional cardiology	315	315									
- Nephrology	844	439		405							
- Medical oncology	34	17		17							
- Pulmonary disease	74	40		34							
- Pulmonary disease and critical care medicine	1,702	615		572		515					
- Rheumatology	458	246		212							
- Sleep medicine (multidisciplinary)	163	163									
- Transplant hepatology	39	39									
Medical genetics and genomics	71	35		36							
- Medical biochemical genetics	9	9									
- Molecular genetic pathology (multidisciplinary)	53	53									
Neurological surgery	1,375	220		221		212		198	190	185	149
- 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	1		2		3		4	5	6	7
		Cat	Prel	Cat	Prel	Cat	Prel	Cat	Cat	Cat	Cat
		#	#	#	#	#	#	#	#	#	#
Neurology	2,544	751		748		695		350			
- Brain injury medicine	0										
- Clinical neurophysiology	169	169									
- Epilepsy	74	74									
- Endovascular surgical neuroradiology	2	2									
- Neurodevelopmental disabilities	27	6		9		8		4			
- Neuromuscular medicine	60	60									
- Vascular neurology	126	126									
Child neurology	360	123		123		114					
Nuclear medicine	74	22		26		26					
Obstetrics and gynecology	5,372	1,340	20	1,338		1,326		1,348			
- Female pelvic medicine and reconstructive surgery	139	46		49		44					
- Gynecologic oncology	172	61		53		58					
- Maternal-fetal medicine	268	95		85		88					
- Reproductive endocrinology and infertility	120	43		41		36					
Ophthalmology	1,446	476		488		482					
- Ophthalmic plastic and reconstructive surgery	6	3		3							
Orthopaedic surgery	3,760	765		763		746		755	731		
- Adult reconstructive orthopaedics	41	41									
- Foot and ankle orthopaedics	15	15									
- Hand surgery	146	146									
- Musculoskeletal oncology	16	16									
- Orthopaedic sports medicine	217	217									
- Orthopaedic surgery of the spine	32	32									
- Orthopaedic trauma	14	14									
- Pediatric orthopaedics	38	38									
Osteopathic neuromusculoskeletal medicine	8	5		3							
Otolaryngology	1,541	318		314		312		303	294		
- Neurotology	28	13		15							
- Pediatric otolaryngology	33	33									
Pathology-anatomic and clinical	2,334	606		617		587		524			
- Blood banking/transfusion medicine	47	47									
- Clinical informatics (Pathology)	10	7		3							
- Chemical pathology	1	1									
- Cytopathology	139	139									
- Forensic pathology	46	46									
- Hematology	132	132									
- Medical microbiology	12	12									
- Neuropathology	55	32		23							
- Pediatric pathology	23	23									
- Selective pathology	154	154									
Pediatrics	9,063	3,062	67	3,003	35	2,895	1				
- Adolescent medicine	89	34		29		26					
- Child abuse pediatrics	35	6		17		12					
- Clinical informatics (Pediatrics)	9	5		4							
- Developmental-behavioral pediatrics	92	33		36		23					
- Neonatal-perinatal medicine	759	257		257		245					
- Pediatric cardiology	432	155		140		137					
- Pediatric critical care medicine	507	179		169		159					
- Pediatric emergency medicine	385	146		120		119					
- Pediatric endocrinology	243	84		87		72					
- Pediatric gastroenterology	290	102		100		88					
- Pediatric hematology/oncology	488	170		166		152					

TABLE C.5 Continued

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

Specialty	Total Residents	1		2		3		4	5	6	7
		Cat	Prel	Cat	Prel	Cat	Prel	Cat	Cat	Cat	Cat
		#	#	#	#	#	#	#	#	#	#
- Pediatric infectious diseases	164	62		42		60					
- Pediatric nephrology	102	35		31		36					
- Pediatric pulmonology	167	62		51		54					
- Pediatric rheumatology	81	29		23		29					
- Pediatric sports medicine	23	23									
- Pediatric transplant hepatology	8	8									
Physical medicine and rehabilitation	1,324	370		410		408		136			
- Brain injury medicine	9	9									
- Neuromuscular medicine	0										
- Spinal cord injury medicine	16	16									
- Pediatric rehabilitation	26	15		11							
- Sports medicine	22	22									
Plastic surgery	316	85		103		128					
Plastic surgery - integrated	748	151		149		139		121	107	81	
- Craniofacial surgery	9	9									
- Hand surgery	24	24									
Preventive medicine	353	194		159							
- Medical toxicology	5	5									
- Undersea and hyperbaric medicine	3	3									
Psychiatry	5,619	1,552		1,549		1,441		1,077			
- Addiction psychiatry	77	77									
- Child and adolescent psychiatry	840	444		396							
- Forensic psychiatry	63	63									
- Geriatric psychiatry	56	55		1							
- Psychosomatic medicine	80	80									
Radiation oncology	749	194		191		186		178			
Radiology-diagnostic	4,769	1,214		1,209		1,185		1,155	6		
- Abdominal radiology	46	46									
- Endovascular surgical neuroradiology	6	6									
- Musculoskeletal radiology	33	33									
- Neuroradiology	265	265									
- Nuclear radiology	12	12									
- Pediatric radiology	65	65									
- Vascular and interventional radiology	284	284									
Interventional radiology - integrated	13	2		3		6		2			
Surgery	8,184	1,335	1,366	1,354	251	1,346	9	1,267	1,256		
- Complex general surgical oncology	105	53		52							
- Hand surgery	8	8									
- Pediatric surgery	83	36		47							
- Surgical critical care	248	248									
- Vascular surgery	241	124		117							
Vascular surgery - integrated	260	58		60		58		42	42		
Thoracic surgery	224	93		100		31					
- Congenital cardiac surgery	5	5									
Thoracic surgery - integrated	161	35		36		31		26	21	12	
Urology	1,276	333		316		311		313	3		
- Female pelvic medicine and reconstructive surgery	29	6		14		9					
- Pediatric urology	25	25									
Transitional year	1,110	1,110									
Internal medicine/Pediatrics	1,483	393		367		362		361			

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, 2012-2013 to 2016-2017

Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017		
	#	#	#	#	#	#	%
OVERALL	117,717	120,108	121,599	124,409	129,720	12,003	10.2%
TOTAL PIPELINE	95,379	97,035	98,411	100,761	105,297	9,918	10.4%
Allergy and immunology	289	298	298	287	287	-2	-0.7%
Anesthesiology	5,848	5,931	5,978	6,051	6,207	359	6.1%
- Adult cardiothoracic anesthesiology	165	167	177	183	193	28	17.0%
- Clinical informatics (Anesthesiology) *					1	N/A	N/A
- Critical care medicine	131	142	159	175	183	52	39.7%
- Regional anesthesiology and acute pain medicine *					20	N/A	N/A
- Obstetric anesthesiology*	19	26	35	38	39	20	105.3%
- Pain medicine (multidisciplinary)	305	326	336	337	354	49	16.1%
- Pediatric anesthesiology	185	200	191	205	205	20	10.8%
Colon and rectal surgery	90	91	94	94	95	5	5.6%
Dermatology	1,240	1,262	1,275	1,323	1,424	184	14.8%
- Dermatopathology (multidisciplinary)	85	76	77	76	71	-14	-16.5%
- Micrographic surgery and dermatologic oncology	58	64	68	73	83	25	43.1%
Emergency medicine	5,590	5,743	5,941	6,244	6,885	1,295	23.2%
- Clinical informatics (Emergency medicine) *			1	3	4	3	300.0%
- Emergency medical services*	8	36	44	50	62	54	675.0%
- Medical toxicology	55	60	58	61	63	8	14.5%
- Pediatric emergency medicine	80	90	98	101	113	33	41.3%
- Sports medicine	9	9	9	11	14	5	55.6%
- Undersea and hyperbaric medicine	7	8	7	9	13	6	85.7%
Family medicine	10,060	10,316	10,499	10,762	11,277	1,217	12.1%
- Clinical informatics (Family medicine) *				2	7	5	250.0%
- Geriatric medicine	64	55	49	49	44	-20	-31.3%
- Hospice and palliative medicine (multidisciplinary)	182	209	243	274	304	122	67.0%
- Sports medicine	181	190	202	210	217	36	19.9%
Internal medicine	23,597	23,891	24,259	24,983	26,301	2,704	11.5%
- Adult congenital heart disease *				5	15	10	200.0%
- Advanced heart failure and transplant cardiology *	35	58	74	82	94	59	168.6%
- Cardiovascular disease	2,548	2,617	2,626	2,670	2,746	198	7.8%
- Clinical cardiac electrophysiology	150	146	151	154	142	-8	-5.3%
- Clinical informatics (Internal medicine) *				5	19	14	280.0%
- Critical care medicine	199	206	210	208	217	18	9.0%
- Endocrinology, diabetes, and metabolism	581	597	604	613	624	43	7.4%
- Gastroenterology	1,428	1,458	1,467	1,505	1,565	137	9.6%
- Geriatric medicine	256	268	249	239	260	4	1.6%
- Hematology	20	24	21	22	15	-5	-25.0%
- Hematology and medical oncology	1,552	1,586	1,637	1,660	1,713	161	10.4%
- Infectious disease	751	752	727	724	694	-57	-7.6%
- Interventional cardiology	302	308	309	309	315	13	4.3%
- Nephrology	900	930	895	863	844	-56	-6.2%
- Medical oncology	85	73	67	59	34	-51	-60.0%
- Pulmonary disease	83	80	81	75	74	-9	-10.8%
- Pulmonary disease and critical care medicine	1,489	1,535	1,571	1,630	1,702	213	14.3%
- Rheumatology	424	433	431	445	458	34	8.0%
- Sleep medicine (multidisciplinary)	154	154	153	165	163	9	5.8%
- Transplant hepatology	32	38	41	40	39	7	21.9%
Medical genetics and genomics	79	79	74	73	71	-8	-10.1%
- Medical biochemical genetics	6	5	8	9	9	3	50.0%
- Molecular genetic pathology (multidisciplinary)	44	48	49	53	53	9	20.5%
Neurological surgery	1,212	1,265	1,295	1,325	1,375	163	13.4%
- Endovascular surgical neuroradiology	3	3	2	2	1	-2	-66.7%

TABLE C.6 Continued							
Number of Active Residents by Specialty and Subspecialty and Academic Year, 2012-2013 to 2016-2017							
Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	#	%
	#	#	#	#	#	#	%
Neurology	2,139	2,238	2,323	2,413	2,544	405	18.9%
- Brain injury medicine *					0	N/A	N/A
- Clinical neurophysiology	238	249	220	200	169	-69	-29.0%
- Epilepsy *			12	53	74	62	516.7%
- Endovascular surgical neuroradiology	2	2	2	1	2	0	0.0%
- Neurodevelopmental disabilities	18	18	17	23	27	9	50.0%
- Neuromuscular medicine	45	56	54	63	60	15	33.3%
- Vascular neurology	94	96	91	112	126	32	34.0%
Child neurology	308	341	347	360	360	52	16.9%
Nuclear medicine	120	107	93	84	74	-46	-38.3%
Obstetrics and gynecology	4,993	5,021	5,102	5,187	5,372	379	7.6%
- Female pelvic medicine and reconstructive surgery *	75	120	123	132	139	64	85.3%
- Gynecologic oncology *					172	N/A	N/A
- Maternal-fetal medicine *					268	N/A	N/A
- Reproductive endocrinology and infertility *					120	N/A	N/A
Ophthalmology	1,417	1,409	1,420	1,432	1,446	29	2.0%
- Ophthalmic plastic and reconstructive surgery	5	6	6	6	6	1	20.0%
Orthopaedic surgery	3,523	3,566	3,604	3,684	3,760	237	6.7%
- Adult reconstructive orthopaedics	42	36	37	44	41	-1	-2.4%
- Foot and ankle orthopaedics	17	18	16	16	15	-2	-11.8%
- Hand surgery	128	140	140	144	146	18	14.1%
- Musculoskeletal oncology	16	14	15	15	16	0	0.0%
- Orthopaedic sports medicine	223	216	219	203	217	-6	-2.7%
- Orthopaedic surgery of the spine	32	36	31	31	32	0	0.0%
- Orthopaedic trauma	16	16	16	17	14	-2	-12.5%
- Pediatric orthopaedics	35	39	39	43	38	3	8.6%
Osteopathic neuromusculoskeletal medicine *				3	8	5	166.7%
Otolaryngology	1,472	1,488	1,506	1,517	1,541	69	4.7%
- Neurotology	28	29	28	30	28	0	0.0%
- Pediatric otolaryngology	24	32	34	33	33	9	37.5%
Pathology-anatomic and clinical	2,340	2,341	2,339	2,318	2,334	-6	-0.3%
- Blood banking/transfusion medicine	50	45	53	48	47	-3	-6.0%
- Clinical informatics (Pathology) *				3	10	7	233.3%
- Chemical pathology		1	1	2	1	0	0.0%
- Cytopathology	139	150	136	141	139	0	0.0%
- Forensic pathology	33	39	41	50	46	13	39.4%
- Hematology	133	134	137	132	132	-1	-0.8%
- Medical microbiology	9	11	11	10	12	3	33.3%
- Neuropathology	40	41	44	50	55	15	37.5%
- Pediatric pathology	18	20	28	22	23	5	27.8%
- Selective pathology	151	156	158	154	154	3	2.0%
Pediatrics	8,669	8,828	8,867	8,933	9,063	394	4.5%
- Adolescent medicine	77	74	72	79	89	12	15.6%
- Child abuse pediatrics	31	31	34	37	35	4	12.9%
- Clinical informatics (Pediatrics) *			2	7	9	7	350.0%
- Developmental-behavioral pediatrics	99	97	97	102	92	-7	-7.1%
- Neonatal-perinatal medicine	661	685	703	738	759	98	14.8%
- Pediatric cardiology	401	411	415	422	432	31	7.7%
- Pediatric critical care medicine	410	447	467	496	507	97	23.7%
- Pediatric emergency medicine	331	349	355	373	385	54	16.3%
- Pediatric endocrinology	253	244	245	243	243	-10	-4.0%
- Pediatric gastroenterology	269	274	274	282	290	21	7.8%
- Pediatric hematology/oncology	442	461	473	476	488	46	10.4%

TABLE C.6 Continued

## Number of Active Residents by Specialty and Subspecialty and Academic Year, 2012-2013 to 2016-2017

Specialty	Academic Year					5-Year Change	
	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	#	%
	#	#	#	#	#	#	%
- Pediatric infectious diseases	185	177	175	162	164	-21	-11.4%
- Pediatric nephrology	122	111	115	101	102	-20	-16.4%
- Pediatric pulmonology	160	158	165	159	167	7	4.4%
- Pediatric rheumatology	73	69	76	76	81	8	11.0%
- Pediatric sports medicine	22	21	22	24	23	1	4.5%
- Pediatric transplant hepatology	4	6	8	6	8	4	100.0%
Physical medicine and rehabilitation	1,250	1,265	1,276	1,293	1,324	74	5.9%
- Brain injury medicine *		3	3	7	9	6	200.0%
- Neuromuscular medicine *	1	1	0	1	0	-1	-100.0%
- Spinal cord injury medicine	13	17	15	16	16	3	23.1%
- Pediatric rehabilitation	18	22	28	25	26	8	44.4%
- Sports medicine	13	18	21	24	22	9	69.2%
Plastic surgery	346	401	392	363	316	-30	-8.7%
Plastic surgery - integrated	431	501	574	663	748	317	73.5%
- Craniofacial surgery	5	8	10	9	9	4	80.0%
- Hand surgery	22	20	20	23	24	2	9.1%
Preventive medicine	344	326	332	355	353	9	2.6%
- Medical toxicology	3	5	4	3	5	2	66.7%
- Undersea and hyperbaric medicine	2	6	5	3	3	1	50.0%
Psychiatry	5,034	5,128	5,176	5,358	5,619	585	11.6%
- Addiction psychiatry	67	66	66	80	77	10	14.9%
- Child and adolescent psychiatry	855	853	820	826	840	-15	-1.8%
- Forensic psychiatry	70	69	66	72	63	-7	-10.0%
- Geriatric psychiatry	67	65	58	58	56	-11	-16.4%
- Psychosomatic medicine	53	81	82	79	80	27	50.9%
Radiation oncology	676	705	721	733	749	73	10.8%
Radiology-diagnostic	4,652	4,652	4,676	4,740	4,769	117	2.5%
- Abdominal radiology	49	47	44	45	46	-3	-6.1%
- Endovascular surgical neuroradiology	7	4	4	5	6	-1	-14.3%
- Musculoskeletal radiology	32	33	33	30	33	1	3.1%
- Neuroradiology	252	259	245	256	265	13	5.2%
- Nuclear radiology	16	15	16	13	12	-4	-25.0%
- Pediatric radiology	92	88	88	79	65	-27	-29.3%
- Vascular and interventional radiology	244	259	260	275	284	40	16.4%
Interventional radiology - integrated *					13	N/A	N/A
Surgery	7,590	7,720	7,732	7,834	8,184	594	7.8%
- Complex general surgical oncology *	73	97	104	101	105	32	43.8%
- Hand surgery	7	8	8	8	8	1	14.3%
- Pediatric surgery	80	83	83	82	83	3	3.8%
- Surgical critical care	194	211	218	236	248	54	27.8%
- Vascular surgery	243	248	248	233	241	-2	-0.8%
Vascular surgery - integrated	135	171	205	234	260	125	92.6%
Thoracic surgery	213	208	216	223	224	11	5.2%
- Congenital cardiac surgery	7	8	8	10	5	-2	-28.6%
Thoracic surgery - integrated	63	85	117	138	161	98	155.6%
Urology	1,131	1,146	1,177	1,254	1,276	145	12.8%
- Female pelvic medicine and reconstructive surgery *	20	27	27	28	29	9	45.0%
- Pediatric urology	22	23	26	25	25	3	13.6%
Transitional year	1,184	1,179	1,089	1,077	1,110	-74	-6.3%
Internal medicine/Pediatrics	1,428	1,450	1,458	1,464	1,483	55	3.9%

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

<b>TABLE C.7</b>				
<b>Number of Active Part-Time Residents by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Residents</b>	<b>Number of Part-Time Residents</b>	<b>Percent of All Residents in Specialty</b>	<b>Percent of All Part-Time Residents</b>
OVERALL	129,720	270	0.2%	100.0%
TOTAL PIPELINE	105,297	188	0.2%	69.6%
Allergy and immunology	287	5	1.7%	1.9%
Anesthesiology	6,207	8	0.1%	3.0%
- Adult cardiothoracic anesthesiology	193	0	0.0%	0.0%
- Clinical informatics (Anesthesiology)	1	0	0.0%	0.0%
- Critical care medicine	183	0	0.0%	0.0%
- Regional anesthesiology and acute pain medicine	20	0	0.0%	0.0%
- Obstetric anesthesiology	39	0	0.0%	0.0%
- Pain medicine (multidisciplinary)	354	0	0.0%	0.0%
- Pediatric anesthesiology	205	0	0.0%	0.0%
Colon and rectal surgery	95	0	0.0%	0.0%
Dermatology	1,424	3	0.2%	1.1%
- Dermatopathology (multidisciplinary)	71	0	0.0%	0.0%
- Micrographic surgery and dermatologic oncology	83	0	0.0%	0.0%
Emergency medicine	6,885	17	0.2%	6.3%
- Clinical informatics (Emergency medicine)	4	0	0.0%	0.0%
- Emergency medical services	62	0	0.0%	0.0%
- Medical toxicology	63	0	0.0%	0.0%
- Pediatric emergency medicine	113	0	0.0%	0.0%
- Sports medicine	14	0	0.0%	0.0%
- Undersea and hyperbaric medicine	13	0	0.0%	0.0%
Family medicine	11,277	24	0.2%	8.9%
- Clinical informatics (Family medicine)	7	0	0.0%	0.0%
- Geriatric medicine	44	1	2.3%	0.4%
- Hospice and palliative medicine (multidisciplinary)	304	12	3.9%	4.4%
- Sports medicine	217	2	0.9%	0.7%
Internal medicine	26,301	49	0.2%	18.1%
- Adult congenital heart disease	15	0	0.0%	0.0%
- Advanced heart failure and transplant cardiology	94	0	0.0%	0.0%
- Cardiovascular disease	2,746	3	0.1%	1.1%
- Clinical cardiac electrophysiology	142	0	0.0%	0.0%
- Clinical informatics (Internal medicine)	19	0	0.0%	0.0%
- Critical care medicine	217	2	0.9%	0.7%
- Endocrinology, diabetes, and metabolism	624	0	0.0%	0.0%
- Gastroenterology	1,565	5	0.3%	1.9%
- Geriatric medicine	260	6	2.3%	2.2%
- Hematology	15	0	0.0%	0.0%
- Hematology and medical oncology	1,713	5	0.3%	1.9%
- Infectious disease	694	1	0.1%	0.4%
- Interventional cardiology	315	0	0.0%	0.0%
- Nephrology	844	0	0.0%	0.0%
- Medical oncology	34	0	0.0%	0.0%
- Pulmonary disease	74	1	1.4%	0.4%
- Pulmonary disease and critical care medicine	1,702	3	0.2%	1.1%
- Rheumatology	458	1	0.2%	0.4%
- Sleep medicine (multidisciplinary)	163	1	0.6%	0.4%
- Transplant hepatology	39	0	0.0%	0.0%
Medical genetics and genomics	71	0	0.0%	0.0%
- Medical biochemical genetics	9	0	0.0%	0.0%
- Molecular genetic pathology (multidisciplinary)	53	0	0.0%	0.0%
Neurological surgery	1,375	4	0.3%	1.5%
- Endovascular surgical neuroradiology	1	0	0.0%	0.0%

TABLE C.7 Continued

<b>Number of Active Part-Time Residents by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Residents</b>	<b>Number of Part-Time Residents</b>	<b>Percent of All Residents in Specialty</b>	<b>Percent of All Part-Time Residents</b>
Neurology	2,544	3	0.1%	1.1%
- Brain injury medicine	0	0	N/A	0.0%
- Clinical neurophysiology	169	0	0.0%	0.0%
- Epilepsy	74	0	0.0%	0.0%
- Endovascular surgical neuroradiology	2	0	0.0%	0.0%
- Neurodevelopmental disabilities	27	1	3.7%	0.4%
- Neuromuscular medicine	60	0	0.0%	0.0%
- Vascular neurology	126	1	0.8%	0.4%
Child neurology	360	2	0.6%	0.7%
Nuclear medicine	74	1	1.4%	0.4%
Obstetrics and gynecology	5,372	8	0.1%	3.0%
- Female pelvic medicine and reconstructive surgery	139	0	0.0%	0.0%
- Gynecologic oncology	172	1	0.6%	0.4%
- Maternal-fetal medicine	268	0	0.0%	0.0%
- Reproductive endocrinology and infertility	120	0	0.0%	0.0%
Ophthalmology	1,446	1	0.1%	0.4%
- Ophthalmic plastic and reconstructive surgery	6	0	0.0%	0.0%
Orthopaedic surgery	3,760	8	0.2%	3.0%
- Adult reconstructive orthopaedics	41	0	0.0%	0.0%
- Foot and ankle orthopaedics	15	0	0.0%	0.0%
- Hand surgery	146	0	0.0%	0.0%
- Musculoskeletal oncology	16	0	0.0%	0.0%
- Orthopaedic sports medicine	217	0	0.0%	0.0%
- Orthopaedic surgery of the spine	32	0	0.0%	0.0%
- Orthopaedic trauma	14	0	0.0%	0.0%
- Pediatric orthopaedics	38	0	0.0%	0.0%
Osteopathic neuromusculoskeletal medicine	8	0	0.0%	0.0%
Otolaryngology	1,541	2	0.1%	0.7%
- Neurotology	28	0	0.0%	0.0%
- Pediatric otolaryngology	33	0	0.0%	0.0%
Pathology-anatomic and clinical	2,334	3	0.1%	1.1%
- Blood banking/transfusion medicine	47	0	0.0%	0.0%
- Clinical informatics (Pathology)	10	0	0.0%	0.0%
- Chemical pathology	1	0	0.0%	0.0%
- Cytopathology	139	3	2.2%	1.1%
- Forensic pathology	46	1	2.2%	0.4%
- Hematology	132	0	0.0%	0.0%
- Medical microbiology	12	0	0.0%	0.0%
- Neuropathology	55	0	0.0%	0.0%
- Pediatric pathology	23	0	0.0%	0.0%
- Selective pathology	154	0	0.0%	0.0%
Pediatrics	9,063	16	0.2%	5.9%
- Adolescent medicine	89	0	0.0%	0.0%
- Child abuse pediatrics	35	1	2.9%	0.4%
- Clinical informatics (Pediatrics)	9	0	0.0%	0.0%
- Developmental-behavioral pediatrics	92	1	1.1%	0.4%
- Neonatal-perinatal medicine	759	2	0.3%	0.7%
- Pediatric cardiology	432	2	0.5%	0.7%
- Pediatric critical care medicine	507	1	0.2%	0.4%
- Pediatric emergency medicine	385	1	0.3%	0.4%
- Pediatric endocrinology	243	0	0.0%	0.0%
- Pediatric gastroenterology	290	2	0.7%	0.7%
- Pediatric hematology/oncology	488	2	0.4%	0.7%

**TABLE C.7 Continued**

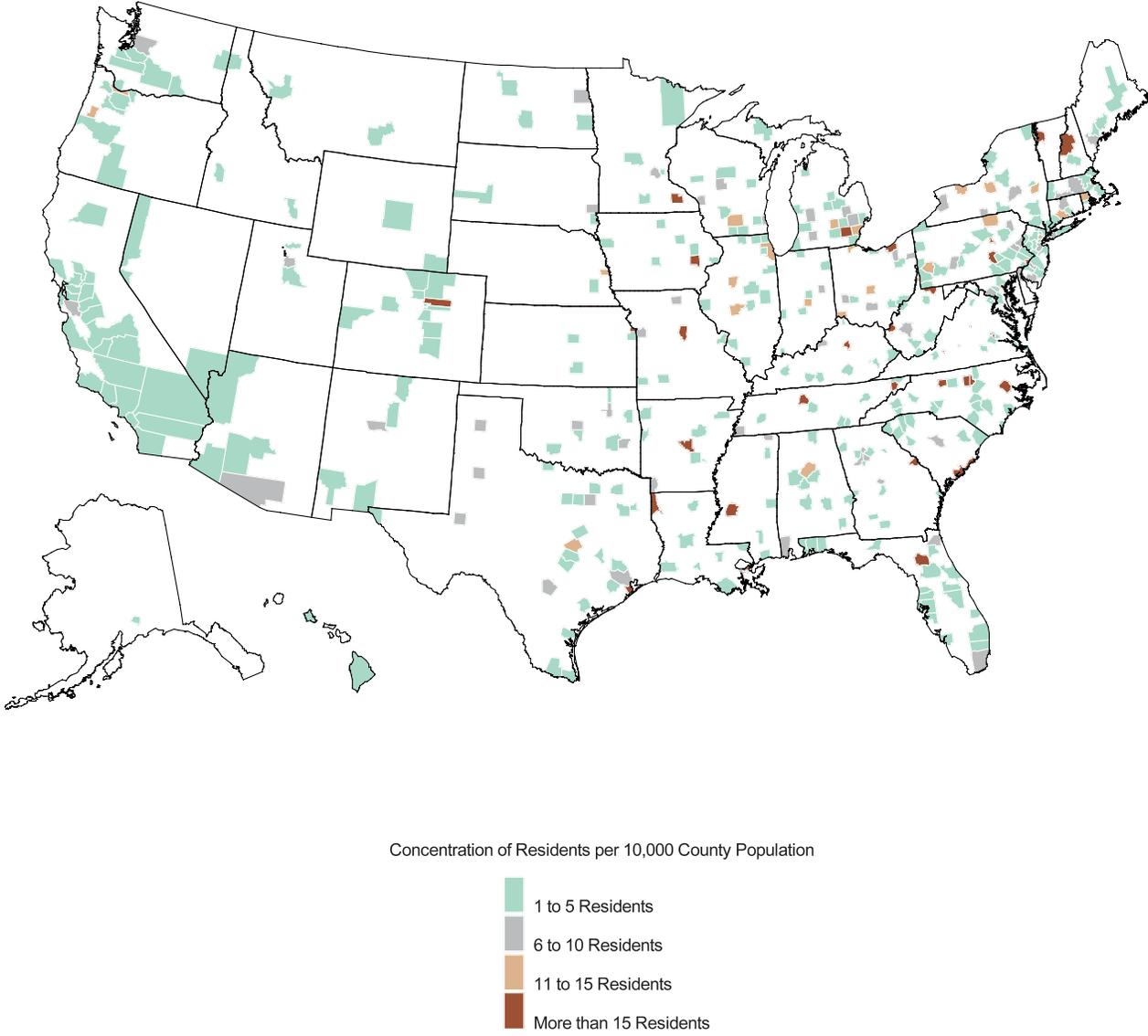
**Number of Active Part-Time Residents by Specialty and Subspecialty**

Specialty	Total Residents	Number of Part-Time Residents	Percent of All Residents in Specialty	Percent of All Part-Time Residents
- Pediatric infectious diseases	164	0	0.0%	0.0%
- Pediatric nephrology	102	0	0.0%	0.0%
- Pediatric pulmonology	167	0	0.0%	0.0%
- Pediatric rheumatology	81	0	0.0%	0.0%
- Pediatric sports medicine	23	0	0.0%	0.0%
- Pediatric transplant hepatology	8	0	0.0%	0.0%
Physical medicine and rehabilitation	1,324	2	0.2%	0.7%
- Brain injury medicine	9	0	0.0%	0.0%
- Neuromuscular medicine	0	0	N/A	0.0%
- Spinal cord injury medicine	16	0	0.0%	0.0%
- Pediatric rehabilitation	26	0	0.0%	0.0%
- Sports medicine	22	0	0.0%	0.0%
Plastic surgery	316	1	0.3%	0.4%
Plastic surgery - integrated	748	0	0.0%	0.0%
- Craniofacial surgery	9	0	0.0%	0.0%
- Hand surgery	24	0	0.0%	0.0%
Preventive medicine	353	1	0.3%	0.4%
- Medical toxicology	5	0	0.0%	0.0%
- Undersea and hyperbaric medicine	3	0	0.0%	0.0%
Psychiatry	5,619	18	0.3%	6.7%
- Addiction psychiatry	77	6	7.8%	2.2%
- Child and adolescent psychiatry	840	4	0.5%	1.5%
- Forensic psychiatry	63	2	3.2%	0.7%
- Geriatric psychiatry	56	2	3.6%	0.7%
- Psychosomatic medicine	80	0	0.0%	0.0%
Radiation oncology	749	1	0.1%	0.4%
Radiology-diagnostic	4,769	7	0.1%	2.6%
- Abdominal radiology	46	0	0.0%	0.0%
- Endovascular surgical neuroradiology	6	0	0.0%	0.0%
- Musculoskeletal radiology	33	0	0.0%	0.0%
- Neuroradiology	265	0	0.0%	0.0%
- Nuclear radiology	12	0	0.0%	0.0%
- Pediatric radiology	65	1	1.5%	0.4%
- Vascular and interventional radiology	284	0	0.0%	0.0%
Interventional radiology - integrated	13	0	0.0%	0.0%
Surgery	8,184	3	0.0%	1.1%
- Complex general surgical oncology	105	0	0.0%	0.0%
- Hand surgery	8	0	0.0%	0.0%
- Pediatric surgery	83	0	0.0%	0.0%
- Surgical critical care	248	0	0.0%	0.0%
- Vascular surgery	241	0	0.0%	0.0%
Vascular surgery - integrated	260	2	0.8%	0.7%
Thoracic surgery	224	0	0.0%	0.0%
- Congenital cardiac surgery	5	0	0.0%	0.0%
Thoracic surgery - integrated	161	0	0.0%	0.0%
Urology	1,276	1	0.1%	0.4%
- Female pelvic medicine and reconstructive surgery	29	0	0.0%	0.0%
- Pediatric urology	25	0	0.0%	0.0%
Transitional year	1,110	0	0.0%	0.0%
Internal medicine/Pediatrics	1,483	3	0.2%	1.1%

Note: Pipeline specialties are highlighted.

FIGURE C.8

Geographic Distribution of Active Residents



Sources: 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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/counties/totals/co-est2016-alldata.csv>. Published December, 2016. Accessed July 11, 2017; SAS Enterprise Guide Software, Version 7.1.

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 2016	Total Residents	Percent of All Residents	Residents per 100,000 Pop
OVERALL	--	326,538,820	129,720	100.0%	39.73
Alabama	AL	4,863,300	1,424	1.1%	29.28
Alaska	AK	741,894	37	0.0%	4.99
Arizona	AZ	6,931,071	1,715	1.3%	24.74
Arkansas	AR	2,988,248	781	0.6%	26.14
California	CA	39,250,017	11,627	9.0%	29.62
Colorado	CO	5,540,545	1,459	1.1%	26.33
Connecticut	CT	3,576,452	2,356	1.8%	65.88
Delaware	DE	952,065	353	0.3%	37.08
District of Columbia	DC	681,170	1,713	1.3%	251.48
Florida	FL	20,612,439	5,136	4.0%	24.92
Georgia	GA	10,310,371	2,441	1.9%	23.68
Hawaii	HI	1,428,557	446	0.3%	31.22
Idaho	ID	1,683,140	118	0.1%	7.01
Illinois	IL	12,801,539	6,421	4.9%	50.16
Indiana	IN	6,633,053	1,420	1.1%	21.41
Iowa	IA	3,134,693	954	0.7%	30.43
Kansas	KS	2,907,289	813	0.6%	27.96
Kentucky	KY	4,436,974	1,302	1.0%	29.34
Louisiana	LA	4,681,666	2,110	1.6%	45.07
Maine	ME	1,331,479	330	0.3%	24.78
Maryland	MD	6,016,447	3,255	2.5%	54.10
Massachusetts	MA	6,811,779	5,565	4.3%	81.70
Michigan	MI	9,928,300	6,305	4.9%	63.51
Minnesota	MN	5,519,952	2,298	1.8%	41.63
Mississippi	MS	2,988,726	689	0.5%	23.05
Missouri	MO	6,093,000	2,908	2.2%	47.73
Montana	MT	1,042,520	81	0.1%	7.77
Nebraska	NE	1,907,116	779	0.6%	40.85
Nevada	NV	2,940,058	509	0.4%	17.31
New Hampshire	NH	1,334,795	417	0.3%	31.24
New Jersey	NJ	8,944,469	3,068	2.4%	34.30
New Mexico	NM	2,081,015	616	0.5%	29.60
New York	NY	19,745,289	17,115	13.2%	86.68
North Carolina	NC	10,146,788	3,398	2.6%	33.49
North Dakota	ND	757,952	141	0.1%	18.60
Ohio	OH	11,614,373	6,469	5.0%	55.70
Oklahoma	OK	3,923,561	1,022	0.8%	26.05
Oregon	OR	4,093,465	993	0.8%	24.26
Pennsylvania	PA	12,784,227	8,330	6.4%	65.16
Puerto Rico	PR	3,411,307	925	0.7%	27.12
Rhode Island	RI	1,056,426	834	0.6%	78.95
South Carolina	SC	4,961,119	1,382	1.1%	27.86
South Dakota	SD	865,454	151	0.1%	17.45
Tennessee	TN	6,651,194	2,521	1.9%	37.90
Texas	TX	27,862,596	8,601	6.6%	30.87
Utah	UT	3,051,217	811	0.6%	26.58
Vermont	VT	624,594	312	0.2%	49.95
Virginia	VA	8,411,808	2,555	2.0%	30.37
Washington	WA	7,288,000	2,003	1.5%	27.48
West Virginia	WV	1,831,102	773	0.6%	42.22
Wisconsin	WI	5,778,708	1,898	1.5%	32.84
Wyoming	WY	585,501	40	0.0%	6.83

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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 2016	Total Specialty Residents	Percent of All Specialty Residents	Specialty Residents per 100,000 Pop
OVERALL	--	326,538,820	107,013	100.0%	32.77
Alabama	AL	4,863,300	1,188	1.1%	24.43
Alaska	AK	741,894	35	0.0%	4.72
Arizona	AZ	6,931,071	1,468	1.4%	21.18
Arkansas	AR	2,988,248	656	0.6%	21.95
California	CA	39,250,017	9,499	8.9%	24.20
Colorado	CO	5,540,545	1,180	1.1%	21.30
Connecticut	CT	3,576,452	1,941	1.8%	54.27
Delaware	DE	952,065	297	0.3%	31.20
District of Columbia	DC	681,170	1,376	1.3%	202.01
Florida	FL	20,612,439	4,302	4.0%	20.87
Georgia	GA	10,310,371	2,022	1.9%	19.61
Hawaii	HI	1,428,557	412	0.4%	28.84
Idaho	ID	1,683,140	116	0.1%	6.89
Illinois	IL	12,801,539	5,466	5.1%	42.70
Indiana	IN	6,633,053	1,195	1.1%	18.02
Iowa	IA	3,134,693	803	0.8%	25.62
Kansas	KS	2,907,289	715	0.7%	24.59
Kentucky	KY	4,436,974	1,073	1.0%	24.18
Louisiana	LA	4,681,666	1,796	1.7%	38.36
Maine	ME	1,331,479	295	0.3%	22.16
Maryland	MD	6,016,447	2,533	2.4%	42.10
Massachusetts	MA	6,811,779	4,278	4.0%	62.80
Michigan	MI	9,928,300	5,452	5.1%	54.91
Minnesota	MN	5,519,952	1,780	1.7%	32.25
Mississippi	MS	2,988,726	593	0.6%	19.84
Missouri	MO	6,093,000	2,306	2.2%	37.85
Montana	MT	1,042,520	80	0.1%	7.67
Nebraska	NE	1,907,116	663	0.6%	34.76
Nevada	NV	2,940,058	471	0.4%	16.02
New Hampshire	NH	1,334,795	333	0.3%	24.95
New Jersey	NJ	8,944,469	2,730	2.6%	30.52
New Mexico	NM	2,081,015	497	0.5%	23.88
New York	NY	19,745,289	14,127	13.2%	71.55
North Carolina	NC	10,146,788	2,695	2.5%	26.56
North Dakota	ND	757,952	141	0.1%	18.60
Ohio	OH	11,614,373	5,237	4.9%	45.09
Oklahoma	OK	3,923,561	898	0.8%	22.89
Oregon	OR	4,093,465	825	0.8%	20.15
Pennsylvania	PA	12,784,227	6,696	6.3%	52.38
Puerto Rico	PR	3,411,307	806	0.8%	23.63
Rhode Island	RI	1,056,426	666	0.6%	63.04
South Carolina	SC	4,961,119	1,186	1.1%	23.91
South Dakota	SD	865,454	139	0.1%	16.06
Tennessee	TN	6,651,194	2,043	1.9%	30.72
Texas	TX	27,862,596	6,997	6.5%	25.11
Utah	UT	3,051,217	629	0.6%	20.61
Vermont	VT	624,594	250	0.2%	40.03
Virginia	VA	8,411,808	2,170	2.0%	25.80
Washington	WA	7,288,000	1,651	1.5%	22.65
West Virginia	WV	1,831,102	697	0.7%	38.06
Wisconsin	WI	5,778,708	1,569	1.5%	27.15
Wyoming	WY	585,501	40	0.0%	6.83

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est-2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Subspecialty Residents	Percent of All Subspecialty Residents	Subspecialty Residents per 100,000 Pop
OVERALL	--	326,538,820	22,707	100.0%	6.95
Alabama	AL	4,863,300	236	1.0%	4.85
Alaska	AK	741,894	2	0.0%	0.27
Arizona	AZ	6,931,071	247	1.1%	3.56
Arkansas	AR	2,988,248	125	0.6%	4.18
California	CA	39,250,017	2,128	9.4%	5.42
Colorado	CO	5,540,545	279	1.2%	5.04
Connecticut	CT	3,576,452	415	1.8%	11.60
Delaware	DE	952,065	56	0.2%	5.88
District of Columbia	DC	681,170	337	1.5%	49.47
Florida	FL	20,612,439	834	3.7%	4.05
Georgia	GA	10,310,371	419	1.8%	4.06
Hawaii	HI	1,428,557	34	0.1%	2.38
Idaho	ID	1,683,140	2	0.0%	0.12
Illinois	IL	12,801,539	955	4.2%	7.46
Indiana	IN	6,633,053	225	1.0%	3.39
Iowa	IA	3,134,693	151	0.7%	4.82
Kansas	KS	2,907,289	98	0.4%	3.37
Kentucky	KY	4,436,974	229	1.0%	5.16
Louisiana	LA	4,681,666	314	1.4%	6.71
Maine	ME	1,331,479	35	0.2%	2.63
Maryland	MD	6,016,447	722	3.2%	12.00
Massachusetts	MA	6,811,779	1,287	5.7%	18.89
Michigan	MI	9,928,300	853	3.8%	8.59
Minnesota	MN	5,519,952	518	2.3%	9.38
Mississippi	MS	2,988,726	96	0.4%	3.21
Missouri	MO	6,093,000	602	2.7%	9.88
Montana	MT	1,042,520	1	0.0%	0.10
Nebraska	NE	1,907,116	116	0.5%	6.08
Nevada	NV	2,940,058	38	0.2%	1.29
New Hampshire	NH	1,334,795	84	0.4%	6.29
New Jersey	NJ	8,944,469	338	1.5%	3.78
New Mexico	NM	2,081,015	119	0.5%	5.72
New York	NY	19,745,289	2,988	13.2%	15.13
North Carolina	NC	10,146,788	703	3.1%	6.93
North Dakota	ND	757,952	0	0.0%	0.00
Ohio	OH	11,614,373	1,232	5.4%	10.61
Oklahoma	OK	3,923,561	124	0.5%	3.16
Oregon	OR	4,093,465	168	0.7%	4.10
Pennsylvania	PA	12,784,227	1,634	7.2%	12.78
Puerto Rico	PR	3,411,307	119	0.5%	3.49
Rhode Island	RI	1,056,426	168	0.7%	15.90
South Carolina	SC	4,961,119	196	0.9%	3.95
South Dakota	SD	865,454	12	0.1%	1.39
Tennessee	TN	6,651,194	478	2.1%	7.19
Texas	TX	27,862,596	1,604	7.1%	5.76
Utah	UT	3,051,217	182	0.8%	5.96
Vermont	VT	624,594	62	0.3%	9.93
Virginia	VA	8,411,808	385	1.7%	4.58
Washington	WA	7,288,000	352	1.6%	4.83
West Virginia	WV	1,831,102	76	0.3%	4.15
Wisconsin	WI	5,778,708	329	1.4%	5.69
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

TABLE C.12

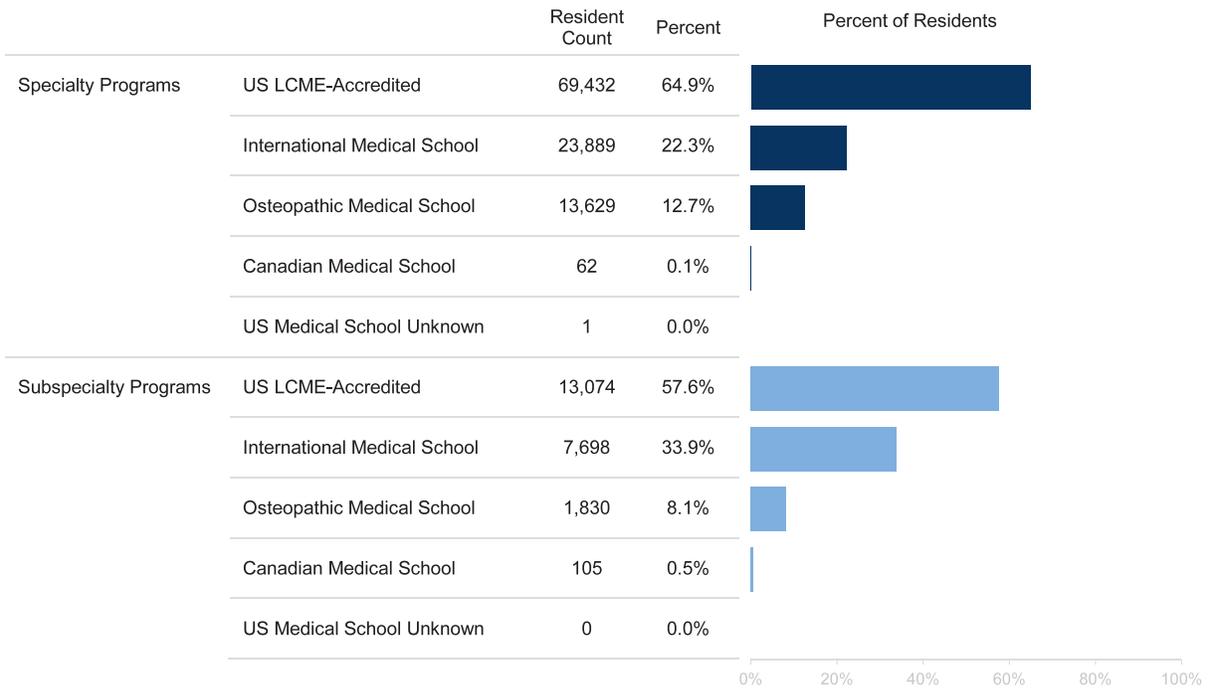
## Number of Active Pipeline Residents and Active Pipeline Resident Concentration per 100,000 Population by State

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Pipeline Residents	Percent of All Pipeline Residents	Pipeline Residents per 100,000 Pop
OVERALL	--	326,538,820	105,297	100.0%	32.25
Alabama	AL	4,863,300	1,163	1.1%	23.91
Alaska	AK	741,894	35	0.0%	4.72
Arizona	AZ	6,931,071	1,441	1.4%	20.79
Arkansas	AR	2,988,248	656	0.6%	21.95
California	CA	39,250,017	9,365	8.9%	23.86
Colorado	CO	5,540,545	1,149	1.1%	20.74
Connecticut	CT	3,576,452	1,933	1.8%	54.05
Delaware	DE	952,065	288	0.3%	30.25
District of Columbia	DC	681,170	1,375	1.3%	201.86
Florida	FL	20,612,439	4,242	4.0%	20.58
Georgia	GA	10,310,371	1,968	1.9%	19.09
Hawaii	HI	1,428,557	393	0.4%	27.51
Idaho	ID	1,683,140	116	0.1%	6.89
Illinois	IL	12,801,539	5,373	5.1%	41.97
Indiana	IN	6,633,053	1,148	1.1%	17.31
Iowa	IA	3,134,693	789	0.7%	25.17
Kansas	KS	2,907,289	709	0.7%	24.39
Kentucky	KY	4,436,974	1,068	1.0%	24.07
Louisiana	LA	4,681,666	1,780	1.7%	38.02
Maine	ME	1,331,479	295	0.3%	22.16
Maryland	MD	6,016,447	2,465	2.3%	40.97
Massachusetts	MA	6,811,779	4,194	4.0%	61.57
Michigan	MI	9,928,300	5,264	5.0%	53.02
Minnesota	MN	5,519,952	1,738	1.7%	31.49
Mississippi	MS	2,988,726	587	0.6%	19.64
Missouri	MO	6,093,000	2,279	2.2%	37.40
Montana	MT	1,042,520	80	0.1%	7.67
Nebraska	NE	1,907,116	660	0.6%	34.61
Nevada	NV	2,940,058	471	0.4%	16.02
New Hampshire	NH	1,334,795	333	0.3%	24.95
New Jersey	NJ	8,944,469	2,725	2.6%	30.47
New Mexico	NM	2,081,015	497	0.5%	23.88
New York	NY	19,745,289	13,985	13.3%	70.83
North Carolina	NC	10,146,788	2,675	2.5%	26.36
North Dakota	ND	757,952	133	0.1%	17.55
Ohio	OH	11,614,373	5,137	4.9%	44.23
Oklahoma	OK	3,923,561	898	0.9%	22.89
Oregon	OR	4,093,465	821	0.8%	20.06
Pennsylvania	PA	12,784,227	6,597	6.3%	51.60
Puerto Rico	PR	3,411,307	766	0.7%	22.45
Rhode Island	RI	1,056,426	664	0.6%	62.85
South Carolina	SC	4,961,119	1,162	1.1%	23.42
South Dakota	SD	865,454	133	0.1%	15.37
Tennessee	TN	6,651,194	2,009	1.9%	30.21
Texas	TX	27,862,596	6,901	6.6%	24.77
Utah	UT	3,051,217	613	0.6%	20.09
Vermont	VT	624,594	250	0.2%	40.03
Virginia	VA	8,411,808	2,125	2.0%	25.26
Washington	WA	7,288,000	1,602	1.5%	21.98
West Virginia	WV	1,831,102	688	0.7%	37.57
Wisconsin	WI	5,778,708	1,519	1.4%	26.29
Wyoming	WY	585,501	40	0.0%	6.83

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

FIGURE C.13

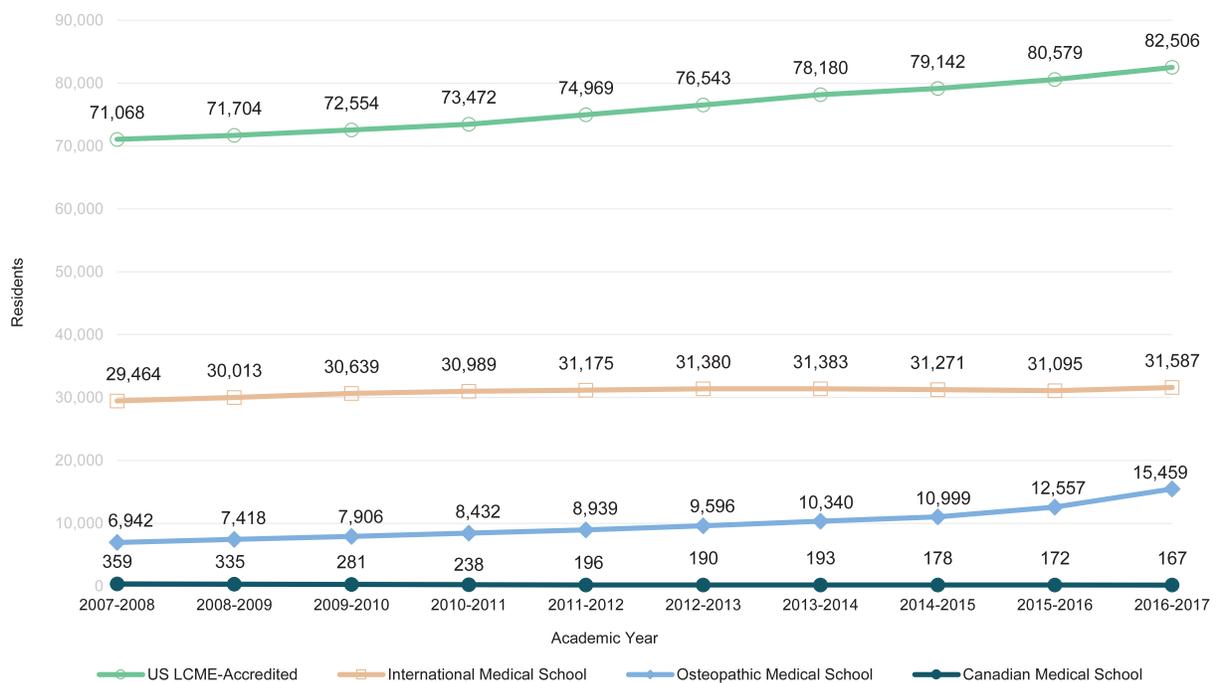
Number of Active Residents by Medical School Type



Notes: Total number of active residents in specialty programs = 107,013. Total number of active residents in subspecialty programs = 22,707.

FIGURE C.14

Number of Active Residents by Medical School Type and Academic Year, 2007-2008 to 2016-2017



Note: Not shown are those graduates for which the specific U.S. medical school is unknown. This number has been fewer than 20 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	129,720	82,506	63.6%	31,587	24.4%	15,459	11.9%	167	0.1%	1	0.0%
TOTAL PIPELINE	105,297	68,121	64.7%	23,678	22.5%	13,444	12.8%	53	0.1%	1	0.0%
Allergy and immunology	287	212	73.9%	49	17.1%	25	8.7%	1	0.3%	0	0.0%
Anesthesiology	6,207	4,604	74.2%	746	12.0%	852	13.7%	4	0.1%	1	0.0%
- Adult cardiothoracic anesthesiology	193	145	75.1%	24	12.4%	24	12.4%	0	0.0%	0	0.0%
- Clinical informatics (Anesthesiology)	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	183	148	80.9%	30	16.4%	5	2.7%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	20	18	90.0%	1	5.0%	1	5.0%	0	0.0%	0	0.0%
- Obstetric anesthesiology	39	31	79.5%	6	15.4%	1	2.6%	1	2.6%	0	0.0%
- Pain medicine (multidisciplinary)	354	243	68.6%	57	16.1%	51	14.4%	3	0.8%	0	0.0%
- Pediatric anesthesiology	205	152	74.1%	24	11.7%	28	13.7%	1	0.5%	0	0.0%
Colon and rectal surgery	95	78	82.1%	14	14.7%	0	0.0%	3	3.2%	0	0.0%
Dermatology	1,424	1,275	89.5%	47	3.3%	102	7.2%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	71	50	70.4%	17	23.9%	4	5.6%	0	0.0%	0	0.0%
- Micrographic surgery and dermatologic oncology	83	78	94.0%	1	1.2%	3	3.6%	1	1.2%	0	0.0%
Emergency medicine	6,885	5,106	74.2%	374	5.4%	1,402	20.4%	3	0.0%	0	0.0%
- Clinical informatics (Emergency medicine)	4	3	75.0%	1	25.0%	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	62	45	72.6%	7	11.3%	10	16.1%	0	0.0%	0	0.0%
- Medical toxicology	63	45	71.4%	11	17.5%	6	9.5%	1	1.6%	0	0.0%
- Pediatric emergency medicine	113	64	56.6%	33	29.2%	16	14.2%	0	0.0%	0	0.0%
- Sports medicine	14	9	64.3%	2	14.3%	3	21.4%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	13	9	69.2%	1	7.7%	2	15.4%	1	7.7%	0	0.0%
Family medicine	11,277	5,196	46.1%	3,426	30.4%	2,650	23.5%	5	0.0%	0	0.0%
- Clinical informatics (Family medicine)	7	7	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Geriatric medicine	44	20	45.5%	16	36.4%	8	18.2%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	304	167	54.9%	78	25.7%	57	18.8%	2	0.7%	0	0.0%
- Sports medicine	217	104	47.9%	50	23.0%	63	29.0%	0	0.0%	0	0.0%
Internal medicine	26,301	12,833	48.8%	10,352	39.4%	3,104	11.8%	12	0.0%	0	0.0%
- Adult congenital heart disease	15	10	66.7%	4	26.7%	1	6.7%	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	94	62	66.0%	26	27.7%	5	5.3%	1	1.1%	0	0.0%
- Cardiovascular disease	2,746	1,437	52.3%	1,129	41.1%	174	6.3%	6	0.2%	0	0.0%
- Clinical cardiac electrophysiology	142	77	54.2%	62	43.7%	3	2.1%	0	0.0%	0	0.0%
- Clinical informatics (Internal medicine)	19	15	78.9%	4	21.1%	0	0.0%	0	0.0%	0	0.0%
- Critical care medicine	217	73	33.6%	125	57.6%	17	7.8%	2	0.9%	0	0.0%
- Endocrinology, diabetes, and metabolism	624	263	42.1%	316	50.6%	45	7.2%	0	0.0%	0	0.0%
- Gastroenterology	1,565	995	63.6%	485	31.0%	84	5.4%	1	0.1%	0	0.0%
- Geriatric medicine	260	97	37.3%	138	53.1%	25	9.6%	0	0.0%	0	0.0%
- Hematology	15	11	73.3%	4	26.7%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	1,713	909	53.1%	717	41.9%	83	4.8%	4	0.2%	0	0.0%
- Infectious disease	694	336	48.4%	300	43.2%	57	8.2%	1	0.1%	0	0.0%
- Interventional cardiology	315	131	41.6%	169	53.7%	15	4.8%	0	0.0%	0	0.0%
- Nephrology	844	216	25.6%	548	64.9%	80	9.5%	0	0.0%	0	0.0%
- Medical oncology	34	16	47.1%	16	47.1%	2	5.9%	0	0.0%	0	0.0%
- Pulmonary disease	74	7	9.5%	65	87.8%	2	2.7%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	1,702	865	50.8%	691	40.6%	145	8.5%	1	0.1%	0	0.0%
- Rheumatology	458	180	39.3%	228	49.8%	49	10.7%	1	0.2%	0	0.0%
- Sleep medicine (multidisciplinary)	163	67	41.1%	87	53.4%	9	5.5%	0	0.0%	0	0.0%
- Transplant hepatology	39	25	64.1%	13	33.3%	1	2.6%	0	0.0%	0	0.0%
Medical genetics and genomics	71	36	50.7%	31	43.7%	3	4.2%	1	1.4%	0	0.0%
- Medical biochemical genetics	9	3	33.3%	6	66.7%	0	0.0%	0	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	53	34	64.2%	17	32.1%	2	3.8%	0	0.0%	0	0.0%
Neurological surgery	1,375	1,248	90.8%	103	7.5%	22	1.6%	2	0.1%	0	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	1	100.0%	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	2,544	1,388	54.6%	894	35.1%	262	10.3%	0	0.0%	0	0.0%
- Brain injury medicine	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Clinical neurophysiology	169	84	49.7%	75	44.4%	9	5.3%	1	0.6%	0	0.0%
- Epilepsy	74	40	54.1%	25	33.8%	7	9.5%	2	2.7%	0	0.0%
- Endovascular surgical neuroradiology	2	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	27	23	85.2%	4	14.8%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	60	37	61.7%	18	30.0%	4	6.7%	1	1.7%	0	0.0%
- Vascular neurology	126	55	43.7%	60	47.6%	8	6.3%	3	2.4%	0	0.0%
Child neurology	360	252	70.0%	88	24.4%	20	5.6%	0	0.0%	0	0.0%
Nuclear medicine	74	17	23.0%	54	73.0%	3	4.1%	0	0.0%	0	0.0%
Obstetrics and gynecology	5,372	4,054	75.5%	563	10.5%	753	14.0%	2	0.0%	0	0.0%
- Female pelvic medicine and reconstructive surgery	139	109	78.4%	16	11.5%	14	10.1%	0	0.0%	0	0.0%
- Gynecologic oncology	172	162	94.2%	7	4.1%	3	1.7%	0	0.0%	0	0.0%
- Maternal-fetal medicine	268	213	79.5%	35	13.1%	19	7.1%	1	0.4%	0	0.0%
- Reproductive endocrinology and infertility	120	102	85.0%	15	12.5%	2	1.7%	1	0.8%	0	0.0%
Ophthalmology	1,446	1,331	92.0%	66	4.6%	47	3.3%	2	0.1%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	6	6	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	3,760	3,563	94.8%	71	1.9%	126	3.4%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	41	30	73.2%	4	9.8%	5	12.2%	2	4.9%	0	0.0%
- Foot and ankle orthopaedics	15	11	73.3%	1	6.7%	2	13.3%	1	6.7%	0	0.0%
- Hand surgery	146	136	93.2%	3	2.1%	4	2.7%	3	2.1%	0	0.0%
- Musculoskeletal oncology	16	11	68.8%	5	31.3%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	217	183	84.3%	9	4.1%	17	7.8%	8	3.7%	0	0.0%
- Orthopaedic surgery of the spine	32	25	78.1%	5	15.6%	1	3.1%	1	3.1%	0	0.0%
- Orthopaedic trauma	14	10	71.4%	4	28.6%	0	0.0%	0	0.0%	0	0.0%
- Pediatric orthopaedics	38	28	73.7%	5	13.2%	2	5.3%	3	7.9%	0	0.0%
Osteopathic neuromusculoskeletal medicine	8	0	0.0%	0	0.0%	8	100.0%	0	0.0%	0	0.0%
Otolaryngology	1,541	1,496	97.1%	28	1.8%	17	1.1%	0	0.0%	0	0.0%
- Neurotology	28	28	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	33	27	81.8%	2	6.1%	0	0.0%	4	12.1%	0	0.0%
Pathology-anatomic and clinical	2,334	1,189	50.9%	928	39.8%	213	9.1%	4	0.2%	0	0.0%
- Blood banking/transfusion medicine	47	27	57.4%	17	36.2%	3	6.4%	0	0.0%	0	0.0%
- Clinical informatics (Pathology)	10	5	50.0%	2	20.0%	3	30.0%	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	63	45.3%	65	46.8%	11	7.9%	0	0.0%	0	0.0%
- Forensic pathology	46	33	71.7%	6	13.0%	7	15.2%	0	0.0%	0	0.0%
- Hematology	132	64	48.5%	58	43.9%	10	7.6%	0	0.0%	0	0.0%
- Medical microbiology	12	4	33.3%	8	66.7%	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	55	36	65.5%	11	20.0%	8	14.5%	0	0.0%	0	0.0%
- Pediatric pathology	23	15	65.2%	7	30.4%	1	4.3%	0	0.0%	0	0.0%
- Selective pathology	154	49	31.8%	90	58.4%	12	7.8%	3	1.9%	0	0.0%
Pediatrics	9,063	6,111	67.4%	1,748	19.3%	1,200	13.2%	4	0.0%	0	0.0%
- Adolescent medicine	89	71	79.8%	11	12.4%	6	6.7%	1	1.1%	0	0.0%
- Child abuse pediatrics	35	29	82.9%	3	8.6%	3	8.6%	0	0.0%	0	0.0%
- Clinical informatics (Pediatrics)	9	8	88.9%	0	0.0%	1	11.1%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	92	55	59.8%	24	26.1%	13	14.1%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	759	433	57.0%	234	30.8%	92	12.1%	0	0.0%	0	0.0%
- Pediatric cardiology	432	311	72.0%	97	22.5%	22	5.1%	2	0.5%	0	0.0%
- Pediatric critical care medicine	507	342	67.5%	113	22.3%	49	9.7%	3	0.6%	0	0.0%
- Pediatric emergency medicine	385	289	75.1%	57	14.8%	39	10.1%	0	0.0%	0	0.0%
- Pediatric endocrinology	243	128	52.7%	105	43.2%	9	3.7%	1	0.4%	0	0.0%
- Pediatric gastroenterology	290	172	59.3%	91	31.4%	27	9.3%	0	0.0%	0	0.0%
- Pediatric hematology/oncology	488	330	67.6%	106	21.7%	50	10.2%	2	0.4%	0	0.0%

TABLE C.15 Continued

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

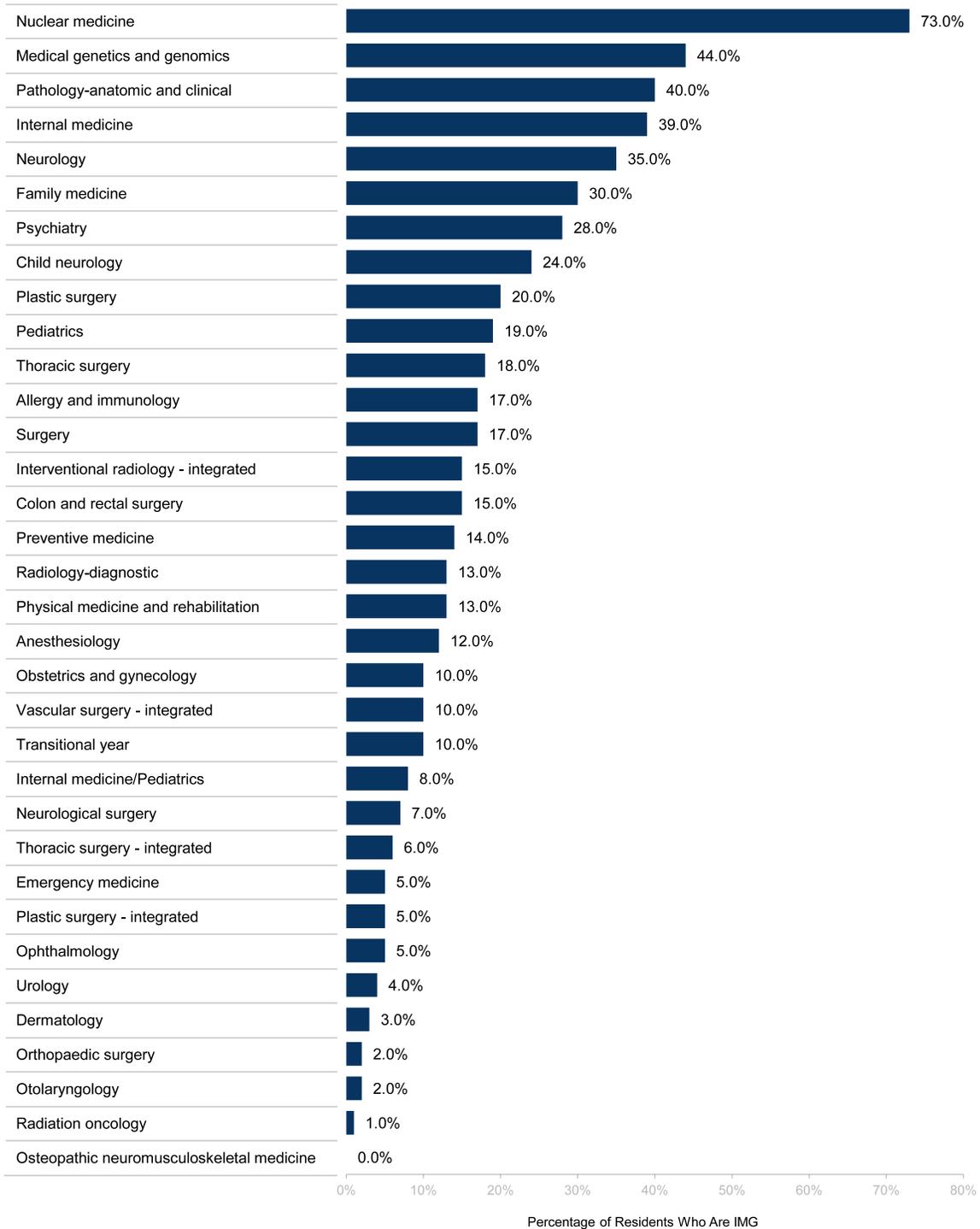
Specialty	Total Residents	US LCME-Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
- Pediatric infectious diseases	164	101	61.6%	55	33.5%	8	4.9%	0	0.0%	0	0.0%
- Pediatric nephrology	102	54	52.9%	44	43.1%	4	3.9%	0	0.0%	0	0.0%
- Pediatric pulmonology	167	96	57.5%	58	34.7%	13	7.8%	0	0.0%	0	0.0%
- Pediatric rheumatology	81	47	58.0%	27	33.3%	7	8.6%	0	0.0%	0	0.0%
- Pediatric sports medicine	23	17	73.9%	2	8.7%	3	13.0%	1	4.3%	0	0.0%
- Pediatric transplant hepatology	8	6	75.0%	2	25.0%	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	1,324	719	54.3%	171	12.9%	433	32.7%	1	0.1%	0	0.0%
- Brain injury medicine	9	5	55.6%	1	11.1%	3	33.3%	0	0.0%	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	16	11	68.8%	2	12.5%	3	18.0%	0	0.0%	0	0.0%
- Pediatric rehabilitation	26	16	61.5%	6	23.1%	4	15.4%	0	0.0%	0	0.0%
- Sports medicine	22	11	50.0%	3	13.6%	8	36.4%	0	0.0%	0	0.0%
Plastic surgery	316	247	78.2%	62	19.6%	7	2.2%	0	0.0%	0	0.0%
Plastic surgery - integrated	748	708	94.7%	35	4.7%	5	0.7%	0	0.0%	0	0.0%
- Craniofacial surgery	9	7	77.8%	1	11.1%	0	0.0%	1	11.1%	0	0.0%
- Hand surgery	24	22	91.7%	1	4.2%	0	0.0%	1	4.2%	0	0.0%
Preventive medicine	353	241	68.3%	51	14.4%	60	17.0%	1	0.3%	0	0.0%
- Medical toxicology	5	5	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	3	2	66.7%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Psychiatry	5,619	3,194	56.8%	1,577	28.1%	843	15.0%	5	0.1%	0	0.0%
- Addiction psychiatry	77	39	50.6%	32	41.6%	5	6.5%	1	1.3%	0	0.0%
- Child and adolescent psychiatry	840	445	53.0%	281	33.5%	114	13.6%	0	0.0%	0	0.0%
- Forensic psychiatry	63	37	58.7%	18	28.6%	7	11.1%	1	1.6%	0	0.0%
- Geriatric psychiatry	56	25	44.6%	24	42.9%	7	12.5%	0	0.0%	0	0.0%
- Psychosomatic medicine	80	41	51.3%	27	33.8%	9	11.3%	3	3.8%	0	0.0%
Radiation oncology	749	722	96.4%	10	1.3%	17	2.3%	0	0.0%	0	0.0%
Radiology-diagnostic	4,769	3,623	76.0%	631	13.2%	511	10.7%	4	0.1%	0	0.0%
- Abdominal radiology	46	27	58.7%	13	28.3%	1	2.2%	5	10.9%	0	0.0%
- Endovascular surgical neuroradiology	6	3	50.0%	3	50.0%	0	0.0%	0	0.0%	0	0.0%
- Musculoskeletal radiology	33	32	97.0%	1	3.0%	0	0.0%	0	0.0%	0	0.0%
- Neuroradiology	265	214	80.8%	34	12.8%	11	4.2%	6	2.3%	0	0.0%
- Nuclear radiology	12	7	58.3%	4	33.3%	1	8.3%	0	0.0%	0	0.0%
- Pediatric radiology	65	48	73.8%	12	18.5%	4	6.2%	1	1.5%	0	0.0%
- Vascular and interventional radiology	284	225	79.2%	31	10.9%	28	9.9%	0	0.0%	0	0.0%
Interventional radiology - integrated	13	11	84.6%	2	15.4%	0	0.0%	0	0.0%	0	0.0%
Surgery	8,184	6,187	75.6%	1,421	17.4%	575	7.0%	1	0.0%	0	0.0%
- Complex general surgical oncology	105	83	79.0%	12	11.4%	4	3.8%	6	5.7%	0	0.0%
- Hand surgery	8	6	75.0%	0	0.0%	0	0.0%	2	25.0%	0	0.0%
- Pediatric surgery	83	76	91.6%	7	8.4%	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	248	182	73.4%	35	14.1%	26	10.5%	5	2.0%	0	0.0%
- Vascular surgery	241	175	72.6%	50	20.7%	15	6.2%	1	0.4%	0	0.0%
Vascular surgery - integrated	260	223	85.8%	25	9.6%	12	4.6%	0	0.0%	0	0.0%
Thoracic surgery	224	169	75.4%	40	17.9%	11	4.9%	4	1.8%	0	0.0%
- Congenital cardiac surgery	5	3	60.0%	2	40.0%	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery - integrated	161	145	90.1%	10	6.2%	6	3.7%	0	0.0%	0	0.0%
Urology	1,276	1,154	90.4%	50	3.9%	71	5.6%	1	0.1%	0	0.0%
- Female pelvic medicine and reconstructive surgery	29	27	93.1%	1	3.4%	0	0.0%	1	3.4%	0	0.0%
- Pediatric urology	25	24	96.0%	0	0.0%	1	4.0%	0	0.0%	0	0.0%
Transitional year	1,110	852	76.8%	108	9.7%	149	13.4%	1	0.1%	0	0.0%
Internal medicine/Pediatrics	1,483	1,248	84.2%	114	7.7%	120	8.1%	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	-	129,720	82,506	31,587	15,459	167	1
Alabama	AL	1,424	1,013	309	102	0	0
Alaska	AK	37	24	1	12	0	0
Arizona	AZ	1,715	1,080	390	242	3	0
Arkansas	AR	781	461	247	73	0	0
California	CA	11,627	9,413	1,194	1,000	20	0
Colorado	CO	1,459	1,195	61	202	1	0
Connecticut	CT	2,356	1,319	840	189	8	0
Delaware	DE	353	199	57	97	0	0
District of Columbia	DC	1,713	1,130	506	76	1	0
Florida	FL	5,136	2,782	1,550	798	6	0
Georgia	GA	2,441	1,640	573	227	0	1
Hawaii	HI	446	279	66	100	1	0
Idaho	ID	118	75	19	24	0	0
Illinois	IL	6,421	3,981	1,675	761	4	0
Indiana	IN	1,420	1,057	218	145	0	0
Iowa	IA	954	556	196	202	0	0
Kansas	KS	813	492	163	158	0	0
Kentucky	KY	1,302	862	279	159	2	0
Louisiana	LA	2,110	1,378	610	122	0	0
Maine	ME	330	189	48	91	2	0
Maryland	MD	3,255	2,282	686	282	5	0
Massachusetts	MA	5,565	4,130	1,148	254	33	0
Michigan	MI	6,305	2,791	1,933	1,577	4	0
Minnesota	MN	2,298	1,660	437	193	8	0
Mississippi	MS	689	446	127	116	0	0
Missouri	MO	2,908	1,917	637	353	1	0
Montana	MT	81	37	25	19	0	0
Nebraska	NE	779	479	212	88	0	0
Nevada	NV	509	206	190	113	0	0
New Hampshire	NH	417	312	75	30	0	0
New Jersey	NJ	3,068	990	1,602	476	0	0
New Mexico	NM	616	407	141	68	0	0
New York	NY	17,115	8,737	6,912	1,443	23	0
North Carolina	NC	3,398	2,708	399	286	5	0
North Dakota	ND	141	70	63	8	0	0
Ohio	OH	6,469	3,748	1,649	1,066	6	0
Oklahoma	OK	1,022	488	250	284	0	0
Oregon	OR	993	775	69	149	0	0
Pennsylvania	PA	8,330	4,999	1,941	1,373	17	0
Puerto Rico	PR	925	645	280	0	0	0
Rhode Island	RI	834	612	147	73	2	0
South Carolina	SC	1,382	1,054	166	162	0	0
South Dakota	SD	151	77	45	29	0	0
Tennessee	TN	2,521	1,820	491	210	0	0
Texas	TX	8,601	5,856	1,717	1,022	6	0
Utah	UT	811	685	81	45	0	0
Vermont	VT	312	245	49	17	1	0
Virginia	VA	2,555	1,791	393	368	3	0
Washington	WA	2,003	1,663	120	215	5	0
West Virginia	WV	773	402	249	122	0	0
Wisconsin	WI	1,898	1,344	330	224	0	0
Wyoming	WY	40	5	21	14	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)	US LCME-Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
OVERALL	30.7	30.1	32.2	30.4	32.0	
TOTAL PIPELINE	29.6	29.1	30.9	29.8	28.6	
Allergy and immunology	32.0	31.8	32.9	32.2		
Anesthesiology	29.4	29.0	31.3	29.6		
- Adult cardiothoracic anesthesiology	33.1	32.6	36.1	32.7		
- Clinical informatics (Anesthesiology)	30.0	30.0				
- Critical care medicine	33.9	33.8	34.8	32.6		
- Regional anesthesiology and acute pain medicine	31.6	31.6	32.0	32.0		
- Obstetric anesthesiology	33.6	33.3	35.8	33.0	32.0	
- Pain medicine (multidisciplinary)	33.6	33.2	35.0	33.8	35.0	
- Pediatric anesthesiology	32.9	32.6	35.1	32.4	33.0	
Colon and rectal surgery	34.7	34.4	36.9		32.3	
Dermatology	30.1	29.8	33.8	30.9		
- Dermatopathology (multidisciplinary)	34.9	33.8	38.2	35.3		
- Micrographic surgery and dermatologic oncology	33.7	33.6	40.0	33.7	36.0	
Emergency medicine	29.6	29.3	30.7	30.0	29.0	
- Clinical informatics (Emergency medicine)	31.0	31.0	31.0			
- Emergency medical services	33.3	32.4	35.3	35.8		
- Medical toxicology	33.9	33.0	36.1	34.3		
- Pediatric emergency medicine	32.1	32.0	32.8	31.0		
- Sports medicine	32.6	32.0	38.5	30.3		
- Undersea and hyperbaric medicine	39.3	41.3	34.0	32.5	40.0	
Family medicine	30.4	29.9	31.6	29.9	29.5	
- Clinical informatics (Family medicine)	37.4	37.4				
- Geriatric medicine	33.7	33.8	34.5	31.8		
- Hospice and palliative medicine (multidisciplinary)	36.3	37.3	36.4	33.6	31.5	
- Sports medicine	32.9	32.8	33.6	32.5		
Internal medicine	29.4	28.7	30.3	29.5	28.5	
- Adult congenital heart disease	34.2	34.0	34.0	36.0		
- Advanced heart failure and transplant cardiology	35.3	34.9	36.3	35.8	34.0	
- Cardiovascular disease	32.0	31.5	32.8	31.8	33.0	
- Clinical cardiac electrophysiology	35.9	34.8	37.4	34.0		
- Clinical informatics (Internal medicine)	32.7	32.8	32.5			
- Critical care medicine	33.5	33.1	33.9	32.8	32.0	
- Endocrinology, diabetes, and metabolism	32.7	31.3	33.9	32.2		
- Gastroenterology	31.8	31.3	32.9	31.9		
- Geriatric medicine	34.0	33.3	34.7	32.2		
- Hematology	32.6	31.6	35.0			
- Hematology and medical oncology	32.5	32.4	32.6	32.1	30.0	
- Infectious disease	33.6	32.9	34.7	32.7	32.0	
- Interventional cardiology	35.4	34.8	36.0	34.9		
- Nephrology	34.2	32.2	35.2	33.3		
- Medical oncology	33.5	32.3	35.3	31.0		
- Pulmonary disease	34.3	36.4	34.0	33.5		
- Pulmonary disease and critical care medicine	32.4	32.1	32.6	32.8	36.0	
- Rheumatology	32.2	31.6	32.8	32.1	32.0	
- Sleep medicine (multidisciplinary)	35.1	34.4	35.9	33.3		
- Transplant hepatology	35.2	34.3	37.1	33.0		
Medical genetics and genomics	35.7	35.8	36.2	31.0		
- Medical biochemical genetics	33.2	33.0	33.3			
- Molecular genetic pathology (multidisciplinary)	37.5	36.4	40.1	34.5		
Neurological surgery	28.6	28.6	29.7	29.0		
- Endovascular surgical neuroradiology	35.0		35.0			

TABLE C.18 Continued

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

Specialty	OVERALL Age (Avg)	US LCME-Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
Neurology	30.4	29.9	31.2	30.0		
- Brain injury medicine						
- Clinical neurophysiology	34.6	33.1	36.4	33.3	32.0	
- Epilepsy	34.5	35.2	33.6	34.4	33.5	
- Endovascular surgical neuroradiology	37.0	37.0				
- Neurodevelopmental disabilities	33.8	33.2	37.0			
- Neuromuscular medicine	33.4	32.9	34.9	32.5	30.0	
- Vascular neurology	34.3	34.3	34.5	33.1	31.7	
Child neurology	31.8	31.4	33.4	29.7		
Nuclear medicine	36.5	36.0	36.7	35.0		
Obstetrics and gynecology	28.7	28.4	29.9	29.1	30.0	
- Female pelvic medicine and reconstructive surgery	33.0	32.4	37.5	38.3		
- Gynecologic oncology	32.8	32.6	36.0			
- Maternal-fetal medicine	32.8	32.5	33.4	35.7		
- Reproductive endocrinology and infertility	32.5	32.1	37.7		32.0	
Ophthalmology	29.6	29.2	35.0	32.0	27.0	
- Ophthalmic plastic and reconstructive surgery	31.7	31.7				
Orthopaedic surgery	28.6	28.5	30.9	30.3		
- Adult reconstructive orthopaedics	34.0	33.6	37.5	34.6	32.5	
- Foot and ankle orthopaedics	33.7	33.6	37.0	35.0	29.0	
- Hand surgery	33.6	33.5	39.3	34.5	32.7	
- Musculoskeletal oncology	34.7	34.4	35.4			
- Orthopaedic sports medicine	33.8	33.7	35.6	34.6	32.3	
- Orthopaedic surgery of the spine	33.8	33.0	37.0	39.0	31.0	
- Orthopaedic trauma	33.9	33.1	35.8			
- Pediatric orthopaedics	34.2	33.5	39.2	32.5	34.3	
Osteopathic neuromusculoskeletal medicine	34.0			34.0		
Otolaryngology	28.4	28.3	32.3	28.0		
- Neurotology	33.8	33.8				
- Pediatric otolaryngology	33.2	33.0	35.5		33.0	
Pathology-anatomic and clinical	31.9	30.4	34.2	29.9	30.0	
- Blood banking/transfusion medicine	36.5	34.2	39.9	37.3		
- Clinical informatics (Pathology)	35.1	33.0	42.0	35.0		
- Chemical pathology	34.0	34.0				
- Cytopathology	36.5	33.8	39.5	34.5		
- Forensic pathology	35.7	35.7	37.3	34.3		
- Hematology	36.5	34.6	39.0	33.6		
- Medical microbiology	35.5	34.8	35.9			
- Neuropathology	35.7	34.0	39.9	35.8		
- Pediatric pathology	35.2	35.7	34.4	33.0		
- Selective pathology	37.6	35.3	39.1	36.8	33.7	
Pediatrics	28.6	28.3	29.8	28.6	25.0	
- Adolescent medicine	31.9	31.5	35.0	32.0	33.0	
- Child abuse pediatrics	32.3	31.8		35.0		
- Clinical informatics (Pediatrics)	32.0	32.3		31.0		
- Developmental-behavioral pediatrics	33.9	33.7	36.3	31.5		
- Neonatal-perinatal medicine	32.0	31.6	32.8	31.4		
- Pediatric cardiology	31.6	31.6	32.1	31.6	26.0	
- Pediatric critical care medicine	32.3	32.1	33.2	32.1	31.0	
- Pediatric emergency medicine	32.1	32.0	32.9	31.6		
- Pediatric endocrinology	32.6	31.3	34.1	30.0		
- Pediatric gastroenterology	31.3	31.3	31.5	31.6		
- Pediatric hematology/oncology	31.9	31.9	31.9	32.0		

**TABLE C.18 Continued**

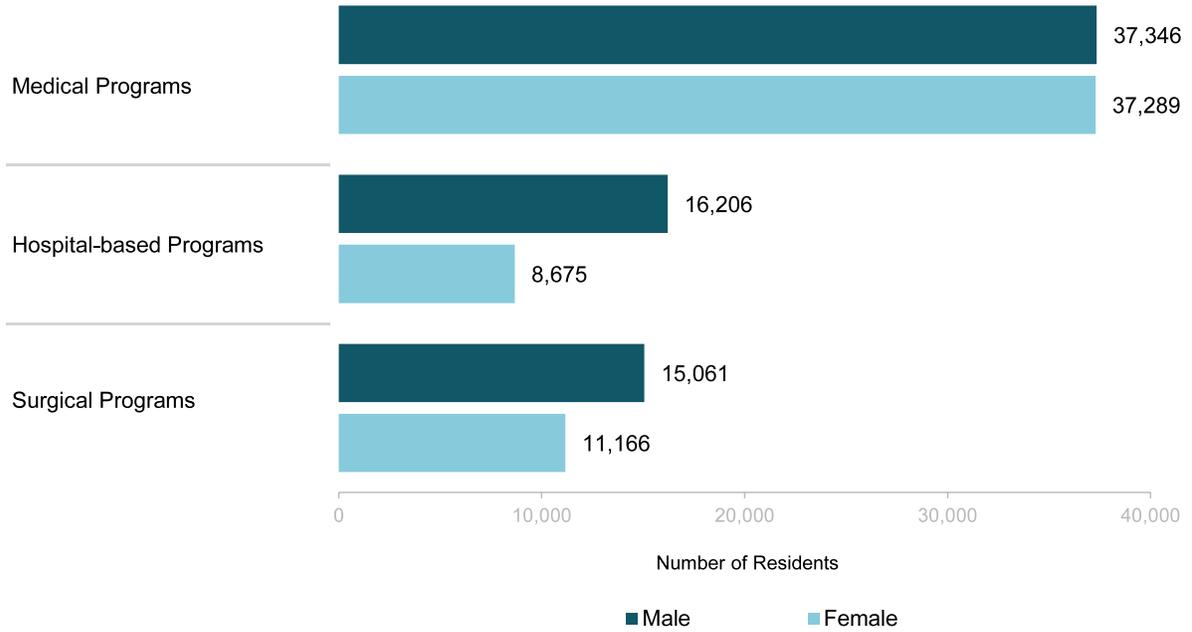
**Mean Age of Year 1 Residents by Specialty and Subspecialty and Medical School Type**

Specialty	OVERALL Age (Avg)	US LCME-Accredited Medical School	International Medical School	Osteopathic Medical School	Canadian Medical School	US Medical School Unknown
- Pediatric infectious diseases	33.2	32.6	34.5	34.0		
- Pediatric nephrology	33.4	31.8	36.2	31.0		
- Pediatric pulmonology	32.3	31.9	33.3	31.2		
- Pediatric rheumatology	32.9	32.2	33.0	37.3		
- Pediatric sports medicine	34.5	35.3	32.5	33.0	30.0	
- Pediatric transplant hepatology	35.6	34.7	38.5			
Physical medicine and rehabilitation	30.4	29.7	32.6	30.6		
- Brain injury medicine	33.4	31.4	46.0	32.7		
- Neuromuscular medicine						
- Spinal cord injury medicine	33.6	31.6	45.0	33.3		
- Pediatric rehabilitation	34.4	32.9	37.2	34.0		
- Sports medicine	32.6	32.3	32.3	33.3		
Plastic surgery	34.2	33.8	35.1	33.7		
Plastic surgery - integrated	28.7	28.5	32.5	34.0		
- Craniofacial surgery	35.6	37.0	33.0		28.0	
- Hand surgery	34.2	34.5	33.0		29.0	
Preventive medicine	37.3	36.9	38.2	37.9		
- Medical toxicology	33.6	33.6				
- Undersea and hyperbaric medicine	44.7	49.5	35.0			
Psychiatry	30.4	29.7	32.1	30.8		
- Addiction psychiatry	35.5	34.8	36.8	33.6	31.0	
- Child and adolescent psychiatry	33.8	33.0	35.1	32.9		
- Forensic psychiatry	35.1	35.3	35.2	34.6	33.0	
- Geriatric psychiatry	36.3	35.0	38.5	32.8		
- Psychosomatic medicine	34.0	32.9	35.8	33.8	34.7	
Radiation oncology	30.4	30.4		30.6		
Radiology-diagnostic	30.5	29.9	32.5	30.7	28.0	
- Abdominal radiology	33.9	33.7	35.2	33.0	32.2	
- Endovascular surgical neuroradiology	36.8	37.0	36.7			
- Musculoskeletal radiology	33.6	33.4	42.0			
- Neuroradiology	34.3	34.1	35.2	36.9	31.2	
- Nuclear radiology	37.6	35.0	39.0	50.0		
- Pediatric radiology	34.8	34.2	36.5	37.3	32.0	
- Vascular and interventional radiology	34.3	34.0	35.7	35.1		
Interventional radiology - integrated	29.5	29.5				
Surgery	29.2	28.8	30.8	29.3	31.0	
- Complex general surgical oncology	35.0	34.9	35.6	35.0	37.0	
- Hand surgery	31.8	31.8			31.5	
- Pediatric surgery	35.3	35.3	34.7			
- Surgical critical care	34.9	34.8	35.7	34.4	33.8	
- Vascular surgery	33.6	33.6	33.3	34.4	36.0	
Vascular surgery - integrated	29.1	29.0	31.0	28.5		
Thoracic surgery	34.5	34.3	35.2	35.6	33.0	
- Congenital cardiac surgery	37.4	39.3	34.5			
Thoracic surgery - integrated	29.0	29.1	30.0	27.5		
Urology	29.7	29.5	33.5	29.7		
- Female pelvic medicine and reconstructive surgery	32.7	32.7				
- Pediatric urology	34.6	34.7		33.0		
Transitional year	29.0	28.5	30.9	30.0	34.0	
Internal medicine/Pediatrics	28.6	28.5	29.3	29.0	30.0	

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

FIGURE C.19

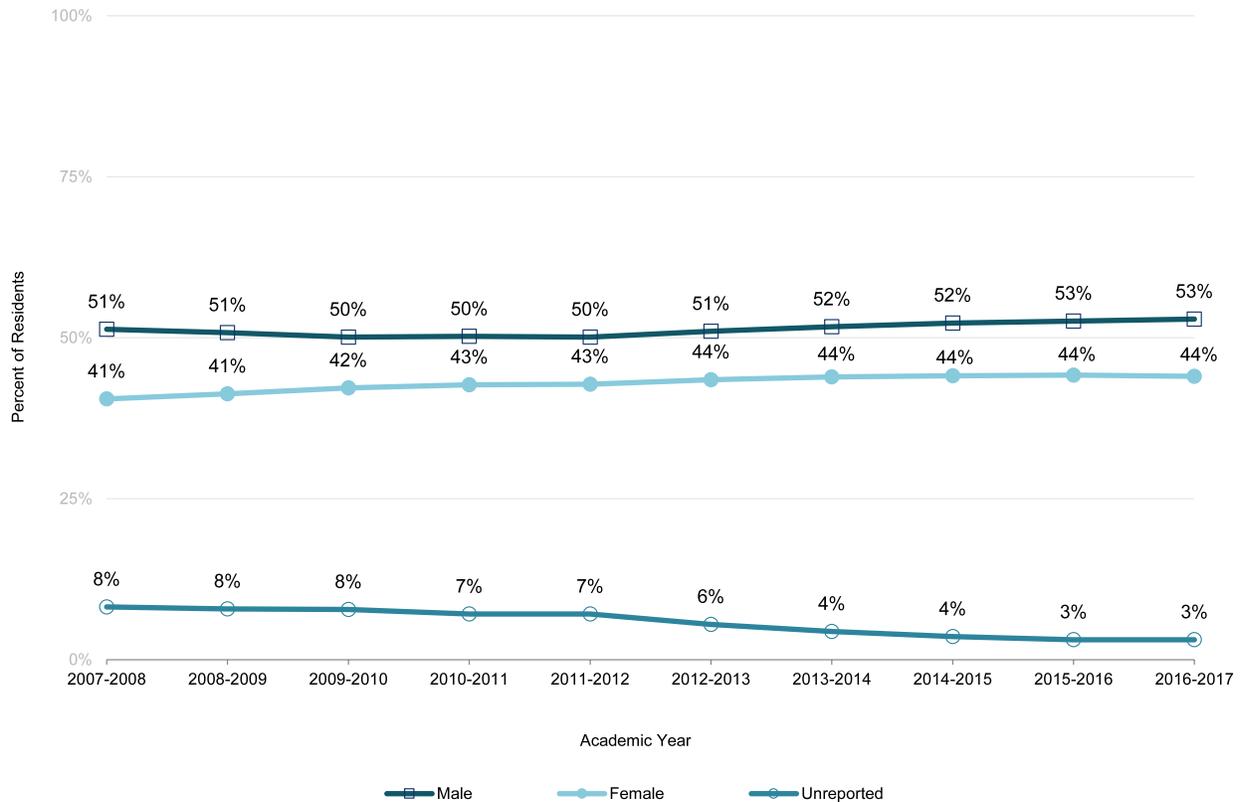
Number of Active Residents by Specialty Group and Sex



Note: Not shown are those residents for which sex is unreported (n = 3,977).

FIGURE C.20

Percent of Active Residents by Sex and Academic Year, 2007-2008 to 2016-2017



Specialty	Total Programs	Total Residents	Sex					
			Female		Male		Not Reported	
			#	%	#	%	#	%
OVERALL	10,672	129,720	57,130	44.0%	68,613	52.9%	3,977	3.1%
TOTAL PIPELINE	4,383	105,297	46,483	44.1%	54,992	52.2%	3,822	3.6%
Allergy and immunology	79	287	200	69.7%	85	29.6%	2	0.7%
Anesthesiology	147	6,207	2,145	34.6%	3,974	64.0%	88	1.4%
- Adult cardiothoracic anesthesiology	66	193	58	30.1%	135	69.9%	0	0.0%
- Clinical informatics (Anesthesiology)	1	1	0	0.0%	1	100.0%	0	0.0%
- Critical care medicine	57	183	49	26.8%	134	73.2%	0	0.0%
- Regional anesthesiology and acute pain medicine	9	20	8	40.0%	12	60.0%	0	0.0%
- Obstetric anesthesiology	32	39	23	59.0%	15	38.5%	1	2.6%
- Pain medicine (multidisciplinary)	101	354	77	21.8%	276	78.0%	1	0.3%
- Pediatric anesthesiology	58	205	109	53.2%	96	46.8%	0	0.0%
Colon and rectal surgery	58	95	40	42.1%	55	57.9%	0	0.0%
Dermatology	128	1,424	906	63.6%	514	36.1%	4	0.3%
- Dermatopathology (multidisciplinary)	53	71	40	56.3%	31	43.7%	0	0.0%
- Micrographic surgery and dermatologic oncology	75	83	41	49.4%	42	50.6%	0	0.0%
Emergency medicine	212	6,885	2,358	34.2%	4,398	63.9%	129	1.9%
- Clinical informatics (Emergency medicine)	4	4	1	25.0%	3	75.0%	0	0.0%
- Emergency medical services	55	62	28	45.2%	34	54.8%	0	0.0%
- Medical toxicology	27	63	26	41.3%	37	58.7%	0	0.0%
- Pediatric emergency medicine	26	113	74	65.5%	37	32.7%	2	1.8%
- Sports medicine	7	14	2	14.3%	12	85.7%	0	0.0%
- Undersea and hyperbaric medicine	7	13	3	23.1%	10	76.9%	0	0.0%
Family medicine	540	11,277	6,111	54.2%	5,026	44.6%	140	1.2%
- Clinical informatics (Family medicine)	2	7	2	28.6%	5	71.4%	0	0.0%
- Geriatric medicine	44	44	30	68.2%	14	31.8%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	130	304	195	64.1%	109	35.9%	0	0.0%
- Sports medicine	132	217	63	29.0%	154	71.0%	0	0.0%
Internal medicine	469	26,301	10,505	39.9%	14,140	53.8%	1,656	6.3%
- Adult congenital heart disease	10	15	6	40.0%	9	60.0%	0	0.0%
- Advanced heart failure and transplant cardiology	71	94	26	27.7%	67	71.3%	1	1.1%
- Cardiovascular disease	210	2,746	592	21.6%	2,133	77.7%	21	0.8%
- Clinical cardiac electrophysiology	105	142	21	14.8%	120	84.5%	1	0.7%
- Clinical informatics (Internal medicine)	12	19	0	0.0%	19	100.0%	0	0.0%
- Critical care medicine	34	217	61	28.1%	152	70.0%	4	1.8%
- Endocrinology, diabetes, and metabolism	141	624	435	69.7%	189	30.3%	0	0.0%
- Gastroenterology	175	1,565	522	33.4%	1,036	66.2%	7	0.4%
- Geriatric medicine	106	260	170	65.4%	90	34.6%	0	0.0%
- Hematology	2	15	2	13.3%	13	86.7%	0	0.0%
- Hematology and medical oncology	146	1,713	720	42.0%	983	57.4%	10	0.6%
- Infectious disease	146	694	375	54.0%	314	45.2%	5	0.7%
- Interventional cardiology	150	315	28	8.9%	284	90.2%	3	1.0%
- Nephrology	149	844	296	35.1%	546	64.7%	2	0.2%
- Medical oncology	6	34	12	35.3%	22	64.7%	0	0.0%
- Pulmonary disease	20	74	25	33.8%	49	66.2%	0	0.0%
- Pulmonary disease and critical care medicine	151	1,702	540	31.7%	1,154	67.8%	8	0.5%
- Rheumatology	114	458	278	60.7%	178	38.9%	2	0.4%
- Sleep medicine (multidisciplinary)	84	163	71	43.6%	90	55.2%	2	1.2%
- Transplant hepatology	51	39	19	48.7%	20	51.3%	0	0.0%
Medical genetics and genomics	46	71	48	67.6%	23	32.4%	0	0.0%
- Medical biochemical genetics	16	9	6	66.7%	3	33.3%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	39	53	17	32.1%	36	67.9%	0	0.0%
Neurological surgery	110	1,375	239	17.4%	1,121	81.5%	15	1.1%
- Endovascular surgical neuroradiology	2	1	0	0.0%	1	100.0%	0	0.0%

TABLE C.21 *Continued*

## Number of Active Residents by Specialty and Subspecialty and Sex

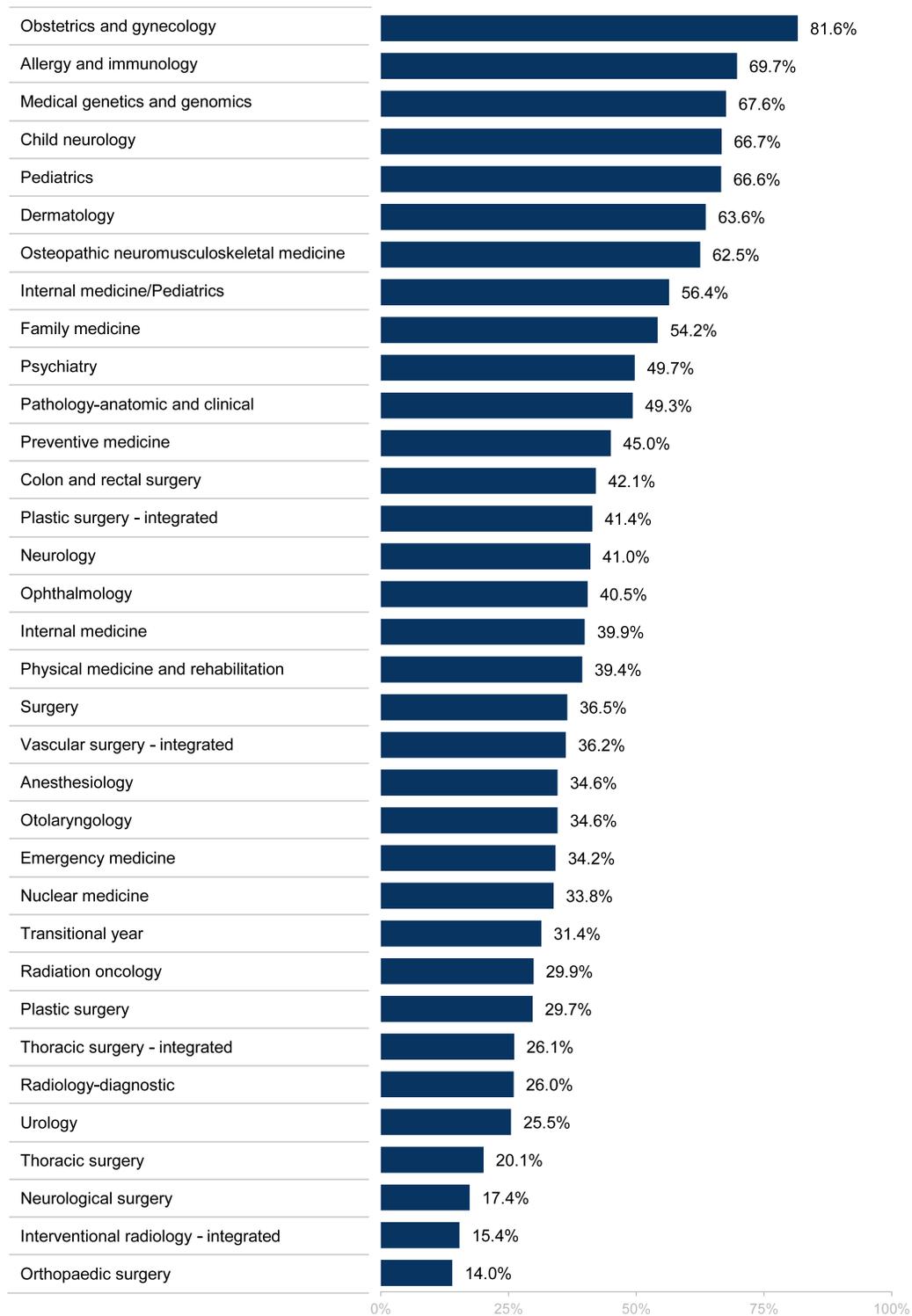
Specialty	Total Programs	Total Residents	Sex					
			Female		Male		Not Reported	
			#	%	#	%	#	%
Neurology	144	2,544	1,054	41.4%	1,364	53.6%	126	5.0%
- Brain injury medicine	1	0	0	N/A	0	N/A	0	N/A
- Clinical neurophysiology	94	169	84	49.7%	85	50.3%	0	0.0%
- Epilepsy	61	74	33	44.6%	41	55.4%	0	0.0%
- Endovascular surgical neuroradiology	1	2	0	0.0%	2	100.0%	0	0.0%
- Neurodevelopmental disabilities	8	27	20	74.1%	7	25.9%	0	0.0%
- Neuromuscular medicine	46	60	36	60.0%	24	40.0%	0	0.0%
- Vascular neurology	93	126	42	33.3%	84	66.7%	0	0.0%
Child neurology	74	360	240	66.7%	120	33.3%	0	0.0%
Nuclear medicine	42	74	25	33.8%	49	66.2%	0	0.0%
Obstetrics and gynecology	269	5,372	4,386	81.6%	909	16.9%	77	1.4%
- Female pelvic medicine and reconstructive surgery	50	139	112	80.6%	27	19.4%	0	0.0%
- Gynecologic oncology	48	172	131	76.2%	41	23.8%	0	0.0%
- Maternal-fetal medicine	73	268	194	72.4%	74	27.6%	0	0.0%
- Reproductive endocrinology and infertility	41	120	94	78.3%	26	21.7%	0	0.0%
Ophthalmology	116	1,446	593	41.0%	846	58.5%	7	0.5%
- Ophthalmic plastic and reconstructive surgery	5	6	2	33.3%	4	66.7%	0	0.0%
Orthopaedic surgery	168	3,760	525	14.0%	3,115	82.8%	120	3.2%
- Adult reconstructive orthopaedics	23	41	2	4.9%	39	95.1%	0	0.0%
- Foot and ankle orthopaedics	6	15	3	20.0%	12	80.0%	0	0.0%
- Hand surgery	68	146	40	27.4%	106	72.6%	0	0.0%
- Musculoskeletal oncology	11	16	7	43.8%	9	56.3%	0	0.0%
- Orthopaedic sports medicine	97	217	25	11.5%	192	88.5%	0	0.0%
- Orthopaedic surgery of the spine	16	32	2	6.3%	30	93.8%	0	0.0%
- Orthopaedic trauma	9	14	0	0.0%	14	100.0%	0	0.0%
- Pediatric orthopaedics	25	38	17	44.7%	21	55.3%	0	0.0%
Osteopathic neuromusculoskeletal medicine	4	8	5	62.5%	3	37.5%	0	0.0%
Otolaryngology	109	1,541	533	34.6%	985	63.9%	23	1.5%
- Neurotology	20	28	8	28.6%	20	71.4%	0	0.0%
- Pediatric otolaryngology	22	33	18	54.5%	15	45.5%	0	0.0%
Pathology-anatomic and clinical	142	2,334	1,151	49.3%	1,151	49.3%	32	1.4%
- Blood banking/transfusion medicine	49	47	24	51.1%	23	48.9%	0	0.0%
- Clinical informatics (Pathology)	5	10	2	20.0%	8	80.0%	0	0.0%
- Chemical pathology	4	1	0	0.0%	1	100.0%	0	0.0%
- Cytopathology	92	139	82	59.0%	56	40.3%	1	0.7%
- Forensic pathology	40	46	30	65.2%	16	34.8%	0	0.0%
- Hematology	86	132	72	54.5%	60	45.5%	0	0.0%
- Medical microbiology	15	12	4	33.3%	8	66.7%	0	0.0%
- Neuropathology	35	55	27	49.1%	28	50.9%	0	0.0%
- Pediatric pathology	26	23	14	60.9%	9	39.1%	0	0.0%
- Selective pathology	85	154	87	56.5%	64	41.6%	3	1.9%
Pediatrics	207	9,063	6,039	66.6%	2,261	24.9%	763	8.4%
- Adolescent medicine	29	89	71	79.8%	18	20.2%	0	0.0%
- Child abuse pediatrics	30	35	33	94.3%	2	5.7%	0	0.0%
- Clinical informatics (Pediatrics)	5	9	2	22.2%	7	77.8%	0	0.0%
- Developmental-behavioral pediatrics	39	92	76	82.6%	16	17.4%	0	0.0%
- Neonatal-perinatal medicine	99	759	547	72.1%	210	27.7%	2	0.3%
- Pediatric cardiology	59	432	210	48.6%	222	51.4%	0	0.0%
- Pediatric critical care medicine	67	507	320	63.1%	184	36.3%	3	0.6%
- Pediatric emergency medicine	52	385	262	68.1%	122	31.7%	1	0.3%
- Pediatric endocrinology	71	243	182	74.9%	60	24.7%	1	0.4%
- Pediatric gastroenterology	63	290	192	66.2%	96	33.1%	2	0.7%
- Pediatric hematology/oncology	73	488	341	69.9%	146	29.9%	1	0.2%

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	
			#	%	#	%	#	%
- Pediatric infectious diseases	64	164	111	67.7%	53	32.3%	0	0.0%
- Pediatric nephrology	44	102	73	71.6%	27	26.5%	2	2.0%
- Pediatric pulmonology	54	167	103	61.7%	64	38.3%	0	0.0%
- Pediatric rheumatology	36	81	62	76.5%	18	22.2%	1	1.2%
- Pediatric sports medicine	18	23	13	56.5%	10	43.5%	0	0.0%
- Pediatric transplant hepatology	13	8	6	75.0%	2	25.0%	0	0.0%
Physical medicine and rehabilitation	86	1,324	521	39.4%	797	60.2%	6	0.5%
- Brain injury medicine	13	9	5	55.6%	4	44.4%	0	0.0%
- Neuromuscular medicine	1	0	0	N/A	0	N/A	0	N/A
- Spinal cord injury medicine	22	16	8	50.0%	8	50.0%	0	0.0%
- Pediatric rehabilitation	20	26	22	84.6%	4	15.4%	0	0.0%
- Sports medicine	19	22	8	36.4%	14	63.6%	0	0.0%
Plastic surgery	68	316	94	29.7%	222	70.3%	0	0.0%
Plastic surgery - integrated	76	748	303	40.5%	423	56.6%	22	2.9%
- Craniofacial surgery	9	9	5	55.6%	4	44.4%	0	0.0%
- Hand surgery	16	24	10	41.7%	14	58.3%	0	0.0%
Preventive medicine	76	353	159	45.0%	193	54.7%	1	0.3%
- Medical toxicology	1	5	2	40.0%	3	60.0%	0	0.0%
- Undersea and hyperbaric medicine	1	3	0	0.0%	3	100.0%	0	0.0%
Psychiatry	226	5,619	2,790	49.7%	2,623	46.7%	206	3.7%
- Addiction psychiatry	47	77	25	32.5%	52	67.5%	0	0.0%
- Child and adolescent psychiatry	134	840	522	62.1%	314	37.4%	4	0.5%
- Forensic psychiatry	46	63	23	36.5%	39	61.9%	1	1.6%
- Geriatric psychiatry	59	56	33	58.9%	23	41.1%	0	0.0%
- Psychosomatic medicine	59	80	46	57.5%	34	42.5%	0	0.0%
Radiation oncology	92	749	224	29.9%	521	69.6%	4	0.5%
Radiology-diagnostic	194	4,769	1,240	26.0%	3,504	73.5%	25	0.5%
- Abdominal radiology	12	46	16	34.8%	30	65.2%	0	0.0%
- Endovascular surgical neuroradiology	4	6	1	16.7%	5	83.3%	0	0.0%
- Musculoskeletal radiology	16	33	2	6.1%	31	93.9%	0	0.0%
- Neuroradiology	85	265	51	19.2%	212	80.0%	2	0.8%
- Nuclear radiology	18	12	3	25.0%	9	75.0%	0	0.0%
- Pediatric radiology	46	65	30	46.2%	35	53.8%	0	0.0%
- Vascular and interventional radiology	93	284	46	16.2%	237	83.5%	1	0.4%
Interventional radiology - integrated	65	13	2	15.4%	11	84.6%	0	0.0%
Surgery	278	8,184	2,989	36.5%	4,879	59.6%	316	3.9%
- Complex general surgical oncology	24	105	41	39.0%	64	61.0%	0	0.0%
- Hand surgery	1	8	2	25.0%	6	75.0%	0	0.0%
- Pediatric surgery	49	83	34	41.0%	49	59.0%	0	0.0%
- Surgical critical care	117	248	106	42.7%	142	57.3%	0	0.0%
- Vascular surgery	107	241	70	29.0%	171	71.0%	0	0.0%
Vascular surgery - integrated	53	260	94	36.2%	163	62.7%	3	1.2%
Thoracic surgery	69	224	45	20.1%	179	79.9%	0	0.0%
- Congenital cardiac surgery	13	5	2	40.0%	3	60.0%	0	0.0%
Thoracic surgery - integrated	27	161	42	26.1%	116	72.0%	3	1.9%
Urology	136	1,276	325	25.5%	943	73.9%	8	0.6%
- Female pelvic medicine and reconstructive surgery	11	29	18	62.1%	11	37.9%	0	0.0%
- Pediatric urology	28	25	15	60.0%	10	40.0%	0	0.0%
Transitional year	115	1,110	349	31.4%	703	63.3%	58	5.2%
Internal medicine/Pediatrics	79	1,483	837	56.4%	598	40.3%	48	3.2%

Note: Pipeline specialties are highlighted.

FIGURE C.22

## Specialties Organized by Largest Percentages of Active Female Residents



Specialty	Ethnicity						
	White, Non-Hispanic	Asian or Pacific Islander	Hispanic	Black, Non-Hispanic	Native American/Alaskan	Other	Unknown
OVERALL	55,921	23,305	6,528	5,811	290	6,785	31,080
TOTAL PIPELINE	44,998	17,484	5,144	4,706	251	5,002	27,712
Allergy and immunology	112	85	9	11	1	16	53
Anesthesiology	2,824	1,090	204	282	17	213	1,577
- Adult cardiothoracic anesthesiology	122	34	2	12	1	8	14
- Clinical informatics (Anesthesiology)	1	0	0	0	0	0	0
- Critical care medicine	95	34	9	7	2	11	25
- Regional anesthesiology and acute pain medicine	10	6	0	1	0	0	3
- Obstetric anesthesiology	17	10	4	4	0	1	3
- Pain medicine (multidisciplinary)	179	96	11	22	1	17	28
- Pediatric anesthesiology	117	35	9	6	0	9	29
Colon and rectal surgery	52	18	3	9	0	7	6
Dermatology	822	195	44	50	2	51	260
- Dermatopathology (multidisciplinary)	43	7	7	0	0	5	9
- Micrographic surgery and dermatologic oncology	58	9	2	2	0	1	11
Emergency medicine	3,994	705	355	279	16	221	1,315
- Clinical informatics (Emergency medicine)	4	0	0	0	0	0	0
- Emergency medical services	47	3	2	5	0	4	1
- Medical toxicology	43	6	3	1	0	1	9
- Pediatric emergency medicine	50	21	9	10	0	4	19
- Sports medicine	8	2	3	1	0	0	0
- Undersea and hyperbaric medicine	11	1	1	0	0	0	0
Family medicine	5,558	1,986	754	780	64	539	1,596
- Clinical informatics (Family medicine)	2	1	1	0	0	0	3
- Geriatric medicine	15	15	6	1	0	1	6
- Hospice and palliative medicine (multidisciplinary)	170	51	23	11	1	17	31
- Sports medicine	145	33	11	13	0	3	12
Internal medicine	7,146	5,548	1,301	1,020	28	1,535	9,723
- Adult congenital heart disease	11	3	1	0	0	0	0
- Advanced heart failure and transplant cardiology	45	22	6	6	0	5	10
- Cardiovascular disease	966	767	146	116	3	278	470
- Clinical cardiac electrophysiology	48	50	7	5	1	17	14
- Clinical informatics (Internal medicine)	7	6	1	1	0	1	3
- Critical care medicine	85	53	15	8	1	31	24
- Endocrinology, diabetes, and metabolism	201	211	58	19	0	66	69
- Gastroenterology	595	470	86	66	0	109	239
- Geriatric medicine	89	78	27	20	0	17	29
- Hematology	5	4	0	0	0	3	3
- Hematology and medical oncology	573	521	75	46	1	132	365
- Infectious disease	283	160	65	49	1	41	95
- Interventional cardiology	116	110	18	15	0	38	18
- Nephrology	195	332	65	63	1	92	96
- Medical oncology	7	23	0	1	0	2	1
- Pulmonary disease	15	27	9	5	0	8	10
- Pulmonary disease and critical care medicine	705	420	80	60	3	147	287
- Rheumatology	162	141	27	19	2	28	79
- Sleep medicine (multidisciplinary)	53	45	13	9	1	20	22
- Transplant hepatology	14	14	1	3	0	2	5
Medical genetics and genomics	34	9	5	3	0	8	12
- Medical biochemical genetics	5	0	2	0	0	2	0
- Molecular genetic pathology (multidisciplinary)	26	14	3	1	0	5	4
Neurological surgery	687	210	52	61	3	98	264
- Endovascular surgical neuroradiology	0	0	1	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	953	528	125	70	5	186	677
- Brain injury medicine	0	0	0	0	0	0	0
- Clinical neurophysiology	70	45	9	8	0	14	23
- Epilepsy	34	24	1	2	0	3	10
- Endovascular surgical neuroradiology	0	1	0	0	0	1	0
- Neurodevelopmental disabilities	19	2	2	1	0	1	2
- Neuromuscular medicine	21	16	3	4	0	6	10
- Vascular neurology	55	22	6	5	1	26	11
Child neurology	157	78	28	19	0	19	59
Nuclear medicine	25	15	6	3	0	17	8
Obstetrics and gynecology	2,751	513	324	400	13	189	1,182
- Female pelvic medicine and reconstructive surgery	78	25	11	12	0	4	9
- Gynecologic oncology	123	21	6	7	0	8	7
- Maternal-fetal medicine	167	30	9	15	0	23	24
- Reproductive endocrinology and infertility	69	16	5	13	0	9	8
Ophthalmology	760	309	55	35	1	75	211
- Ophthalmic plastic and reconstructive surgery	3	1	1	0	0	1	0
Orthopaedic surgery	2,235	343	105	116	11	118	832
- Adult reconstructive orthopaedics	31	3	0	3	0	1	3
- Foot and ankle orthopaedics	9	0	1	0	0	0	5
- Hand surgery	98	15	4	4	1	5	19
- Musculoskeletal oncology	14	1	0	0	0	1	0
- Orthopaedic sports medicine	162	16	6	6	0	10	17
- Orthopaedic surgery of the spine	16	3	2	3	0	6	2
- Orthopaedic trauma	9	0	0	0	0	4	1
- Pediatric orthopaedics	28	2	0	0	0	3	5
Osteopathic neuromusculoskeletal medicine	8	0	0	0	0	0	0
Otolaryngology	850	235	47	30	4	66	309
- Neurotology	20	4	0	1	0	1	2
- Pediatric otolaryngology	24	6	0	0	0	2	1
Pathology-anatomic and clinical	1,011	487	104	67	2	151	512
- Blood banking/transfusion medicine	20	15	3	2	0	3	4
- Clinical informatics (Pathology)	4	2	0	1	0	1	2
- Chemical pathology	1	0	0	0	0	0	0
- Cytopathology	66	35	6	2	1	7	22
- Forensic pathology	34	2	4	1	0	2	3
- Hematology	59	36	8	2	0	9	18
- Medical microbiology	4	3	1	0	0	3	1
- Neuropathology	32	5	10	0	0	0	8
- Pediatric pathology	14	3	1	1	0	0	4
- Selective pathology	49	45	15	6	0	17	22
Pediatrics	3,048	1,103	502	351	13	278	3,768
- Adolescent medicine	46	9	8	19	0	5	2
- Child abuse pediatrics	25	2	2	4	0	0	2
- Clinical informatics (Pediatrics)	5	1	0	0	0	2	1
- Developmental-behavioral pediatrics	54	14	11	4	0	3	6
- Neonatal-perinatal medicine	378	171	35	54	2	48	71
- Pediatric cardiology	244	100	16	16	0	32	24
- Pediatric critical care medicine	309	65	29	17	0	28	59
- Pediatric emergency medicine	244	59	16	18	1	10	37
- Pediatric endocrinology	100	59	23	17	1	16	27
- Pediatric gastroenterology	133	65	22	13	0	27	30
- Pediatric hematology/oncology	270	92	26	23	1	20	56

**TABLE C.23 Continued**

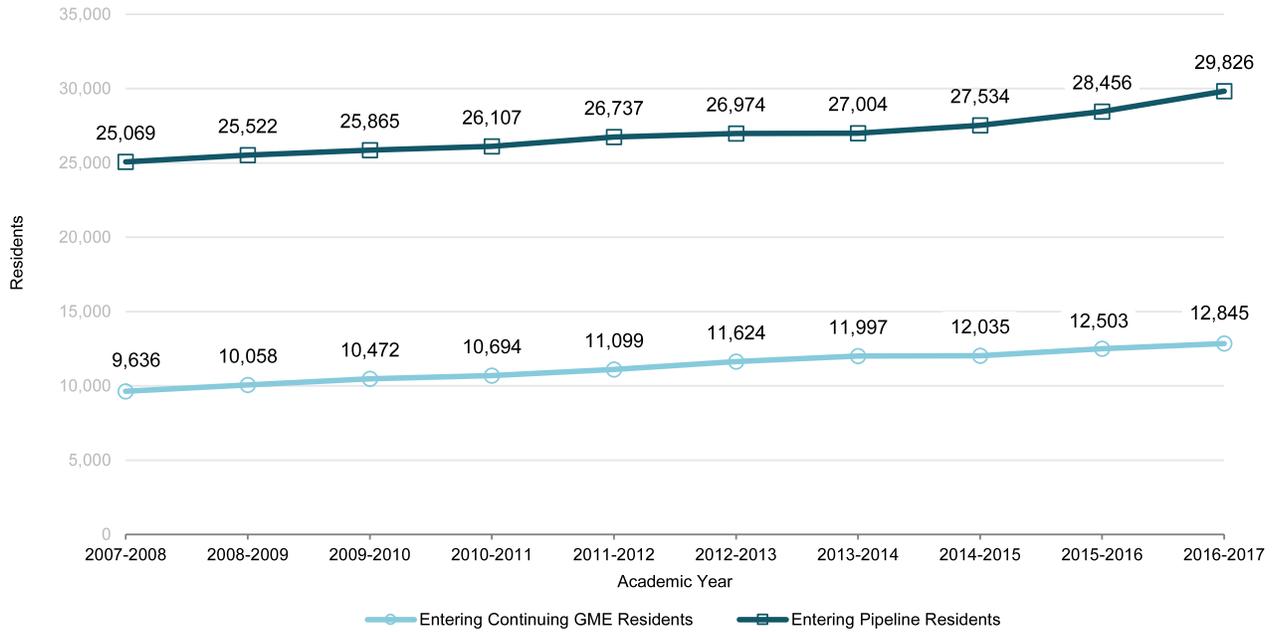
**Number of Active Residents by Specialty and Subspecialty and Ethnicity**

Specialty	Ethnicity						
	White, Non-Hispanic	Asian or Pacific Islander	Hispanic	Black, Non-Hispanic	Native American/Alaskan	Other	Unknown
- Pediatric infectious diseases	88	22	11	5	0	13	25
- Pediatric nephrology	44	25	4	9	0	7	13
- Pediatric pulmonology	82	33	20	4	0	19	9
- Pediatric rheumatology	45	15	7	4	0	3	7
- Pediatric sports medicine	16	2	1	0	0	1	3
- Pediatric transplant hepatology	4	2	1	1	0	0	0
Physical medicine and rehabilitation	662	267	65	73	5	55	197
- Brain injury medicine	4	1	0	0	0	2	2
- Neuromuscular medicine	0	0	0	0	0	0	0
- Spinal cord injury medicine	9	3	0	1	0	1	2
- Pediatric rehabilitation	15	6	2	0	0	0	3
- Sports medicine	13	1	2	1	1	0	4
Plastic surgery	173	57	25	17	1	18	25
Plastic surgery - integrated	395	93	22	21	4	32	181
- Craniofacial surgery	4	4	0	0	0	0	1
- Hand surgery	14	3	2	1	0	2	2
Preventive medicine	177	61	18	44	1	17	35
- Medical toxicology	3	2	0	0	0	0	0
- Undersea and hyperbaric medicine	2	1	0	0	0	0	0
Psychiatry	2,320	1,056	330	332	19	284	1,278
- Addiction psychiatry	42	19	5	2	0	4	5
- Child and adolescent psychiatry	337	240	64	65	7	46	81
- Forensic psychiatry	33	9	3	7	0	2	9
- Geriatric psychiatry	18	17	5	6	0	3	7
- Psychosomatic medicine	36	21	4	2	0	7	10
Radiation oncology	379	196	27	24	2	33	88
Radiology-diagnostic	2,523	968	166	151	11	248	702
- Abdominal radiology	16	11	0	2	0	4	13
- Endovascular surgical neuroradiology	3	1	0	1	0	1	0
- Musculoskeletal radiology	21	5	0	0	0	3	4
- Neuroradiology	141	54	6	5	0	28	31
- Nuclear radiology	6	1	1	1	0	1	2
- Pediatric radiology	36	14	4	1	0	4	6
- Vascular and interventional radiology	155	52	12	7	2	16	40
Interventional radiology - integrated	8	3	0	0	0	0	2
Surgery	3,836	1,001	382	369	25	417	2,154
- Complex general surgical oncology	60	18	3	4	0	9	11
- Hand surgery	3	2	0	0	0	1	2
- Pediatric surgery	56	12	3	3	0	3	6
- Surgical critical care	166	31	8	8	0	12	23
- Vascular surgery	122	48	11	15	1	22	22
Vascular surgery - integrated	136	45	10	6	1	20	42
Thoracic surgery	132	37	15	7	0	10	23
- Congenital cardiac surgery	1	2	0	0	0	2	0
Thoracic surgery - integrated	92	27	7	1	0	11	23
Urology	741	197	38	37	1	63	199
- Female pelvic medicine and reconstructive surgery	19	3	2	3	0	1	1
- Pediatric urology	18	2	1	0	0	2	2
Transitional year	511	128	64	28	0	43	336
Internal medicine/Pediatrics	693	159	43	65	2	40	481

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.

FIGURE C.24

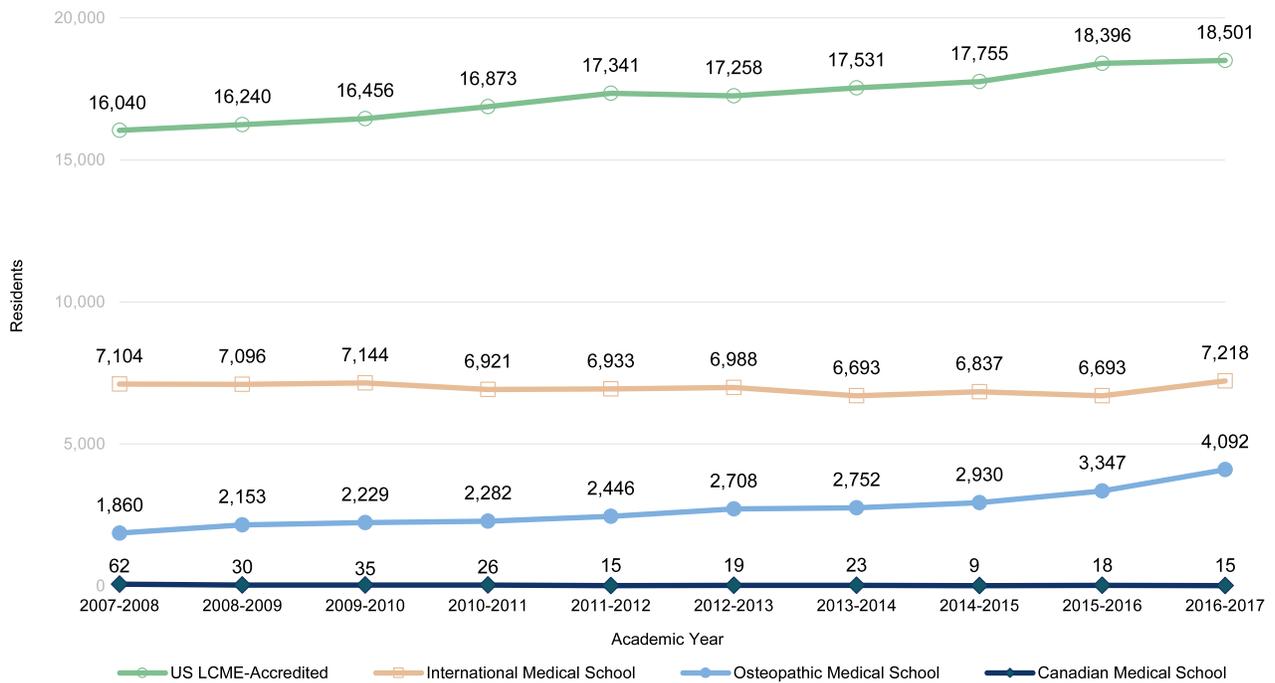
Number of Residents Entering Pipeline and Continuing GME Programs by Academic Year, 2007-2008 to 2016-2017



Notes: Excluding residents doing prerequisite training for a pipeline specialty program (preliminary and transitional year residents). Abbreviations: GME, graduate medical education.

FIGURE C.25

Number of Residents Entering the Pipeline by Medical School Type and Academic Year, 2007-2008 to 2016-2017



Notes: 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.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	29,826	18,501	62.0%	7,218	24.2%	4,092	13.7%	15	0.1%	0	0.0%
Anesthesiology	1,408	1,001	71.1%	191	13.6%	216	15.3%	0	0.0%	0	0.0%
Dermatology	472	418	88.6%	21	4.4%	33	7.0%	0	0.0%	0	0.0%
Emergency medicine	2,186	1,628	74.5%	121	5.5%	436	19.9%	1	0.0%	0	0.0%
Family medicine	3,875	1,802	46.5%	1,188	30.7%	883	22.8%	2	0.1%	0	0.0%
Internal medicine	8,246	3,791	46.0%	3,475	42.1%	977	11.8%	3	0.0%	0	0.0%
Medical genetics and genomics	35	16	45.7%	17	48.6%	2	5.7%	0	0.0%	0	0.0%
Neurological surgery	220	205	93.2%	13	5.9%	2	0.9%	0	0.0%	0	0.0%
Neurology	751	424	56.5%	243	32.4%	84	11.2%	0	0.0%	0	0.0%
Child neurology	123	86	69.9%	30	24.4%	7	5.7%	0	0.0%	0	0.0%
Nuclear medicine	22	5	22.7%	16	72.7%	1	4.5%	0	0.0%	0	0.0%
Obstetrics and gynecology	1,340	1,027	76.6%	123	9.2%	189	14.1%	1	0.1%	0	0.0%
Ophthalmology	476	438	92.0%	21	4.4%	16	3.4%	1	0.2%	0	0.0%
Orthopaedic surgery	765	724	94.6%	15	2.0%	26	3.4%	0	0.0%	0	0.0%
Osteopathic neuromusculoskeletal medicine	5	0	0.0%	0	0.0%	5	100.0%	0	0.0%	0	0.0%
Otolaryngology	318	304	95.6%	12	3.8%	2	0.6%	0	0.0%	0	0.0%
Pathology-anatomic and clinical	606	300	49.5%	247	40.8%	57	9.4%	2	0.3%	0	0.0%
Pediatrics	3,062	2,049	66.9%	579	18.9%	432	14.1%	2	0.1%	0	0.0%
Physical medicine and rehabilitation	370	192	51.9%	50	13.5%	128	34.6%	0	0.0%	0	0.0%
Plastic surgery	85	56	65.9%	26	30.6%	3	3.5%	0	0.0%	0	0.0%
Plastic surgery - integrated	151	144	95.4%	6	4.0%	1	0.7%	0	0.0%	0	0.0%
Preventive medicine	194	128	66.0%	29	14.9%	37	19.1%	0	0.0%	0	0.0%
Psychiatry	1,552	929	59.9%	376	24.2%	247	15.9%	0	0.0%	0	0.0%
Radiation oncology	194	189	97.4%	0	0.0%	5	2.6%	0	0.0%	0	0.0%
Radiology-diagnostic	1,214	844	69.5%	220	18.1%	149	12.3%	1	0.1%	0	0.0%
Interventional radiology - integrated	2	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Surgery	1,335	1,076	80.6%	151	11.3%	107	8.0%	1	0.1%	0	0.0%
Vascular surgery - integrated	58	52	89.7%	4	6.9%	2	3.4%	0	0.0%	0	0.0%
Thoracic surgery - integrated	35	32	91.4%	1	2.9%	2	5.7%	0	0.0%	0	0.0%
Urology	333	298	89.5%	17	5.1%	18	5.4%	0	0.0%	0	0.0%
Internal medicine/Pediatrics	393	341	86.8%	26	6.6%	25	6.4%	1	0.3%	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	-	1,408	2,186	35	22	606	194	194	1,214	2	5,861
Alabama	AL	15	10	1	0	12	5	3	17	0	63
Alaska	AK	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	15	34	0	0	3	0	2	20	0	74
Arkansas	AR	14	10	0	0	5	0	0	8	0	37
California	CA	136	180	7	4	58	19	23	110	0	537
Colorado	CO	4	17	1	0	9	5	2	9	0	47
Connecticut	CT	21	33	0	0	12	4	3	33	0	106
Delaware	DE	0	12	0	0	0	0	0	6	0	18
District of Columbia	DC	13	21	0	0	8	0	2	10	0	54
Florida	FL	63	114	1	1	19	17	9	54	0	278
Georgia	GA	22	34	0	1	12	3	4	27	0	103
Hawaii	HI	0	0	0	0	4	0	0	5	0	9
Idaho	ID	0	0	0	0	0	0	0	0	0	0
Illinois	IL	75	107	0	2	28	4	6	60	0	282
Indiana	IN	25	19	2	0	6	0	2	13	0	67
Iowa	IA	15	9	0	0	4	2	2	8	0	40
Kansas	KS	11	8	0	0	3	0	1	10	0	33
Kentucky	KY	22	20	0	0	7	2	4	11	0	66
Louisiana	LA	22	33	0	0	10	2	0	16	0	83
Maine	ME	5	10	0	0	0	1	0	4	0	20
Maryland	MD	41	24	4	4	21	20	9	25	0	148
Massachusetts	MA	41	65	2	2	45	6	9	68	0	238
Michigan	MI	67	202	0	0	17	4	8	58	0	356
Minnesota	MN	25	30	0	0	13	5	5	23	0	101
Mississippi	MS	8	12	0	0	3	0	1	5	0	29
Missouri	MO	39	38	0	0	20	0	5	35	1	138
Montana	MT	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	12	9	0	0	6	0	1	10	0	38
Nevada	NV	0	12	0	0	0	0	0	0	0	12
New Hampshire	NH	7	6	0	0	3	5	0	5	0	26
New Jersey	NJ	23	68	0	0	10	6	2	28	0	137
New Mexico	NM	6	12	0	0	4	2	0	7	0	31
New York	NY	200	299	4	2	63	18	27	141	0	754
North Carolina	NC	36	64	1	0	14	6	7	30	0	158
North Dakota	ND	0	0	0	0	0	0	0	0	0	0
Ohio	OH	70	131	1	0	28	27	10	46	0	313
Oklahoma	OK	14	19	0	1	4	0	2	12	0	52
Oregon	OR	10	11	0	0	3	2	2	6	0	34
Pennsylvania	PA	93	157	2	0	28	5	12	80	0	377
Puerto Rico	PR	6	17	0	1	3	0	0	4	0	31
Rhode Island	RI	0	19	0	0	2	0	0	7	0	28
South Carolina	SC	15	19	1	0	6	0	1	10	0	52
South Dakota	SD	0	0	0	0	3	0	0	0	0	3
Tennessee	TN	26	34	0	0	18	6	2	25	1	112
Texas	TX	95	149	4	1	53	9	16	79	0	406
Utah	UT	3	9	1	0	5	3	2	7	0	30
Vermont	VT	6	0	0	0	4	0	0	6	0	16
Virginia	VA	25	49	1	0	10	0	3	26	0	114
Washington	WA	29	24	2	2	10	2	3	22	0	94
West Virginia	WV	4	14	0	0	3	2	0	4	0	27
Wisconsin	WI	29	22	0	1	7	2	4	24	0	89
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; IRI, 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	-	472	3,875	8,246	751	123	5	3,062	370	1,552	393	18,849
Alabama	AL	4	55	78	10	0	0	34	4	12	6	203
Alaska	AK	0	12	0	0	0	0	0	0	0	0	12
Arizona	AZ	4	55	103	15	2	0	50	0	23	6	258
Arkansas	AR	3	51	29	4	1	0	26	4	12	5	135
California	CA	50	410	637	58	12	0	278	26	150	18	1,639
Colorado	CO	6	81	82	7	4	0	31	9	12	4	236
Connecticut	CT	6	20	223	15	0	0	40	0	29	4	337
Delaware	DE	0	13	12	0	0	0	23	0	4	4	56
District of Columbia	DC	8	6	122	12	3	0	51	6	26	4	238
Florida	FL	29	139	444	35	2	0	145	9	61	10	874
Georgia	GA	9	99	189	13	2	0	63	6	21	0	402
Hawaii	HI	0	17	35	0	0	0	16	0	14	0	82
Idaho	ID	0	29	9	0	0	0	0	0	0	0	38
Illinois	IL	21	222	461	40	4	0	145	20	60	24	997
Indiana	IN	0	88	64	6	2	0	31	3	10	14	218
Iowa	IA	5	61	42	5	1	0	22	0	7	0	143
Kansas	KS	0	39	34	5	0	0	13	4	14	3	112
Kentucky	KY	2	38	49	10	2	0	34	6	15	11	167
Louisiana	LA	10	68	121	12	1	0	43	6	30	16	307
Maine	ME	0	35	12	0	0	0	6	0	5	3	61
Maryland	MD	12	26	218	18	5	0	61	15	39	8	402
Massachusetts	MA	19	46	377	42	11	0	88	9	76	20	688
Michigan	MI	25	200	422	32	3	4	114	22	63	29	914
Minnesota	MN	13	81	110	15	1	0	34	12	24	10	300
Mississippi	MS	3	24	39	4	2	0	15	0	7	4	98
Missouri	MO	14	63	153	21	6	0	76	7	37	10	387
Montana	MT	0	18	11	0	0	0	0	0	0	0	29
Nebraska	NE	0	46	48	4	0	0	13	0	8	4	123
Nevada	NV	0	24	77	2	0	0	13	0	10	0	126
New Hampshire	NH	2	8	19	4	0	0	7	0	7	0	47
New Jersey	NJ	3	87	286	14	0	0	85	12	32	6	525
New Mexico	NM	0	26	28	3	1	0	18	0	10	0	86
New York	NY	53	227	1,366	87	12	0	442	76	263	21	2,547
North Carolina	NC	14	118	147	16	4	0	72	13	39	18	441
North Dakota	ND	0	22	8	0	0	0	0	0	6	0	36
Ohio	OH	21	143	395	40	10	0	177	9	51	27	873
Oklahoma	OK	3	59	33	6	0	0	37	0	21	6	165
Oregon	OR	6	38	76	4	0	0	16	0	12	0	152
Pennsylvania	PA	32	226	517	58	9	0	148	27	71	17	1,105
Puerto Rico	PR	2	26	86	3	1	0	26	5	12	2	163
Rhode Island	RI	6	15	71	5	0	0	16	0	8	4	125
South Carolina	SC	3	72	56	9	0	0	40	0	25	7	212
South Dakota	SD	0	16	7	0	0	0	6	0	7	0	36
Tennessee	TN	7	78	134	13	3	0	63	4	23	18	343
Texas	TX	47	271	435	49	12	1	228	27	96	27	1,193
Utah	UT	4	25	32	13	0	0	21	6	8	3	112
Vermont	VT	2	6	14	4	0	0	7	0	5	0	38
Virginia	VA	10	92	112	14	3	0	80	11	37	4	363
Washington	WA	3	115	85	11	2	0	49	3	19	0	287
West Virginia	WV	1	43	54	5	0	0	18	0	15	8	144
Wisconsin	WI	10	81	84	8	2	0	41	9	16	8	259
Wyoming	WY	0	15	0	0	0	0	0	0	0	0	15

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	-	220	1,340	476	765	318	85	151	1,335	58	35	333	5,116
Alabama	AL	2	12	5	9	4	2	0	19	1	0	3	57
Alaska	AK	0	0	0	0	0	0	0	0	0	0	0	0
Arizona	AZ	5	21	4	10	3	0	1	25	1	0	4	74
Arkansas	AR	2	5	3	4	3	0	0	5	1	0	2	25
California	CA	18	107	42	72	30	5	20	108	5	6	28	441
Colorado	CO	2	14	5	6	3	2	0	17	0	0	3	52
Connecticut	CT	2	33	5	10	5	0	2	25	1	2	5	90
Delaware	DE	0	6	0	0	0	0	0	6	0	0	0	12
District of Columbia	DC	3	21	13	12	5	0	3	19	1	0	5	82
Florida	FL	9	41	16	26	9	5	5	51	2	0	12	176
Georgia	GA	4	30	9	16	7	4	2	31	0	2	6	111
Hawaii	HI	0	11	0	5	2	0	0	8	0	0	1	27
Idaho	ID	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	IL	13	61	23	31	14	4	7	52	2	1	19	227
Indiana	IN	3	15	6	5	3	2	2	13	1	1	4	55
Iowa	IA	2	5	5	6	5	1	0	14	1	0	4	43
Kansas	KS	2	9	3	8	4	0	2	11	0	0	3	42
Kentucky	KY	4	11	7	9	5	1	2	16	0	1	5	61
Louisiana	LA	7	27	16	13	9	1	2	30	2	0	7	114
Maine	ME	0	4	0	0	0	0	0	4	1	0	1	10
Maryland	MD	8	29	15	19	11	2	4	25	0	1	7	121
Massachusetts	MA	8	32	16	26	10	5	5	54	5	2	13	176
Michigan	MI	8	88	24	41	12	3	6	69	2	2	16	271
Minnesota	MN	5	13	9	20	9	5	4	22	1	0	8	96
Mississippi	MS	1	6	4	4	3	2	1	7	0	0	2	30
Missouri	MO	4	32	14	24	9	0	6	21	2	0	6	118
Montana	MT	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska	NE	2	8	3	5	2	1	0	9	0	0	3	33
Nevada	NV	0	4	0	4	1	0	1	8	0	0	0	18
New Hampshire	NH	1	4	0	4	1	1	0	4	1	0	2	18
New Jersey	NJ	2	48	5	16	2	1	2	34	2	0	5	117
New Mexico	NM	1	6	0	5	1	0	0	8	0	0	2	23
New York	NY	22	174	60	86	32	8	16	142	8	4	43	595
North Carolina	NC	8	43	14	23	10	0	7	32	0	2	10	149
North Dakota	ND	0	0	0	0	0	0	0	5	0	0	0	5
Ohio	OH	10	70	22	42	15	4	8	69	5	3	17	265
Oklahoma	OK	1	12	4	6	3	1	0	9	0	0	3	39
Oregon	OR	3	7	5	5	3	0	2	13	0	0	3	41
Pennsylvania	PA	15	88	30	49	22	5	9	94	5	4	21	342
Puerto Rico	PR	2	12	4	4	2	0	0	8	0	0	2	34
Rhode Island	RI	2	0	3	6	0	0	2	7	0	0	2	22
South Carolina	SC	2	16	7	10	4	2	0	19	1	1	3	65
South Dakota	SD	0	0	0	0	0	0	0	3	0	0	0	3
Tennessee	TN	5	31	10	16	8	6	2	36	0	0	9	123
Texas	TX	15	106	40	56	20	9	13	92	4	1	21	377
Utah	UT	3	6	4	5	3	2	1	6	0	0	3	33
Vermont	VT	1	3	0	3	1	0	0	4	0	0	1	13
Virginia	VA	5	32	8	14	9	1	5	28	0	1	5	108
Washington	WA	3	11	6	12	6	0	4	21	1	1	5	70
West Virginia	WV	1	9	2	7	2	0	0	12	1	0	3	37
Wisconsin	WI	4	17	5	11	6	0	5	20	1	0	6	75
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; PS, Plastic surgery; PSI, Plastic surgery - Integrated; GS, Surgery; VSI, Vascular surgery - integrated; TSI, Thoracic surgery - integrated; U, Urology.

<b>Specialty</b>	<b>PGY1 Residents</b>	<b>PGY1 Residents as % of Total</b>	<b>PGY1 Residents with No Prior Training</b>	<b>PGY1 Residents with No Prior Training as % of Total</b>	<b>Entering Pipeline Residents</b>	<b>Entering Pipeline Residents as % of Total</b>
OVERALL	30,381	100.0%	29,453	100.0%	29,826	100.0%
Anesthesiology	1,044	3.4%	1,007	3.4%	1,408	4.7%
Dermatology	10	0.0%	2	0.0%	472	1.6%
Emergency medicine	2,178	7.2%	2,083	7.1%	2,186	7.3%
Family medicine	3,875	12.8%	3,749	12.7%	3,875	13.0%
Internal medicine	10,420	34.3%	10,190	34.6%	8,246	27.6%
Medical genetics and genomics	5	0.0%	0	0.0%	35	0.1%
Neurological surgery	220	0.7%	217	0.7%	220	0.7%
Neurology	346	1.1%	324	1.1%	751	2.5%
Child neurology	0	0.0%	0	0.0%	123	0.4%
Nuclear medicine	0	0.0%	0	0.0%	22	0.1%
Obstetrics and gynecology	1,360	4.5%	1,327	4.5%	1,340	4.5%
Ophthalmology	0	0.0%	0	0.0%	476	1.6%
Orthopaedic surgery	765	2.5%	723	2.5%	765	2.6%
Osteopathic neuromusculoskeletal medicine	0	0.0%	0	0.0%	5	0.0%
Otolaryngology	318	1.0%	306	1.0%	318	1.1%
Pathology-anatomic and clinical	606	2.0%	565	1.9%	606	2.0%
Pediatrics	3,129	10.3%	3,089	10.5%	3,062	10.3%
Physical medicine and rehabilitation	97	0.3%	89	0.3%	370	1.2%
Plastic surgery	0	0.0%	0	0.0%	85	0.3%
Plastic surgery - integrated	151	0.5%	144	0.5%	151	0.5%
Preventive medicine	8	0.0%	0	0.0%	194	0.7%
Psychiatry	1,552	5.1%	1,518	5.2%	1,552	5.2%
Radiation oncology	0	0.0%	0	0.0%	194	0.7%
Radiology-diagnostic	0	0.0%	0	0.0%	1,214	4.1%
Interventional radiology - integrated	0	0.0%	0	0.0%	2	0.0%
Surgery	2,701	8.9%	2,575	8.7%	1,335	4.5%
Vascular surgery - integrated	58	0.2%	55	0.2%	58	0.2%
Thoracic surgery - integrated	35	0.1%	34	0.1%	35	0.1%
Urology	0	0.0%	0	0.0%	333	1.1%
Transitional year	1,110	3.7%	1,065	3.6%	0	0.0%
Internal medicine/Pediatrics	393	1.3%	391	1.3%	393	1.3%

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	30,381	100.0%	29,453	100.0%	29,826	100.0%
Alabama	326	1.1%	318	1.1%	323	1.1%
Alaska	12	0.0%	12	0.0%	12	0.0%
Arizona	430	1.4%	413	1.4%	406	1.4%
Arkansas	194	0.6%	185	0.6%	197	0.7%
California	2,654	8.7%	2,589	8.8%	2,617	8.8%
Colorado	341	1.1%	330	1.1%	335	1.1%
Connecticut	532	1.8%	523	1.8%	533	1.8%
Delaware	86	0.3%	82	0.3%	86	0.3%
District of Columbia	366	1.2%	355	1.2%	374	1.3%
Florida	1,320	4.3%	1,262	4.3%	1,328	4.5%
Georgia	605	2.0%	580	2.0%	616	2.1%
Hawaii	139	0.5%	134	0.5%	118	0.4%
Idaho	42	0.1%	42	0.1%	38	0.1%
Illinois	1,580	5.2%	1,533	5.2%	1,506	5.0%
Indiana	342	1.1%	334	1.1%	340	1.1%
Iowa	223	0.7%	215	0.7%	226	0.8%
Kansas	184	0.6%	181	0.6%	187	0.6%
Kentucky	292	1.0%	287	1.0%	294	1.0%
Louisiana	514	1.7%	504	1.7%	504	1.7%
Maine	91	0.3%	88	0.3%	91	0.3%
Maryland	705	2.3%	684	2.3%	671	2.2%
Massachusetts	1,098	3.6%	1,077	3.7%	1,102	3.7%
Michigan	1,597	5.3%	1,545	5.2%	1,541	5.2%
Minnesota	463	1.5%	456	1.5%	497	1.7%
Mississippi	159	0.5%	151	0.5%	157	0.5%
Missouri	628	2.1%	603	2.0%	643	2.2%
Montana	29	0.1%	27	0.1%	29	0.1%
Nebraska	193	0.6%	187	0.6%	194	0.7%
Nevada	173	0.6%	168	0.6%	156	0.5%
New Hampshire	84	0.3%	82	0.3%	91	0.3%
New Jersey	782	2.6%	762	2.6%	779	2.6%
New Mexico	138	0.5%	133	0.5%	140	0.5%
New York	4,059	13.4%	3,939	13.4%	3,896	13.1%
North Carolina	735	2.4%	721	2.4%	748	2.5%
North Dakota	51	0.2%	50	0.2%	41	0.1%
Ohio	1,486	4.9%	1,435	4.9%	1,451	4.9%
Oklahoma	247	0.8%	241	0.8%	256	0.9%
Oregon	227	0.7%	222	0.8%	227	0.8%
Pennsylvania	1,822	6.0%	1,766	6.0%	1,824	6.1%
Puerto Rico	281	0.9%	258	0.9%	228	0.8%
Rhode Island	175	0.6%	175	0.6%	175	0.6%
South Carolina	363	1.2%	353	1.2%	329	1.1%
South Dakota	50	0.2%	47	0.2%	42	0.1%
Tennessee	594	2.0%	574	1.9%	578	1.9%
Texas	1,969	6.5%	1,891	6.4%	1,976	6.6%
Utah	160	0.5%	157	0.5%	175	0.6%
Vermont	63	0.2%	62	0.2%	67	0.2%
Virginia	627	2.1%	610	2.1%	585	2.0%
Washington	483	1.6%	465	1.6%	451	1.5%
West Virginia	224	0.7%	218	0.7%	208	0.7%
Wisconsin	428	1.4%	414	1.4%	423	1.4%
Wyoming	15	0.0%	13	0.0%	15	0.1%

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



# D 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 of their training. Resident completion status for the 2015-2016 academic year was reported during the fall of the 2016-2017 academic year, therefore, the following data includes only those residents who graduated or left their programs between September 1, 2015 and August 31, 2016.

## Graduating Residents

Of the 40,545 residents graduating from ACGME-accredited programs in the 2015-2016 academic year, 62.1% graduated from a medical program, 23.0% graduated from a hospital-based program, and 14.9% graduated from a surgical program. From the 2006-2007 academic year to the 2015-2016 academic year, there was a 19.7% increase in graduating residents (a 14.3% increase in specialty program graduates and a 35.5% increase in subspecialty program graduates). The specialties with the highest number of graduating residents in the 2015-2016 academic year include:

- Internal medicine (7,548)
- Family medicine (3,497)
- Pediatrics (2,900)

International medical school graduates account for 10,954 (27.0%) of all graduating residents.

## Residents Completing Preliminary Training and Transitional Year Graduates

There were 3,499 residents who completed preliminary training and 1,085 residents graduating from transitional year programs during the 2015-2016 academic year for a total of 4,584 residents completing the necessary prerequisite training for specialty programs that require a clinical base year. Of the 3,499 preliminary training graduates, 2,123 (60.7%) were in internal medicine, 1,290 (36.9%) were in surgery, 70 (2.0%) were in pediatrics, and 16 (0.4%) were in obstetrics and gynecology. Over the last 10 years the total number of preliminary graduates has fluctuated with a high of 3,854 completing training in the

2008-2009 academic year and a low of 3,118 completing training in the 2011-2012 while the number of transitional year graduates has remained fairly constant; approximately 1,100 residents complete transitional year programs every year.

## Geographic Distribution of Graduates

There were approximately 12.42 graduating residents per 100,000 population, including Puerto Rico, during the 2015-2016 academic year (8.85 specialty graduates and 3.56 subspecialty graduates). The following states have the highest total number of graduating residents:

- New York (5,323)
- California (3,617)
- Pennsylvania (2,693)
- Texas (2,653)

The concentration of specialty graduates ranges from 1.48 per 100,000 population in Alaska to 53.14 per 100,000 population in the District of Columbia.

## Residents Leaving Prior to Completion

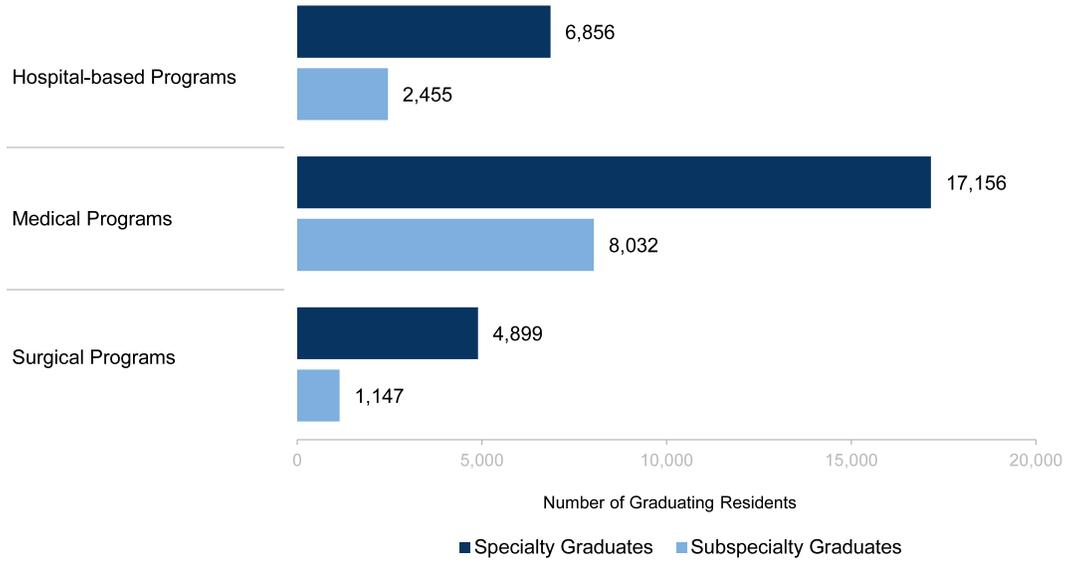
In the 2015-2016 academic year, 2,204 left their programs prior to successful completion with statuses of either deceased (1.1%), dismissed (11.3%), transferred (48.5%), unsuccessfully completed program (0.8%), or withdrawn (38.2%). In addition to having the highest number of residents who left prior to successful completion, the following specialties have the highest number of transferring residents:

- Psychiatry (359)
- Internal medicine (149)
- Surgery (109)

Overall, of the 1,020 transfers that occurred among residents in specialty programs during the 2015-2016 academic year, 390 (38.2%) occurred during the first year of training, 247 (24.2%) occurred during the second year of training, 336 (32.9%) occurred during the third year of training, and 47 (4.6%) occurred in the fourth, fifth, and sixth years of training. ʌ

FIGURE D.1

Number of Graduating Residents by Specialty Group, 2015-2016 AY



Note: Total number of graduating residents = 40,545.  
Abbreviations: AY, academic year.

FIGURE D.2

Number of Graduating Residents by Academic Year, 2006-2007 to 2015-2016

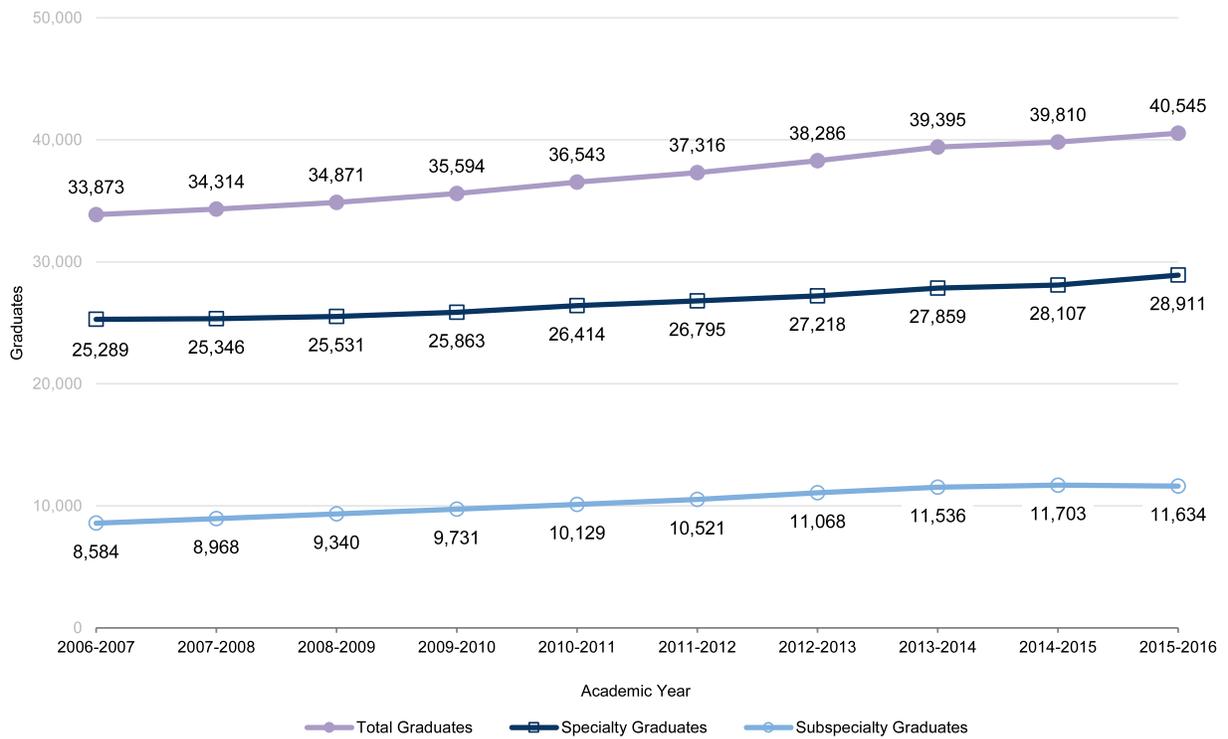
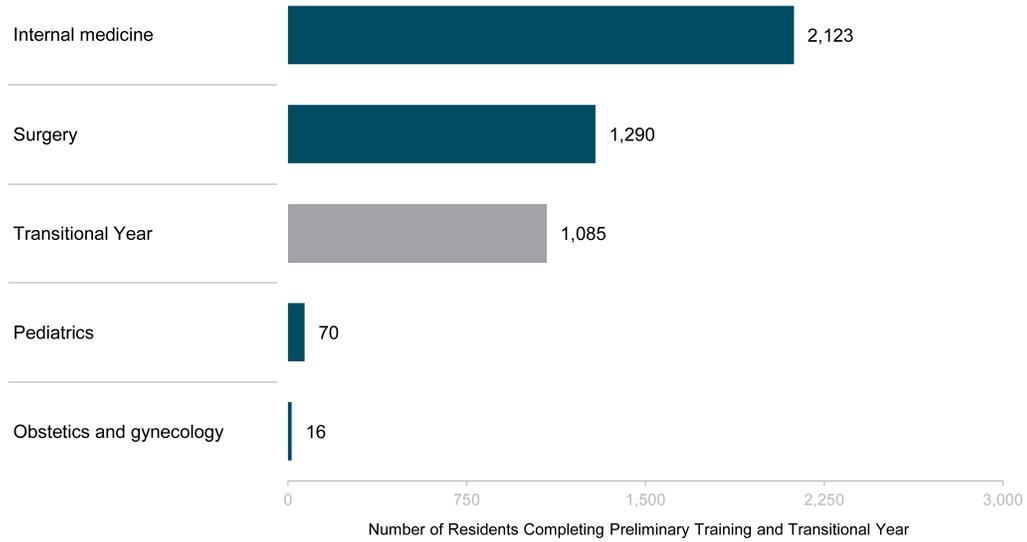


FIGURE D.3

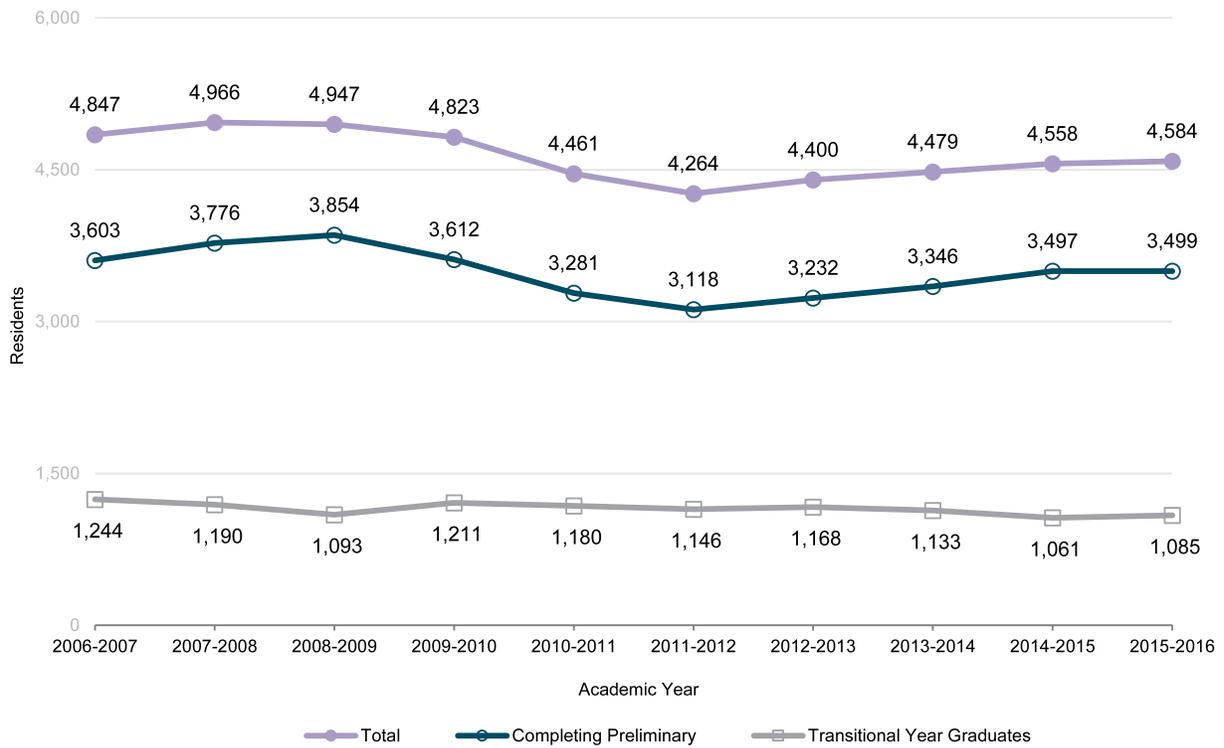
Number of Residents Completing Preliminary Training and Transitional Year by Specialty, 2015-2016 AY



Note: Total number of residents completing preliminary training = 3,499. Total number of residents completing transitional year programs = 1,085.  
Abbreviations: AY, academic year

FIGURE D.4

Number of Residents Completing Preliminary Training and Transitional Year, 2006-2007 to 2015-2016



**TABLE D.5**

**Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2015-2016 AY**

Specialty	Total Graduates	Percent of Total Graduates	Number of Residents Completing Preliminary Training	Percent of Total Residents Completing Preliminary Training
OVERALL	40,545	100.0%	3,499	100.0%
TOTAL PIPELINE	27,495	67.8%	3,499	100.0%
Allergy and immunology	140	0.3%	0	0.0%
Anesthesiology	1,651	4.1%	0	0.0%
- Adult cardiothoracic anesthesiology	190	0.5%	0	0.0%
- Clinical informatics (Anesthesiology)	0	0.0%	0	0.0%
- Critical care medicine	180	0.4%	0	0.0%
- Regional anesthesiology and acute pain medicine	0	0.0%	0	0.0%
- Obstetric anesthesiology	42	0.1%	0	0.0%
- Pain medicine (multidisciplinary)	348	0.9%	0	0.0%
- Pediatric anesthesiology	214	0.5%	0	0.0%
Colon and rectal surgery	94	0.2%	0	0.0%
Dermatology	429	1.1%	0	0.0%
- Dermatopathology (multidisciplinary)	79	0.2%	0	0.0%
- Micrographic surgery and dermatologic oncology	73	0.2%	0	0.0%
Emergency medicine	1,921	4.7%	0	0.0%
- Clinical informatics (Emergency medicine)	3	0.0%	0	0.0%
- Emergency medical services	48	0.1%	0	0.0%
- Medical toxicology	28	0.1%	0	0.0%
- Pediatric emergency medicine	34	0.1%	0	0.0%
- Sports medicine	11	0.0%	0	0.0%
- Undersea and hyperbaric medicine	9	0.0%	0	0.0%
Family medicine	3,497	8.6%	0	0.0%
- Clinical informatics (Family medicine)	0	0.0%	0	0.0%
- Geriatric medicine	50	0.1%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	280	0.7%	0	0.0%
- Sports medicine	209	0.5%	0	0.0%
Internal medicine	7,548	18.6%	2,123	60.7%
- Adult congenital heart disease	0	0.0%	0	0.0%
- Advanced heart failure and transplant cardiology	84	0.2%	0	0.0%
- Cardiovascular disease	885	2.2%	0	0.0%
- Clinical cardiac electrophysiology	142	0.4%	0	0.0%
- Clinical informatics (Internal medicine)	0	0.0%	0	0.0%
- Critical care medicine	128	0.3%	0	0.0%
- Endocrinology, diabetes, and metabolism	299	0.7%	0	0.0%
- Gastroenterology	488	1.2%	0	0.0%
- Geriatric medicine	240	0.6%	0	0.0%
- Hematology	5	0.0%	0	0.0%
- Hematology and medical oncology	562	1.4%	0	0.0%
- Infectious disease	355	0.9%	0	0.0%
- Interventional cardiology	310	0.8%	0	0.0%
- Nephrology	436	1.1%	0	0.0%
- Medical oncology	20	0.0%	0	0.0%
- Pulmonary disease	36	0.1%	0	0.0%
- Pulmonary disease and critical care medicine	526	1.3%	0	0.0%
- Rheumatology	215	0.5%	0	0.0%
- Sleep medicine (multidisciplinary)	169	0.4%	0	0.0%
- Transplant hepatology	41	0.1%	0	0.0%
Medical genetics and genomics	34	0.1%	0	0.0%
- Medical biochemical genetics	11	0.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	52	0.1%	0	0.0%
Neurological surgery	190	0.5%	0	0.0%
- Endovascular surgical neuroradiology	2	0.0%	0	0.0%

**TABLE D.5 Continued**

<b>Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2015-2016 AY</b>				
<b>Specialty</b>	<b>Total Graduates</b>	<b>Percent of Total Graduates</b>	<b>Number of Residents Completing Preliminary Training</b>	<b>Percent of Total Residents Completing Preliminary Training</b>
Neurology	663	1.6%	0	0.0%
- Brain injury medicine	0	0.0%	0	0.0%
- Clinical neurophysiology	206	0.5%	0	0.0%
- Epilepsy	51	0.1%	0	0.0%
- Endovascular surgical neuroradiology	1	0.0%	0	0.0%
- Neurodevelopmental disabilities	3	0.0%	0	0.0%
- Neuromuscular medicine	66	0.2%	0	0.0%
- Vascular neurology	113	0.3%	0	0.0%
Child neurology	116	0.3%	0	0.0%
Nuclear medicine	35	0.1%	0	0.0%
Obstetrics and gynecology	1,284	3.2%	16	0.5%
- Female pelvic medicine and reconstructive surgery	41	0.1%	0	0.0%
- Gynecologic oncology	10	0.0%	0	0.0%
- Maternal-fetal medicine	3	0.0%	0	0.0%
- Reproductive endocrinology and infertility	0	0.0%	0	0.0%
Ophthalmology	470	1.2%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	3	0.0%	0	0.0%
Orthopaedic surgery	720	1.8%	0	0.0%
- Adult reconstructive orthopaedics	44	0.1%	0	0.0%
- Foot and ankle orthopaedics	16	0.0%	0	0.0%
- Hand surgery	147	0.4%	0	0.0%
- Musculoskeletal oncology	15	0.0%	0	0.0%
- Orthopaedic sports medicine	204	0.5%	0	0.0%
- Orthopaedic surgery of the spine	32	0.1%	0	0.0%
- Orthopaedic trauma	17	0.0%	0	0.0%
- Pediatric orthopaedics	43	0.1%	0	0.0%
Osteopathic neuromusculoskeletal medicine	6	0.0%	0	0.0%
Otolaryngology	291	0.7%	0	0.0%
- Neurotology	14	0.0%	0	0.0%
- Pediatric otolaryngology	31	0.1%	0	0.0%
Pathology-anatomic and clinical	569	1.4%	0	0.0%
- Blood banking/transfusion medicine	47	0.1%	0	0.0%
- Clinical informatics (Pathology)	2	0.0%	0	0.0%
- Chemical pathology	3	0.0%	0	0.0%
- Cytopathology	144	0.4%	0	0.0%
- Forensic pathology	49	0.1%	0	0.0%
- Hematology	130	0.3%	0	0.0%
- Medical microbiology	11	0.0%	0	0.0%
- Neuropathology	21	0.1%	0	0.0%
- Pediatric pathology	22	0.1%	0	0.0%
- Selective pathology	153	0.4%	0	0.0%
Pediatrics	2,900	7.2%	70	2.0%
- Adolescent medicine	22	0.1%	0	0.0%
- Child abuse pediatrics	9	0.0%	0	0.0%
- Clinical informatics (Pediatrics)	3	0.0%	0	0.0%
- Developmental-behavioral pediatrics	32	0.1%	0	0.0%
- Neonatal-perinatal medicine	231	0.6%	0	0.0%
- Pediatric cardiology	133	0.3%	0	0.0%
- Pediatric critical care medicine	152	0.4%	0	0.0%
- Pediatric emergency medicine	120	0.3%	0	0.0%
- Pediatric endocrinology	76	0.2%	0	0.0%
- Pediatric gastroenterology	92	0.2%	0	0.0%
- Pediatric hematology/oncology	148	0.4%	0	0.0%

**TABLE D.5 Continued**

**Number of Graduating Residents and Residents Completing Preliminary Training by Specialty and Subspecialty, 2015-2016 AY**

Specialty	Total Graduates	Percent of Total Graduates	Number of Residents Completing Preliminary Training	Percent of Total Residents Completing Preliminary Training
- Pediatric infectious diseases	57	0.1%	0	0.0%
- Pediatric nephrology	32	0.1%	0	0.0%
- Pediatric pulmonology	52	0.1%	0	0.0%
- Pediatric rheumatology	25	0.1%	0	0.0%
- Pediatric sports medicine	21	0.1%	0	0.0%
- Pediatric transplant hepatology	6	0.0%	0	0.0%
Physical medicine and rehabilitation	393	1.0%	0	0.0%
- Brain injury medicine	8	0.0%	0	0.0%
- Neuromuscular medicine	1	0.0%	0	0.0%
- Spinal cord injury medicine	19	0.0%	0	0.0%
- Pediatric rehabilitation	12	0.0%	0	0.0%
- Sports medicine	24	0.1%	0	0.0%
Plastic surgery	133	0.3%	0	0.0%
Plastic surgery - integrated	72	0.2%	0	0.0%
- Craniofacial surgery	9	0.0%	0	0.0%
- Hand surgery	23	0.1%	0	0.0%
Preventive medicine	183	0.5%	0	0.0%
- Medical toxicology	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	3	0.0%	0	0.0%
Psychiatry	1,106	2.7%	0	0.0%
- Addiction psychiatry	78	0.2%	0	0.0%
- Child and adolescent psychiatry	396	1.0%	0	0.0%
- Forensic psychiatry	74	0.2%	0	0.0%
- Geriatric psychiatry	58	0.1%	0	0.0%
- Psychosomatic medicine	79	0.2%	0	0.0%
Radiation oncology	180	0.4%	0	0.0%
Radiology-diagnostic	1,190	2.9%	0	0.0%
- Abdominal radiology	45	0.1%	0	0.0%
- Endovascular surgical neuroradiology	4	0.0%	0	0.0%
- Musculoskeletal radiology	30	0.1%	0	0.0%
- Neuroradiology	258	0.6%	0	0.0%
- Nuclear radiology	13	0.0%	0	0.0%
- Pediatric radiology	78	0.2%	0	0.0%
- Vascular and interventional radiology	272	0.7%	0	0.0%
Interventional radiology - integrated	8	0.0%	0	0.0%
Surgery	1,203	3.0%	1,290	36.9%
- Complex general surgical oncology	49	0.1%	0	0.0%
- Hand surgery	8	0.0%	0	0.0%
- Pediatric surgery	39	0.1%	0	0.0%
- Surgical critical care	236	0.6%	0	0.0%
- Vascular surgery	116	0.3%	0	0.0%
Vascular surgery - integrated	32	0.1%	0	0.0%
Thoracic surgery	97	0.2%	0	0.0%
- Congenital cardiac surgery	10	0.0%	0	0.0%
Thoracic surgery - integrated	9	0.0%	0	0.0%
Urology	304	0.7%	0	0.0%
- Female pelvic medicine and reconstructive surgery	9	0.0%	0	0.0%
- Pediatric urology	26	0.1%	0	0.0%
Transitional year	1,085	2.7%	0	0.0%
Internal medicine/Pediatrics	358	0.9%	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, 2015-2016 AY**

Specialty	Total Graduates	US LCME-Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
OVERALL	40,545	25,110	61.9%	10,954	27.0%	4,366	10.8%	114	0.3%	1	0.0%
TOTAL PIPELINE	27,495	17,330	63.0%	6,887	25.0%	3,256	11.8%	22	0.1%	0	0.0%
Allergy and immunology	140	102	72.9%	24	17.1%	13	9.3%	1	0.7%	0	0.0%
Anesthesiology	1,651	1,267	76.7%	189	11.4%	193	11.7%	2	0.1%	0	0.0%
- Adult cardiothoracic anesthesiology	190	143	75.3%	33	17.4%	12	6.3%	2	1.1%	0	0.0%
- Clinical informatics (Anesthesiology)	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Critical care medicine	180	129	71.7%	33	18.3%	18	10.0%	0	0.0%	0	0.0%
- Regional anesthesiology and acute pain medicine	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Obstetric anesthesiology	42	34	81.0%	4	9.5%	3	7.1%	1	2.4%	0	0.0%
- Pain medicine (multidisciplinary)	348	235	67.5%	62	17.8%	50	14.4%	1	0.3%	0	0.0%
- Pediatric anesthesiology	214	179	83.6%	21	9.8%	11	5.1%	3	1.4%	0	0.0%
Colon and rectal surgery	94	65	69.1%	23	24.5%	3	3.2%	3	3.2%	0	0.0%
Dermatology	429	390	90.9%	14	3.3%	25	5.8%	0	0.0%	0	0.0%
- Dermatopathology (multidisciplinary)	79	56	70.9%	20	25.3%	1	1.3%	2	2.5%	0	0.0%
- Micrographic surgery and dermatologic oncology	73	70	95.9%	0	0.0%	3	4.1%	0	0.0%	0	0.0%
Emergency medicine	1,921	1,498	78.0%	99	5.2%	324	16.9%	0	0.0%	0	0.0%
- Clinical informatics (Emergency medicine)	3	2	66.7%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
- Emergency medical services	48	36	75.0%	6	12.5%	6	12.5%	0	0.0%	0	0.0%
- Medical toxicology	28	24	85.7%	1	3.6%	3	10.7%	0	0.0%	0	0.0%
- Pediatric emergency medicine	34	22	64.7%	6	17.6%	6	17.6%	0	0.0%	0	0.0%
- Sports medicine	11	7	63.6%	2	18.2%	2	18.2%	0	0.0%	0	0.0%
- Undersea and hyperbaric medicine	9	9	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Family medicine	3,497	1,568	44.8%	1,154	33.0%	774	22.1%	1	0.0%	0	0.0%
- Clinical informatics (Family medicine)	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Geriatric medicine	50	19	38.0%	25	50.0%	6	12.0%	0	0.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	280	174	62.1%	61	21.8%	45	16.1%	0	0.0%	0	0.0%
- Sports medicine	209	107	51.2%	36	17.2%	65	31.1%	1	0.5%	0	0.0%
Internal medicine	7,548	3,584	47.5%	3,154	41.8%	807	10.7%	3	0.0%	0	0.0%
- Adult congenital heart disease	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Advanced heart failure and transplant cardiology	84	53	63.1%	25	29.8%	4	4.8%	2	2.4%	0	0.0%
- Cardiovascular disease	885	478	54.0%	365	41.2%	40	4.5%	2	0.2%	0	0.0%
- Clinical cardiac electrophysiology	142	72	50.7%	62	43.7%	6	4.2%	1	0.7%	1	0.7%
- Clinical informatics (Internal medicine)	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Critical care medicine	128	35	27.3%	85	66.4%	8	6.3%	0	0.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	299	117	39.1%	167	55.9%	15	5.0%	0	0.0%	0	0.0%
- Gastroenterology	488	297	60.9%	159	32.6%	32	6.6%	0	0.0%	0	0.0%
- Geriatric medicine	240	82	34.2%	135	56.3%	21	8.8%	2	0.8%	0	0.0%
- Hematology	5	5	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Hematology and medical oncology	562	288	51.2%	245	43.6%	29	5.2%	0	0.0%	0	0.0%
- Infectious disease	355	169	47.6%	162	45.6%	24	6.8%	0	0.0%	0	0.0%
- Interventional cardiology	310	130	41.9%	164	52.9%	12	3.9%	4	1.3%	0	0.0%
- Nephrology	436	122	28.0%	288	66.1%	25	5.7%	1	0.2%	0	0.0%
- Medical oncology	20	8	40.0%	11	55.0%	1	5.0%	0	0.0%	0	0.0%
- Pulmonary disease	36	4	11.1%	31	86.1%	1	2.8%	0	0.0%	0	0.0%
- Pulmonary disease and critical care medicine	526	247	47.0%	235	44.7%	44	8.4%	0	0.0%	0	0.0%
- Rheumatology	215	77	35.8%	115	53.5%	23	10.7%	0	0.0%	0	0.0%
- Sleep medicine (multidisciplinary)	169	63	37.3%	94	55.6%	11	6.5%	1	0.6%	0	0.0%
- Transplant hepatology	41	32	78.0%	7	17.1%	1	2.4%	1	2.4%	0	0.0%
Medical genetics and genomics	34	18	52.9%	14	41.2%	1	2.9%	1	2.9%	0	0.0%
- Medical biochemical genetics	11	7	63.6%	3	27.3%	0	0.0%	1	9.1%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	52	32	61.5%	19	36.5%	0	0.0%	1	1.9%	0	0.0%
Neurological surgery	190	162	85.3%	23	12.1%	5	2.6%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	2	2	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, 2015-2016 AY**

Specialty	Total Graduates	USLCME-Accredited Medical School		International Medical School		Osteopathic Medical School		Canadian Medical School		US Medical School Unknown	
		#	%	#	%	#	%	#	%	#	%
Neurology	663	366	55.2%	240	36.2%	55	8.3%	2	0.3%	0	0.0%
- Brain injury medicine	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Clinical neurophysiology	206	104	50.5%	88	42.7%	13	6.3%	1	0.5%	0	0.0%
- Epilepsy	51	29	56.9%	20	39.2%	2	3.9%	0	0.0%	0	0.0%
- Endovascular surgical neuroradiology	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
- Neurodevelopmental disabilities	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Neuromuscular medicine	66	39	59.1%	21	31.8%	3	4.5%	3	4.5%	0	0.0%
- Vascular neurology	113	56	49.6%	48	42.5%	8	7.1%	1	0.9%	0	0.0%
Child neurology	116	82	70.7%	30	25.9%	4	3.4%	0	0.0%	0	0.0%
Nuclear medicine	35	15	42.9%	20	57.1%	0	0.0%	0	0.0%	0	0.0%
Obstetrics and gynecology	1,284	932	72.6%	171	13.3%	180	14.0%	1	0.1%	0	0.0%
- Female pelvic medicine and reconstructive surgery	41	29	70.7%	7	17.1%	5	12.2%	0	0.0%	0	0.0%
- Gynecologic oncology	10	5	50.0%	5	50.0%	0	0.0%	0	0.0%	0	0.0%
- Maternal-fetal medicine	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Reproductive endocrinology and infertility	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
Ophthalmology	470	435	92.6%	24	5.1%	10	2.1%	1	0.2%	0	0.0%
- Ophthalmic plastic and reconstructive surgery	3	2	66.7%	1	33.3%	0	0.0%	0	0.0%	0	0.0%
Orthopaedic surgery	720	690	95.8%	9	1.3%	21	2.9%	0	0.0%	0	0.0%
- Adult reconstructive orthopaedics	44	27	61.4%	10	22.7%	4	9.1%	3	6.8%	0	0.0%
- Foot and ankle orthopaedics	16	14	87.5%	1	6.3%	0	0.0%	1	6.3%	0	0.0%
- Hand surgery	147	136	92.5%	3	2.0%	5	3.4%	3	2.0%	0	0.0%
- Musculoskeletal oncology	15	11	73.3%	4	26.7%	0	0.0%	0	0.0%	0	0.0%
- Orthopaedic sports medicine	204	154	75.5%	15	7.4%	28	13.7%	7	3.4%	0	0.0%
- Orthopaedic surgery of the spine	32	22	68.8%	5	15.6%	4	12.5%	1	3.1%	0	0.0%
- Orthopaedic trauma	17	15	88.2%	0	0.0%	2	11.8%	0	0.0%	0	0.0%
- Pediatric orthopaedics	43	35	81.4%	3	7.0%	4	9.3%	1	2.3%	0	0.0%
Osteopathic neuromusculoskeletal medicine	6	0	0.0%	0	0.0%	6	100.0%	0	0.0%	0	0.0%
Otolaryngology	291	288	99.0%	1	0.3%	1	0.3%	1	0.3%	0	0.0%
- Neurotology	14	14	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Pediatric otolaryngology	31	24	77.4%	3	9.7%	2	6.5%	2	6.5%	0	0.0%
Pathology-anatomic and clinical	569	295	51.8%	224	39.4%	50	8.8%	0	0.0%	0	0.0%
- Blood banking/transfusion medicine	47	26	55.3%	15	31.9%	5	10.6%	1	2.1%	0	0.0%
- Clinical informatics (Pathology)	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%
- Chemical pathology	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Cytopathology	144	66	45.8%	71	49.3%	6	4.2%	1	0.7%	0	0.0%
- Forensic pathology	49	27	55.1%	11	22.4%	11	22.4%	0	0.0%	0	0.0%
- Hematology	130	71	54.6%	49	37.7%	9	6.9%	1	0.8%	0	0.0%
- Medical microbiology	11	9	81.8%	2	18.2%	0	0.0%	0	0.0%	0	0.0%
- Neuropathology	21	12	57.1%	9	42.9%	0	0.0%	0	0.0%	0	0.0%
- Pediatric pathology	22	14	63.6%	5	22.7%	2	9.1%	1	4.5%	0	0.0%
- Selective pathology	153	65	42.5%	75	49.0%	9	5.9%	4	2.6%	0	0.0%
Pediatrics	2,900	1,941	66.9%	621	21.4%	335	11.6%	3	0.1%	0	0.0%
- Adolescent medicine	22	13	59.1%	4	18.2%	5	22.7%	0	0.0%	0	0.0%
- Child abuse pediatrics	9	7	77.8%	1	11.1%	1	11.1%	0	0.0%	0	0.0%
- Clinical informatics (Pediatrics)	3	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Developmental-behavioral pediatrics	32	19	59.4%	8	25.0%	5	15.6%	0	0.0%	0	0.0%
- Neonatal-perinatal medicine	231	125	54.1%	85	36.8%	19	8.2%	2	0.9%	0	0.0%
- Pediatric cardiology	133	92	69.2%	33	24.8%	7	5.3%	1	0.8%	0	0.0%
- Pediatric critical care medicine	152	103	67.8%	39	25.7%	10	6.6%	0	0.0%	0	0.0%
- Pediatric emergency medicine	120	83	69.2%	23	19.2%	14	11.7%	0	0.0%	0	0.0%
- Pediatric endocrinology	76	42	55.3%	25	32.9%	9	11.8%	0	0.0%	0	0.0%
- Pediatric gastroenterology	92	50	54.3%	36	39.1%	5	5.4%	1	1.1%	0	0.0%
- Pediatric hematology/oncology	148	98	66.2%	32	21.6%	18	12.2%	0	0.0%	0	0.0%

**TABLE D.6 Continued**
**Number of Graduating Residents by Specialty and Subspecialty and Medical School Type, 2015-2016 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	57	37	64.9%	15	26.3%	4	7.0%	1	1.8%	0	0.0%
- Pediatric nephrology	32	17	53.1%	14	43.8%	1	3.1%	0	0.0%	0	0.0%
- Pediatric pulmonology	52	32	61.5%	17	32.7%	3	5.8%	0	0.0%	0	0.0%
- Pediatric rheumatology	25	16	64.0%	5	20.0%	4	16.0%	0	0.0%	0	0.0%
- Pediatric sports medicine	21	13	61.9%	2	9.5%	6	28.6%	0	0.0%	0	0.0%
- Pediatric transplant hepatology	6	2	33.3%	4	66.7%	0	0.0%	0	0.0%	0	0.0%
Physical medicine and rehabilitation	393	214	54.5%	76	19.3%	103	26.2%	0	0.0%	0	0.0%
- Brain injury medicine	8	6	75.0%	1	12.5%	1	12.5%	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	19	13	68.4%	2	10.5%	4	21.1%	0	0.0%	0	0.0%
- Pediatric rehabilitation	12	7	58.3%	2	16.7%	3	25.0%	0	0.0%	0	0.0%
- Sports medicine	24	14	58.3%	4	16.7%	6	25.0%	0	0.0%	0	0.0%
Plastic surgery	133	111	83.5%	20	15.0%	1	0.8%	1	0.8%	0	0.0%
Plastic surgery - integrated	72	68	94.4%	4	5.6%	0	0.0%	0	0.0%	0	0.0%
- Craniofacial surgery	9	8	88.9%	0	0.0%	0	0.0%	1	11.1%	0	0.0%
- Hand surgery	23	17	73.9%	2	8.7%	1	4.3%	3	13.0%	0	0.0%
Preventive medicine	183	126	68.9%	27	14.8%	29	15.8%	1	0.5%	0	0.0%
- Medical toxicology	0	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
- Undersea and hyperbaric medicine	3	2	66.7%	0	0.0%	0	0.0%	1	33.3%	0	0.0%
Psychiatry	1,106	579	52.4%	393	35.5%	132	11.9%	2	0.2%	0	0.0%
- Addiction psychiatry	78	40	51.3%	27	34.6%	9	11.5%	2	2.6%	0	0.0%
- Child and adolescent psychiatry	396	213	53.8%	126	31.8%	57	14.4%	0	0.0%	0	0.0%
- Forensic psychiatry	74	38	51.4%	24	32.4%	12	16.2%	0	0.0%	0	0.0%
- Geriatric psychiatry	58	28	48.3%	26	44.8%	4	6.9%	0	0.0%	0	0.0%
- Psychosomatic medicine	79	44	55.7%	28	35.4%	5	6.3%	2	2.5%	0	0.0%
Radiation oncology	180	177	98.3%	2	1.1%	1	0.6%	0	0.0%	0	0.0%
Radiology-diagnostic	1,190	1,001	84.1%	102	8.6%	86	7.2%	1	0.1%	0	0.0%
- Abdominal radiology	45	33	73.3%	6	13.3%	3	6.7%	3	6.7%	0	0.0%
- Endovascular surgical neuroradiology	4	2	50.0%	1	25.0%	0	0.0%	1	25.0%	0	0.0%
- Musculoskeletal radiology	30	27	90.0%	2	6.7%	1	3.3%	0	0.0%	0	0.0%
- Neuroradiology	258	192	74.4%	40	15.5%	24	9.3%	2	0.8%	0	0.0%
- Nuclear radiology	13	7	53.8%	5	38.5%	1	7.7%	0	0.0%	0	0.0%
- Pediatric radiology	78	54	69.2%	15	19.2%	7	9.0%	2	2.6%	0	0.0%
- Vascular and interventional radiology	272	226	83.1%	31	11.4%	12	4.4%	3	1.1%	0	0.0%
Interventional radiology - integrated	8	6	75.0%	2	25.0%	0	0.0%	0	0.0%	0	0.0%
Surgery	1,203	925	76.9%	213	17.7%	65	5.4%	0	0.0%	0	0.0%
- Complex general surgical oncology	49	37	75.5%	10	20.4%	0	0.0%	2	4.1%	0	0.0%
- Hand surgery	8	5	62.5%	1	12.5%	2	25.0%	0	0.0%	0	0.0%
- Pediatric surgery	39	36	92.3%	3	7.7%	0	0.0%	0	0.0%	0	0.0%
- Surgical critical care	236	192	81.4%	24	10.2%	19	8.1%	1	0.4%	0	0.0%
- Vascular surgery	116	73	62.9%	32	27.6%	11	9.5%	0	0.0%	0	0.0%
Vascular surgery - integrated	32	32	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery	97	69	71.1%	21	21.6%	6	6.2%	1	1.0%	0	0.0%
- Congenital cardiac surgery	10	9	90.0%	1	10.0%	0	0.0%	0	0.0%	0	0.0%
Thoracic surgery - integrated	9	6	66.7%	3	33.3%	0	0.0%	0	0.0%	0	0.0%
Urology	304	271	89.1%	13	4.3%	19	6.3%	1	0.3%	0	0.0%
- Female pelvic medicine and reconstructive surgery	9	8	88.9%	1	11.1%	0	0.0%	0	0.0%	0	0.0%
- Pediatric urology	26	25	96.2%	0	0.0%	0	0.0%	1	3.8%	0	0.0%
Transitional year	1,085	854	78.7%	85	7.8%	145	13.4%	1	0.1%	0	0.0%
Internal medicine/Pediatrics	358	283	79.1%	45	12.6%	29	8.1%	1	0.3%	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, 2015-2016 AY**

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Graduates	Percent of All Graduates	Graduates per 100,000 Pop
OVERALL	--	326,538,820	40,545	100.0%	12.42
Alabama	AL	4,863,300	467	1.2%	9.60
Alaska	AK	741,894	13	0.0%	1.75
Arizona	AZ	6,931,071	519	1.3%	7.49
Arkansas	AR	2,988,248	243	0.6%	8.13
California	CA	39,250,017	3,617	8.9%	9.22
Colorado	CO	5,540,545	437	1.1%	7.89
Connecticut	CT	3,576,452	729	1.8%	20.38
Delaware	DE	952,065	131	0.3%	13.76
District of Columbia	DC	681,170	524	1.3%	76.93
Florida	FL	20,612,439	1,415	3.5%	6.86
Georgia	GA	10,310,371	782	1.9%	7.58
Hawaii	HI	1,428,557	133	0.3%	9.31
Idaho	ID	1,683,140	32	0.1%	1.90
Illinois	IL	12,801,539	2,058	5.1%	16.08
Indiana	IN	6,633,053	493	1.2%	7.43
Iowa	IA	3,134,693	299	0.7%	9.54
Kansas	KS	2,907,289	239	0.6%	8.22
Kentucky	KY	4,436,974	379	0.9%	8.54
Louisiana	LA	4,681,666	603	1.5%	12.88
Maine	ME	1,331,479	97	0.2%	7.29
Maryland	MD	6,016,447	1,073	2.6%	17.83
Massachusetts	MA	6,811,779	1,922	4.7%	28.22
Michigan	MI	9,928,300	1,999	4.9%	20.13
Minnesota	MN	5,519,952	809	2.0%	14.66
Mississippi	MS	2,988,726	188	0.5%	6.29
Missouri	MO	6,093,000	916	2.3%	15.03
Montana	MT	1,042,520	23	0.1%	2.21
Nebraska	NE	1,907,116	219	0.5%	11.48
Nevada	NV	2,940,058	132	0.3%	4.49
New Hampshire	NH	1,334,795	131	0.3%	9.81
New Jersey	NJ	8,944,469	915	2.3%	10.23
New Mexico	NM	2,081,015	185	0.5%	8.89
New York	NY	19,745,289	5,323	13.1%	26.96
North Carolina	NC	10,146,788	1,081	2.7%	10.65
North Dakota	ND	757,952	43	0.1%	5.67
Ohio	OH	11,614,373	2,088	5.1%	17.98
Oklahoma	OK	3,923,561	284	0.7%	7.24
Oregon	OR	4,093,465	298	0.7%	7.28
Pennsylvania	PA	12,784,227	2,693	6.6%	21.07
Puerto Rico	PR	3,411,307	287	0.7%	8.41
Rhode Island	RI	1,056,426	251	0.6%	23.76
South Carolina	SC	4,961,119	384	0.9%	7.74
South Dakota	SD	865,454	42	0.1%	4.85
Tennessee	TN	6,651,194	758	1.9%	11.40
Texas	TX	27,862,596	2,653	6.5%	9.52
Utah	UT	3,051,217	266	0.7%	8.72
Vermont	VT	624,594	91	0.2%	14.57
Virginia	VA	8,411,808	761	1.9%	9.05
Washington	WA	7,288,000	675	1.7%	9.26
West Virginia	WV	1,831,102	216	0.5%	11.80
Wisconsin	WI	5,778,708	615	1.5%	10.64
Wyoming	WY	585,501	14	0.0%	2.39

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

Abbreviations: AY, academic year.

TABLE D.8

## Number of Specialty Graduates and Specialty Graduate Concentration per 100,000 Population by State, 2015-2016 AY

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Specialty Graduates	Percent of All Specialty Graduates	Specialty Graduates per 100,000 Pop
OVERALL	--	326,538,820	28,911	100.0%	8.85
Alabama	AL	4,863,300	335	1.2%	6.89
Alaska	AK	741,894	11	0.0%	1.48
Arizona	AZ	6,931,071	400	1.4%	5.77
Arkansas	AR	2,988,248	184	0.6%	6.16
California	CA	39,250,017	2,515	8.7%	6.41
Colorado	CO	5,540,545	299	1.0%	5.40
Connecticut	CT	3,576,452	510	1.8%	14.26
Delaware	DE	952,065	104	0.4%	10.92
District of Columbia	DC	681,170	362	1.3%	53.14
Florida	FL	20,612,439	968	3.3%	4.70
Georgia	GA	10,310,371	550	1.9%	5.33
Hawaii	HI	1,428,557	116	0.4%	8.12
Idaho	ID	1,683,140	31	0.1%	1.84
Illinois	IL	12,801,539	1,565	5.4%	12.23
Indiana	IN	6,633,053	373	1.3%	5.62
Iowa	IA	3,134,693	225	0.8%	7.18
Kansas	KS	2,907,289	189	0.7%	6.50
Kentucky	KY	4,436,974	271	0.9%	6.11
Louisiana	LA	4,681,666	463	1.6%	9.89
Maine	ME	1,331,479	79	0.3%	5.93
Maryland	MD	6,016,447	700	2.4%	11.63
Massachusetts	MA	6,811,779	1,214	4.2%	17.82
Michigan	MI	9,928,300	1,553	5.4%	15.64
Minnesota	MN	5,519,952	514	1.8%	9.31
Mississippi	MS	2,988,726	143	0.5%	4.78
Missouri	MO	6,093,000	620	2.1%	10.18
Montana	MT	1,042,520	22	0.1%	2.11
Nebraska	NE	1,907,116	170	0.6%	8.91
Nevada	NV	2,940,058	114	0.4%	3.88
New Hampshire	NH	1,334,795	82	0.3%	6.14
New Jersey	NJ	8,944,469	770	2.7%	8.61
New Mexico	NM	2,081,015	126	0.4%	6.05
New York	NY	19,745,289	3,792	13.1%	19.20
North Carolina	NC	10,146,788	712	2.5%	7.02
North Dakota	ND	757,952	43	0.1%	5.67
Ohio	OH	11,614,373	1,475	5.1%	12.70
Oklahoma	OK	3,923,561	230	0.8%	5.86
Oregon	OR	4,093,465	212	0.7%	5.18
Pennsylvania	PA	12,784,227	1,839	6.4%	14.38
Puerto Rico	PR	3,411,307	238	0.8%	6.98
Rhode Island	RI	1,056,426	173	0.6%	16.38
South Carolina	SC	4,961,119	283	1.0%	5.70
South Dakota	SD	865,454	38	0.1%	4.39
Tennessee	TN	6,651,194	528	1.8%	7.94
Texas	TX	27,862,596	1,827	6.3%	6.56
Utah	UT	3,051,217	181	0.6%	5.93
Vermont	VT	624,594	62	0.2%	9.93
Virginia	VA	8,411,808	564	2.0%	6.70
Washington	WA	7,288,000	486	1.7%	6.67
West Virginia	WV	1,831,102	189	0.7%	10.32
Wisconsin	WI	5,778,708	447	1.5%	7.74
Wyoming	WY	585,501	14	0.0%	2.39

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

Abbreviations: AY, academic year.

**TABLE D.9**

**Number of Subspecialty Graduates and Subspecialty Graduate Concentration per 100,000 Population by State, 2015-2016 AY**

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Subspecialty Graduates	Percent of All Subspecialty Graduates	Subspecialty Graduates per 100,000 Pop
OVERALL	--	326,538,820	11,634	100.0%	3.56
Alabama	AL	4,863,300	132	1.1%	2.71
Alaska	AK	741,894	2	0.0%	0.27
Arizona	AZ	6,931,071	119	1.0%	1.72
Arkansas	AR	2,988,248	59	0.5%	1.97
California	CA	39,250,017	1,102	9.5%	2.81
Colorado	CO	5,540,545	138	1.2%	2.49
Connecticut	CT	3,576,452	219	1.9%	6.12
Delaware	DE	952,065	27	0.2%	2.84
District of Columbia	DC	681,170	162	1.4%	23.78
Florida	FL	20,612,439	447	3.8%	2.17
Georgia	GA	10,310,371	232	2.0%	2.25
Hawaii	HI	1,428,557	17	0.1%	1.19
Idaho	ID	1,683,140	1	0.0%	0.06
Illinois	IL	12,801,539	493	4.2%	3.85
Indiana	IN	6,633,053	120	1.0%	1.81
Iowa	IA	3,134,693	74	0.6%	2.36
Kansas	KS	2,907,289	50	0.4%	1.72
Kentucky	KY	4,436,974	108	0.9%	2.43
Louisiana	LA	4,681,666	140	1.2%	2.99
Maine	ME	1,331,479	18	0.2%	1.35
Maryland	MD	6,016,447	373	3.2%	6.20
Massachusetts	MA	6,811,779	708	6.1%	10.39
Michigan	MI	9,928,300	446	3.8%	4.49
Minnesota	MN	5,519,952	295	2.5%	5.34
Mississippi	MS	2,988,726	45	0.4%	1.51
Missouri	MO	6,093,000	296	2.5%	4.86
Montana	MT	1,042,520	1	0.0%	0.10
Nebraska	NE	1,907,116	49	0.4%	2.57
Nevada	NV	2,940,058	18	0.2%	0.61
New Hampshire	NH	1,334,795	49	0.4%	3.67
New Jersey	NJ	8,944,469	145	1.2%	1.62
New Mexico	NM	2,081,015	59	0.5%	2.84
New York	NY	19,745,289	1,531	13.2%	7.75
North Carolina	NC	10,146,788	369	3.2%	3.64
North Dakota	ND	757,952	0	0.0%	0.00
Ohio	OH	11,614,373	613	5.3%	5.28
Oklahoma	OK	3,923,561	54	0.5%	1.38
Oregon	OR	4,093,465	86	0.7%	2.10
Pennsylvania	PA	12,784,227	854	7.3%	6.68
Puerto Rico	PR	3,411,307	49	0.4%	1.44
Rhode Island	RI	1,056,426	78	0.7%	7.38
South Carolina	SC	4,961,119	101	0.9%	2.04
South Dakota	SD	865,454	4	0.0%	0.46
Tennessee	TN	6,651,194	230	2.0%	3.46
Texas	TX	27,862,596	826	7.1%	2.96
Utah	UT	3,051,217	85	0.7%	2.79
Vermont	VT	624,594	29	0.2%	4.64
Virginia	VA	8,411,808	197	1.7%	2.34
Washington	WA	7,288,000	189	1.6%	2.59
West Virginia	WV	1,831,102	27	0.2%	1.47
Wisconsin	WI	5,778,708	168	1.4%	2.91
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

Abbreviations: AY, academic year

TABLE D.10

**Number of Pipeline Graduates and Pipeline Graduate Concentration per 100,000 Population by State, 2015-2016 AY**

State Name	State Abbreviation	State Population - Census Estimate 2016	Total Pipeline Graduates	Percent of All Pipeline Graduates	Pipeline Graduates per 100,000 Pop
OVERALL	--	326,538,820	27,495	100.0%	8.42
Alabama	AL	4,863,300	314	1.1%	6.46
Alaska	AK	741,894	11	0.0%	1.48
Arizona	AZ	6,931,071	378	1.4%	5.45
Arkansas	AR	2,988,248	184	0.7%	6.16
California	CA	39,250,017	2,394	8.7%	6.10
Colorado	CO	5,540,545	281	1.0%	5.07
Connecticut	CT	3,576,452	506	1.8%	14.15
Delaware	DE	952,065	90	0.3%	9.45
District of Columbia	DC	681,170	361	1.3%	53.00
Florida	FL	20,612,439	941	3.4%	4.57
Georgia	GA	10,310,371	509	1.9%	4.94
Hawaii	HI	1,428,557	91	0.3%	6.37
Idaho	ID	1,683,140	31	0.1%	1.84
Illinois	IL	12,801,539	1,483	5.4%	11.58
Indiana	IN	6,633,053	328	1.2%	4.94
Iowa	IA	3,134,693	213	0.8%	6.79
Kansas	KS	2,907,289	186	0.7%	6.40
Kentucky	KY	4,436,974	268	1.0%	6.04
Louisiana	LA	4,681,666	454	1.7%	9.70
Maine	ME	1,331,479	79	0.3%	5.93
Maryland	MD	6,016,447	643	2.3%	10.69
Massachusetts	MA	6,811,779	1,145	4.2%	16.81
Michigan	MI	9,928,300	1,380	5.0%	13.90
Minnesota	MN	5,519,952	483	1.8%	8.75
Mississippi	MS	2,988,726	140	0.5%	4.68
Missouri	MO	6,093,000	600	2.2%	9.85
Montana	MT	1,042,520	22	0.1%	2.11
Nebraska	NE	1,907,116	169	0.6%	8.86
Nevada	NV	2,940,058	114	0.4%	3.88
New Hampshire	NH	1,334,795	82	0.3%	6.14
New Jersey	NJ	8,944,469	765	2.8%	8.55
New Mexico	NM	2,081,015	126	0.5%	6.05
New York	NY	19,745,289	3,677	13.4%	18.62
North Carolina	NC	10,146,788	702	2.6%	6.92
North Dakota	ND	757,952	35	0.1%	4.62
Ohio	OH	11,614,373	1,402	5.1%	12.07
Oklahoma	OK	3,923,561	230	0.8%	5.86
Oregon	OR	4,093,465	210	0.8%	5.13
Pennsylvania	PA	12,784,227	1,759	6.4%	13.76
Puerto Rico	PR	3,411,307	199	0.7%	5.83
Rhode Island	RI	1,056,426	171	0.6%	16.19
South Carolina	SC	4,961,119	271	1.0%	5.46
South Dakota	SD	865,454	32	0.1%	3.70
Tennessee	TN	6,651,194	502	1.8%	7.55
Texas	TX	27,862,596	1,745	6.3%	6.26
Utah	UT	3,051,217	168	0.6%	5.51
Vermont	VT	624,594	62	0.2%	9.93
Virginia	VA	8,411,808	526	1.9%	6.25
Washington	WA	7,288,000	437	1.6%	6.00
West Virginia	WV	1,831,102	181	0.7%	9.88
Wisconsin	WI	5,778,708	401	1.5%	6.94
Wyoming	WY	585,501	14	0.1%	2.39

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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

Abbreviations: AY, academic year.

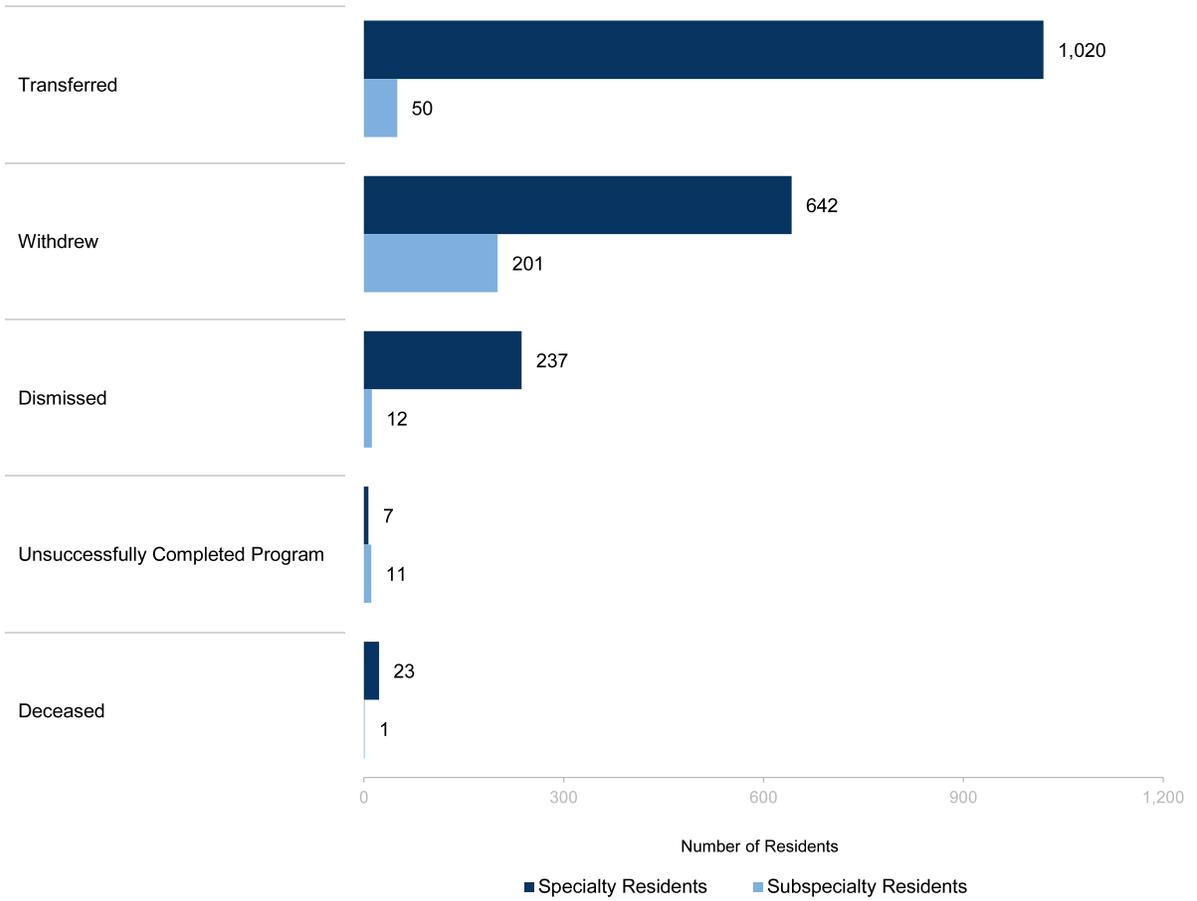
**TABLE D.11**  
**Number of Graduating Residents by State and Medical School Type, 2015-2016 AY**

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	-	40,545	25,110	10,954	4,366	114	1
Alabama	AL	467	337	101	29	0	0
Alaska	AK	13	5	0	8	0	0
Arizona	AZ	519	293	149	75	2	0
Arkansas	AR	243	140	81	22	0	0
California	CA	3,617	2,881	420	304	12	0
Colorado	CO	437	376	22	39	0	0
Connecticut	CT	729	411	271	44	3	0
Delaware	DE	131	78	24	29	0	0
District of Columbia	DC	524	331	171	22	0	0
Florida	FL	1,415	772	442	197	4	0
Georgia	GA	782	492	210	78	2	0
Hawaii	HI	133	80	21	32	0	0
Idaho	ID	32	19	4	9	0	0
Illinois	IL	2,058	1,241	572	238	7	0
Indiana	IN	493	345	96	52	0	0
Iowa	IA	299	158	78	61	2	0
Kansas	KS	239	147	59	33	0	0
Kentucky	KY	379	230	100	49	0	0
Louisiana	LA	603	355	221	26	1	0
Maine	ME	97	55	16	25	1	0
Maryland	MD	1,073	759	225	87	2	0
Massachusetts	MA	1,922	1,388	418	90	25	1
Michigan	MI	1,999	922	683	391	3	0
Minnesota	MN	809	559	187	56	7	0
Mississippi	MS	188	122	46	20	0	0
Missouri	MO	916	601	214	99	2	0
Montana	MT	23	14	4	5	0	0
Nebraska	NE	219	110	77	32	0	0
Nevada	NV	132	47	50	35	0	0
New Hampshire	NH	131	88	26	17	0	0
New Jersey	NJ	915	289	517	109	0	0
New Mexico	NM	185	128	40	17	0	0
New York	NY	5,323	2,592	2,308	406	17	0
North Carolina	NC	1,081	864	133	81	3	0
North Dakota	ND	43	18	21	4	0	0
Ohio	OH	2,088	1,130	662	292	4	0
Oklahoma	OK	284	132	89	63	0	0
Oregon	OR	298	223	30	43	2	0
Pennsylvania	PA	2,693	1,544	724	419	6	0
Puerto Rico	PR	287	191	96	0	0	0
Rhode Island	RI	251	171	59	20	1	0
South Carolina	SC	384	296	45	43	0	0
South Dakota	SD	42	25	8	9	0	0
Tennessee	TN	758	554	159	44	1	0
Texas	TX	2,653	1,723	612	317	1	0
Utah	UT	266	216	33	17	0	0
Vermont	VT	91	64	22	5	0	0
Virginia	VA	761	485	153	122	1	0
Washington	WA	675	564	49	57	5	0
West Virginia	WV	216	115	70	31	0	0
Wisconsin	WI	615	428	129	58	0	0
Wyoming	WY	14	2	7	5	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, 2015-2016 AY



Abbreviations: AY, academic year.

**TABLE D.13**

**Number of Residents Leaving Prior to Completion of a Program by Specialty and Subspecialty and Status, 2015-2016 AY**

Specialty	Number of Residents Not Graduating	Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
OVERALL	2,204	1,070	843	249	18	24
TOTAL PIPELINE	1,912	1,010	638	234	7	23
Allergy and immunology	3	2	0	1	0	0
Anesthesiology	93	34	38	17	0	4
- Adult cardiothoracic anesthesiology	1	0	0	0	1	0
- Clinical informatics (Anesthesiology)	0	0	0	0	0	0
- Critical care medicine	4	0	4	0	0	0
- Regional anesthesiology and acute pain medicine	0	0	0	0	0	0
- Obstetric anesthesiology	0	0	0	0	0	0
- Pain medicine (multidisciplinary)	3	0	3	0	0	0
- Pediatric anesthesiology	2	0	2	0	0	0
Colon and rectal surgery	0	0	0	0	0	0
Dermatology	10	4	4	2	0	0
- Dermatopathology (multidisciplinary)	0	0	0	0	0	0
- Micrographic surgery and dermatologic oncology	0	0	0	0	0	0
Emergency medicine	64	27	26	8	0	3
- Clinical informatics (Emergency medicine)	1	0	1	0	0	0
- Emergency medical services	1	0	1	0	0	0
- Medical toxicology	0	0	0	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	225	80	108	37	0	0
- Clinical informatics (Family medicine)	0	0	0	0	0	0
- Geriatric medicine	0	0	0	0	0	0
- Hospice and palliative medicine (multidisciplinary)	6	0	6	0	0	0
- Sports medicine	0	0	0	0	0	0
Internal medicine	303	149	99	47	2	6
- Adult congenital heart disease	0	0	0	0	0	0
- Advanced heart failure and transplant cardiology	1	0	1	0	0	0
- Cardiovascular disease	13	4	7	2	0	0
- Clinical cardiac electrophysiology	3	0	2	0	1	0
- Clinical informatics (Internal medicine)	1	0	1	0	0	0
- Critical care medicine	5	4	1	0	0	0
- Endocrinology, diabetes, and metabolism	4	1	3	0	0	0
- Gastroenterology	7	2	4	0	0	1
- Geriatric medicine	7	1	6	0	0	0
- Hematology	0	0	0	0	0	0
- Hematology and medical oncology	8	2	6	0	0	0
- Infectious disease	15	3	10	1	1	0
- Interventional cardiology	2	0	2	0	0	0
- Nephrology	31	4	25	1	1	0
- Medical oncology	0	0	0	0	0	0
- Pulmonary disease	0	0	0	0	0	0
- Pulmonary disease and critical care medicine	14	4	10	0	0	0
- Rheumatology	3	0	3	0	0	0
- Sleep medicine (multidisciplinary)	2	2	0	0	0	0
- Transplant hepatology	0	0	0	0	0	0
Medical genetics and genomics	2	0	1	1	0	0
- Medical biochemical genetics	0	0	0	0	0	0
- Molecular genetic pathology (multidisciplinary)	2	0	1	0	1	0
Neurological surgery	31	15	11	4	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, 2015-2016 AY**

Specialty	Number of Residents Not Graduating	Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
Neurology	43	22	14	6	0	1
- Brain injury medicine	0	0	0	0	0	0
- Clinical neurophysiology	3	1	1	1	0	0
- Epilepsy	0	0	0	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	0	0	0	0	0	0
Child neurology	3	1	2	0	0	0
Nuclear medicine	11	6	3	2	0	0
Obstetrics and gynecology	74	28	30	15	0	1
- Female pelvic medicine and reconstructive surgery	2	0	2	0	0	0
- Gynecologic oncology	1	0	0	0	1	0
- Maternal-fetal medicine	0	0	0	0	0	0
- Reproductive endocrinology and infertility	0	0	0	0	0	0
Ophthalmology	10	2	4	3	1	0
- Ophthalmic plastic and reconstructive surgery	0	0	0	0	0	0
Orthopaedic surgery	24	8	9	7	0	0
- Adult reconstructive orthopaedics	0	0	0	0	0	0
- Foot and ankle orthopaedics	0	0	0	0	0	0
- Hand surgery	1	0	1	0	0	0
- Musculoskeletal oncology	0	0	0	0	0	0
- Orthopaedic sports medicine	1	0	1	0	0	0
- Orthopaedic surgery of the spine	1	0	1	0	0	0
- Orthopaedic trauma	0	0	0	0	0	0
- Pediatric orthopaedics	0	0	0	0	0	0
Osteopathic neuromusculoskeletal medicine	0	0	0	0	0	0
Otolaryngology	11	2	8	1	0	0
- Neurotology	0	0	0	0	0	0
- Pediatric otolaryngology	1	0	1	0	0	0
Pathology-anatomic and clinical	61	28	26	5	1	1
- Blood banking/transfusion medicine	4	0	3	1	0	0
- Clinical informatics (Pathology)	0	0	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
- Hematology	1	0	1	0	0	0
- Medical microbiology	0	0	0	0	0	0
- Neuropathology	3	2	1	0	0	0
- Pediatric pathology	0	0	0	0	0	0
- Selective pathology	4	2	2	0	0	0
Pediatrics	116	58	42	14	2	0
- Adolescent medicine	5	0	5	0	0	0
- Child abuse pediatrics	1	0	1	0	0	0
- Clinical informatics (Pediatrics)	0	0	0	0	0	0
- Developmental-behavioral pediatrics	4	1	3	0	0	0
- Neonatal-perinatal medicine	7	0	7	0	0	0
- Pediatric cardiology	6	0	4	1	1	0
- Pediatric critical care medicine	9	1	7	0	1	0
- Pediatric emergency medicine	6	1	5	0	0	0
- Pediatric endocrinology	8	3	5	0	0	0
- Pediatric gastroenterology	1	0	1	0	0	0
- Pediatric hematology/oncology	10	0	8	2	0	0

**TABLE D.13 Continued**

**Number of Residents Leaving Prior to Completion of a Program by Specialty and Subspecialty and Status, 2015-2016 AY**

Specialty	Number of Residents Not Graduating	Transferred	Withdrew	Dismissed	Unsuccessfully Completed Program	Deceased
- Pediatric infectious diseases	5	2	3	0	0	0
- Pediatric nephrology	2	0	2	0	0	0
- Pediatric pulmonology	2	1	1	0	0	0
- Pediatric rheumatology	2	0	2	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	10	5	4	0	0	1
- Brain injury medicine	0	0	0	0	0	0
- Neuromuscular medicine	0	0	0	0	0	0
- Spinal cord injury medicine	0	0	0	0	0	0
- Pediatric rehabilitation	0	0	0	0	0	0
- Sports medicine	0	0	0	0	0	0
Plastic surgery	2	0	1	1	0	0
Plastic surgery - integrated	6	1	4	1	0	0
- Craniofacial surgery	0	0	0	0	0	0
- Hand surgery	0	0	0	0	0	0
Preventive medicine	11	3	6	1	1	0
- Medical toxicology	0	0	0	0	0	0
- Undersea and hyperbaric medicine	0	0	0	0	0	0
Psychiatry	421	359	39	22	0	1
- Addiction psychiatry	4	0	4	0	0	0
- Child and adolescent psychiatry	23	8	13	2	0	0
- Forensic psychiatry	2	0	2	0	0	0
- Geriatric psychiatry	0	0	0	0	0	0
- Psychosomatic medicine	0	0	0	0	0	0
Radiation oncology	7	3	4	0	0	0
Radiology-diagnostic	98	53	38	5	0	2
- Abdominal radiology	0	0	0	0	0	0
- Endovascular surgical neuroradiology	1	0	0	0	1	0
- Musculoskeletal radiology	0	0	0	0	0	0
- Neuroradiology	1	1	0	0	0	0
- Nuclear radiology	1	0	1	0	0	0
- Pediatric radiology	4	0	3	0	1	0
- Vascular and interventional radiology	4	0	4	0	0	0
Interventional radiology - integrated	0	0	0	0	0	0
Surgery	239	109	97	31	0	2
- Complex general surgical oncology	1	0	1	0	0	0
- Hand surgery	0	0	0	0	0	0
- Pediatric surgery	0	0	0	0	0	0
- Surgical critical care	3	0	2	1	0	0
- Vascular surgery	2	0	1	0	1	0
Vascular surgery - integrated	7	3	4	0	0	0
Thoracic surgery	1	0	1	0	0	0
- Congenital cardiac surgery	0	0	0	0	0	0
Thoracic surgery - integrated	5	2	3	0	0	0
Urology	9	1	6	2	0	0
- Female pelvic medicine and reconstructive surgery	0	0	0	0	0	0
- Pediatric urology	0	0	0	0	0	0
Transitional year	13	8	3	2	0	0
Internal medicine/Pediatrics	16	7	7	2	0	0

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

TABLE D.14

**Number of Transferring Residents by Specialty and Resident Year, 2015-2016 AY**

Specialty	Number of Transferring Residents	Resident Year					
		1	2	3	4	5	6
OVERALL	1,020	390	247	336	43	2	2
Allergy and immunology	2	1	1				
Anesthesiology	34	6	20	8			
Colon and rectal surgery	0						
Dermatology	4	2	2				
Emergency medicine	27	17	9	1			
Family medicine	80	61	17	2			
Internal medicine	149	104	44	1			
Medical genetics and genomics	0						
Neurological surgery	15	4	5	1	2	1	2
Neurology	22	11	9	1	1		
Child neurology	1		1				
Nuclear medicine	6	4	1	1			
Obstetrics and gynecology	28	7	15	4	2		
Ophthalmology	2	2					
Orthopaedic surgery	8	3	2	3			
Osteopathic neuromusculoskeletal medicine	0						
Otolaryngology	2	1	1				
Pathology-anatomic and clinical	28	11	12	4	1		
Pediatrics	58	30	24	4			
Physical medicine and rehabilitation	5	2	3				
Plastic surgery	0						
Plastic surgery - integrated	1	1					
Preventive medicine	3	3					
Psychiatry	359	32	23	273	31		
Radiation oncology	3	1	1	1			
Radiology-diagnostic	53	34	14	5			
Interventional radiology - integrated	0						
Surgery	109	39	40	25	5		
Vascular surgery - integrated	3	1	1	1			
Thoracic surgery	0						
Thoracic surgery - integrated	2				1	1	
Urology	1	1					
Transitional year	8	8					
Internal medicine/Pediatrics	7	4	2	1			

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 have occurred throughout the 2016-2017 academic year.

### Accredited Sponsors by Status

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Of the 821 total number of ACGME-accredited Sponsoring Institutions, 171 (20.8%) are in the initial phase of accreditation, 637 (77.6%) have a status of Continued Accreditation, 10 (1.2%) have a status of Continued Accreditation with Warning, and 3 (0.4%) are on probation. Overall there has been a 19.5% 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 GME accreditation system, has led to the recent upward trend in total accredited Sponsoring Institutions.

### Distribution by Sponsor Size

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Sponsors with 1 program and those with 2-5 programs account for the majority of all Sponsoring Institutions (32.3% and 28.0%, respectively). The remaining Sponsoring Institutions with accredited programs all have more than 5 programs: 17.8% have between 6 and 25 programs; 10.2% have between 26 and 75 programs; 3.4% have between 76 and 100 programs; and 1.3% have more than 100 programs. There are 57 (6.9%) Sponsoring Institutions that currently do not have any accredited programs.

### Geographic Distribution

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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 (88)
- New York (60)
- Florida (54)

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

- New York (46)
- California (43)
- Michigan (35)

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

- California (41)
- Florida (18)
- New York (14)

Sponsors that do not yet have ACGME-accredited programs (57) are located in 24 states and Puerto Rico, with the highest number of these (8) located in Florida.

### Distribution by Institution Type

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The type of institution is self-reported by Sponsoring Institutions. More than half of Sponsoring Institutions with ACGME-accredited programs are General/Teaching Hospitals (402, 52.6%); the next largest group are Academic Medical Centers/Medical Schools, with 112 (14.7%) sponsors in this category. Though a much smaller percentage of total Sponsoring Institutions, Academic Medical Centers/Medical Schools account for almost the same number of programs and residents as General/Teaching Hospitals.

### DIO Changes

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Each year between 10% and 16% of Sponsoring Institutions have a change in leadership in the DIO role (excluding Sponsoring Institutions that have no accredited programs). In the 2016-2017 academic year, 62 (8.1%) Sponsoring Institutions had a single DIO change and 27 (3.5%) had more than one DIO change. <sup>8</sup>

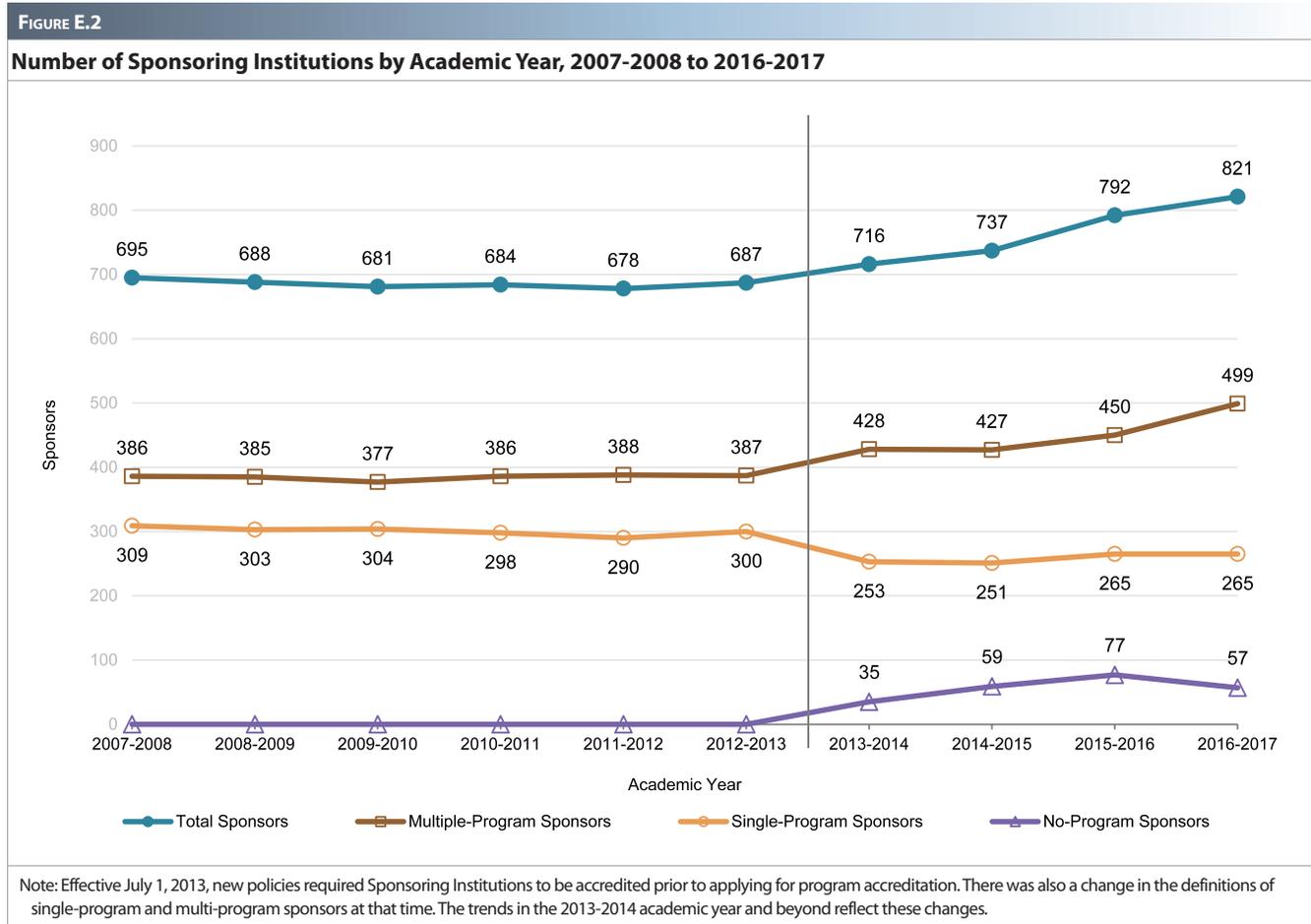
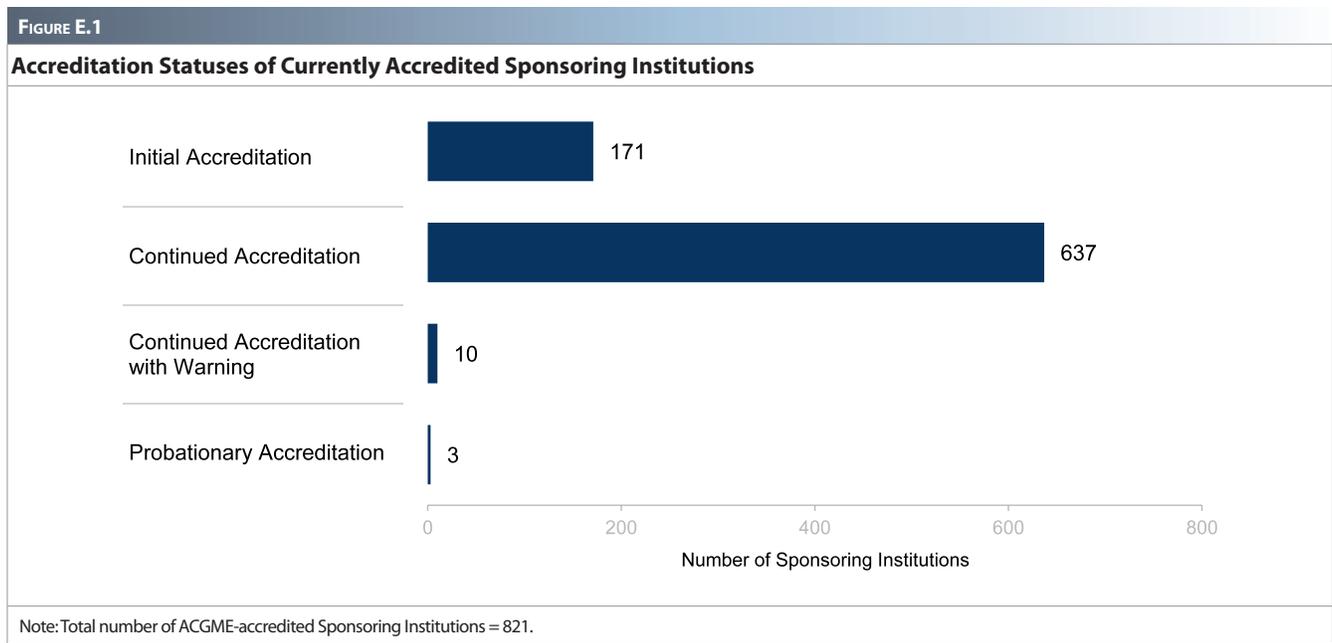
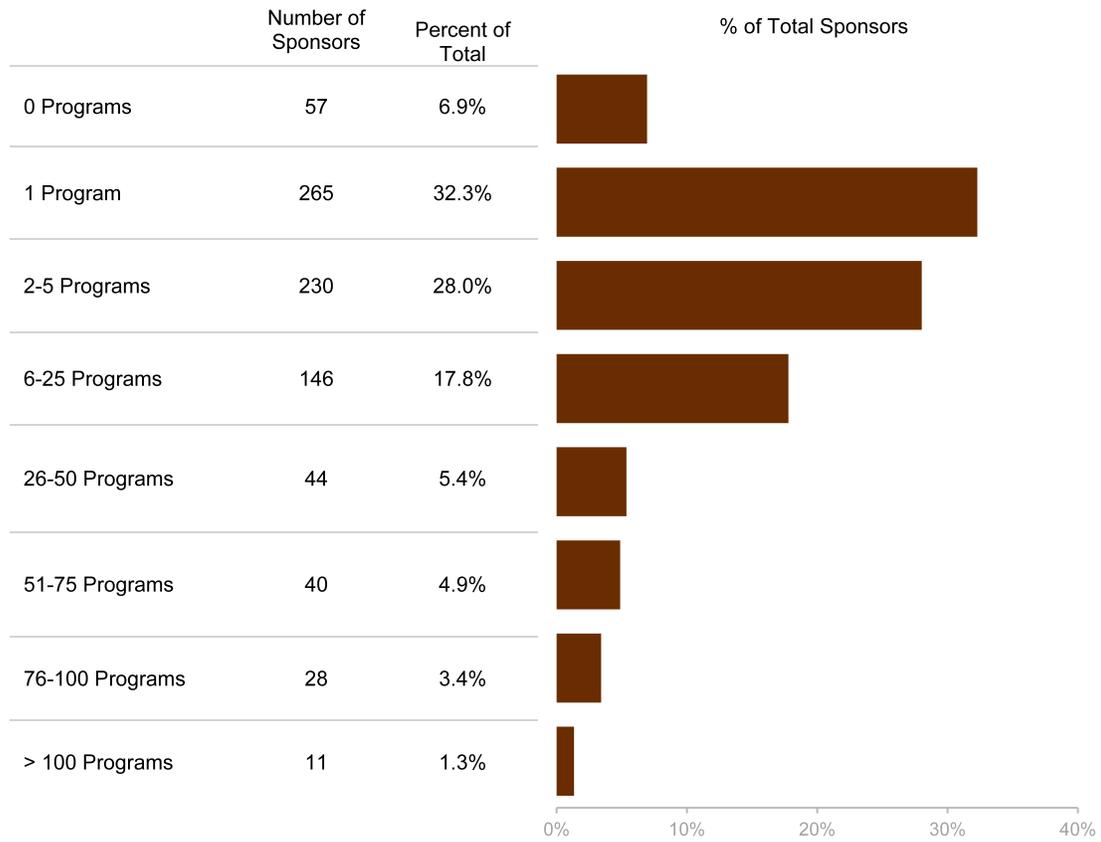


FIGURE E.3

## Number of Sponsoring Institutions by Size of Sponsor



Note: Total number of ACGME-accredited Sponsoring Institutions = 821. Percentages may not add to 100% due to rounding.

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 2016	Total Sponsors	Percent of All Sponsors	Sponsors per 100,000 Pop
OVERALL	--	326,538,820	821	100.0%	0.25
Alabama	AL	4,863,300	14	1.7%	0.29
Alaska	AK	741,894	1	0.1%	0.13
Arizona	AZ	6,931,071	12	1.5%	0.17
Arkansas	AR	2,988,248	4	0.5%	0.13
California	CA	39,250,017	88	10.7%	0.22
Colorado	CO	5,540,545	13	1.6%	0.23
Connecticut	CT	3,576,452	17	2.1%	0.48
Delaware	DE	952,065	3	0.4%	0.32
District of Columbia	DC	681,170	8	1.0%	1.17
Florida	FL	20,612,439	54	6.6%	0.26
Georgia	GA	10,310,371	24	2.9%	0.23
Hawaii	HI	1,428,557	4	0.5%	0.28
Idaho	ID	1,683,140	4	0.5%	0.24
Illinois	IL	12,801,539	33	4.0%	0.26
Indiana	IN	6,633,053	11	1.3%	0.17
Iowa	IA	3,134,693	10	1.2%	0.32
Kansas	KS	2,907,289	2	0.2%	0.07
Kentucky	KY	4,436,974	5	0.6%	0.11
Louisiana	LA	4,681,666	10	1.2%	0.21
Maine	ME	1,331,479	4	0.5%	0.30
Maryland	MD	6,016,447	15	1.8%	0.25
Massachusetts	MA	6,811,779	26	3.2%	0.38
Michigan	MI	9,928,300	48	5.8%	0.48
Minnesota	MN	5,519,952	10	1.2%	0.18
Mississippi	MS	2,988,726	8	1.0%	0.27
Missouri	MO	6,093,000	13	1.6%	0.21
Montana	MT	1,042,520	3	0.4%	0.29
Nebraska	NE	1,907,116	4	0.5%	0.21
Nevada	NV	2,940,058	6	0.7%	0.20
New Hampshire	NH	1,334,795	2	0.2%	0.15
New Jersey	NJ	8,944,469	26	3.2%	0.29
New Mexico	NM	2,081,015	6	0.7%	0.29
New York	NY	19,745,289	60	7.3%	0.30
North Carolina	NC	10,146,788	16	1.9%	0.16
North Dakota	ND	757,952	2	0.2%	0.26
Ohio	OH	11,614,373	44	5.4%	0.38
Oklahoma	OK	3,923,561	10	1.2%	0.25
Oregon	OR	4,093,465	4	0.5%	0.10
Pennsylvania	PA	12,784,227	44	5.4%	0.34
Puerto Rico	PR	3,411,307	13	1.6%	0.38
Rhode Island	RI	1,056,426	7	0.9%	0.66
South Carolina	SC	4,961,119	12	1.5%	0.24
South Dakota	SD	865,454	3	0.4%	0.35
Tennessee	TN	6,651,194	10	1.2%	0.15
Texas	TX	27,862,596	45	5.5%	0.16
Utah	UT	3,051,217	6	0.7%	0.20
Vermont	VT	624,594	1	0.1%	0.16
Virginia	VA	8,411,808	18	2.2%	0.21
Washington	WA	7,288,000	21	2.6%	0.29
West Virginia	WV	1,831,102	8	1.0%	0.44
Wisconsin	WI	5,778,708	8	1.0%	0.14
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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 2016	Total Multiple-Program Sponsors	Percent of All Multiple-Program Sponsors	Multiple-Program Sponsors per 100,000 Pop
OVERALL	--	326,538,820	499	100.0%	0.15
Alabama	AL	4,863,300	8	1.6%	0.16
Alaska	AK	741,894	1	0.2%	0.13
Arizona	AZ	6,931,071	7	1.4%	0.10
Arkansas	AR	2,988,248	2	0.4%	0.07
California	CA	39,250,017	43	8.6%	0.11
Colorado	CO	5,540,545	6	1.2%	0.11
Connecticut	CT	3,576,452	11	2.2%	0.31
Delaware	DE	952,065	1	0.2%	0.11
District of Columbia	DC	681,170	8	1.6%	1.17
Florida	FL	20,612,439	28	5.6%	0.14
Georgia	GA	10,310,371	11	2.2%	0.11
Hawaii	HI	1,428,557	2	0.4%	0.14
Idaho	ID	1,683,140	1	0.2%	0.06
Illinois	IL	12,801,539	22	4.4%	0.17
Indiana	IN	6,633,053	6	1.2%	0.09
Iowa	IA	3,134,693	5	1.0%	0.16
Kansas	KS	2,907,289	2	0.4%	0.07
Kentucky	KY	4,436,974	3	0.6%	0.07
Louisiana	LA	4,681,666	6	1.2%	0.13
Maine	ME	1,331,479	3	0.6%	0.23
Maryland	MD	6,016,447	13	2.6%	0.22
Massachusetts	MA	6,811,779	18	3.6%	0.26
Michigan	MI	9,928,300	35	7.0%	0.35
Minnesota	MN	5,519,952	4	0.8%	0.07
Mississippi	MS	2,988,726	2	0.4%	0.07
Missouri	MO	6,093,000	8	1.6%	0.13
Montana	MT	1,042,520	1	0.2%	0.10
Nebraska	NE	1,907,116	2	0.4%	0.10
Nevada	NV	2,940,058	2	0.4%	0.07
New Hampshire	NH	1,334,795	1	0.2%	0.07
New Jersey	NJ	8,944,469	16	3.2%	0.18
New Mexico	NM	2,081,015	1	0.2%	0.05
New York	NY	19,745,289	46	9.2%	0.23
North Carolina	NC	10,146,788	13	2.6%	0.13
North Dakota	ND	757,952	2	0.4%	0.26
Ohio	OH	11,614,373	31	6.2%	0.27
Oklahoma	OK	3,923,561	5	1.0%	0.13
Oregon	OR	4,093,465	3	0.6%	0.07
Pennsylvania	PA	12,784,227	31	6.2%	0.24
Puerto Rico	PR	3,411,307	7	1.4%	0.21
Rhode Island	RI	1,056,426	6	1.2%	0.57
South Carolina	SC	4,961,119	8	1.6%	0.16
South Dakota	SD	865,454	1	0.2%	0.12
Tennessee	TN	6,651,194	7	1.4%	0.11
Texas	TX	27,862,596	26	5.2%	0.09
Utah	UT	3,051,217	3	0.6%	0.10
Vermont	VT	624,594	1	0.2%	0.16
Virginia	VA	8,411,808	9	1.8%	0.11
Washington	WA	7,288,000	9	1.8%	0.12
West Virginia	WV	1,831,102	4	0.8%	0.22
Wisconsin	WI	5,778,708	7	1.4%	0.12
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

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 2016	Total Single-Program Sponsors	Percent of All Sponsors	Single-Program Sponsors per 100,000 Pop
OVERALL	--	326,538,820	265	100.0%	0.08
Alabama	AL	4,863,300	3	1.1%	0.06
Alaska	AK	741,894	0	0.0%	0.00
Arizona	AZ	6,931,071	3	1.1%	0.04
Arkansas	AR	2,988,248	2	0.8%	0.07
California	CA	39,250,017	41	15.5%	0.10
Colorado	CO	5,540,545	7	2.6%	0.13
Connecticut	CT	3,576,452	5	1.9%	0.14
Delaware	DE	952,065	2	0.8%	0.21
District of Columbia	DC	681,170	0	0.0%	0.00
Florida	FL	20,612,439	18	6.8%	0.09
Georgia	GA	10,310,371	11	4.2%	0.11
Hawaii	HI	1,428,557	2	0.8%	0.14
Idaho	ID	1,683,140	2	0.8%	0.12
Illinois	IL	12,801,539	9	3.4%	0.07
Indiana	IN	6,633,053	5	1.9%	0.08
Iowa	IA	3,134,693	4	1.5%	0.13
Kansas	KS	2,907,289	0	0.0%	0.00
Kentucky	KY	4,436,974	1	0.4%	0.02
Louisiana	LA	4,681,666	3	1.1%	0.06
Maine	ME	1,331,479	1	0.4%	0.08
Maryland	MD	6,016,447	2	0.8%	0.03
Massachusetts	MA	6,811,779	7	2.6%	0.10
Michigan	MI	9,928,300	13	4.9%	0.13
Minnesota	MN	5,519,952	6	2.3%	0.11
Mississippi	MS	2,988,726	4	1.5%	0.13
Missouri	MO	6,093,000	5	1.9%	0.08
Montana	MT	1,042,520	2	0.8%	0.19
Nebraska	NE	1,907,116	2	0.8%	0.10
Nevada	NV	2,940,058	1	0.4%	0.03
New Hampshire	NH	1,334,795	1	0.4%	0.07
New Jersey	NJ	8,944,469	10	3.8%	0.11
New Mexico	NM	2,081,015	4	1.5%	0.19
New York	NY	19,745,289	14	5.3%	0.07
North Carolina	NC	10,146,788	3	1.1%	0.03
North Dakota	ND	757,952	0	0.0%	0.00
Ohio	OH	11,614,373	10	3.8%	0.09
Oklahoma	OK	3,923,561	5	1.9%	0.13
Oregon	OR	4,093,465	1	0.4%	0.02
Pennsylvania	PA	12,784,227	10	3.8%	0.08
Puerto Rico	PR	3,411,307	5	1.9%	0.15
Rhode Island	RI	1,056,426	1	0.4%	0.09
South Carolina	SC	4,961,119	3	1.1%	0.06
South Dakota	SD	865,454	2	0.8%	0.23
Tennessee	TN	6,651,194	1	0.4%	0.02
Texas	TX	27,862,596	14	5.3%	0.05
Utah	UT	3,051,217	2	0.8%	0.07
Vermont	VT	624,594	0	0.0%	0.00
Virginia	VA	8,411,808	5	1.9%	0.06
Washington	WA	7,288,000	9	3.4%	0.12
West Virginia	WV	1,831,102	3	1.1%	0.16
Wisconsin	WI	5,778,708	1	0.4%	0.02
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

TABLE E.7

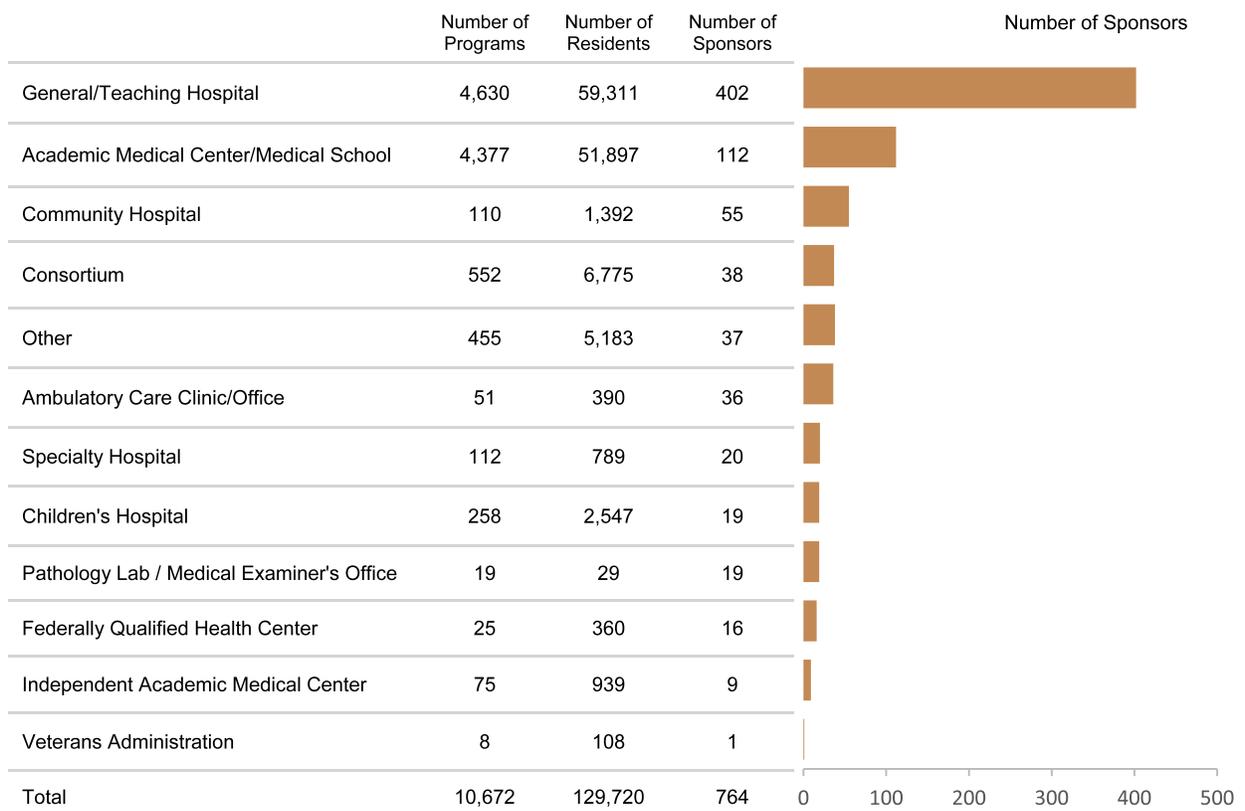
**Number of No-Program Sponsoring Institutions and No-Program Sponsoring Institution Concentration per 100,000 Population by State**

State Name	State Abbreviation	State Population - Census Estimate 2016	No-Program Sponsors	Percent of All No-Program Sponsors	No-Program Sponsors per 100,000 Pop
OVERALL	--	326,538,820	57	100.0%	0.02
Alabama	AL	4,863,300	3	5.3%	0.06
Alaska	AK	741,894	0	0.0%	0.00
Arizona	AZ	6,931,071	2	3.5%	0.03
Arkansas	AR	2,988,248	0	0.0%	0.00
California	CA	39,250,017	4	7.0%	0.01
Colorado	CO	5,540,545	0	0.0%	0.00
Connecticut	CT	3,576,452	1	1.8%	0.03
Delaware	DE	952,065	0	0.0%	0.00
District of Columbia	DC	681,170	0	0.0%	0.00
Florida	FL	20,612,439	8	14.0%	0.04
Georgia	GA	10,310,371	2	3.5%	0.02
Hawaii	HI	1,428,557	0	0.0%	0.00
Idaho	ID	1,683,140	1	1.8%	0.06
Illinois	IL	12,801,539	2	3.5%	0.02
Indiana	IN	6,633,053	0	0.0%	0.00
Iowa	IA	3,134,693	1	1.8%	0.03
Kansas	KS	2,907,289	0	0.0%	0.00
Kentucky	KY	4,436,974	1	1.8%	0.02
Louisiana	LA	4,681,666	1	1.8%	0.02
Maine	ME	1,331,479	0	0.0%	0.00
Maryland	MD	6,016,447	0	0.0%	0.00
Massachusetts	MA	6,811,779	1	1.8%	0.01
Michigan	MI	9,928,300	0	0.0%	0.00
Minnesota	MN	5,519,952	0	0.0%	0.00
Mississippi	MS	2,988,726	2	3.5%	0.07
Missouri	MO	6,093,000	0	0.0%	0.00
Montana	MT	1,042,520	0	0.0%	0.00
Nebraska	NE	1,907,116	0	0.0%	0.00
Nevada	NV	2,940,058	3	5.3%	0.10
New Hampshire	NH	1,334,795	0	0.0%	0.00
New Jersey	NJ	8,944,469	0	0.0%	0.00
New Mexico	NM	2,081,015	1	1.8%	0.05
New York	NY	19,745,289	0	0.0%	0.00
North Carolina	NC	10,146,788	0	0.0%	0.00
North Dakota	ND	757,952	0	0.0%	0.00
Ohio	OH	11,614,373	3	5.3%	0.03
Oklahoma	OK	3,923,561	0	0.0%	0.00
Oregon	OR	4,093,465	0	0.0%	0.00
Pennsylvania	PA	12,784,227	3	5.3%	0.02
Puerto Rico	PR	3,411,307	1	1.8%	0.03
Rhode Island	RI	1,056,426	0	0.0%	0.00
South Carolina	SC	4,961,119	1	1.8%	0.02
South Dakota	SD	865,454	0	0.0%	0.00
Tennessee	TN	6,651,194	2	3.5%	0.03
Texas	TX	27,862,596	5	8.8%	0.02
Utah	UT	3,051,217	1	1.8%	0.03
Vermont	VT	624,594	0	0.0%	0.00
Virginia	VA	8,411,808	4	7.0%	0.05
Washington	WA	7,288,000	3	5.3%	0.04
West Virginia	WV	1,831,102	1	1.8%	0.05
Wisconsin	WI	5,778,708	0	0.0%	0.00
Wyoming	WY	585,501	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, 2016. <https://www2.census.gov/programs-surveys/popest/datasets/2010-2016/national/totals/nst-est2016-alldata.csv>. Published March, 2017. Accessed July 11, 2017.

FIGURE E.8

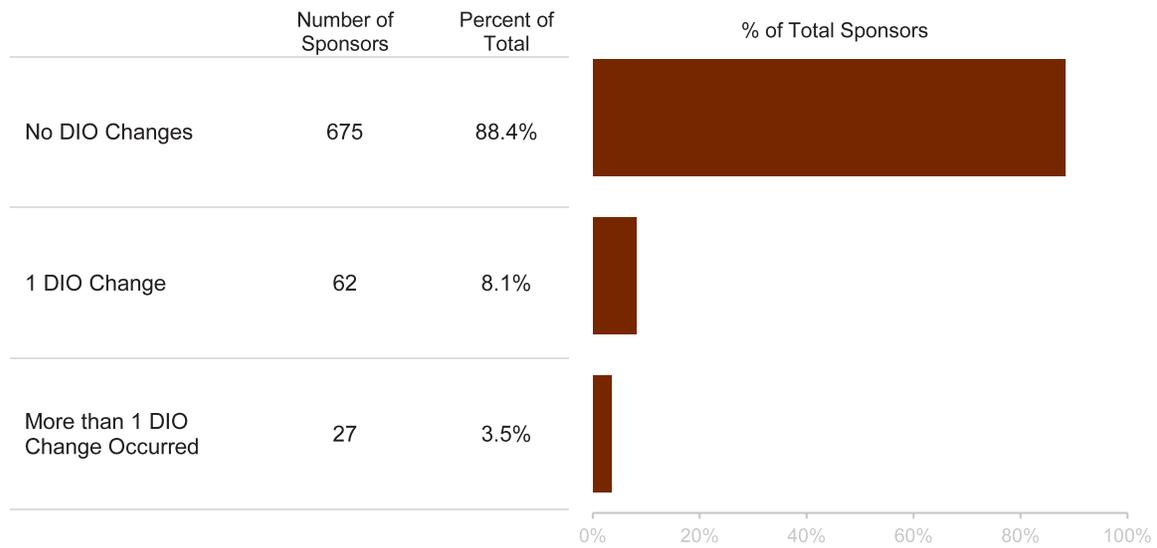
**Number of Sponsoring Institutions by Institution Type**



Note: Excluding sponsors with no ACGME-accredited programs.

FIGURE E.9

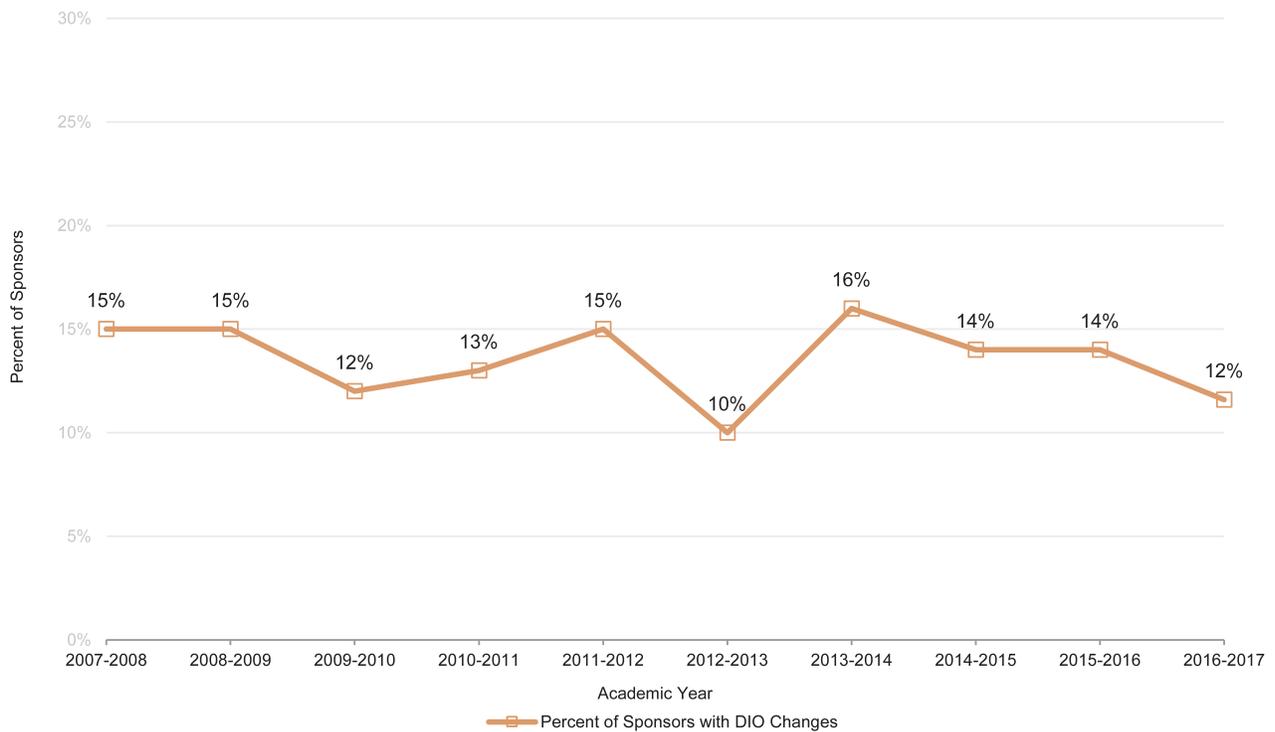
Number of Sponsoring Institutions with DIO Changes



Notes: Excluding sponsors with no ACGME-accredited programs and any sponsors newly accredited in the 2016-2017 academic year. Total number of sponsors included = 740. 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, 2007-2008 to 2016-2017



Note: Excluding sponsors with no ACGME-accredited programs and any sponsors newly accredited in the academic year. Total number of sponsors included = 740. Abbreviations: DIO, designated institutional official.



# F

## Participating Sites

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

### **Distribution by Institution Type**

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There was a total of 5,884 unique participating sites at which residents rotated during the 2016-2017 academic year. The highest number of sites were in the following categories:

- Ambulatory Care Clinic/Office (1,959)
- General/Teaching Hospital (1,548)
- Other (546)

Since the 2007-2008 academic year, there has been an 88.6% 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 (450.9% increase)
- Specialty Hospital (93.7% increase)
- General Teaching / Community Hospital (54.8% increase)

The number of academic medical centers listed as participating sites also increased by 145.7%. With only 172 unique sites in this category in the 2016-2017 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 3.0. Among pipeline specialty programs,

this number is slightly higher at 3.8 participating sites per program. The pipeline specialties with the highest average number of participating sites include:

- Preventive medicine (7.4)
- Plastic surgery – integrated (5.2)
- Psychiatry (5.2)

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

- Family medicine (35)
- Preventative medicine (27)
- Internal medicine/pediatrics (21)
- Internal medicine (21)

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

### **Number of Sites by Specialty and Subspecialty**

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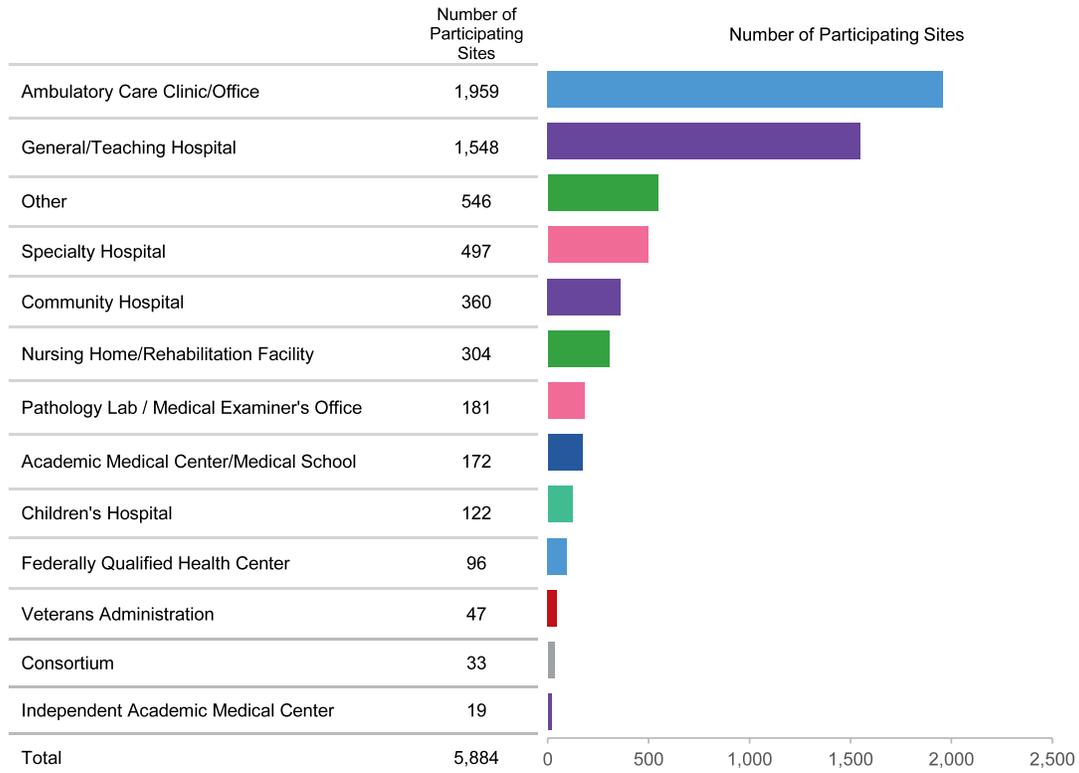
The specialties with the highest number of unique participating sites to which residents rotate include:

- Family medicine (1,907)
- Internal medicine (1,310)
- Surgery (1,287)
- Psychiatry (1,186)

Sponsors account for 9.8% of all participating sites with 579 Sponsoring Institutions listed as participating sites to which residents rotate. ↕

FIGURE F.1

**Number of Unique Participating Sites Where Residents Rotate by Institution Type**



Notes: Bar color denotes institution type groupings. See Appendix C for complete list of institution type groups.

FIGURE F.2

**Number of Unique Participating Sites Where Residents Rotate by Academic Year, 2007-2008 to 2016-2017**

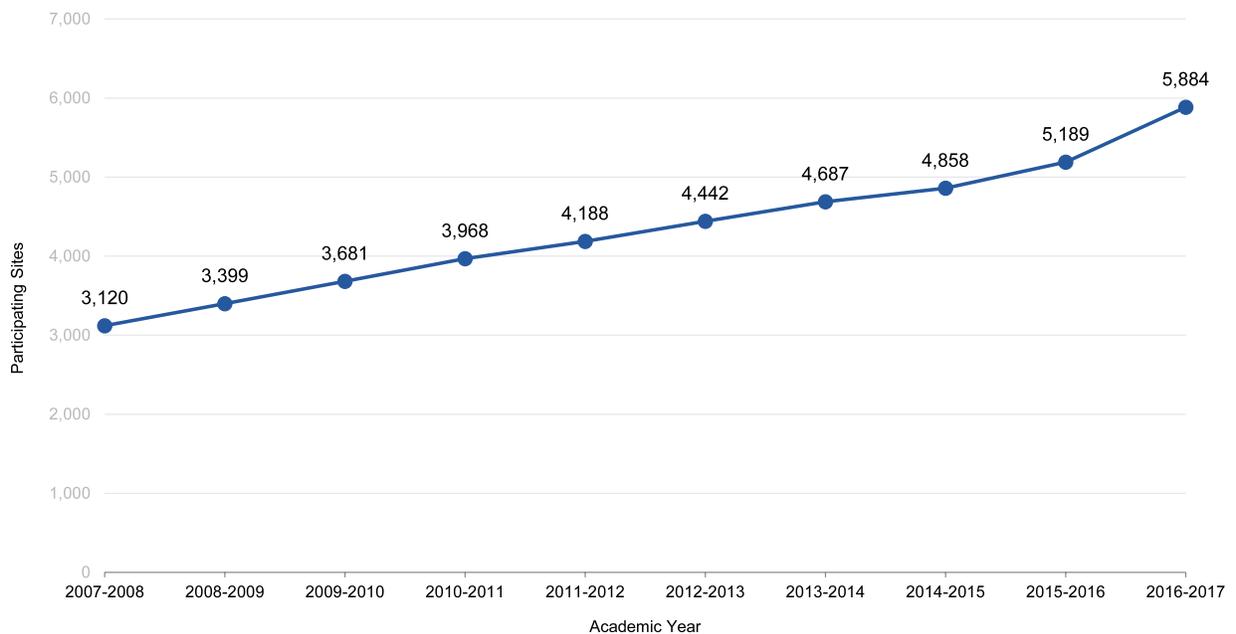
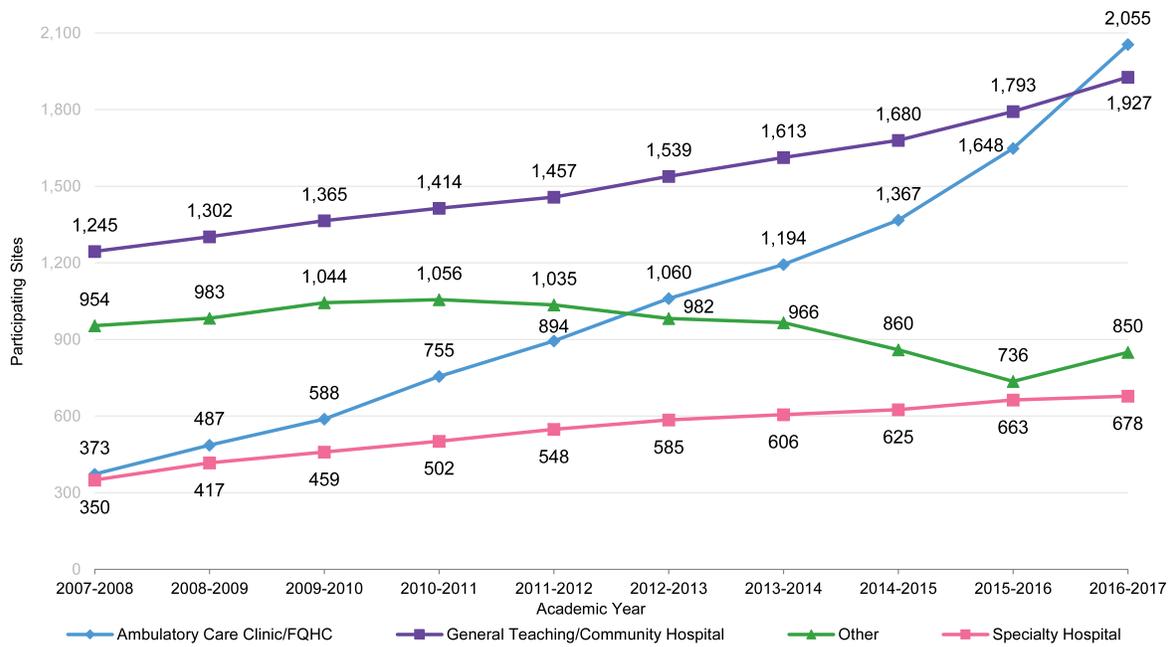


FIGURE F.3

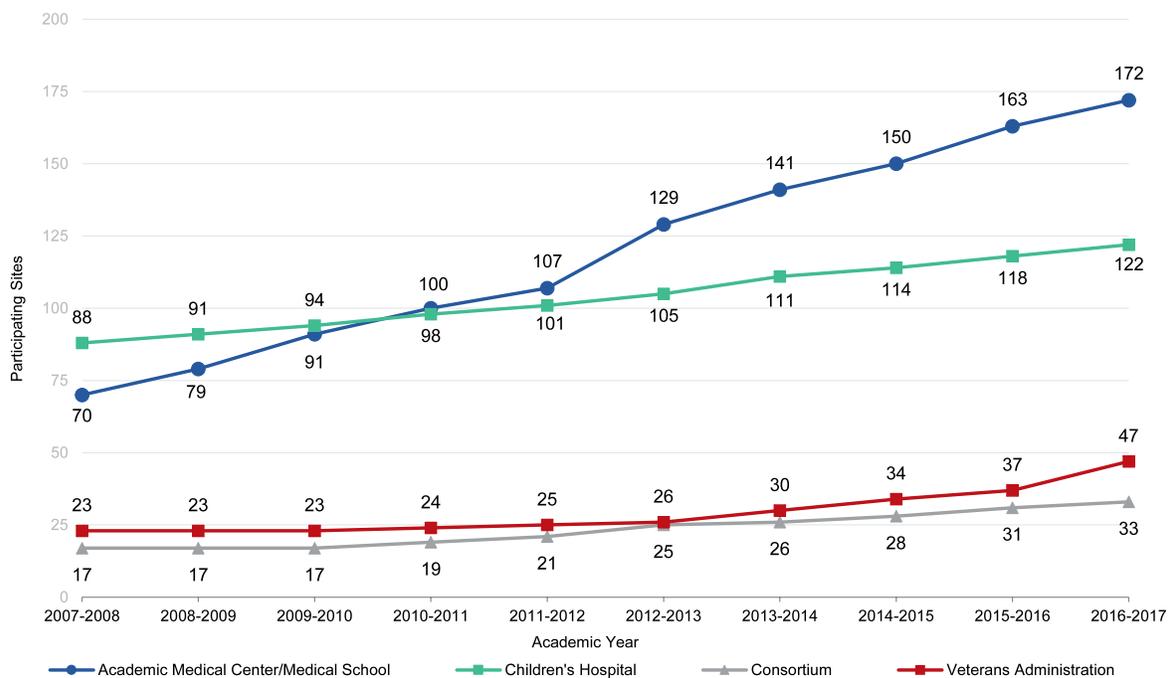
**Number of Participating Sites where Residents Rotate by Institution Type Groups (Largest Groups Only) and Academic Year, 2007-2008 to 2016-2017**



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, 2007-2008 to 2016-2017**



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	10,672	3.0	2.1	1	35
TOTAL PIPELINE	4,383	3.8	2.4	1	35
Allergy and immunology	79	2.7	1.5	1	6
Anesthesiology	147	4.0	1.8	1	10
- Adult cardiothoracic anesthesiology	66	1.8	1.1	1	5
- Clinical informatics (Anesthesiology)	1	1.0	0.0	1	1
- Critical care medicine	57	1.9	0.9	1	5
- Regional anesthesiology and acute pain medicine	9	2.1	0.9	1	3
- Obstetric anesthesiology	32	1.3	0.6	1	3
- Pain medicine (multidisciplinary)	101	2.6	1.3	1	7
- Pediatric anesthesiology	58	1.5	0.7	1	3
Colon and rectal surgery	58	2.9	1.9	1	11
Dermatology	128	3.7	2.1	1	13
- Dermatopathology (multidisciplinary)	53	2.1	1.1	1	5
- Micrographic surgery and dermatologic oncology	75	2.2	1.5	1	11
Emergency medicine	212	3.9	2.0	1	12
- Clinical informatics (Emergency medicine)	4	4.3	2.5	2	8
- Emergency medical services	55	3.0	2.7	1	13
- Medical toxicology	27	3.1	1.3	1	6
- Pediatric emergency medicine	26	2.5	0.9	1	4
- Sports medicine	7	4.4	3.3	1	10
- Undersea and hyperbaric medicine	7	2.3	1.3	1	5
Family medicine	540	3.5	3.0	1	35
- Clinical informatics (Family medicine)	2	2.5	1.5	1	4
- Geriatric medicine	44	3.8	2.4	1	11
- Hospice and palliative medicine (multidisciplinary)	130	4.4	1.9	1	12
- Sports medicine	132	3.7	3.1	1	17
Internal medicine	469	2.8	2.4	1	21
- Adult congenital heart disease	10	2.1	0.8	1	3
- Advanced heart failure and transplant cardiology	71	1.4	0.6	1	3
- Cardiovascular disease	210	2.5	1.2	1	6
- Clinical cardiac electrophysiology	105	1.7	0.9	1	5
- Clinical informatics (Internal medicine)	12	2.0	1.5	1	6
- Critical care medicine	34	2.5	1.4	1	7
- Endocrinology, diabetes, and metabolism	141	2.7	1.3	1	6
- Gastroenterology	175	2.7	1.2	1	7
- Geriatric medicine	106	3.6	1.9	1	10
- Hematology	2	2.5	0.5	2	3
- Hematology and medical oncology	146	2.8	1.2	1	6
- Infectious disease	146	2.9	1.2	1	6
- Interventional cardiology	150	1.6	0.8	1	4
- Nephrology	149	2.8	1.2	1	7
- Medical oncology	6	2.3	0.7	1	3
- Pulmonary disease	20	2.4	1.1	1	5
- Pulmonary disease and critical care medicine	151	3.1	1.5	1	8
- Rheumatology	114	2.7	1.2	1	8
- Sleep medicine (multidisciplinary)	84	2.4	1.1	1	5
- Transplant hepatology	51	1.3	0.5	1	2
Medical genetics and genomics	46	3.2	1.9	1	8
- Medical biochemical genetics	16	2.3	1.2	1	5
- Molecular genetic pathology (multidisciplinary)	39	2.1	1.5	1	8
Neurological surgery	110	3.5	1.5	1	9
- Endovascular surgical neuroradiology	2	1.5	0.5	1	2

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	144	3.3	1.6	1	12
- Brain injury medicine	1	1.0	0.0	1	1
- Clinical neurophysiology	94	2.2	1.1	1	5
- Epilepsy	61	1.9	0.9	1	5
- Endovascular surgical neuroradiology	1	2.0	0.0	2	2
- Neurodevelopmental disabilities	8	4.4	1.3	3	7
- Neuromuscular medicine	46	2.0	1.1	1	6
- Vascular neurology	93	1.8	0.9	1	4
Child neurology	74	2.9	1.2	1	6
Nuclear medicine	42	2.5	1.3	1	6
Obstetrics and gynecology	269	3.3	1.9	1	12
- Female pelvic medicine and reconstructive surgery	50	2.5	1.1	1	5
- Gynecologic oncology	48	2.1	1.1	1	5
- Maternal-fetal medicine	73	2.0	0.9	1	4
- Reproductive endocrinology and infertility	41	2.2	1.4	1	6
Ophthalmology	116	3.7	1.6	1	9
- Ophthalmic plastic and reconstructive surgery	5	5.4	6.0	1	17
Orthopaedic surgery	168	5.1	2.3	1	15
- Adult reconstructive orthopaedics	23	2.5	1.4	1	5
- Foot and ankle orthopaedics	6	2.0	1.2	1	4
- Hand surgery	68	3.4	1.9	1	11
- Musculoskeletal oncology	11	2.1	1.1	1	4
- Orthopaedic sports medicine	97	2.8	2.2	1	15
- Orthopaedic surgery of the spine	16	2.3	1.3	1	6
- Orthopaedic trauma	9	1.7	1.3	1	5
- Pediatric orthopaedics	25	1.6	0.8	1	3
Osteopathic neuromusculoskeletal medicine	4	4.0	2.3	2	8
Otolaryngology	109	4.0	1.8	1	9
- Neurotology	20	2.5	1.5	1	5
- Pediatric otolaryngology	22	1.2	0.4	1	2
Pathology-anatomic and clinical	142	4.1	1.8	1	9
- Blood banking/transfusion medicine	49	3.1	1.6	1	7
- Clinical informatics (Pathology)	5	2.2	1.5	1	4
- Chemical pathology	4	1.3	0.4	1	2
- Cytopathology	92	1.4	0.6	1	3
- Forensic pathology	40	1.3	0.7	1	4
- Hematology	86	1.8	1.0	1	5
- Medical microbiology	15	1.9	1.0	1	4
- Neuropathology	35	2.2	1.4	1	7
- Pediatric pathology	26	2.3	1.2	1	5
- Selective pathology	85	1.4	0.7	1	3
Pediatrics	207	2.7	1.7	1	13
- Adolescent medicine	29	2.9	2.3	1	10
- Child abuse pediatrics	30	2.6	1.4	1	7
- Clinical informatics (Pediatrics)	5	2.8	1.6	1	5
- Developmental-behavioral pediatrics	39	2.0	1.3	1	6
- Neonatal-perinatal medicine	99	2.1	1.0	1	6
- Pediatric cardiology	59	1.5	0.7	1	5
- Pediatric critical care medicine	67	1.5	0.8	1	4
- Pediatric emergency medicine	52	2.8	0.9	1	5
- Pediatric endocrinology	71	1.5	0.7	1	4
- Pediatric gastroenterology	63	1.7	0.8	1	4
- Pediatric hematology/oncology	73	1.9	0.9	1	4

<b>TABLE F.5 Continued</b>					
<b>Mean Number of Participating Sites Per Program where Residents Rotate by Specialty and Subspecialty</b>					
<b>Specialty</b>	<b>Total Programs</b>	<b>Number of Participating Sites Per Program</b>			
		<b>AVG</b>	<b>STD</b>	<b>MIN</b>	<b>MAX</b>
- Pediatric infectious diseases	64	2.1	1.3	1	7
- Pediatric nephrology	44	1.3	0.6	1	3
- Pediatric pulmonology	54	1.6	0.9	1	5
- Pediatric rheumatology	36	1.7	0.7	1	3
- Pediatric sports medicine	18	2.9	1.9	1	7
- Pediatric transplant hepatology	13	1.5	0.5	1	2
Physical medicine and rehabilitation	86	5.1	2.6	1	17
- Brain injury medicine	13	2.7	0.6	2	4
- Neuromuscular medicine	1	2.0	0.0	2	2
- Spinal cord injury medicine	22	3.0	0.8	2	5
- Pediatric rehabilitation	20	2.1	0.8	1	4
- Sports medicine	19	2.8	1.6	1	7
Plastic surgery	68	4.8	2.1	1	10
Plastic surgery - integrated	76	5.2	2.4	1	11
- Craniofacial surgery	9	2.4	1.2	1	5
- Hand surgery	16	3.5	2.2	1	10
Preventive medicine	76	7.4	4.8	1	27
- Medical toxicology	1	4.0	0.0	4	4
- Undersea and hyperbaric medicine	1	2.0	0.0	2	2
Psychiatry	226	5.2	2.8	1	16
- Addiction psychiatry	47	3.3	1.5	1	8
- Child and adolescent psychiatry	134	4.4	2.7	1	12
- Forensic psychiatry	46	3.9	1.5	1	8
- Geriatric psychiatry	59	3.5	1.7	1	10
- Psychosomatic medicine	59	2.2	1.1	1	6
Radiation oncology	92	2.8	1.3	1	7
Radiology-diagnostic	194	3.1	1.6	1	13
- Abdominal radiology	12	1.8	1.0	1	4
- Endovascular surgical neuroradiology	4	1.8	0.8	1	3
- Musculoskeletal radiology	16	1.6	0.9	1	4
- Neuroradiology	85	2.0	1.1	1	5
- Nuclear radiology	18	1.7	1.1	1	5
- Pediatric radiology	46	1.3	0.6	1	3
- Vascular and interventional radiology	93	2.2	1.3	1	7
Interventional radiology - integrated	65	3.0	1.4	1	9
Surgery	278	4.6	1.9	1	13
- Complex general surgical oncology	24	1.8	1.0	1	4
- Hand surgery	1	5.0	0.0	5	5
- Pediatric surgery	49	1.6	0.7	1	3
- Surgical critical care	117	1.7	0.9	1	4
- Vascular surgery	107	2.3	1.1	1	6
Vascular surgery - integrated	53	3.5	1.4	1	7
Thoracic surgery	69	2.7	1.2	1	6
- Congenital cardiac surgery	13	1.5	0.6	1	3
Thoracic surgery - integrated	27	4.3	1.8	2	8
Urology	136	3.8	1.4	1	8
- Female pelvic medicine and reconstructive surgery	11	1.9	1.0	1	4
- Pediatric urology	28	1.4	0.7	1	4
Transitional year	115	2.1	1.5	1	10
Internal medicine/Pediatrics	79	3.6	2.5	1	21

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	Sponsor	
		#	%
OVERALL	5,884	579	9.8%
TOTAL PIPELINE	4,274	514	12.0%
Allergy and immunology	214	37	17.3%
Anesthesiology	587	71	12.1%
- Adult cardiothoracic anesthesiology	122	35	28.7%
- Clinical informatics (Anesthesiology)	1	1	100.0%
- Critical care medicine	109	29	26.6%
- Regional anesthesiology and acute pain medicine	19	6	31.6%
- Obstetric anesthesiology	42	16	38.1%
- Pain medicine (multidisciplinary)	266	52	19.5%
- Pediatric anesthesiology	89	20	22.5%
Colon and rectal surgery	167	35	21.0%
Dermatology	475	59	12.4%
- Dermatopathology (multidisciplinary)	111	25	22.5%
- Micrographic surgery and dermatologic oncology	164	38	23.2%
Emergency medicine	819	107	13.1%
- Clinical informatics (Emergency medicine)	17	2	11.8%
- Emergency medical services	166	22	13.3%
- Medical toxicology	83	10	12.0%
- Pediatric emergency medicine	66	14	21.2%
- Sports medicine	31	1	3.2%
- Undersea and hyperbaric medicine	16	5	31.3%
Family medicine	1,907	298	15.6%
- Clinical informatics (Family medicine)	5	1	20.0%
- Geriatric medicine	168	24	14.3%
- Hospice and palliative medicine (multidisciplinary)	577	69	12.0%
- Sports medicine	488	73	15.0%
Internal medicine	1,310	282	21.5%
- Adult congenital heart disease	21	5	23.8%
- Advanced heart failure and transplant cardiology	100	34	34.0%
- Cardiovascular disease	531	96	18.1%
- Clinical cardiac electrophysiology	179	54	30.2%
- Clinical informatics (Internal medicine)	24	5	20.8%
- Critical care medicine	86	17	19.8%
- Endocrinology, diabetes, and metabolism	377	65	17.2%
- Gastroenterology	477	86	18.0%
- Geriatric medicine	378	50	13.2%
- Hematology	5	1	20.0%
- Hematology and medical oncology	416	72	17.3%
- Infectious disease	419	67	16.0%
- Interventional cardiology	247	69	27.9%
- Nephrology	410	74	18.0%
- Medical oncology	14	2	14.3%
- Pulmonary disease	48	13	27.1%
- Pulmonary disease and critical care medicine	464	71	15.3%
- Rheumatology	304	55	18.1%
- Sleep medicine (multidisciplinary)	205	37	18.0%
- Transplant hepatology	67	27	40.3%
Medical genetics and genomics	148	24	16.2%
- Medical biochemical genetics	37	8	21.6%
- Molecular genetic pathology (multidisciplinary)	82	21	25.6%
Neurological surgery	383	50	13.1%
- Endovascular surgical neuroradiology	3	1	33.3%

<b>TABLE F.6 Continued</b>			
<b>Total Number of Participating Sites and Number of Sponsoring Institutions Where Residents Rotate by Specialty and Subspecialty</b>			
<b>Specialty</b>	<b>Total Participating Sites</b>	<b>Sponsor</b>	
		<b>#</b>	<b>%</b>
Neurology	472	59	12.5%
- Brain injury medicine	1	1	100.0%
- Clinical neurophysiology	203	45	22.2%
- Epilepsy	117	26	22.2%
- Endovascular surgical neuroradiology	2	0	0.0%
- Neurodevelopmental disabilities	35	4	11.4%
- Neuromuscular medicine	93	27	29.0%
- Vascular neurology	165	44	26.7%
Child neurology	214	34	15.9%
Nuclear medicine	104	20	19.2%
Obstetrics and gynecology	894	149	16.7%
- Female pelvic medicine and reconstructive surgery	125	26	20.8%
- Gynecologic oncology	103	23	22.3%
- Maternal-fetal medicine	147	32	21.8%
- Reproductive endocrinology and infertility	89	18	20.2%
Ophthalmology	427	50	11.7%
- Ophthalmic plastic and reconstructive surgery	27	2	7.4%
Orthopaedic surgery	849	81	9.5%
- Adult reconstructive orthopaedics	58	10	17.2%
- Foot and ankle orthopaedics	12	6	50.0%
- Hand surgery	231	31	13.4%
- Musculoskeletal oncology	23	7	30.4%
- Orthopaedic sports medicine	272	59	21.7%
- Orthopaedic surgery of the spine	36	11	30.6%
- Orthopaedic trauma	15	6	40.0%
- Pediatric orthopaedics	41	13	31.7%
Osteopathic neuromusculoskeletal medicine	16	3	18.8%
Otolaryngology	434	48	11.1%
- Neurotology	51	12	23.5%
- Pediatric otolaryngology	27	11	40.7%
Pathology-anatomic and clinical	583	68	11.7%
- Blood banking/transfusion medicine	153	29	19.0%
- Clinical informatics (Pathology)	11	2	18.2%
- Chemical pathology	5	4	80.0%
- Cytopathology	132	44	33.3%
- Forensic pathology	52	20	38.5%
- Hematology	159	42	26.4%
- Medical microbiology	28	9	32.1%
- Neuropathology	77	16	20.8%
- Pediatric pathology	61	12	19.7%
- Selective pathology	118	42	35.6%
Pediatrics	555	108	19.5%
- Adolescent medicine	84	11	13.1%
- Child abuse pediatrics	79	14	17.7%
- Clinical informatics (Pediatrics)	14	4	28.6%
- Developmental-behavioral pediatrics	77	21	27.3%
- Neonatal-perinatal medicine	210	45	21.4%
- Pediatric cardiology	88	25	28.4%
- Pediatric critical care medicine	99	30	30.3%
- Pediatric emergency medicine	148	23	15.5%
- Pediatric endocrinology	110	31	28.2%
- Pediatric gastroenterology	104	26	25.0%
- Pediatric hematology/oncology	137	31	22.6%

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	Sponsor	
		#	%
- Pediatric infectious diseases	133	29	21.8%
- Pediatric nephrology	59	19	32.2%
- Pediatric pulmonology	88	24	27.3%
- Pediatric rheumatology	60	13	21.7%
- Pediatric sports medicine	53	12	22.6%
- Pediatric transplant hepatology	20	4	20.0%
Physical medicine and rehabilitation	438	41	9.4%
- Brain injury medicine	35	5	14.3%
- Neuromuscular medicine	2	0	0.0%
- Spinal cord injury medicine	67	7	10.4%
- Pediatric rehabilitation	43	6	14.0%
- Sports medicine	53	3	5.7%
Plastic surgery	329	30	9.1%
Plastic surgery - integrated	398	32	8.0%
- Craniofacial surgery	22	3	13.6%
- Hand surgery	56	8	14.3%
Preventive medicine	564	39	6.9%
- Medical toxicology	4	1	25.0%
- Undersea and hyperbaric medicine	2	1	50.0%
Psychiatry	1,186	115	9.7%
- Addiction psychiatry	154	17	11.0%
- Child and adolescent psychiatry	591	58	9.8%
- Forensic psychiatry	179	18	10.1%
- Geriatric psychiatry	205	22	10.7%
- Psychosomatic medicine	128	29	22.7%
Radiation oncology	253	43	17.0%
Radiology-diagnostic	598	102	17.1%
- Abdominal radiology	21	6	28.6%
- Endovascular surgical neuroradiology	7	2	28.6%
- Musculoskeletal radiology	26	10	38.5%
- Neuroradiology	172	43	25.0%
- Nuclear radiology	31	12	38.7%
- Pediatric radiology	59	22	37.3%
- Vascular and interventional radiology	200	46	23.0%
Interventional radiology - integrated	195	33	16.9%
Surgery	1,287	150	11.7%
- Complex general surgical oncology	43	11	25.6%
- Hand surgery	5	0	0.0%
- Pediatric surgery	78	17	21.8%
- Surgical critical care	201	57	28.4%
- Vascular surgery	250	51	20.4%
Vascular surgery - integrated	187	26	13.9%
Thoracic surgery	187	35	18.7%
- Congenital cardiac surgery	20	4	20.0%
Thoracic surgery - integrated	117	14	12.0%
Urology	523	64	12.2%
- Female pelvic medicine and reconstructive surgery	21	8	38.1%
- Pediatric urology	40	10	25.0%
Transitional year	247	84	34.0%
Internal medicine/Pediatrics	287	37	12.9%

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 in this section.

## Program Director Changes

A total of 594 specialty programs (12.9%) and 628 subspecialty programs (10.5%) had at least one program director change. Of these, a small number (24 specialty programs and 19 subspecialty programs) had more than one program director change during the academic year. Overall, 1,267 distinct program director changes occurred in 1,222 programs. The specialties with the highest percentage of program director turnover include:

- Preventive medicine (19.7%)
- Neurological surgery (16.4%)
- Anesthesiology (15.6%)
- Obstetrics and gynecology (15.6%)

The specialties with the highest total number of program director changes include:

- Family medicine (78)
- Internal medicine (61)
- Obstetrics and gynecology (44)

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

- Osteopathic neuromuscular medicine (0.0%)
- Interventional radiology - integrated (4.6%)
- Urology (8.1%)

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, 2007, nuclear medicine program directors have had the highest average tenure at 9.5 years, while integrated interventional radiology program directors have had the lowest tenure at 0.1 years.

## Program Director Years Teaching in Specialty

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

are not new to their role (continuing program directors). The mean length in years that new program directors have taught in their specialty is 14.3 years among medical specialty programs, 11.3 years among hospital-based specialty programs, and 13.4 years among surgical specialty programs. In each group, the years that subspecialty program directors have taught in their subspecialty is 11.4 years, 10.3 years, and 16.4 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 18.5 years among medical specialty programs, 16.2 years among hospital-based specialty programs, and 17.7 years among surgical specialty programs.

## Physician Faculty

A total of 165,613 physician faculty members were listed as active at the time of the Academic Year 2016-2017 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 15.5 overall. The specialties with the highest average number of faculty members per program include:

- Anesthesiology (56.9)
- Pediatrics (44.0)
- Radiology – diagnostic (38.4)

The subspecialties with the highest average number of faculty members per program include:

- Pediatric cardiology (17.4)
- Pediatric emergency medicine (17.1)
- Neurodevelopmental disabilities (15.9)

## Core Faculty

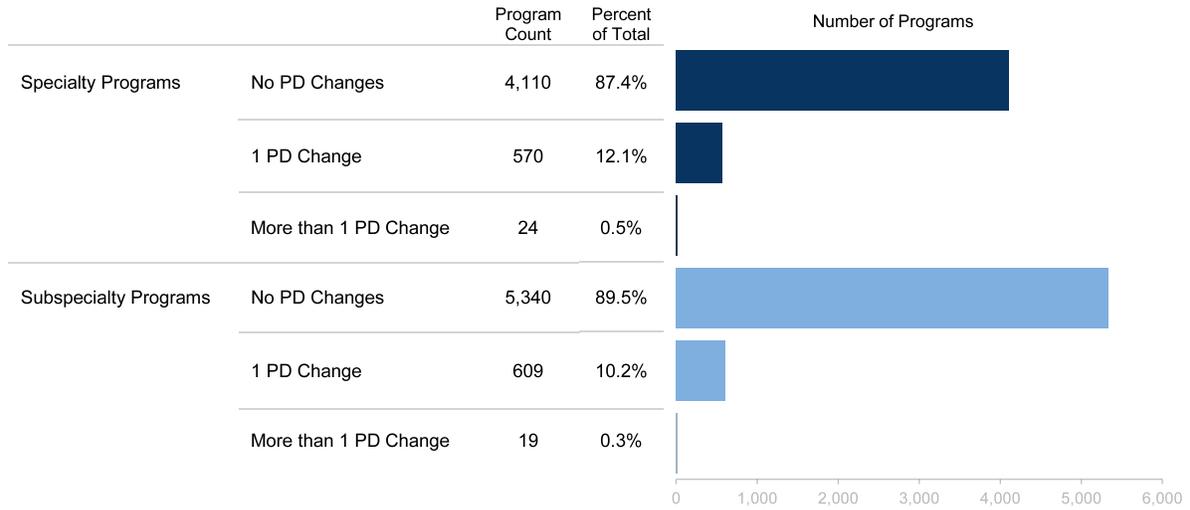
A total of 63,249 core faculty members were listed as active in specialty programs at the time of the Academic Year 2016-2017 snapshot. The specialties with the highest average number of core faculty members per program include:

- Anesthesiology (27.7)
- Radiology – diagnostic (24.8)
- Pediatrics (23.6)

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

**FIGURE G.1**

**Number of Programs with Program Director Changes during the Academic Year**



Total number of programs = 10,672. Total number of distinct program director changes = 1,267.  
Abbreviations: PD, program director.

**FIGURE G.2**

**Percent of Programs with at Least One Program Director Change by Academic Year, 2007-2008 to 2016-2017**

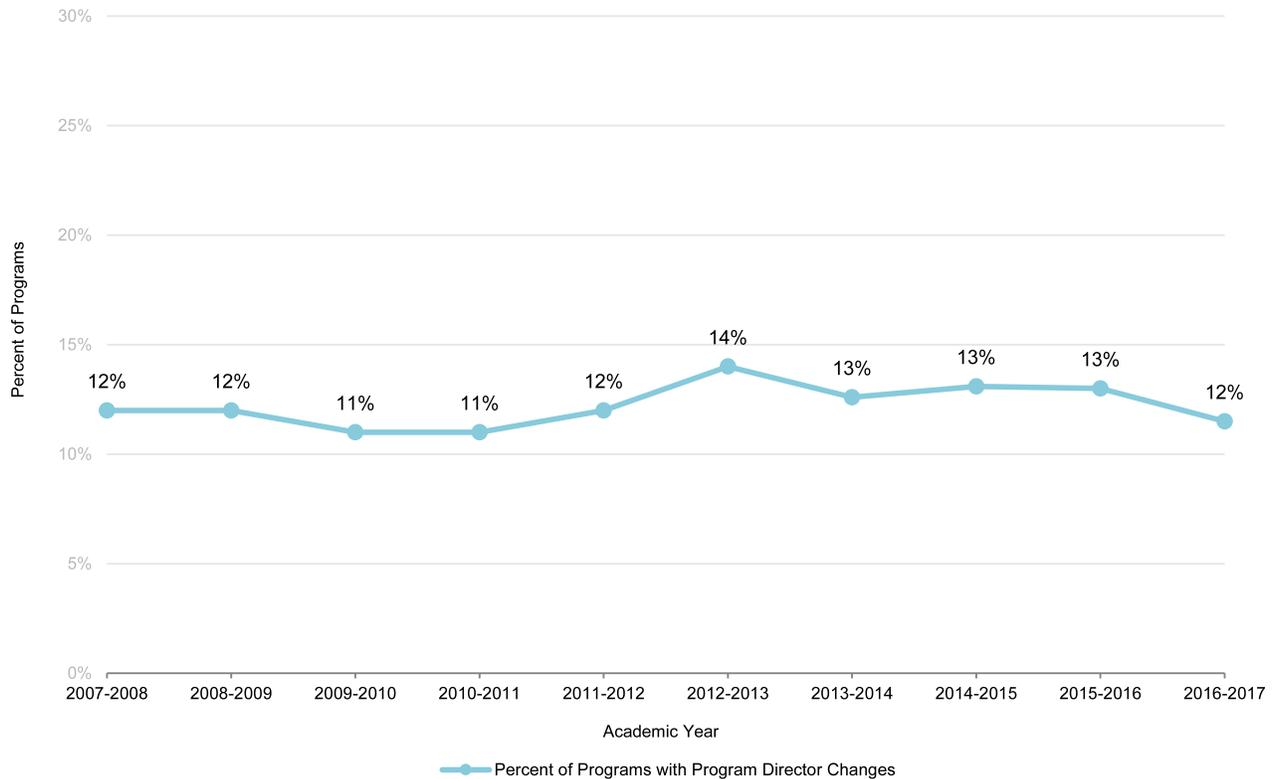


TABLE G.3

**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	10,672	1,222	11.5%	1,267
TOTAL PIPELINE	4,383	551	12.6%	576
Allergy and immunology	79	11	13.9%	11
Anesthesiology	147	23	15.6%	24
- Adult cardiothoracic anesthesiology	66	16	24.2%	16
- Clinical informatics (Anesthesiology)	1	0	0.0%	0
- Critical care medicine	57	3	5.3%	3
- Regional anesthesiology and acute pain medicine	9	1	11.1%	1
- Obstetric anesthesiology	32	3	9.4%	3
- Pain medicine (multidisciplinary)	101	6	5.9%	6
- Pediatric anesthesiology	58	8	13.8%	8
Colon and rectal surgery	58	9	15.5%	9
Dermatology	128	14	10.9%	16
- Dermatopathology (multidisciplinary)	53	6	11.3%	6
- Micrographic surgery and dermatologic oncology	75	6	8.0%	6
Emergency medicine	212	33	15.6%	34
- Clinical informatics (Emergency medicine)	4	0	0.0%	0
- Emergency medical services	55	5	9.1%	5
- Medical toxicology	27	6	22.2%	7
- Pediatric emergency medicine	26	2	7.7%	2
- Sports medicine	7	0	0.0%	0
- Undersea and hyperbaric medicine	7	1	14.3%	1
Family medicine	540	76	14.1%	78
- Clinical informatics (Family medicine)	2	1	50.0%	1
- Geriatric medicine	44	1	2.3%	1
- Hospice and palliative medicine (multidisciplinary)	130	17	13.1%	17
- Sports medicine	132	12	9.1%	13
Internal medicine	469	57	12.2%	61
- Adult congenital heart disease	10	0	0.0%	0
- Advanced heart failure and transplant cardiology	71	13	18.3%	13
- Cardiovascular disease	210	24	11.4%	24
- Clinical cardiac electrophysiology	105	14	13.3%	14
- Clinical informatics (Internal medicine)	12	2	16.7%	2
- Critical care medicine	34	2	5.9%	2
- Endocrinology, diabetes, and metabolism	141	13	9.2%	14
- Gastroenterology	175	20	11.4%	21
- Geriatric medicine	106	6	5.7%	7
- Hematology	2	0	0.0%	0
- Hematology and medical oncology	146	24	16.4%	24
- Infectious disease	146	15	10.3%	15
- Interventional cardiology	150	11	7.3%	11
- Nephrology	149	21	14.1%	21
- Medical oncology	6	0	0.0%	0
- Pulmonary disease	20	2	10.0%	2
- Pulmonary disease and critical care medicine	151	17	11.3%	18
- Rheumatology	114	14	12.3%	14
- Sleep medicine (multidisciplinary)	84	5	6.0%	5
- Transplant hepatology	51	5	9.8%	5
Medical genetics and genomics	46	4	8.7%	5
- Medical biochemical genetics	16	4	25.0%	4
- Molecular genetic pathology (multidisciplinary)	39	7	17.9%	7
Neurological surgery	110	18	16.4%	18
- Endovascular surgical neuroradiology	2	0	0.0%	0

<b>TABLE G.3 Continued</b>				
<b>Number of Programs with New Program Directors and Number of Distinct Program Director Changes during the Academic Year by Specialty and Subspecialty</b>				
<b>Specialty</b>	<b>Total Programs</b>	<b>Programs with New PDs</b>		<b>Number of Distinct PD Changes</b>
		<b>#</b>	<b>%</b>	
Neurology	144	13	9.0%	14
- Brain injury medicine	1	0	0.0%	0
- Clinical neurophysiology	94	13	13.8%	13
- Epilepsy	61	3	4.9%	3
- Endovascular surgical neuroradiology	1	0	0.0%	0
- Neurodevelopmental disabilities	8	0	0.0%	0
- Neuromuscular medicine	46	7	15.2%	7
- Vascular neurology	93	6	6.5%	6
Child neurology	74	8	10.8%	8
Nuclear medicine	42	5	11.9%	5
Obstetrics and gynecology	269	42	15.6%	44
- Female pelvic medicine and reconstructive surgery	50	6	12.0%	7
- Gynecologic oncology	48	4	8.3%	4
- Maternal-fetal medicine	73	7	9.6%	7
- Reproductive endocrinology and infertility	41	1	2.4%	1
Ophthalmology	116	17	14.7%	18
- Ophthalmic plastic and reconstructive surgery	5	0	0.0%	0
Orthopaedic surgery	168	14	8.3%	15
- Adult reconstructive orthopaedics	23	1	4.3%	2
- Foot and ankle orthopaedics	6	0	0.0%	0
- Hand surgery	68	4	5.9%	4
- Musculoskeletal oncology	11	0	0.0%	0
- Orthopaedic sports medicine	97	10	10.3%	10
- Orthopaedic surgery of the spine	16	0	0.0%	0
- Orthopaedic trauma	9	0	0.0%	0
- Pediatric orthopaedics	25	1	4.0%	1
Osteopathic neuromusculoskeletal medicine	4	0	0.0%	0
Otolaryngology	109	15	13.8%	16
- Neurotology	20	2	10.0%	2
- Pediatric otolaryngology	22	3	13.6%	3
Pathology-anatomic and clinical	142	19	13.4%	19
- Blood banking/transfusion medicine	49	5	10.2%	6
- Clinical informatics (Pathology)	5	1	20.0%	1
- Chemical pathology	4	0	0.0%	0
- Cytopathology	92	9	9.8%	9
- Forensic pathology	40	3	7.5%	3
- Hematology	86	11	12.8%	11
- Medical microbiology	15	2	13.3%	3
- Neuropathology	35	4	11.4%	4
- Pediatric pathology	26	5	19.2%	6
- Selective pathology	85	5	5.9%	5
Pediatrics	207	23	11.1%	24
- Adolescent medicine	29	1	3.4%	1
- Child abuse pediatrics	30	3	10.0%	4
- Clinical informatics (Pediatrics)	5	1	20.0%	1
- Developmental-behavioral pediatrics	39	4	10.3%	4
- Neonatal-perinatal medicine	99	11	11.1%	12
- Pediatric cardiology	59	4	6.8%	4
- Pediatric critical care medicine	67	5	7.5%	5
- Pediatric emergency medicine	52	6	11.5%	6
- Pediatric endocrinology	71	6	8.5%	6
- Pediatric gastroenterology	63	6	9.5%	6
- Pediatric hematology/oncology	73	10	13.7%	10

TABLE G.3 Continued

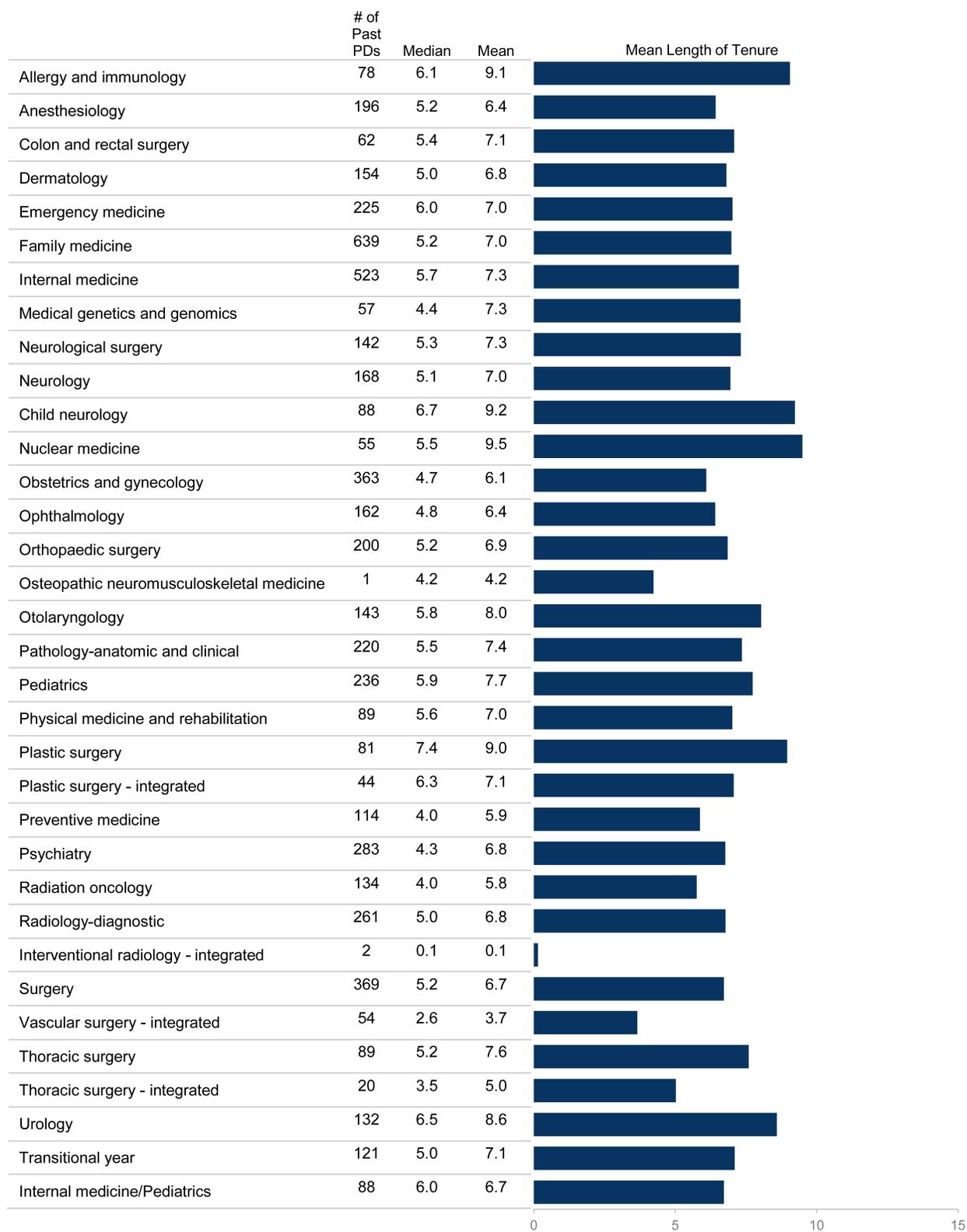
**Number of Programs with New Program Directors and Number of Distinct Program Director Changes during the Academic Year by Specialty and Subspecialty**

Specialty	Total Programs	Programs with New PDs		Number of Distinct PD Changes
		#	%	
- Pediatric infectious diseases	64	9	14.1%	9
- Pediatric nephrology	44	2	4.5%	2
- Pediatric pulmonology	54	4	7.4%	4
- Pediatric rheumatology	36	2	5.6%	2
- Pediatric sports medicine	18	1	5.6%	1
- Pediatric transplant hepatology	13	1	7.7%	1
Physical medicine and rehabilitation	86	10	11.6%	10
- Brain injury medicine	13	2	15.4%	2
- Neuromuscular medicine	1	0	0.0%	0
- Spinal cord injury medicine	22	0	0.0%	0
- Pediatric rehabilitation	20	1	5.0%	1
- Sports medicine	19	1	5.3%	1
Plastic surgery	68	9	13.2%	10
Plastic surgery - integrated	76	8	10.5%	8
- Craniofacial surgery	9	1	11.1%	1
- Hand surgery	16	0	0.0%	0
Preventive medicine	76	15	19.7%	15
- Medical toxicology	1	0	0.0%	0
- Undersea and hyperbaric medicine	1	0	0.0%	0
Psychiatry	226	31	13.7%	32
- Addiction psychiatry	47	8	17.0%	8
- Child and adolescent psychiatry	134	13	9.7%	15
- Forensic psychiatry	46	3	6.5%	3
- Geriatric psychiatry	59	5	8.5%	5
- Psychosomatic medicine	59	6	10.2%	6
Radiation oncology	92	13	14.1%	13
Radiology-diagnostic	194	22	11.3%	23
- Abdominal radiology	12	0	0.0%	0
- Endovascular surgical neuroradiology	4	1	25.0%	1
- Musculoskeletal radiology	16	1	6.3%	1
- Neuroradiology	85	14	16.5%	14
- Nuclear radiology	18	3	16.7%	3
- Pediatric radiology	46	6	13.0%	6
- Vascular and interventional radiology	93	12	12.9%	12
Interventional radiology - integrated	65	3	4.6%	3
Surgery	278	28	10.1%	32
- Complex general surgical oncology	24	4	16.7%	4
- Hand surgery	1	0	0.0%	0
- Pediatric surgery	49	3	6.1%	3
- Surgical critical care	117	18	15.4%	20
- Vascular surgery	107	19	17.8%	20
Vascular surgery - integrated	53	8	15.1%	8
Thoracic surgery	69	7	10.1%	8
- Congenital cardiac surgery	13	2	15.4%	2
Thoracic surgery - integrated	27	3	11.1%	3
Urology	136	11	8.1%	11
- Female pelvic medicine and reconstructive surgery	11	0	0.0%	0
- Pediatric urology	28	3	10.7%	4
Transitional year	115	16	13.9%	16
Internal medicine/Pediatrics	79	9	11.4%	9

Notes: Total number of new program directors = 1,267 (620 in specialty programs and 647 in subspecialty programs). Pipeline specialties are highlighted.  
Abbreviations: PD, program director.

FIGURE G.4

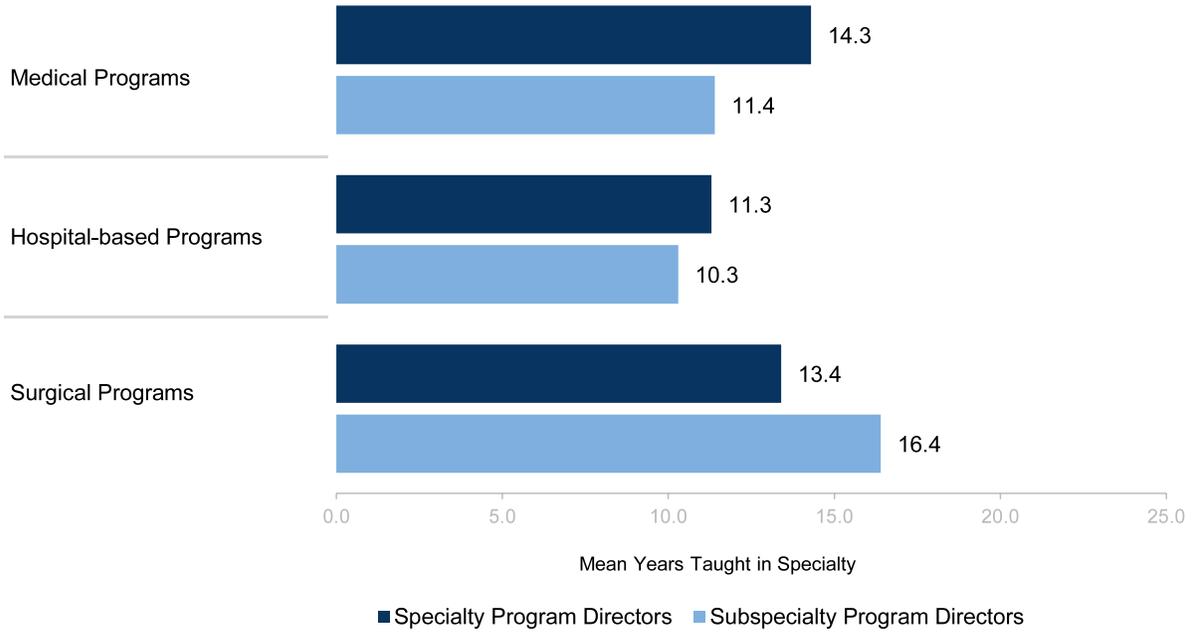
Mean Length in Years of Past Program Director Tenure by Specialty



Notes: Data is based on program director changes since 7/1/2007 (n = 5,593). Overall mean length in tenure = 7.0 years.  
Abbreviations: PD, program director.

**FIGURE G.5**

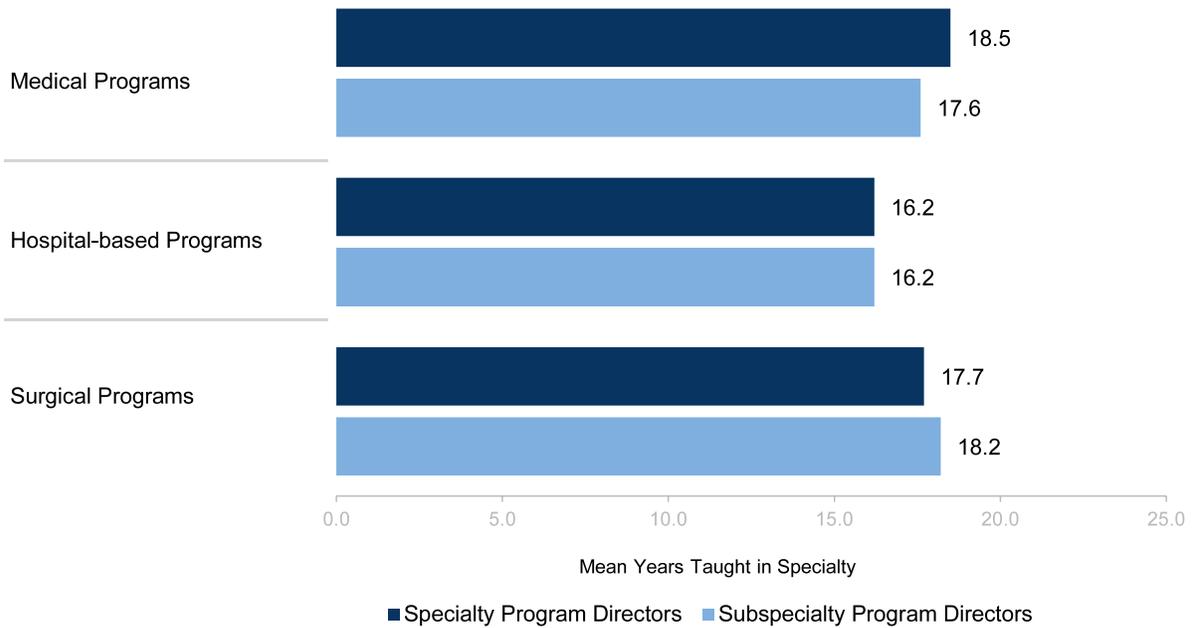
**Mean Length in Years New Program Directors Have Taught in Their Specialty by Specialty Group**



Notes: Total number of new program directors in specialty programs = 889. Total number of new program directors in subspecialty programs = 1,034.

**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 = 3,815. Total number of continuing program directors in subspecialty programs = 4,934.

FIGURE G.7

Mean Number of Hours per Week Spent by Program Directors in Key Areas by Specialty

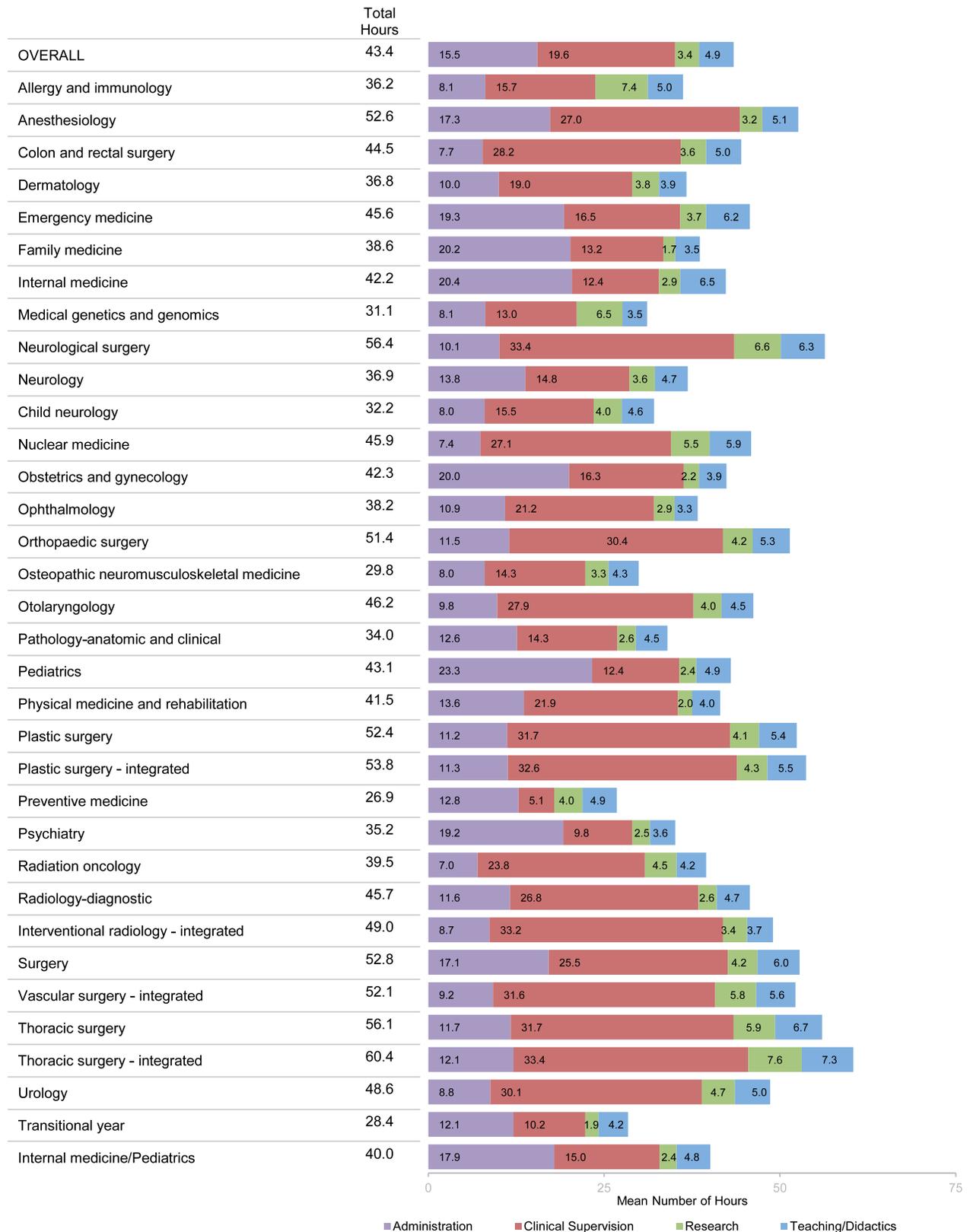


TABLE G.8

**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	10,672	165,613	15.5	0	291
TOTAL PIPELINE	4,383	111,890	25.5	1	291
Allergy and immunology	79	773	9.8	2	29
Anesthesiology	147	8,362	56.9	7	192
- Adult cardiothoracic anesthesiology	66	744	11.3	4	33
- Clinical informatics (Anesthesiology)	1	7	7.0	7	7
- Critical care medicine	57	756	13.3	3	30
- Regional anesthesiology and acute pain medicine	9	102	11.3	6	19
- Obstetric anesthesiology	32	320	10.0	2	20
- Pain medicine (multidisciplinary)	101	887	8.8	2	28
- Pediatric anesthesiology	58	880	15.2	3	46
Colon and rectal surgery	58	396	6.8	2	25
Dermatology	128	1,940	15.2	3	62
- Dermatopathology (multidisciplinary)	53	402	7.6	1	25
- Micrographic surgery and dermatologic oncology	75	279	3.7	0	14
Emergency medicine	212	5,015	23.7	5	132
- Clinical informatics (Emergency medicine)	4	32	8.0	6	13
- Emergency medical services	55	175	3.2	1	9
- Medical toxicology	27	124	4.6	1	10
- Pediatric emergency medicine	26	249	9.6	2	27
- Sports medicine	7	35	5.0	1	9
- Undersea and hyperbaric medicine	7	26	3.7	2	6
Family medicine	540	13,861	25.7	2	121
- Clinical informatics (Family medicine)	2	14	7.0	4	10
- Geriatric medicine	44	436	9.9	2	21
- Hospice and palliative medicine (multidisciplinary)	130	1,124	8.6	1	28
- Sports medicine	132	1,111	8.4	1	35
Internal medicine	469	8,984	19.2	4	120
- Adult congenital heart disease	10	73	7.3	2	13
- Advanced heart failure and transplant cardiology	71	333	4.7	1	12
- Cardiovascular disease	210	2,916	13.9	3	39
- Clinical cardiac electrophysiology	105	488	4.6	1	17
- Clinical informatics (Internal medicine)	12	97	8.1	4	12
- Critical care medicine	34	362	10.6	2	27
- Endocrinology, diabetes, and metabolism	141	1,011	7.2	1	25
- Gastroenterology	175	1,983	11.3	0	43
- Geriatric medicine	106	634	6.0	0	17
- Hematology	2	19	9.5	6	13
- Hematology and medical oncology	146	1,918	13.1	3	54
- Infectious disease	146	1,244	8.5	1	37
- Interventional cardiology	150	681	4.5	0	13
- Nephrology	149	1,299	8.7	1	26
- Medical oncology	6	49	8.2	3	15
- Pulmonary disease	20	127	6.3	2	13
- Pulmonary disease and critical care medicine	151	1,979	13.1	4	38
- Rheumatology	114	760	6.7	2	19
- Sleep medicine (multidisciplinary)	84	424	5.0	1	17
- Transplant hepatology	51	249	4.9	1	12
Medical genetics and genomics	46	462	10.0	3	36
- Medical biochemical genetics	16	86	5.4	2	16
- Molecular genetic pathology (multidisciplinary)	39	220	5.6	0	12
Neurological surgery	110	1,813	16.5	3	46
- Endovascular surgical neuroradiology	2	3	1.5	1	2

<b>TABLE G.8 Continued</b>					
<b>Number of Physician Faculty and Mean Number of Physician Faculty per Program by Specialty and Subspecialty</b>					
<b>Specialty</b>	<b>Total Programs</b>	<b>Total Number of Physician Faculty</b>	<b>Mean</b>	<b>MIN</b>	<b>MAX</b>
Neurology	144	4,244	29.5	4	105
- Brain injury medicine	1	2	2.0	2	2
- Clinical neurophysiology	94	872	9.3	2	28
- Epilepsy	61	473	7.8	2	21
- Endovascular surgical neuroradiology	1	2	2.0	2	2
- Neurodevelopmental disabilities	8	127	15.9	5	29
- Neuromuscular medicine	46	281	6.1	1	14
- Vascular neurology	93	585	6.3	1	18
Child neurology	74	1,062	14.4	1	44
Nuclear medicine	42	250	6.0	1	16
Obstetrics and gynecology	269	7,989	29.7	3	127
- Female pelvic medicine and reconstructive surgery	50	331	6.6	2	14
- Gynecologic oncology	48	529	11.0	4	66
- Maternal-fetal medicine	73	929	12.7	2	27
- Reproductive endocrinology and infertility	41	310	7.6	2	27
Ophthalmology	116	3,082	26.6	8	70
- Ophthalmic plastic and reconstructive surgery	5	30	6.0	2	10
Orthopaedic surgery	168	5,238	31.2	8	100
- Adult reconstructive orthopaedics	23	128	5.6	1	20
- Foot and ankle orthopaedics	6	31	5.2	3	8
- Hand surgery	68	412	6.1	2	22
- Musculoskeletal oncology	11	32	2.9	1	5
- Orthopaedic sports medicine	97	594	6.1	1	28
- Orthopaedic surgery of the spine	16	106	6.6	2	20
- Orthopaedic trauma	9	37	4.1	2	11
- Pediatric orthopaedics	25	221	8.8	3	21
Osteopathic neuromusculoskeletal medicine	4	21	5.3	3	9
Otolaryngology	109	2,239	20.5	7	49
- Neurotology	20	119	6.0	2	14
- Pediatric otolaryngology	22	187	8.5	3	16
Pathology-anatomic and clinical	142	4,118	29.0	6	93
- Blood banking/transfusion medicine	49	257	5.2	1	15
- Clinical informatics (Pathology)	5	43	8.6	5	15
- Chemical pathology	4	11	2.8	1	6
- Cytopathology	92	502	5.5	1	18
- Forensic pathology	40	257	6.4	2	23
- Hematology	86	509	5.9	1	18
- Medical microbiology	15	45	3.0	1	10
- Neuropathology	35	142	4.1	1	10
- Pediatric pathology	26	214	8.2	0	20
- Selective pathology	85	644	7.6	1	33
Pediatrics	207	9,110	44.0	12	291
- Adolescent medicine	29	167	5.8	1	17
- Child abuse pediatrics	30	99	3.3	0	10
- Clinical informatics (Pediatrics)	5	41	8.2	4	11
- Developmental-behavioral pediatrics	39	246	6.3	2	16
- Neonatal-perinatal medicine	99	1,405	14.2	3	47
- Pediatric cardiology	59	1,026	17.4	3	71
- Pediatric critical care medicine	67	886	13.2	5	41
- Pediatric emergency medicine	52	891	17.1	5	48
- Pediatric endocrinology	71	519	7.3	2	31
- Pediatric gastroenterology	63	561	8.9	3	25
- Pediatric hematology/oncology	73	1,083	14.8	5	53

TABLE G.8 Continued

<b>Number of Physician Faculty and Mean Number of Physician Faculty per Program by Specialty and Subspecialty</b>					
<b>Specialty</b>	<b>Total Programs</b>	<b>Total Number of Physician Faculty</b>	<b>Mean</b>	<b>MIN</b>	<b>MAX</b>
- Pediatric infectious diseases	64	444	6.9	2	26
- Pediatric nephrology	44	243	5.5	1	13
- Pediatric pulmonology	54	435	8.1	1	22
- Pediatric rheumatology	36	166	4.6	1	10
- Pediatric sports medicine	18	117	6.5	1	16
- Pediatric transplant hepatology	13	67	5.2	1	12
Physical medicine and rehabilitation	86	1,735	20.2	5	48
- Brain injury medicine	13	67	5.2	1	12
- Neuromuscular medicine	1	4	4.0	4	4
- Spinal cord injury medicine	22	123	5.6	2	10
- Pediatric rehabilitation	20	108	5.4	2	15
- Sports medicine	19	94	4.9	1	12
Plastic surgery	68	936	13.8	3	44
Plastic surgery - integrated	76	1,563	20.6	3	69
- Craniofacial surgery	9	28	3.1	2	5
- Hand surgery	16	95	5.9	1	13
Preventive medicine	76	714	9.4	1	36
- Medical toxicology	1	5	5.0	5	5
- Undersea and hyperbaric medicine	1	8	8.0	8	8
Psychiatry	226	5,237	23.2	4	85
- Addiction psychiatry	47	286	6.1	1	14
- Child and adolescent psychiatry	134	1,214	9.1	2	36
- Forensic psychiatry	46	243	5.3	0	14
- Geriatric psychiatry	59	344	5.8	1	15
- Psychosomatic medicine	59	322	5.5	1	18
Radiation oncology	92	1,017	11.1	3	52
Radiology-diagnostic	194	7,445	38.4	7	160
- Abdominal radiology	12	166	13.8	7	24
- Endovascular surgical neuroradiology	4	14	3.5	2	7
- Musculoskeletal radiology	16	106	6.6	2	20
- Neuroradiology	85	844	9.9	2	36
- Nuclear radiology	18	78	4.3	0	15
- Pediatric radiology	46	503	10.9	2	38
- Vascular and interventional radiology	93	672	7.2	2	29
Interventional radiology - integrated	65	1,822	28.0	5	97
Surgery	278	9,520	34.2	4	133
- Complex general surgical oncology	24	364	15.2	4	28
- Hand surgery	1	11	11.0	11	11
- Pediatric surgery	49	413	8.4	3	18
- Surgical critical care	117	1,114	9.5	2	25
- Vascular surgery	107	711	6.6	1	17
Vascular surgery - integrated	53	707	13.3	3	54
Thoracic surgery	69	923	13.4	4	49
- Congenital cardiac surgery	13	47	3.6	2	8
Thoracic surgery - integrated	27	561	20.8	6	97
Urology	136	2,287	16.8	3	46
- Female pelvic medicine and reconstructive surgery	11	78	7.1	4	11
- Pediatric urology	28	130	4.6	1	11
Transitional year	115	1423	12.4	2	68
Internal medicine/Pediatrics	79	556	7.0	1	19

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. 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	4,704	63,249	13.4	0	109
Allergy and immunology	79	392	5.0	0	14
Anesthesiology	147	4,071	27.7	3	109
Colon and rectal surgery	58	277	4.8	1	14
Dermatology	128	1,046	8.2	2	21
Emergency medicine	212	2,929	13.8	3	66
Family medicine	540	3,850	7.1	0	32
Internal medicine	469	5,683	12.1	2	53
Medical genetics and genomics	46	218	4.7	1	15
Neurological surgery	110	1,269	11.5	3	27
Neurology	144	2,255	15.7	3	58
Child neurology	74	695	9.4	1	32
Nuclear medicine	42	198	4.7	0	16
Obstetrics and gynecology	269	4,413	16.4	2	56
Ophthalmology	116	1,541	13.3	2	32
Orthopaedic surgery	168	3,402	20.3	5	51
Osteopathic neuromusculoskeletal medicine	4	8	2.0	1	3
Otolaryngology	109	1,534	14.1	4	33
Pathology-anatomic and clinical	142	2,196	15.5	2	44
Pediatrics	207	4,877	23.6	5	59
Physical medicine and rehabilitation	86	1,135	13.2	3	32
Plastic surgery	68	617	9.1	2	31
Plastic surgery - integrated	76	754	9.9	2	31
Preventive medicine	76	284	3.7	0	11
Psychiatry	226	2,673	11.8	1	48
Radiation oncology	92	790	8.6	3	40
Radiology-diagnostic	194	4,812	24.8	5	94
Interventional radiology - integrated	65	1,302	20.0	5	83
Surgery	278	5,716	20.6	3	108
Vascular surgery - integrated	53	442	8.3	3	32
Thoracic surgery	69	753	10.9	3	31
Thoracic surgery - integrated	27	318	11.8	5	29
Urology	136	1,483	10.9	2	29
Transitional year	115	930	8.1	0	38
Internal medicine/Pediatrics	79	386	4.9	0	14

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.

FIGURE G.10

Specialties Organized by Largest Mean Number of Core Faculty per Program

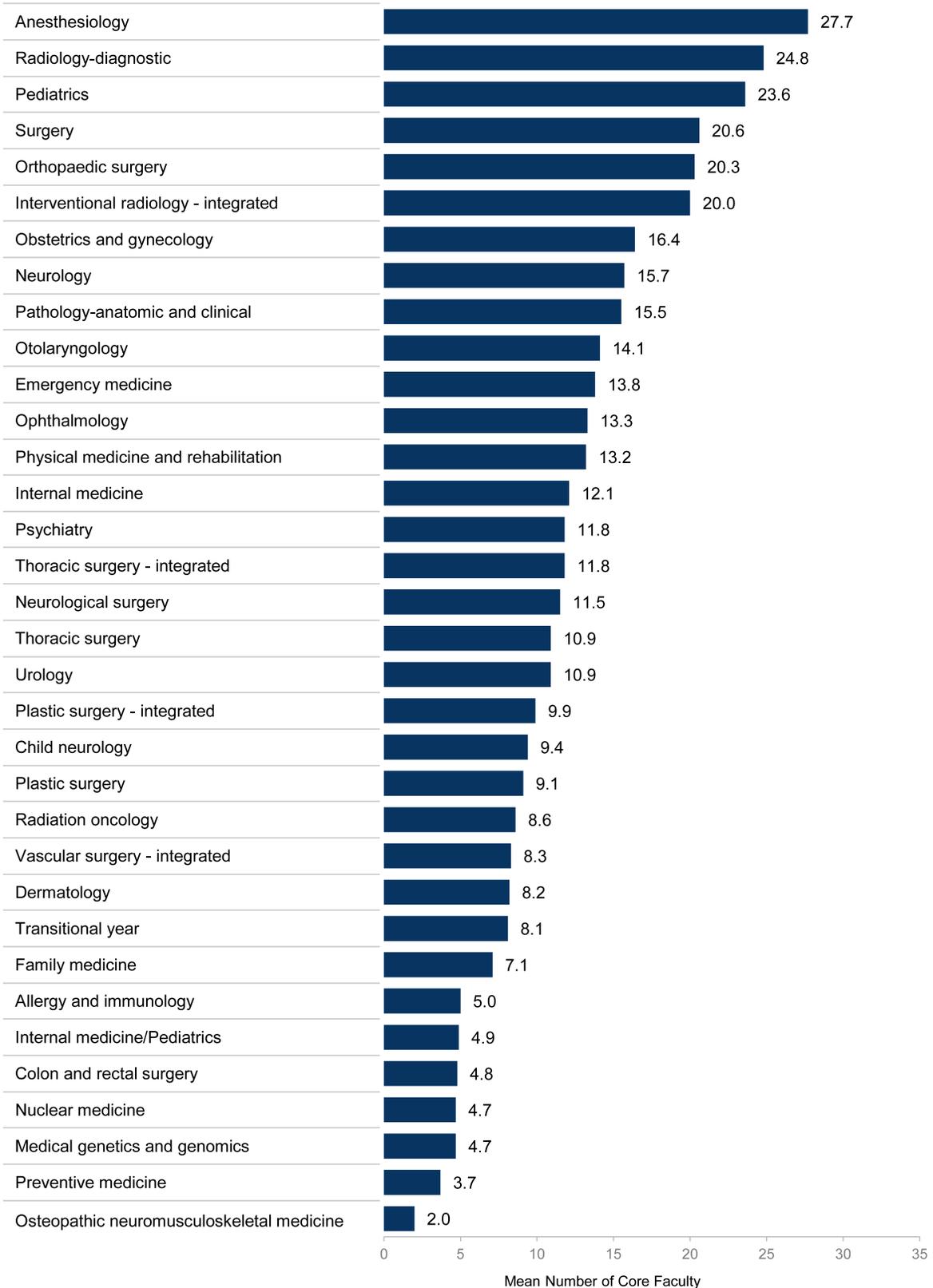
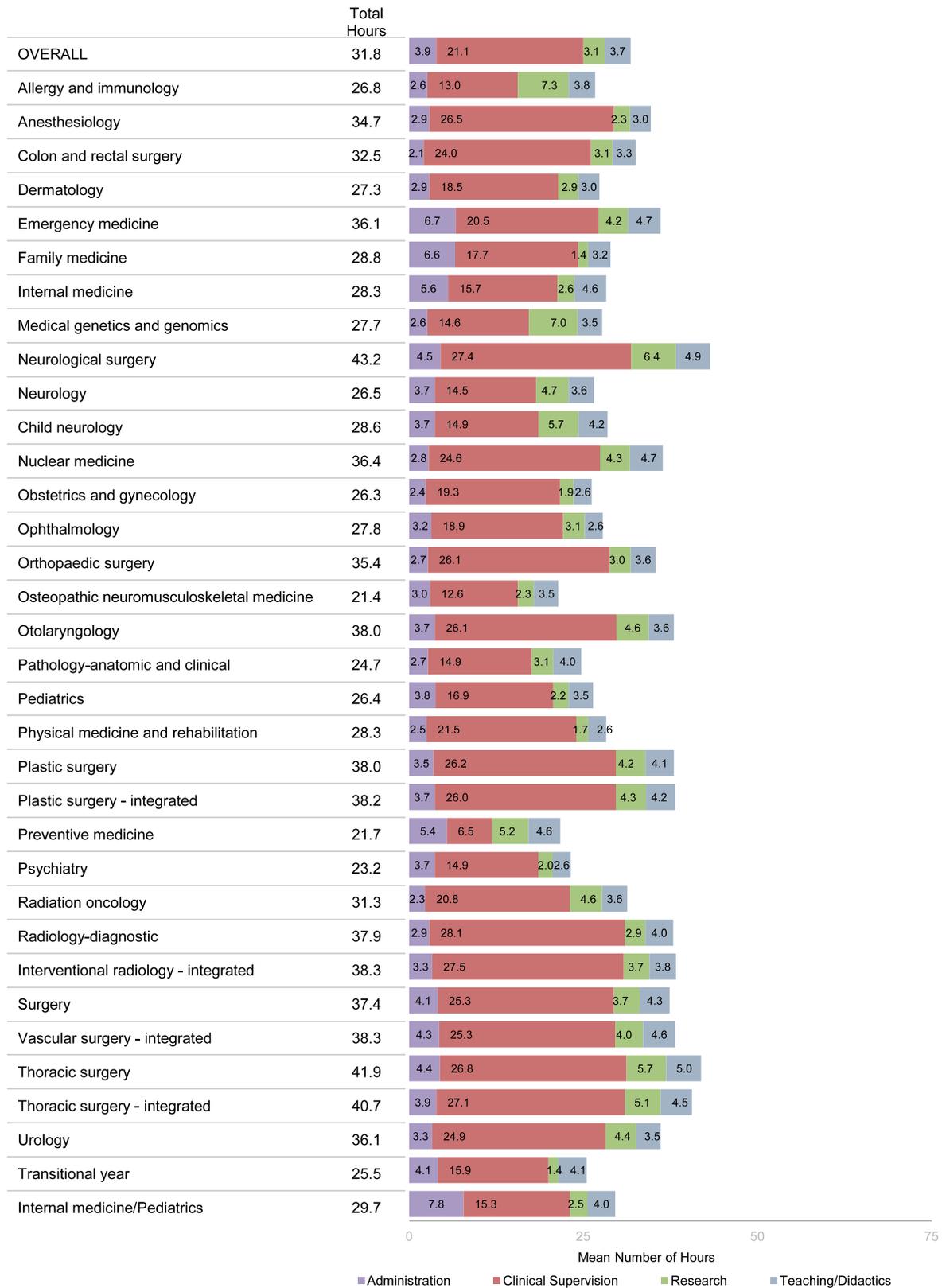


FIGURE G.11

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





# Program Activities

This section summarizes self-reported assessments of each Competency area, resident/fellow participation in patient safety and quality improvement programs, and use of ambulatory and/or non-hospital settings and electronic medical records by specialty and subspecialty programs during the 2016-2017 academic year.

## Competency Assessment

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Among specialty programs, the mean number of evaluators for each competency ranged from 5.4 in the Competency area of practice-based learning and improvement to 8.2 in both the professionalism and interpersonal and communication skills Competencies. Among subspecialty programs, the mean number of evaluators for each Competency ranged from 4.3 to 6.6 in practice-based learning and improvement and professionalism, respectively.

The mean number of assessment methods for each Competency among specialty programs ranged from 3.2 in systems-based practice to 4.7 in patient care. In subspecialty programs, the mean number of assessment methods was lower for each Competency, ranging from 2.3 to 3.3 in systems-based practice and patient care, respectively.

## Patient Safety and Quality Improvement

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The vast majority of specialty and subspecialty programs reported that all residents participated in patient safety in at least one year of their training (98.4% and 98.8% 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 training was slightly less: 96.5% and 98.0% 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

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Across all programs, 90.7% 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 (69.6%)
- Hospital-Based Continuity Clinic (62.2%)
- Faculty Ambulatory Practice (55.1%)
- Private Physician's Offices (49.9%)

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, 14.4% of pathology-anatomic and clinical programs selected the category of hospital-based continuity clinic while 94.3% and 84.1% of child neurology and neurology programs, respectively, reported using a hospital-based continuity clinic. <sup>△</sup>

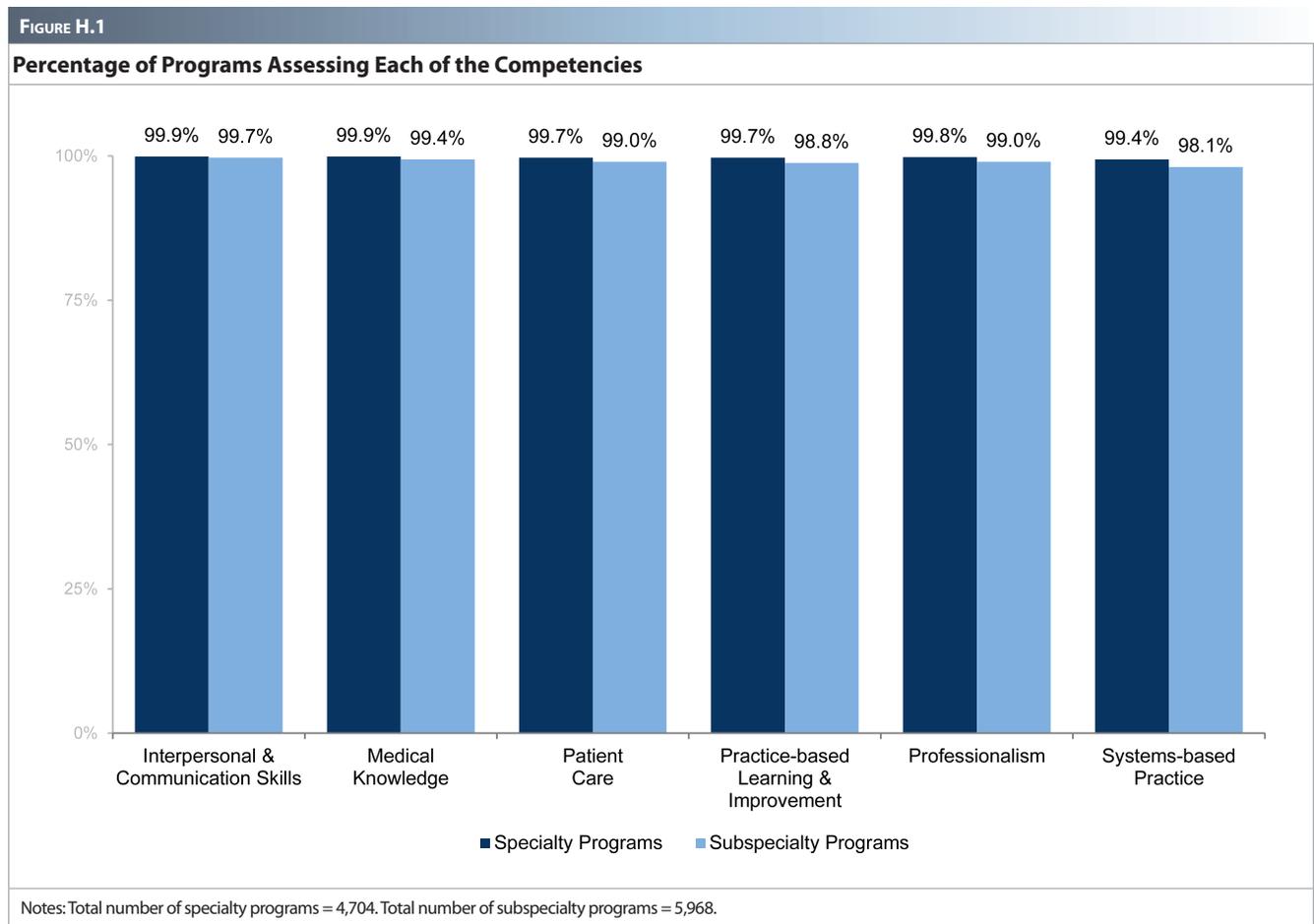
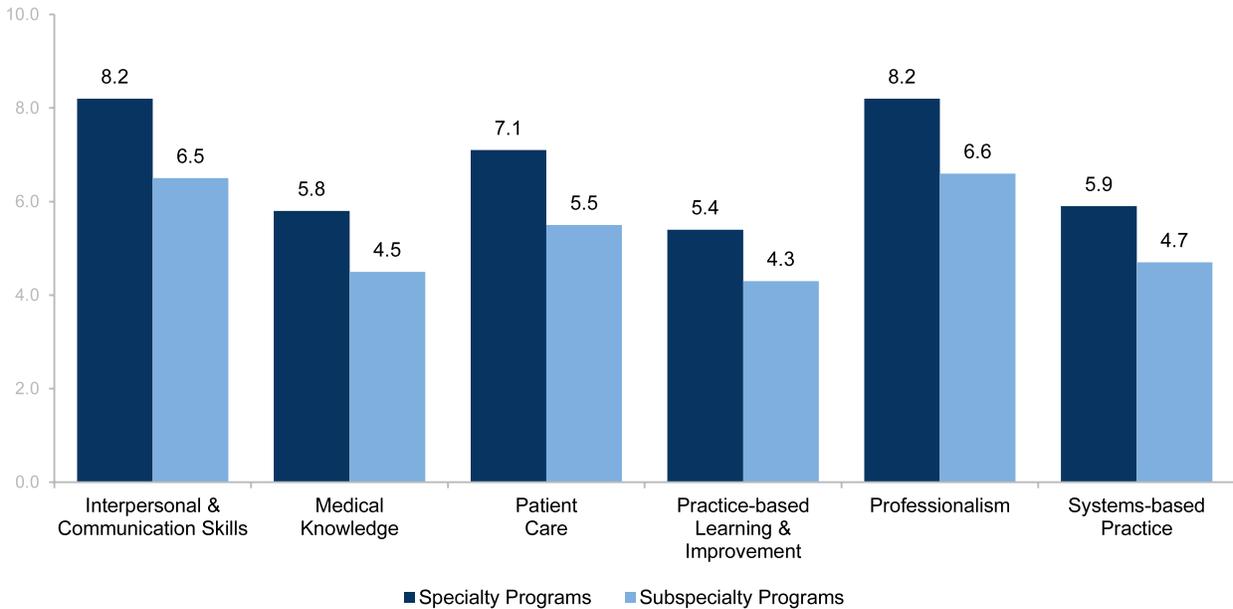


FIGURE H.2

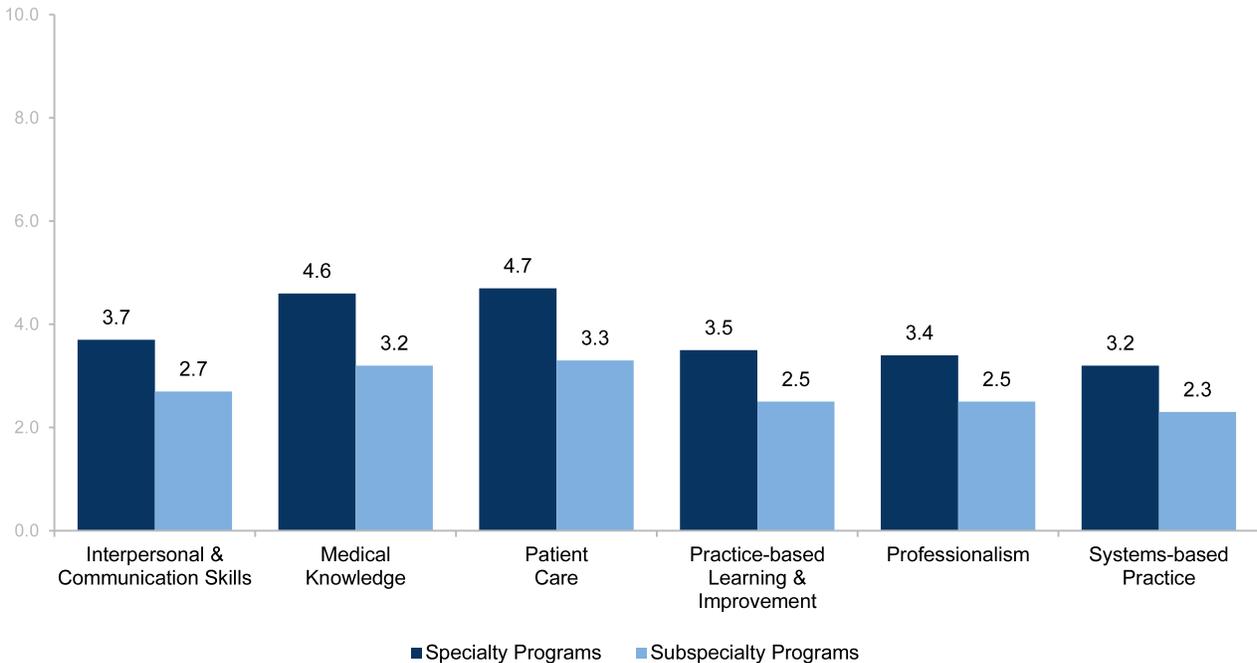
Mean Number of Evaluators for Each Competency



Notes: Total number of specialty programs = 4,704. Total number of subspecialty programs = 5,968.

FIGURE H.3

Mean Number of Assessment Methods for Each Competency



Notes: Total number of specialty programs = 4,704. Total number of subspecialty programs = 5,968.

**TABLE H.4**  
**Mean Number of Evaluators for Each Competency by Specialty and Subspecialty**

Specialty	Total Programs	Mean Number of Evaluators					
		ICS	MK	PC	PBLI	PROF	SBP
OVERALL	10,672	7.2	5.1	6.2	4.8	7.3	5.2
TOTAL PIPELINE	4,383	8.3	5.9	7.1	5.5	8.3	5.9
Allergy and immunology	79	6.9	4.3	5.6	4.6	6.5	4.9
Anesthesiology	147	7.9	5.1	6.6	5.0	7.7	5.6
- Adult cardiothoracic anesthesiology	66	5.9	3.8	4.6	3.8	6.0	4.1
- Clinical informatics (Anesthesiology)	1	7.0	6.0	7.0	10.0	9.0	9.0
- Critical care medicine	57	6.1	4.1	5.0	4.1	6.5	4.7
- Regional anesthesiology and acute pain medicine	9	8.8	6.0	8.0	6.8	8.3	6.2
- Obstetric anesthesiology	32	6.0	4.2	5.5	4.8	6.8	4.6
- Pain medicine (multidisciplinary)	101	7.1	4.4	5.8	4.8	7.2	5.1
- Pediatric anesthesiology	58	6.2	3.9	4.7	4.1	6.5	4.4
Colon and rectal surgery	58	6.3	4.2	5.7	4.2	6.6	4.4
Dermatology	128	7.3	5.3	6.7	5.2	7.5	5.5
- Dermatopathology (multidisciplinary)	53	5.2	3.7	3.8	3.4	5.5	3.8
- Micrographic surgery and dermatologic oncology	75	5.9	3.9	4.9	4.1	6.0	4.3
Emergency medicine	212	8.2	6.1	7.2	5.5	8.1	6.1
- Clinical informatics (Emergency medicine)	4	5.5	3.8	3.3	3.5	5.0	3.7
- Emergency medical services	55	5.4	4.4	5.0	3.7	5.8	4.2
- Medical toxicology	27	5.1	4.0	4.2	4.1	5.6	4.2
- Pediatric emergency medicine	26	7.1	5.4	5.7	4.8	6.2	4.6
- Sports medicine	7	6.4	5.3	4.6	4.4	6.1	5.1
- Undersea and hyperbaric medicine	7	6.6	4.9	5.9	4.3	6.4	5.1
Family medicine	540	9.2	7.0	8.2	6.0	9.4	6.8
- Clinical informatics (Family medicine)	2	9.0	6.0	5.5	5.5	8.5	8.5
- Geriatric medicine	44	6.5	4.0	5.6	4.1	6.5	4.3
- Hospice and palliative medicine (multidisciplinary)	130	6.7	4.6	5.8	4.7	6.8	4.8
- Sports medicine	132	6.4	4.7	5.7	4.5	6.8	5.0
Internal medicine	469	9.1	6.5	7.9	6.1	9.2	6.9
- Adult congenital heart disease	10	6.8	5.2	6.7	4.0	6.9	5.2
- Advanced heart failure and transplant cardiology	71	6.1	3.8	5.1	3.8	6.2	4.2
- Cardiovascular disease	210	7.0	4.8	6.0	4.4	7.1	5.1
- Clinical cardiac electrophysiology	105	6.0	3.8	5.0	3.9	6.1	4.4
- Clinical informatics (Internal medicine)	12	5.6	4.5	5.2	5.2	6.5	5.3
- Critical care medicine	34	7.1	4.6	5.8	4.2	7.2	5.3
- Endocrinology, diabetes, and metabolism	141	6.7	4.4	5.4	3.9	6.6	4.6
- Gastroenterology	175	7.2	4.7	5.9	4.5	7.2	5.1
- Geriatric medicine	106	6.6	3.8	5.2	3.9	6.7	4.5
- Hematology	2	5.5	4.5	5.0	5.0	4.5	5.0
- Hematology and medical oncology	146	7.0	4.9	5.8	4.6	7.1	5.2
- Infectious disease	146	6.8	4.6	5.7	4.3	6.7	4.9
- Interventional cardiology	150	6.1	4.0	5.4	3.7	6.2	4.4
- Nephrology	149	6.7	4.5	5.4	4.2	6.6	4.9
- Medical oncology	6	5.5	4.7	4.7	4.3	5.5	4.7
- Pulmonary disease	20	7.3	4.5	5.7	4.5	7.6	4.7
- Pulmonary disease and critical care medicine	151	7.0	4.8	6.1	4.6	7.2	5.0
- Rheumatology	114	7.0	4.5	5.8	4.2	6.9	4.7
- Sleep medicine (multidisciplinary)	84	6.4	4.2	5.3	4.2	6.2	4.6
- Transplant hepatology	51	5.8	4.1	5.0	4.1	6.0	4.3
Medical genetics and genomics	46	5.9	4.9	5.1	4.0	5.7	4.3
- Medical biochemical genetics	16	5.8	4.5	5.0	4.1	5.9	4.4
- Molecular genetic pathology (multidisciplinary)	39	4.9	3.8	3.9	3.6	5.1	3.5
Neurological surgery	110	7.7	5.7	6.9	5.4	7.7	5.9
- Endovascular surgical neuroradiology	2	8.0	4.5	4.5	7.0	7.0	7.5

TABLE H.4 Continued

Mean Number of Evaluators for Each Competency by Specialty and Subspecialty							
Specialty	Total Programs	Mean Number of Evaluators					
		ICS	MK	PC	PBLI	PROF	SBP
Neurology	144	8.4	5.7	6.8	5.1	8.2	5.8
- Brain injury medicine	1	6.0	3.0	4.0	2.0	5.0	3.0
- Clinical neurophysiology	94	6.4	4.4	5.4	3.9	6.3	4.3
- Epilepsy	61	7.2	4.0	5.6	3.9	7.3	4.6
- Endovascular surgical neuroradiology	1	8.0	9.0	7.0	8.0	6.0	7.0
- Neurodevelopmental disabilities	8	7.5	4.0	6.6	3.5	6.8	3.5
- Neuromuscular medicine	46	5.7	3.9	4.8	3.4	5.8	3.4
- Vascular neurology	93	6.1	3.9	5.4	4.0	6.4	4.6
Child neurology	74	7.7	4.8	5.8	4.4	7.4	5.3
Nuclear medicine	42	6.3	4.5	5.8	3.8	6.1	4.3
Obstetrics and gynecology	269	8.7	6.4	7.6	6.0	8.7	6.3
- Female pelvic medicine and reconstructive surgery	50	7.7	5.8	6.9	5.5	7.5	5.5
- Gynecologic oncology	48	7.5	5.0	6.9	5.1	7.7	5.2
- Maternal-fetal medicine	73	7.2	5.3	6.4	5.2	7.9	5.3
- Reproductive endocrinology and infertility	41	7.1	5.0	5.6	4.8	7.0	5.2
Ophthalmology	116	8.4	5.6	6.7	5.4	8.2	5.9
- Ophthalmic plastic and reconstructive surgery	5	6.4	5.0	6.0	4.2	6.2	4.0
Orthopaedic surgery	168	7.7	5.5	7.0	5.5	7.8	5.7
- Adult reconstructive orthopaedics	23	5.8	3.5	4.6	3.5	6.7	4.0
- Foot and ankle orthopaedics	6	6.2	5.7	6.0	5.8	6.5	5.2
- Hand surgery	68	6.0	4.2	5.1	3.9	6.1	4.1
- Musculoskeletal oncology	11	5.4	3.9	5.5	4.0	5.9	4.5
- Orthopaedic sports medicine	97	5.4	4.2	5.0	3.9	5.7	4.1
- Orthopaedic surgery of the spine	16	5.4	3.8	4.3	3.5	6.1	3.7
- Orthopaedic trauma	9	4.8	3.9	4.3	4.6	5.0	4.2
- Pediatric orthopaedics	25	5.0	3.7	4.8	3.7	5.8	4.0
Osteopathic neuromusculoskeletal medicine	4	6.8	4.8	6.0	4.5	7.3	3.5
Otolaryngology	109	8.0	5.7	7.2	5.2	8.0	6.0
- Neurotology	20	5.7	4.8	5.2	4.3	6.3	4.4
- Pediatric otolaryngology	22	6.4	4.8	6.1	4.2	6.3	5.4
Pathology-anatomic and clinical	142	7.1	5.4	5.5	4.8	7.3	4.9
- Blood banking/transfusion medicine	49	5.4	4.3	4.2	3.6	5.8	4.1
- Clinical informatics (Pathology)	5	6.2	5.4	5.4	5.2	7.4	6.4
- Chemical pathology	4	4.3	3.3	2.8	2.0	4.5	3.0
- Cytopathology	92	5.4	4.0	4.3	3.8	5.5	3.9
- Forensic pathology	40	5.0	3.5	3.9	3.4	5.4	3.9
- Hematology	86	5.3	4.0	4.4	3.9	5.6	3.9
- Medical microbiology	15	4.4	3.8	3.7	3.5	4.9	3.5
- Neuropathology	35	5.9	4.3	3.9	4.1	5.8	4.0
- Pediatric pathology	26	4.8	3.7	3.3	3.3	5.2	3.6
- Selective pathology	85	5.6	3.7	3.7	3.6	5.7	3.6
Pediatrics	207	8.8	6.3	7.5	5.6	8.6	5.8
- Adolescent medicine	29	7.0	4.7	6.2	5.0	6.9	5.2
- Child abuse pediatrics	30	7.9	5.2	6.3	4.7	7.6	5.7
- Clinical informatics (Pediatrics)	5	6.0	5.6	4.4	4.2	6.6	6.0
- Developmental-behavioral pediatrics	39	7.2	4.8	6.2	4.9	7.4	4.9
- Neonatal-perinatal medicine	99	7.7	5.8	7.3	5.3	7.6	5.4
- Pediatric cardiology	59	7.1	4.6	6.1	4.6	7.0	4.7
- Pediatric critical care medicine	67	7.9	5.8	6.6	5.0	7.8	5.5
- Pediatric emergency medicine	52	7.3	5.6	6.6	4.9	6.9	4.9
- Pediatric endocrinology	71	7.6	5.1	6.4	4.9	7.4	5.2
- Pediatric gastroenterology	63	6.6	4.9	5.8	4.5	7.1	4.8
- Pediatric hematology/oncology	73	7.4	5.5	6.3	5.4	7.4	5.3

<b>TABLE H.4 Continued</b>							
<b>Mean Number of Evaluators for Each Competency by Specialty and Subspecialty</b>							
<b>Specialty</b>	<b>Total Programs</b>	<b>Mean Number of Evaluators</b>					
		<b>ICS</b>	<b>MK</b>	<b>PC</b>	<b>PBLI</b>	<b>PROF</b>	<b>SBP</b>
- Pediatric infectious diseases	64	6.8	5.1	5.8	4.7	7.1	4.8
- Pediatric nephrology	44	6.9	4.8	5.6	4.5	6.6	4.6
- Pediatric pulmonology	54	7.3	5.5	6.6	5.2	7.4	5.4
- Pediatric rheumatology	36	6.9	4.3	5.8	4.3	6.6	4.6
- Pediatric sports medicine	18	6.9	5.1	6.2	5.0	6.0	5.1
- Pediatric transplant hepatology	13	5.8	4.8	6.6	5.1	7.6	4.8
Physical medicine and rehabilitation	86	8.6	5.3	7.1	5.2	8.3	5.8
- Brain injury medicine	13	8.2	4.3	7.1	5.5	7.8	5.2
- Neuromuscular medicine	1	5.0	3.0	2.0	2.0	4.0	2.0
- Spinal cord injury medicine	22	6.3	3.5	5.1	3.9	6.0	3.6
- Pediatric rehabilitation	20	6.8	4.0	5.6	4.3	6.5	4.9
- Sports medicine	19	6.5	3.7	5.2	3.4	6.6	4.4
Plastic surgery	68	7.8	5.9	6.9	5.5	7.5	5.9
Plastic surgery - integrated	76	7.6	5.4	6.8	5.4	7.5	5.7
- Craniofacial surgery	9	4.9	4.2	4.2	3.9	5.4	4.1
- Hand surgery	16	7.1	5.3	6.1	4.8	7.3	5.5
Preventive medicine	76	7.4	5.4	6.0	5.3	7.4	5.4
- Medical toxicology	1	13.0	10.0	12.0	11.0	12.0	12.0
- Undersea and hyperbaric medicine	1	3.0	3.0	3.0	4.0	6.0	3.0
Psychiatry	226	8.3	5.4	7.0	5.2	8.4	5.8
- Addiction psychiatry	47	5.6	3.6	4.5	3.8	5.9	4.6
- Child and adolescent psychiatry	134	7.8	5.4	6.7	5.3	7.9	5.9
- Forensic psychiatry	46	5.4	3.7	3.7	3.7	5.3	3.9
- Geriatric psychiatry	59	5.9	3.9	5.2	3.9	6.4	4.4
- Psychosomatic medicine	59	6.3	4.1	5.4	3.9	6.5	4.5
Radiation oncology	92	7.2	5.1	5.8	4.6	7.0	4.9
Radiology-diagnostic	194	7.8	5.2	6.3	4.7	7.8	4.6
- Abdominal radiology	12	4.2	2.8	3.6	2.8	4.9	3.1
- Endovascular surgical neuroradiology	4	5.5	3.3	4.5	3.8	5.8	3.3
- Musculoskeletal radiology	16	6.3	4.1	5.6	3.9	6.1	4.0
- Neuroradiology	85	5.5	3.5	4.6	3.3	5.6	3.5
- Nuclear radiology	18	5.9	3.8	4.7	3.5	5.4	3.2
- Pediatric radiology	46	5.2	3.8	4.5	3.4	5.5	3.3
- Vascular and interventional radiology	93	6.0	3.9	5.1	3.9	5.9	3.8
Interventional radiology - integrated	65	8.0	5.3	6.7	4.7	7.9	4.7
Surgery	278	8.3	6.1	7.5	5.9	8.4	6.1
- Complex general surgical oncology	24	6.5	4.9	5.8	4.9	6.4	4.8
- Hand surgery	1	7.0	7.0	7.0	6.0	8.0	6.0
- Pediatric surgery	49	7.1	5.1	6.3	5.0	7.3	5.3
- Surgical critical care	117	6.1	5.0	5.6	4.3	6.3	4.6
- Vascular surgery	107	7.4	5.3	6.6	4.8	7.4	5.3
Vascular surgery - integrated	53	7.7	5.6	7.1	5.0	7.8	5.6
Thoracic surgery	69	6.9	5.4	6.3	5.1	7.0	5.3
- Congenital cardiac surgery	13	4.7	4.2	4.6	4.2	4.9	4.2
Thoracic surgery - integrated	27	7.7	6.2	7.3	5.8	7.7	5.7
Urology	136	7.4	5.2	6.4	4.9	7.4	5.2
- Female pelvic medicine and reconstructive surgery	11	6.5	5.6	6.4	3.6	6.2	4.9
- Pediatric urology	28	5.8	4.3	5.2	4.4	6.4	4.5
Transitional year	115	7.8	5.9	7.0	5.4	8.1	6.0
Internal medicine/Pediatrics	79	8.8	6.4	7.9	6.1	8.8	6.5

Note: Pipeline specialties are highlighted.  
Abbreviations: ICS, Interpersonal & Communication Skills; MK, Medical Knowledge; PC, Patient Care; PBLI, Practice-based Learning & Improvement; PROF, Professionalism; SBP, Systems-based Practice.

TABLE H.5

## Mean Number of Assessment Methods for Each Competency by Specialty and Subspecialty

Specialty	Total Programs	Mean Number of Assessment Methods					
		ICS	MK	PC	PBLI	PROF	SBP
OVERALL	10,672	3.1	3.8	3.9	2.9	2.9	2.7
TOTAL PIPELINE	4,383	3.8	4.6	4.7	3.5	3.4	3.2
Allergy and immunology	79	3.1	3.6	3.7	2.9	2.6	2.6
Anesthesiology	147	4.6	5.5	5.5	3.9	3.8	3.6
- Adult cardiothoracic anesthesiology	66	2.3	2.9	2.8	2.2	2.2	2.2
- Clinical informatics (Anesthesiology)	1	3.0	2.0	4.0	2.0	2.0	2.0
- Critical care medicine	57	2.5	3.0	2.7	2.3	2.2	2.2
- Regional anesthesiology and acute pain medicine	9	4.3	5.1	5.7	3.3	3.7	2.9
- Obstetric anesthesiology	32	2.2	2.8	3.1	2.3	2.0	2.1
- Pain medicine (multidisciplinary)	101	3.1	3.5	3.6	3.0	2.9	2.6
- Pediatric anesthesiology	58	2.7	2.8	3.1	2.6	2.5	2.4
Colon and rectal surgery	58	2.5	3.4	3.4	2.6	2.4	2.2
Dermatology	128	3.0	3.9	4.0	3.1	3.1	2.8
- Dermatopathology (multidisciplinary)	53	1.8	2.6	2.3	1.9	1.7	1.8
- Micrographic surgery and dermatologic oncology	75	2.3	2.9	2.9	2.4	2.2	2.2
Emergency medicine	212	4.4	5.9	6.0	4.2	4.0	4.3
- Clinical informatics (Emergency medicine)	4	3.0	2.3	2.5	2.3	2.3	2.7
- Emergency medical services	55	2.7	3.1	3.5	2.2	2.4	2.3
- Medical toxicology	27	2.3	3.2	3.0	2.4	2.1	2.2
- Pediatric emergency medicine	26	3.2	4.5	4.6	3.3	2.6	3.1
- Sports medicine	7	1.3	2.9	2.4	1.7	1.4	1.7
- Undersea and hyperbaric medicine	7	2.9	3.4	3.1	2.7	2.6	2.6
Family medicine	540	4.3	5.1	5.5	3.8	3.9	3.6
- Clinical informatics (Family medicine)	2	3.5	4.5	4.0	3.0	3.0	5.0
- Geriatric medicine	44	2.7	3.1	3.6	2.3	2.6	2.3
- Hospice and palliative medicine (multidisciplinary)	130	3.2	3.0	3.4	2.8	2.6	2.5
- Sports medicine	132	2.4	3.5	3.3	2.5	2.3	2.3
Internal medicine	469	4.3	4.7	5.3	3.9	3.8	3.6
- Adult congenital heart disease	10	2.1	3.2	2.9	2.0	2.1	1.8
- Advanced heart failure and transplant cardiology	71	2.2	2.6	2.8	2.3	2.2	2.1
- Cardiovascular disease	210	2.8	3.3	3.3	2.6	2.5	2.4
- Clinical cardiac electrophysiology	105	2.3	2.6	2.7	2.2	2.2	2.0
- Clinical informatics (Internal medicine)	12	2.2	2.3	2.5	1.9	1.8	1.9
- Critical care medicine	34	2.8	3.5	3.5	2.5	2.5	2.5
- Endocrinology, diabetes, and metabolism	141	2.9	3.3	3.7	2.8	2.7	2.5
- Gastroenterology	175	3.2	3.7	4.0	3.0	2.9	2.8
- Geriatric medicine	106	3.0	2.8	3.2	2.5	2.7	2.4
- Hematology	2	2.0	2.5	3.5	2.5	2.0	2.0
- Hematology and medical oncology	146	2.9	3.3	3.4	2.7	2.7	2.5
- Infectious disease	146	3.0	3.4	3.2	2.7	2.8	2.5
- Interventional cardiology	150	2.3	2.4	2.7	2.1	2.1	2.1
- Nephrology	149	3.0	3.6	3.7	2.6	2.8	2.6
- Medical oncology	6	3.3	3.3	4.0	3.2	2.7	2.5
- Pulmonary disease	20	3.1	3.5	3.4	2.6	2.5	2.4
- Pulmonary disease and critical care medicine	151	2.9	3.5	3.8	2.8	2.7	2.6
- Rheumatology	114	3.2	3.7	3.9	3.1	2.9	2.6
- Sleep medicine (multidisciplinary)	84	2.6	2.9	3.1	2.4	2.5	2.3
- Transplant hepatology	51	2.4	2.8	3.0	2.6	2.3	2.1
Medical genetics and genomics	46	2.8	3.3	3.1	2.4	2.3	2.3
- Medical biochemical genetics	16	1.9	2.4	2.1	1.9	1.9	1.6
- Molecular genetic pathology (multidisciplinary)	39	1.7	2.2	1.9	1.8	1.6	1.7
Neurological surgery	110	2.9	4.2	4.0	3.1	2.8	2.8
- Endovascular surgical neuroradiology	2	2.5	3.5	3.0	3.5	2.0	3.0

TABLE H.5 Continued							
Mean Number of Assessment Methods for Each Competency by Specialty and Subspecialty							
Specialty	Total Programs	Mean Number of Assessment Methods					
		ICS	MK	PC	PBLI	PROF	SBP
Neurology	144	3.5	4.3	4.2	3.0	3.3	2.8
- Brain injury medicine	1	2.0	5.0	5.0	2.0	2.0	2.0
- Clinical neurophysiology	94	2.1	2.9	2.6	2.0	2.0	2.0
- Epilepsy	61	2.5	2.8	3.1	2.2	2.3	2.1
- Endovascular surgical neuroradiology	1	4.0	5.0	3.0	4.0	2.0	3.0
- Neurodevelopmental disabilities	8	2.6	3.6	3.6	2.5	3.0	2.1
- Neuromuscular medicine	46	1.9	2.5	2.4	1.8	1.8	1.8
- Vascular neurology	93	2.3	2.3	2.6	2.0	2.0	2.2
Child neurology	74	3.2	4.2	3.7	3.0	3.1	2.8
Nuclear medicine	42	2.8	3.6	3.6	2.8	2.4	2.4
Obstetrics and gynecology	269	4.1	5.2	5.5	4.0	3.9	3.6
- Female pelvic medicine and reconstructive surgery	50	3.4	4.5	5.5	3.6	3.3	3.1
- Gynecologic oncology	48	2.9	3.7	4.1	2.9	2.7	2.9
- Maternal-fetal medicine	73	3.1	3.7	4.4	3.1	2.8	2.7
- Reproductive endocrinology and infertility	41	2.7	3.7	4.0	2.6	2.3	2.4
Ophthalmology	116	3.7	4.8	5.1	3.9	3.5	3.3
- Ophthalmic plastic and reconstructive surgery	5	3.2	3.6	4.0	2.2	2.4	2.4
Orthopaedic surgery	168	2.9	4.0	3.8	2.9	2.8	2.7
- Adult reconstructive orthopaedics	23	2.3	2.5	2.4	1.9	2.2	1.8
- Foot and ankle orthopaedics	6	2.7	2.5	3.0	2.3	2.3	1.8
- Hand surgery	68	2.2	2.7	2.7	2.1	2.2	2.0
- Musculoskeletal oncology	11	1.7	1.5	1.8	1.6	1.6	1.7
- Orthopaedic sports medicine	97	1.9	2.7	2.4	2.0	1.9	1.8
- Orthopaedic surgery of the spine	16	2.5	2.8	2.8	2.4	1.9	2.3
- Orthopaedic trauma	9	1.9	2.0	1.7	1.7	1.7	1.4
- Pediatric orthopaedics	25	1.8	2.0	1.9	1.8	1.6	1.7
Osteopathic neuromusculoskeletal medicine	4	2.3	3.8	3.0	1.3	2.0	2.5
Otolaryngology	109	3.4	4.6	4.5	3.5	3.1	3.1
- Neurotology	20	2.5	3.0	3.1	2.8	2.5	2.4
- Pediatric otolaryngology	22	2.2	2.8	2.7	2.3	1.9	2.6
Pathology-anatomic and clinical	142	2.5	3.8	3.1	2.7	2.4	2.5
- Blood banking/transfusion medicine	49	1.9	2.6	2.2	2.0	1.9	2.1
- Clinical informatics (Pathology)	5	2.8	3.2	3.6	3.6	2.4	3.2
- Chemical pathology	4	2.3	2.3	2.3	1.8	1.8	2.0
- Cytopathology	92	2.1	2.7	2.3	2.1	1.9	1.9
- Forensic pathology	40	1.9	2.8	2.4	2.2	1.9	2.0
- Hematology	86	1.9	2.7	2.2	1.9	1.8	1.9
- Medical microbiology	15	1.6	1.9	1.7	1.7	1.5	1.5
- Neuropathology	35	2.4	3.1	2.7	2.4	2.2	2.1
- Pediatric pathology	26	1.9	2.7	2.0	2.0	1.7	1.7
- Selective pathology	85	2.6	2.9	2.7	2.4	2.3	2.3
Pediatrics	207	4.7	4.8	5.3	3.7	4.0	3.4
- Adolescent medicine	29	3.3	3.6	3.3	2.9	2.9	2.7
- Child abuse pediatrics	30	3.5	3.9	4.1	3.1	2.9	2.8
- Clinical informatics (Pediatrics)	5	2.4	2.6	2.0	2.0	2.0	2.2
- Developmental-behavioral pediatrics	39	3.4	3.6	3.9	3.0	2.8	2.8
- Neonatal-perinatal medicine	99	3.0	3.6	3.9	2.9	2.7	2.6
- Pediatric cardiology	59	2.7	3.2	3.3	2.5	2.6	2.4
- Pediatric critical care medicine	67	3.2	3.8	3.9	3.1	2.8	2.5
- Pediatric emergency medicine	52	3.7	4.7	4.8	3.3	3.1	2.9
- Pediatric endocrinology	71	3.1	3.4	3.4	2.8	2.6	2.4
- Pediatric gastroenterology	63	2.8	3.4	3.5	2.8	2.6	2.5
- Pediatric hematology/oncology	73	3.0	3.5	3.5	2.9	2.8	2.5

TABLE H.5 *Continued***Mean Number of Assessment Methods for Each Competency by Specialty and Subspecialty**

Specialty	Total Programs	Mean Number of Assessment Methods					
		ICS	MK	PC	PBLI	PROF	SBP
- Pediatric infectious diseases	64	3.2	3.5	3.2	2.6	2.9	2.5
- Pediatric nephrology	44	2.8	3.3	3.3	2.8	2.7	2.7
- Pediatric pulmonology	54	3.0	3.7	3.8	3.1	3.0	2.4
- Pediatric rheumatology	36	3.1	3.8	3.9	2.8	2.9	2.7
- Pediatric sports medicine	18	2.7	3.4	3.4	2.5	2.8	2.3
- Pediatric transplant hepatology	13	2.5	2.7	3.3	2.4	2.3	2.2
Physical medicine and rehabilitation	86	3.7	5.2	4.9	3.4	3.5	3.3
- Brain injury medicine	13	3.5	3.4	5.2	2.5	2.9	2.5
- Neuromuscular medicine	1	1.0	1.0	1.0	1.0	1.0	1.0
- Spinal cord injury medicine	22	2.5	2.8	3.6	2.0	1.9	2.0
- Pediatric rehabilitation	20	2.9	3.3	3.8	2.5	3.0	2.7
- Sports medicine	19	2.9	3.4	3.3	2.9	2.8	2.6
Plastic surgery	68	2.5	4.4	3.6	2.9	2.6	2.6
Plastic surgery - integrated	76	3.1	4.6	4.0	3.1	2.9	3.0
- Craniofacial surgery	9	1.8	1.9	2.4	1.9	1.8	1.9
- Hand surgery	16	2.4	3.5	3.1	2.6	2.6	2.9
Preventive medicine	76	3.3	3.9	3.9	3.3	3.1	3.2
- Medical toxicology	1	3.0	6.0	5.0	5.0	6.0	5.0
- Undersea and hyperbaric medicine	1	1.0	1.0	1.0	1.0	1.0	1.0
Psychiatry	226	4.5	4.8	5.4	4.0	4.0	3.6
- Addiction psychiatry	47	2.3	2.6	2.8	2.3	2.1	2.0
- Child and adolescent psychiatry	134	4.4	4.6	5.2	3.9	3.9	3.5
- Forensic psychiatry	46	2.7	2.9	2.5	2.3	2.2	2.1
- Geriatric psychiatry	59	2.7	3.1	3.6	2.6	2.5	2.5
- Psychosomatic medicine	59	2.7	3.0	3.4	2.4	2.4	2.3
Radiation oncology	92	2.8	4.2	3.5	2.8	2.5	2.4
Radiology-diagnostic	194	3.0	4.1	3.4	2.7	2.6	2.5
- Abdominal radiology	12	1.9	1.8	2.1	1.5	1.7	1.5
- Endovascular surgical neuroradiology	4	1.8	1.8	2.3	1.8	1.8	1.3
- Musculoskeletal radiology	16	2.4	2.4	2.1	2.1	2.1	1.7
- Neuroradiology	85	2.1	2.1	2.3	1.9	1.8	1.8
- Nuclear radiology	18	1.7	1.9	1.6	1.7	1.7	1.4
- Pediatric radiology	46	1.8	2.1	2.0	1.7	1.7	1.6
- Vascular and interventional radiology	93	2.2	2.2	2.3	1.9	1.9	1.7
Interventional radiology - integrated	65	3.3	3.8	3.9	2.9	2.7	2.5
Surgery	278	3.8	5.1	5.1	3.6	3.4	3.1
- Complex general surgical oncology	24	2.5	3.2	3.5	2.9	2.5	2.7
- Hand surgery	1	1.0	4.0	2.0	1.0	2.0	2.0
- Pediatric surgery	49	2.4	3.4	3.3	2.6	2.5	2.6
- Surgical critical care	117	2.0	2.7	2.8	2.1	2.1	2.0
- Vascular surgery	107	2.9	4.1	4.1	2.9	2.8	2.6
Vascular surgery - integrated	53	2.8	4.1	4.2	3.0	2.8	2.7
Thoracic surgery	69	2.5	4.0	3.6	2.9	2.3	2.5
- Congenital cardiac surgery	13	2.1	2.4	2.3	2.2	1.5	1.8
Thoracic surgery - integrated	27	3.0	4.3	4.0	3.2	2.6	2.7
Urology	136	3.1	4.0	4.0	3.2	3.1	2.8
- Female pelvic medicine and reconstructive surgery	11	3.1	3.8	4.4	2.7	2.4	2.9
- Pediatric urology	28	2.3	2.4	2.6	2.3	2.2	2.0
Transitional year	115	4.0	4.0	4.3	3.5	3.6	3.1
Internal medicine/Pediatrics	79	4.3	4.3	5.0	3.7	3.6	3.4

Note: Pipeline specialties are highlighted.

Abbreviations: ICS, Interpersonal &amp; Communication Skills; MK, Medical Knowledge; PC, Patient Care; PBLI, Practice-based Learning &amp; Improvement; PROF, Professionalism; SBP, Systems-based Practice.

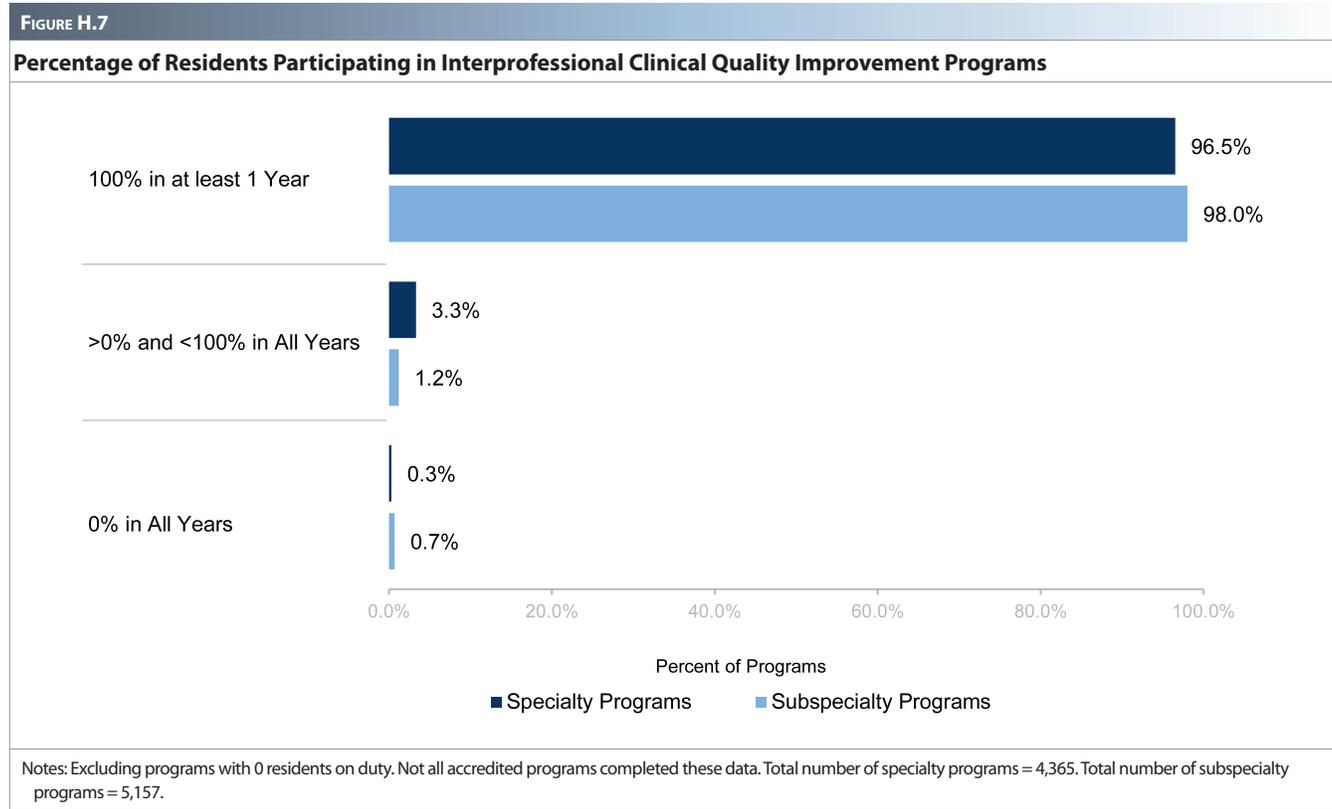
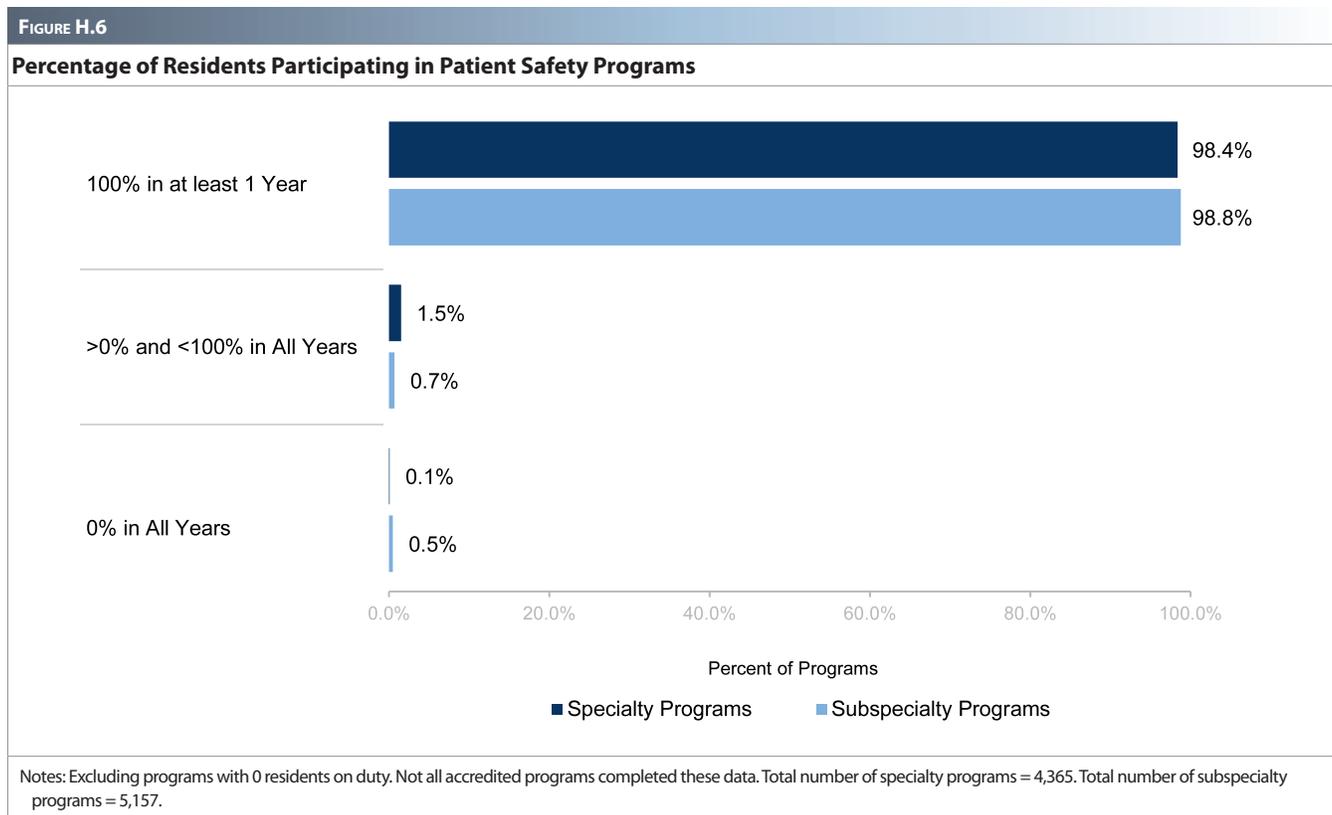


TABLE H.8

**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	9,522	98.6%	1.1%	0.3%	97.3%	2.2%	0.5%
TOTAL PIPELINE	4,169	98.4%	1.6%	0.0%	96.4%	3.4%	0.2%
Allergy and immunology	77	98.7%	0.0%	1.3%	97.4%	1.3%	1.3%
Anesthesiology	144	95.8%	4.2%	0.0%	96.5%	3.5%	0.0%
- Adult cardiothoracic anesthesiology	58	100.0%	0.0%	0.0%	98.3%	1.7%	0.0%
- Clinical informatics (Anesthesiology)	1	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Critical care medicine	48	97.9%	2.1%	0.0%	97.9%	2.1%	0.0%
- Regional anesthesiology and acute pain medicine	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Obstetric anesthesiology	24	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pain medicine (multidisciplinary)	97	97.9%	2.1%	0.0%	96.9%	3.1%	0.0%
- Pediatric anesthesiology	52	100.0%	0.0%	0.0%	98.1%	0.0%	1.9%
Colon and rectal surgery	55	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Dermatology	127	96.9%	3.1%	0.0%	95.3%	4.7%	0.0%
- Dermatopathology (multidisciplinary)	47	97.9%	0.0%	2.1%	97.9%	0.0%	2.1%
- Micrographic surgery and dermatologic oncology	66	98.5%	0.0%	1.5%	100.0%	0.0%	0.0%
Emergency medicine	200	99.0%	1.0%	0.0%	97.5%	2.5%	0.0%
- Clinical informatics (Emergency medicine)	1	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	22	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric emergency medicine	23	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Sports medicine	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Undersea and hyperbaric medicine	6	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Family medicine	513	99.6%	0.4%	0.0%	99.0%	1.0%	0.0%
- Clinical informatics (Family medicine)	2	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Geriatric medicine	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hospice and palliative medicine (multidisciplinary)	106	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Sports medicine	115	99.1%	0.0%	0.9%	97.4%	0.0%	2.6%
Internal medicine	457	96.3%	3.7%	0.0%	93.2%	6.8%	0.0%
- Adult congenital heart disease	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Advanced heart failure and transplant cardiology	58	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Cardiovascular disease	203	98.0%	2.0%	0.0%	94.1%	5.9%	0.0%
- Clinical cardiac electrophysiology	78	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Clinical informatics (Internal medicine)	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Critical care medicine	32	100.0%	0.0%	0.0%	96.9%	3.1%	0.0%
- Endocrinology, diabetes, and metabolism	135	95.6%	3.7%	0.7%	98.5%	1.5%	0.0%
- Gastroenterology	171	98.8%	1.2%	0.0%	98.8%	1.2%	0.0%
- Geriatric medicine	88	97.7%	1.1%	1.1%	96.6%	2.3%	1.1%
- Hematology	2	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Hematology and medical oncology	145	98.6%	0.7%	0.7%	96.6%	2.8%	0.7%
- Infectious disease	142	99.3%	0.7%	0.0%	97.9%	2.1%	0.0%
- Interventional cardiology	146	98.6%	0.0%	1.4%	99.3%	0.0%	0.7%
- Nephrology	147	98.6%	1.4%	0.0%	98.6%	1.4%	0.0%
- Medical oncology	6	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pulmonary disease	19	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pulmonary disease and critical care medicine	148	96.6%	3.4%	0.0%	95.9%	4.1%	0.0%
- Rheumatology	111	100.0%	0.0%	0.0%	98.2%	1.8%	0.0%
- Sleep medicine (multidisciplinary)	77	100.0%	0.0%	0.0%	98.7%	1.3%	0.0%
- Transplant hepatology	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Medical genetics and genomics	32	100.0%	0.0%	0.0%	96.9%	0.0%	3.1%
- Medical biochemical genetics	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Molecular genetic pathology (multidisciplinary)	34	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Neurological surgery	109	100.0%	0.0%	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.8 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	138	98.6%	1.4%	0.0%	94.2%	5.8%	0.0%
- Brain injury medicine	0	N/A	N/A	N/A	N/A	N/A	N/A
- Clinical neurophysiology	70	98.6%	1.4%	0.0%	97.1%	0.0%	2.9%
- Epilepsy	35	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- 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	32	100.0%	0.0%	0.0%	96.9%	0.0%	3.1%
- Vascular neurology	65	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Child neurology	72	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Nuclear medicine	31	100.0%	0.0%	0.0%	96.8%	0.0%	3.2%
Obstetrics and gynecology	263	99.6%	0.4%	0.0%	96.6%	3.4%	0.0%
- Female pelvic medicine and reconstructive surgery	48	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Gynecologic oncology	38	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Maternal-fetal medicine	49	98.0%	2.0%	0.0%	100.0%	0.0%	0.0%
- Reproductive endocrinology and infertility	25	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Ophthalmology	116	99.1%	0.9%	0.0%	97.4%	2.6%	0.0%
- Ophthalmic plastic and reconstructive surgery	5	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Orthopaedic surgery	164	98.8%	1.2%	0.0%	98.2%	1.2%	0.6%
- Adult reconstructive orthopaedics	21	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	96.9%	0.0%	3.1%	93.8%	0.0%	6.3%
- Musculoskeletal oncology	10	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Orthopaedic sports medicine	87	96.6%	1.1%	2.3%	98.9%	1.1%	0.0%
- Orthopaedic surgery of the spine	16	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Orthopaedic trauma	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric orthopaedics	20	100.0%	0.0%	0.0%	95.0%	0.0%	5.0%
Osteopathic neuromusculoskeletal medicine	3	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Otolaryngology	107	98.1%	1.9%	0.0%	97.2%	2.8%	0.0%
- Neurotology	18	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric otolaryngology	20	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Pathology-anatomic and clinical	141	97.9%	2.1%	0.0%	95.7%	4.3%	0.0%
- Blood banking/transfusion medicine	34	97.1%	0.0%	2.9%	97.1%	0.0%	2.9%
- Clinical informatics (Pathology)	3	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	84	98.8%	0.0%	1.2%	100.0%	0.0%	0.0%
- Forensic pathology	27	81.5%	0.0%	18.5%	77.8%	0.0%	22.2%
- Hematology	78	96.2%	1.3%	2.6%	97.4%	1.3%	1.3%
- Medical microbiology	11	90.9%	0.0%	9.1%	100.0%	0.0%	0.0%
- Neuropathology	31	100.0%	0.0%	0.0%	96.8%	3.2%	0.0%
- Pediatric pathology	14	92.9%	0.0%	7.1%	92.9%	0.0%	7.1%
- Selective pathology	69	98.6%	0.0%	1.4%	97.1%	0.0%	2.9%
Pediatrics	203	98.0%	2.0%	0.0%	94.6%	5.4%	0.0%
- Adolescent medicine	26	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Child abuse pediatrics	22	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Clinical informatics (Pediatrics)	3	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Developmental-behavioral pediatrics	33	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neonatal-perinatal medicine	98	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	66	100.0%	0.0%	0.0%	97.0%	3.0%	0.0%
- Pediatric gastroenterology	59	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric hematology/oncology	70	98.6%	1.4%	0.0%	94.3%	5.7%	0.0%

TABLE H.8 *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	33	93.9%	6.1%	0.0%	93.9%	3.0%	3.0%
- Pediatric pulmonology	45	100.0%	0.0%	0.0%	97.8%	0.0%	2.2%
- Pediatric rheumatology	29	96.6%	0.0%	3.4%	96.6%	0.0%	3.4%
- Pediatric sports medicine	13	100.0%	0.0%	0.0%	92.3%	7.7%	0.0%
- Pediatric transplant hepatology	7	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Physical medicine and rehabilitation	83	98.8%	1.2%	0.0%	97.6%	1.2%	1.2%
- Brain injury medicine	8	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Neuromuscular medicine	0	N/A	N/A	N/A	N/A	N/A	N/A
- Spinal cord injury medicine	8	100.0%	0.0%	0.0%	87.5%	0.0%	12.5%
- Pediatric rehabilitation	16	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Sports medicine	16	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Plastic surgery	67	100.0%	0.0%	0.0%	97.0%	3.0%	0.0%
Plastic surgery - integrated	70	97.1%	1.4%	1.4%	95.7%	2.9%	1.4%
- Craniofacial surgery	8	87.5%	12.5%	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	71	98.6%	1.4%	0.0%	97.2%	2.8%	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	208	99.0%	1.0%	0.0%	94.2%	4.8%	1.0%
- Addiction psychiatry	35	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Child and adolescent psychiatry	125	100.0%	0.0%	0.0%	96.8%	2.4%	0.8%
- Forensic psychiatry	33	93.9%	0.0%	6.1%	93.9%	0.0%	6.1%
- Geriatric psychiatry	35	97.1%	2.9%	0.0%	97.1%	2.9%	0.0%
- Psychosomatic medicine	43	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Radiation oncology	89	97.8%	2.2%	0.0%	96.6%	2.2%	1.1%
Radiology-diagnostic	192	96.4%	3.6%	0.0%	91.1%	8.3%	0.5%
- Abdominal radiology	12	100.0%	0.0%	0.0%	91.7%	0.0%	8.3%
- Endovascular surgical neuroradiology	4	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	71	100.0%	0.0%	0.0%	95.8%	0.0%	4.2%
- Nuclear radiology	9	100.0%	0.0%	0.0%	88.9%	11.1%	0.0%
- Pediatric radiology	27	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Vascular and interventional radiology	86	98.8%	1.2%	0.0%	98.8%	1.2%	0.0%
Interventional radiology - integrated	5	80.0%	20.0%	0.0%	80.0%	20.0%	0.0%
Surgery	274	98.5%	1.5%	0.0%	98.5%	1.5%	0.0%
- Complex general surgical oncology	20	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	47	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Surgical critical care	105	99.0%	1.0%	0.0%	97.1%	2.9%	0.0%
- Vascular surgery	102	100.0%	0.0%	0.0%	99.0%	1.0%	0.0%
Vascular surgery - integrated	50	100.0%	0.0%	0.0%	98.0%	0.0%	2.0%
Thoracic surgery	64	100.0%	0.0%	0.0%	98.4%	1.6%	0.0%
- Congenital cardiac surgery	5	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Thoracic surgery - integrated	27	96.3%	0.0%	3.7%	100.0%	0.0%	0.0%
Urology	134	99.3%	0.7%	0.0%	97.8%	2.2%	0.0%
- Female pelvic medicine and reconstructive surgery	10	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
- Pediatric urology	23	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	79	100.0%	0.0%	0.0%	96.2%	3.8%	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 = 4,365. Total number of subspecialty programs = 5,157.

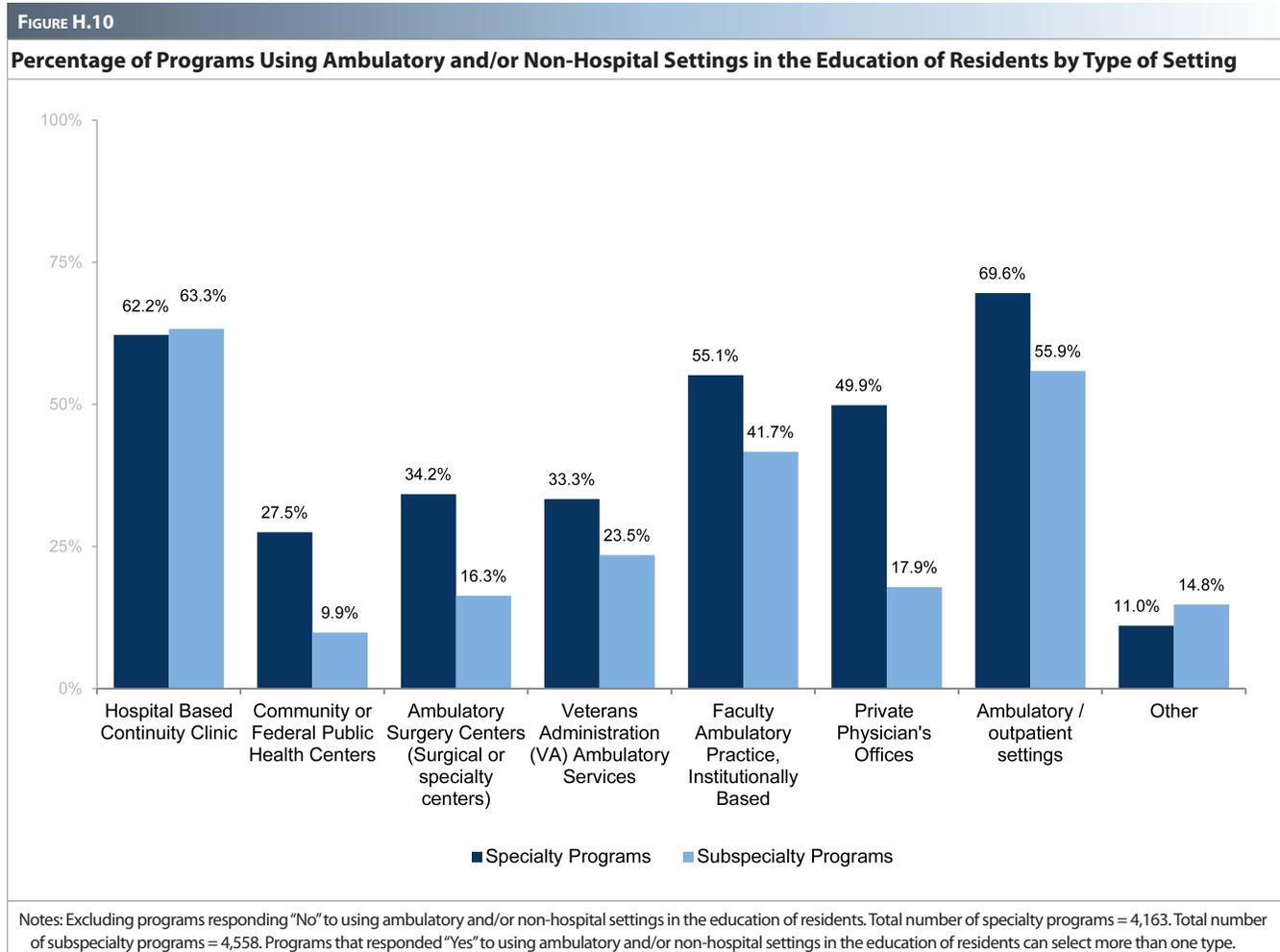
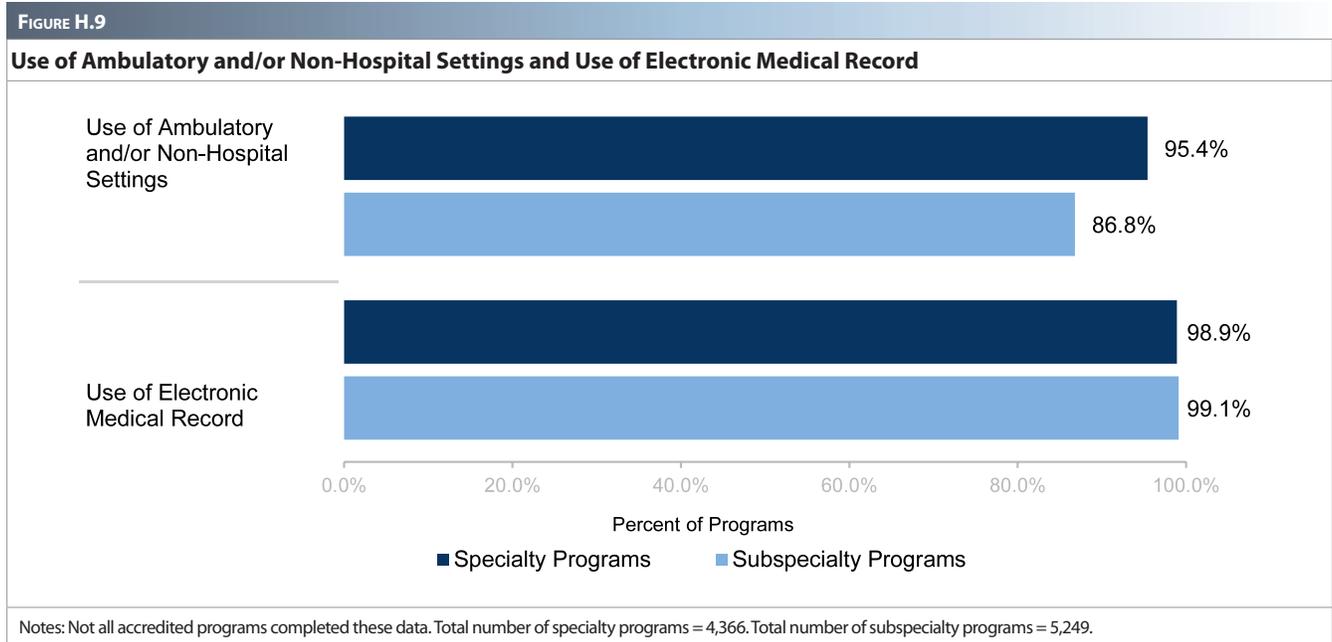


TABLE H.11

## 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 Setting				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
OVERALL	9,615	8,721	90.7%	894	9.3%	9,520	99.0%	95	1.0%
TOTAL PIPELINE	4,170	3,974	95.3%	196	4.7%	4,122	98.8%	48	1.2%
Allergy and immunology	77	74	96.1%	3	3.9%	77	100.0%	0	0.0%
Anesthesiology	144	134	93.1%	10	6.9%	140	97.2%	4	2.8%
- Adult cardiothoracic anesthesiology	59	7	11.9%	52	88.1%	58	98.3%	1	1.7%
- Clinical informatics (Anesthesiology)	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Critical care medicine	50	1	2.0%	49	98.0%	49	98.0%	1	2.0%
- Regional anesthesiology and acute pain medicine	8	7	87.5%	1	12.5%	8	100.0%	0	0.0%
- Obstetric anesthesiology	26	18	69.2%	8	30.8%	26	100.0%	0	0.0%
- Pain medicine (multidisciplinary)	99	97	98.0%	2	2.0%	99	100.0%	0	0.0%
- Pediatric anesthesiology	53	37	69.8%	16	30.2%	53	100.0%	0	0.0%
Colon and rectal surgery	55	53	96.4%	2	3.6%	55	100.0%	0	0.0%
Dermatology	127	127	100.0%	0	0.0%	126	99.2%	1	0.8%
- Dermatopathology (multidisciplinary)	48	40	83.3%	8	16.7%	48	100.0%	0	0.0%
- Micrographic surgery and dermatologic oncology	69	67	97.1%	2	2.9%	66	95.7%	3	4.3%
Emergency medicine	200	145	72.5%	55	27.5%	198	99.0%	2	1.0%
- Clinical informatics (Emergency medicine)	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Emergency medical services	42	39	92.9%	3	7.1%	42	100.0%	0	0.0%
- Medical toxicology	22	22	100.0%	0	0.0%	22	100.0%	0	0.0%
- Pediatric emergency medicine	23	21	91.3%	2	8.7%	23	100.0%	0	0.0%
- Sports medicine	7	7	100.0%	0	0.0%	7	100.0%	0	0.0%
- Undersea and hyperbaric medicine	6	6	100.0%	0	0.0%	6	100.0%	0	0.0%
Family medicine	513	513	100.0%	0	0.0%	511	99.6%	2	0.4%
- Clinical informatics (Family medicine)	2	2	100.0%	0	0.0%	2	100.0%	0	0.0%
- Geriatric medicine	26	26	100.0%	0	0.0%	26	100.0%	0	0.0%
- Hospice and palliative medicine (multidisciplinary)	108	108	100.0%	0	0.0%	108	100.0%	0	0.0%
- Sports medicine	124	124	100.0%	0	0.0%	121	97.6%	3	2.4%
Internal medicine	457	457	100.0%	0	0.0%	452	98.9%	5	1.1%
- Adult congenital heart disease	7	7	100.0%	0	0.0%	7	100.0%	0	0.0%
- Advanced heart failure and transplant cardiology	59	57	96.6%	2	3.4%	59	100.0%	0	0.0%
- Cardiovascular disease	204	201	98.5%	3	1.5%	201	98.5%	3	1.5%
- Clinical cardiac electrophysiology	78	75	96.2%	3	3.8%	78	100.0%	0	0.0%
- Clinical informatics (Internal medicine)	8	7	87.5%	1	12.5%	8	100.0%	0	0.0%
- Critical care medicine	32	4	12.5%	28	87.5%	32	100.0%	0	0.0%
- Endocrinology, diabetes, and metabolism	136	134	98.5%	2	1.5%	135	99.3%	1	0.7%
- Gastroenterology	171	169	98.8%	2	1.2%	170	99.4%	1	0.6%
- Geriatric medicine	91	91	100.0%	0	0.0%	91	100.0%	0	0.0%
- Hematology	2	2	100.0%	0	0.0%	2	100.0%	0	0.0%
- Hematology and medical oncology	145	144	99.3%	1	0.7%	143	98.6%	2	1.4%
- Infectious disease	142	142	100.0%	0	0.0%	141	99.3%	1	0.7%
- Interventional cardiology	147	139	94.6%	8	5.4%	146	99.3%	1	0.7%
- Nephrology	147	147	100.0%	0	0.0%	147	100.0%	0	0.0%
- Medical oncology	6	6	100.0%	0	0.0%	6	100.0%	0	0.0%
- Pulmonary disease	19	18	94.7%	1	5.3%	19	100.0%	0	0.0%
- Pulmonary disease and critical care medicine	148	148	100.0%	0	0.0%	147	99.3%	1	0.7%
- Rheumatology	112	111	99.1%	1	0.9%	112	100.0%	0	0.0%
- Sleep medicine (multidisciplinary)	77	74	96.1%	3	3.9%	77	100.0%	0	0.0%
- Transplant hepatology	28	27	96.4%	1	3.6%	28	100.0%	0	0.0%
Medical genetics and genomics	32	31	96.9%	1	3.1%	31	96.9%	1	3.1%
- Medical biochemical genetics	8	6	75.0%	2	25.0%	8	100.0%	0	0.0%
- Molecular genetic pathology (multidisciplinary)	35	19	54.3%	16	45.7%	35	100.0%	0	0.0%
Neurological surgery	109	107	98.2%	2	1.8%	108	99.1%	1	0.9%
- Endovascular surgical neuroradiology	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%

**TABLE H.11 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 Setting				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
Neurology	138	138	100.0%	0	0.0%	137	99.3%	1	0.7%
- Brain injury medicine	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%
- Clinical neurophysiology	73	70	95.9%	3	4.1%	73	100.0%	0	0.0%
- Epilepsy	37	37	100.0%	0	0.0%	37	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	35	34	97.1%	1	2.9%	34	97.1%	1	2.9%
- Vascular neurology	70	67	95.7%	3	4.3%	70	100.0%	0	0.0%
Child neurology	72	70	97.2%	2	2.8%	70	97.2%	2	2.8%
Nuclear medicine	31	17	54.8%	14	45.2%	30	96.8%	1	3.2%
Obstetrics and gynecology	263	262	99.6%	1	0.4%	259	98.5%	4	1.5%
- Female pelvic medicine and reconstructive surgery	48	48	100.0%	0	0.0%	48	100.0%	0	0.0%
- Gynecologic oncology	38	37	97.4%	1	2.6%	38	100.0%	0	0.0%
- Maternal-fetal medicine	50	50	100.0%	0	0.0%	50	100.0%	0	0.0%
- Reproductive endocrinology and infertility	25	25	100.0%	0	0.0%	25	100.0%	0	0.0%
Ophthalmology	116	114	98.3%	2	1.7%	114	98.3%	2	1.7%
- Ophthalmic plastic and reconstructive surgery	5	5	100.0%	0	0.0%	5	100.0%	0	0.0%
Orthopaedic surgery	164	160	97.6%	4	2.4%	162	98.8%	2	1.2%
- Adult reconstructive orthopaedics	21	19	90.5%	2	9.5%	20	95.2%	1	4.8%
- Foot and ankle orthopaedics	6	6	100.0%	0	0.0%	6	100.0%	0	0.0%
- Hand surgery	64	63	98.4%	1	1.6%	64	100.0%	0	0.0%
- Musculoskeletal oncology	11	7	63.6%	4	36.4%	11	100.0%	0	0.0%
- Orthopaedic sports medicine	90	88	97.8%	2	2.2%	90	100.0%	0	0.0%
- Orthopaedic surgery of the spine	16	15	93.8%	1	6.3%	16	100.0%	0	0.0%
- Orthopaedic trauma	7	7	100.0%	0	0.0%	7	100.0%	0	0.0%
- Pediatric orthopaedics	20	16	80.0%	4	20.0%	19	95.0%	1	5.0%
Osteopathic neuromusculoskeletal medicine	3	3	100.0%	0	0.0%	3	100.0%	0	0.0%
Otolaryngology	107	106	99.1%	1	0.9%	106	99.1%	1	0.9%
- Neurotology	18	18	100.0%	0	0.0%	18	100.0%	0	0.0%
- Pediatric otolaryngology	21	21	100.0%	0	0.0%	21	100.0%	0	0.0%
Pathology-anatomic and clinical	141	104	73.8%	37	26.2%	139	98.6%	2	1.4%
- Blood banking/transfusion medicine	36	30	83.3%	6	16.7%	35	97.2%	1	2.8%
- Clinical informatics (Pathology)	3	3	100.0%	0	0.0%	3	100.0%	0	0.0%
- Chemical pathology	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Cytopathology	85	47	55.3%	38	44.7%	84	98.8%	1	1.2%
- Forensic pathology	28	13	46.4%	15	53.6%	22	78.6%	6	21.4%
- Hematology	79	32	40.5%	47	59.5%	79	100.0%	0	0.0%
- Medical microbiology	12	5	41.7%	7	58.3%	12	100.0%	0	0.0%
- Neuropathology	31	12	38.7%	19	61.3%	31	100.0%	0	0.0%
- Pediatric pathology	18	5	27.8%	13	72.2%	18	100.0%	0	0.0%
- Selective pathology	70	24	34.3%	46	65.7%	70	100.0%	0	0.0%
Pediatrics	203	202	99.5%	1	0.5%	198	97.5%	5	2.5%
- Adolescent medicine	26	26	100.0%	0	0.0%	26	100.0%	0	0.0%
- Child abuse pediatrics	22	22	100.0%	0	0.0%	22	100.0%	0	0.0%
- Clinical informatics (Pediatrics)	3	3	100.0%	0	0.0%	3	100.0%	0	0.0%
- Developmental-behavioral pediatrics	33	33	100.0%	0	0.0%	32	97.0%	1	3.0%
- Neonatal-perinatal medicine	98	95	96.9%	3	3.1%	96	98.0%	2	2.0%
- Pediatric cardiology	59	56	94.9%	3	5.1%	59	100.0%	0	0.0%
- Pediatric critical care medicine	66	7	10.6%	59	89.4%	65	98.5%	1	1.5%
- Pediatric emergency medicine	52	42	80.8%	10	19.2%	52	100.0%	0	0.0%
- Pediatric endocrinology	67	66	98.5%	1	1.5%	67	100.0%	0	0.0%
- Pediatric gastroenterology	59	54	91.5%	5	8.5%	59	100.0%	0	0.0%
- Pediatric hematology/oncology	70	69	98.6%	1	1.4%	69	98.6%	1	1.4%

TABLE H.11 *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 Setting				Use Electronic Medical Record			
		Yes	%	No	%	Yes	%	No	%
- Pediatric infectious diseases	57	56	98.2%	1	1.8%	56	98.2%	1	1.8%
- Pediatric nephrology	34	34	100.0%	0	0.0%	34	100.0%	0	0.0%
- Pediatric pulmonology	46	46	100.0%	0	0.0%	46	100.0%	0	0.0%
- Pediatric rheumatology	30	28	93.3%	2	6.7%	30	100.0%	0	0.0%
- Pediatric sports medicine	13	13	100.0%	0	0.0%	13	100.0%	0	0.0%
- Pediatric transplant hepatology	8	6	75.0%	2	25.0%	8	100.0%	0	0.0%
Physical medicine and rehabilitation	83	83	100.0%	0	0.0%	82	98.8%	1	1.2%
- Brain injury medicine	8	8	100.0%	0	0.0%	8	100.0%	0	0.0%
- Neuromuscular medicine	0	0	N/A	0	N/A	0	N/A	0	N/A
- Spinal cord injury medicine	12	10	83.3%	2	16.7%	12	100.0%	0	0.0%
- Pediatric rehabilitation	17	17	100.0%	0	0.0%	17	100.0%	0	0.0%
- Sports medicine	16	16	100.0%	0	0.0%	15	93.8%	1	6.3%
Plastic surgery	67	65	97.0%	2	3.0%	67	100.0%	0	0.0%
Plastic surgery - integrated	70	69	98.6%	1	1.4%	70	100.0%	0	0.0%
- Craniofacial surgery	8	6	75.0%	2	25.0%	8	100.0%	0	0.0%
- Hand surgery	16	16	100.0%	0	0.0%	16	100.0%	0	0.0%
Preventive medicine	71	71	100.0%	0	0.0%	68	95.8%	3	4.2%
- 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	208	206	99.0%	2	1.0%	206	99.0%	2	1.0%
- Addiction psychiatry	38	37	97.4%	1	2.6%	37	97.4%	1	2.6%
- Child and adolescent psychiatry	125	125	100.0%	0	0.0%	122	97.6%	3	2.4%
- Forensic psychiatry	34	34	100.0%	0	0.0%	29	85.3%	5	14.7%
- Geriatric psychiatry	36	36	100.0%	0	0.0%	36	100.0%	0	0.0%
- Psychosomatic medicine	43	43	100.0%	0	0.0%	41	95.3%	2	4.7%
Radiation oncology	89	81	91.0%	8	9.0%	89	100.0%	0	0.0%
Radiology-diagnostic	192	158	82.3%	34	17.7%	191	99.5%	1	0.5%
- Abdominal radiology	12	7	58.3%	5	41.7%	12	100.0%	0	0.0%
- Endovascular surgical neuroradiology	4	3	75.0%	1	25.0%	4	100.0%	0	0.0%
- Musculoskeletal radiology	16	13	81.3%	3	18.8%	16	100.0%	0	0.0%
- Neuroradiology	73	43	58.9%	30	41.1%	73	100.0%	0	0.0%
- Nuclear radiology	9	4	44.4%	5	55.6%	9	100.0%	0	0.0%
- Pediatric radiology	29	17	58.6%	12	41.4%	29	100.0%	0	0.0%
- Vascular and interventional radiology	88	71	80.7%	17	19.3%	88	100.0%	0	0.0%
Interventional radiology - integrated	6	5	83.3%	1	16.7%	6	100.0%	0	0.0%
Surgery	274	262	95.6%	12	4.4%	271	98.9%	3	1.1%
- Complex general surgical oncology	22	22	100.0%	0	0.0%	22	100.0%	0	0.0%
- Hand surgery	1	1	100.0%	0	0.0%	1	100.0%	0	0.0%
- Pediatric surgery	47	44	93.6%	3	6.4%	47	100.0%	0	0.0%
- Surgical critical care	106	23	21.7%	83	78.3%	106	100.0%	0	0.0%
- Vascular surgery	102	96	94.1%	6	5.9%	102	100.0%	0	0.0%
Vascular surgery - integrated	50	49	98.0%	1	2.0%	50	100.0%	0	0.0%
Thoracic surgery	64	62	96.9%	2	3.1%	64	100.0%	0	0.0%
- Congenital cardiac surgery	5	3	60.0%	2	40.0%	5	100.0%	0	0.0%
Thoracic surgery - integrated	27	26	96.3%	1	3.7%	27	100.0%	0	0.0%
Urology	134	130	97.0%	4	3.0%	133	99.3%	1	0.7%
- Female pelvic medicine and reconstructive surgery	10	10	100.0%	0	0.0%	10	100.0%	0	0.0%
- Pediatric urology	24	22	91.7%	2	8.3%	24	100.0%	0	0.0%
Transitional year	0	0	N/A	0	N/A	0	N/A	0	N/A
Internal medicine/Pediatrics	79	79	100.0%	0	0.0%	78	98.7%	1	1.3%

Notes: Pipeline specialties are highlighted. Not all accredited programs completed these data. Total number of specialty programs = 4,366. Total number of subspecialty programs = 5,249.

**TABLE H.12**  
**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	3,974	2,790	70.2%	2,471	62.2%	2,202	55.4%	2,012	50.6%
Anesthesiology	134	83	61.9%	30	22.4%	40	29.9%	20	14.9%
Dermatology	127	90	70.9%	89	70.1%	84	66.1%	62	48.8%
Emergency medicine	145	51	35.2%	41	28.3%	37	25.5%	40	27.6%
Family medicine	513	465	90.6%	320	62.4%	226	44.1%	453	88.3%
Internal medicine	457	339	74.2%	363	79.4%	280	61.3%	302	66.1%
Medical genetics and genomics	31	20	64.5%	22	71.0%	14	45.2%	3	9.7%
Neurological surgery	107	60	56.1%	54	50.5%	58	54.2%	26	24.3%
Neurology	138	86	62.3%	116	84.1%	94	68.1%	36	26.1%
Child neurology	70	58	82.9%	66	94.3%	47	67.1%	10	14.3%
Nuclear medicine	17	10	58.8%	8	47.1%	6	35.3%	2	11.8%
Obstetrics and gynecology	262	166	63.4%	228	87.0%	189	72.1%	153	58.4%
Ophthalmology	114	69	60.5%	75	65.8%	77	67.5%	56	49.1%
Orthopaedic surgery	160	108	67.5%	82	51.3%	96	60.0%	100	62.5%
Osteopathic neuromusculoskeletal medicine	3	3	100.0%	0	0.0%	3	100.0%	3	100.0%
Otolaryngology	106	76	71.7%	57	53.8%	74	69.8%	44	41.5%
Pathology-anatomic and clinical	104	24	23.1%	15	14.4%	10	9.6%	14	13.5%
Pediatrics	202	178	88.1%	161	79.7%	130	64.4%	163	80.7%
Physical medicine and rehabilitation	83	72	86.7%	51	61.4%	67	80.7%	44	53.0%
Plastic surgery	65	51	78.5%	41	63.1%	43	66.2%	50	76.9%
Plastic surgery - integrated	69	48	69.6%	44	63.8%	45	65.2%	48	69.6%
Preventive medicine	71	65	91.5%	42	59.2%	49	69.0%	31	43.7%
Psychiatry	206	152	73.8%	145	70.4%	84	40.8%	38	18.4%
Radiation oncology	81	52	64.2%	38	46.9%	32	39.5%	7	8.6%
Radiology-diagnostic	158	117	74.1%	44	27.8%	52	32.9%	23	14.6%
Interventional radiology - integrated	5	5	100.0%	2	40.0%	1	20.0%	0	0.0%
Surgery	262	158	60.3%	162	61.8%	167	63.7%	160	61.1%
Vascular surgery - integrated	49	25	51.0%	22	44.9%	37	75.5%	16	32.7%
Thoracic surgery - integrated	26	11	42.3%	14	53.8%	16	61.5%	5	19.2%
Urology	130	79	60.8%	76	58.5%	90	69.2%	48	36.9%
Internal medicine/Pediatrics	79	69	87.3%	63	79.7%	54	68.4%	55	69.6%

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.13

## 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	3,974	1,383	34.8%	1,336	33.6%	1,141	28.7%	455	11.4%
Anesthesiology	134	94	70.1%	25	18.7%	3	2.2%	9	6.7%
Dermatology	127	28	22.0%	78	61.4%	29	22.8%	5	3.9%
Emergency medicine	145	24	16.6%	8	5.5%	9	6.2%	83	57.2%
Family medicine	513	222	43.3%	91	17.7%	326	63.5%	73	14.2%
Internal medicine	457	20	4.4%	153	33.5%	167	36.5%	35	7.7%
Medical genetics and genomics	31	2	6.5%	3	9.7%	6	19.4%	2	6.5%
Neurological surgery	107	25	23.4%	37	34.6%	2	1.9%	5	4.7%
Neurology	138	5	3.6%	70	50.7%	16	11.6%	5	3.6%
Child neurology	70	6	8.6%	36	51.4%	14	20.0%	1	1.4%
Nuclear medicine	17	0	0.0%	6	35.3%	2	11.8%	2	11.8%
Obstetrics and gynecology	262	149	56.9%	30	11.5%	74	28.2%	10	3.8%
Ophthalmology	114	86	75.4%	80	70.2%	20	17.5%	5	4.4%
Orthopaedic surgery	160	136	85.0%	62	38.8%	10	6.3%	9	5.6%
Osteopathic neuromusculoskeletal medicine	3	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Otolaryngology	106	76	71.7%	65	61.3%	11	10.4%	3	2.8%
Pathology-anatomic and clinical	104	16	15.4%	19	18.3%	10	9.6%	71	68.3%
Pediatrics	202	25	12.4%	0	0.0%	118	58.4%	30	14.9%
Physical medicine and rehabilitation	83	39	47.0%	60	72.3%	13	15.7%	2	2.4%
Plastic surgery	65	55	84.6%	30	46.2%	7	10.8%	0	0.0%
Plastic surgery - integrated	69	61	88.4%	39	56.5%	10	14.5%	0	0.0%
Preventive medicine	71	7	9.9%	35	49.3%	47	66.2%	23	32.4%
Psychiatry	206	5	2.4%	124	60.2%	145	70.4%	35	17.0%
Radiation oncology	81	7	8.6%	23	28.4%	5	6.2%	4	4.9%
Radiology-diagnostic	158	27	17.1%	40	25.3%	12	7.6%	26	16.5%
Interventional radiology - integrated	5	1	20.0%	2	40.0%	1	20.0%	0	0.0%
Surgery	262	157	59.9%	79	30.2%	23	8.8%	6	2.3%
Vascular surgery - integrated	49	22	44.9%	25	51.0%	3	6.1%	1	2.0%
Thoracic surgery - integrated	26	7	26.9%	10	38.5%	1	3.8%	0	0.0%
Urology	130	74	56.9%	64	49.2%	16	12.3%	3	2.3%
Internal medicine/Pediatrics	79	7	8.9%	42	53.2%	41	51.9%	7	8.9%

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

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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  
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

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### Hospital-based Specialties and Subspecialties

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#### Anesthesiology

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

#### Emergency medicine

- Clinical informatics (Emergency medicine)
- 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 (Pathology)
- Chemical pathology
- Cytopathology
- Forensic pathology
- Hematology
- 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

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#### Allergy and immunology

#### Dermatology

- Dermatopathology (multidisciplinary)

- Micrographic surgery and dermatologic oncology
- Family medicine
  - Clinical informatics (Family medicine)
  - 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 (Internal medicine)
  - 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 (Pediatrics)
  - 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 psychiatry
- Child and adolescent psychiatry
- Forensic psychiatry
- Geriatric psychiatry
- Psychosomatic medicine

Internal medicine/Pediatrics

**Surgical Specialties and Subspecialties**

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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

- 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

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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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