

# American Board of Emergency Medicine Report on Residency and Fellowship Training Information (2018-2019)



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The American Board of Emergency Medicine (ABEM) gathers extensive background information on emergency medicine–sponsored residency and fellowship programs, residents and fellows training in those programs, and all fellows for whom ABEM issues subspecialty certifications. We present the 2019 annual report on the status of US emergency medicine training programs. [Ann Emerg Med. 2019;73:524-541.]

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## INTRODUCTION

The American Board of Emergency Medicine (ABEM) gathers extensive information on emergency medicine residency programs, emergency medicine residents, emergency medicine–sponsored fellowship programs, and all fellows eligible for whom ABEM issues subspecialty certification. Survey data are collected annually from all Accreditation Council for Graduate Medical Education (ACGME)–accredited emergency medicine residency programs. Selected parts of the data are reported in this article.\* Information on ACGME-accredited fellowship programs, and fellows for whom ABEM issues subspecialty certification, are also included in this report.

ABEM has several reasons for collecting and disseminating information on emergency medicine programs, residents, and fellows. As the evaluating and certifying arm of the specialty, ABEM seeks to meet the following goals:

- Collect accurate and comprehensive information pertaining to residents, fellows, and their associated programs

- Disseminate information that will aid stakeholders in resident and fellowship education in establishing guidelines to improve the quality of graduate medical education in emergency medicine
- Gather background information on residents and fellows to understand the diversity in training programs
- Support research related to emergency medicine resident and fellow training

This annual publication serves the specialty of emergency medicine and the medical community at large by serving as a reference tool for evaluating the status and growth of emergency medicine and informing decisions to improve the training of residents and fellows.

## METHODOLOGY

ABEM annually surveys all ACGME-accredited US categorical residency programs; ABEM-approved combined residency programs; ACGME-accredited, emergency medicine–sponsored fellowship programs; and all fellowship programs enrolling physicians for whom ABEM issues subspecialty certification. Categorical programs are defined as residency programs in a single primary specialty. There are currently 2 types of emergency medicine categorical programs based on the number of postgraduate years (PGYs) residents are enrolled in the program: PGY 1 to 3 and PGY 1 to 4.

\*This report reflects the status of data contained in the ABEM Residency Training Information Survey as of March 5, 2019. Data accuracy is contingent on survey compliance of participating 2018-2019 programs.

ABEM-approved combined programs consist of PGY 1 to 5 and PGY 1 to 6 program formats. ACGME-accredited fellowships for emergency physicians range between 1 and 3 years in duration. Information is collected annually about new residents, fellows, and their respective programs from July through October.

ABEM surveys programs to obtain demographic information on their residents, including:

- Name
- Date of birth
- Sex
- Country of birth
- Medical degree
- Location of medical school (United States, international)
- Year of medical school graduation
- Dates of residency
- Citizenship
- Previous internships or specialty training
- Ethnicity (not required)

In addition to resident information, residency programs are asked to provide:

- Number of ACGME-approved positions
- Number of applications received
- Interviews
- Residents and/or fellows enrolled

ABEM also reports the following data provided by the ACGME:

- Type of program
- Number of on-duty residents and fellows
- Length of fellowship

Additional information on resident demographics is obtained from comparison data derived from the Graduate Medical Education report that is published annually in the *Journal of the American Medical Association (JAMA)*. Data are used with permission.

Analyses are performed using academic year and calendar year. For the most part, analyses related to programs, either a residency or a fellowship, are conducted using the academic year (July 1 to June 30). Analyses related to residents or fellows are based on their status as of December 31, referred to as “calendar year.” For clarity, the use of academic or calendar year is specified for each analysis throughout the article.

## RESULTS

In academic year 2018-2019, there are 240 accredited US categorical emergency medicine residency programs, with a total of 7,936 filled positions.<sup>†</sup> Two hundred thirty-four

categorical programs were surveyed by ABEM in 2018; 6 programs were not surveyed because their date of ACGME accreditation was after December 2018. Twenty-eight emergency medicine combined training programs were also surveyed. All surveyed programs, categorical and combined, submitted the requested program and resident information. There are 136 accredited emergency medicine–sponsored fellowship programs, with a total of 301 filled positions.<sup>‡</sup>

### Emergency Medicine Residency Programs

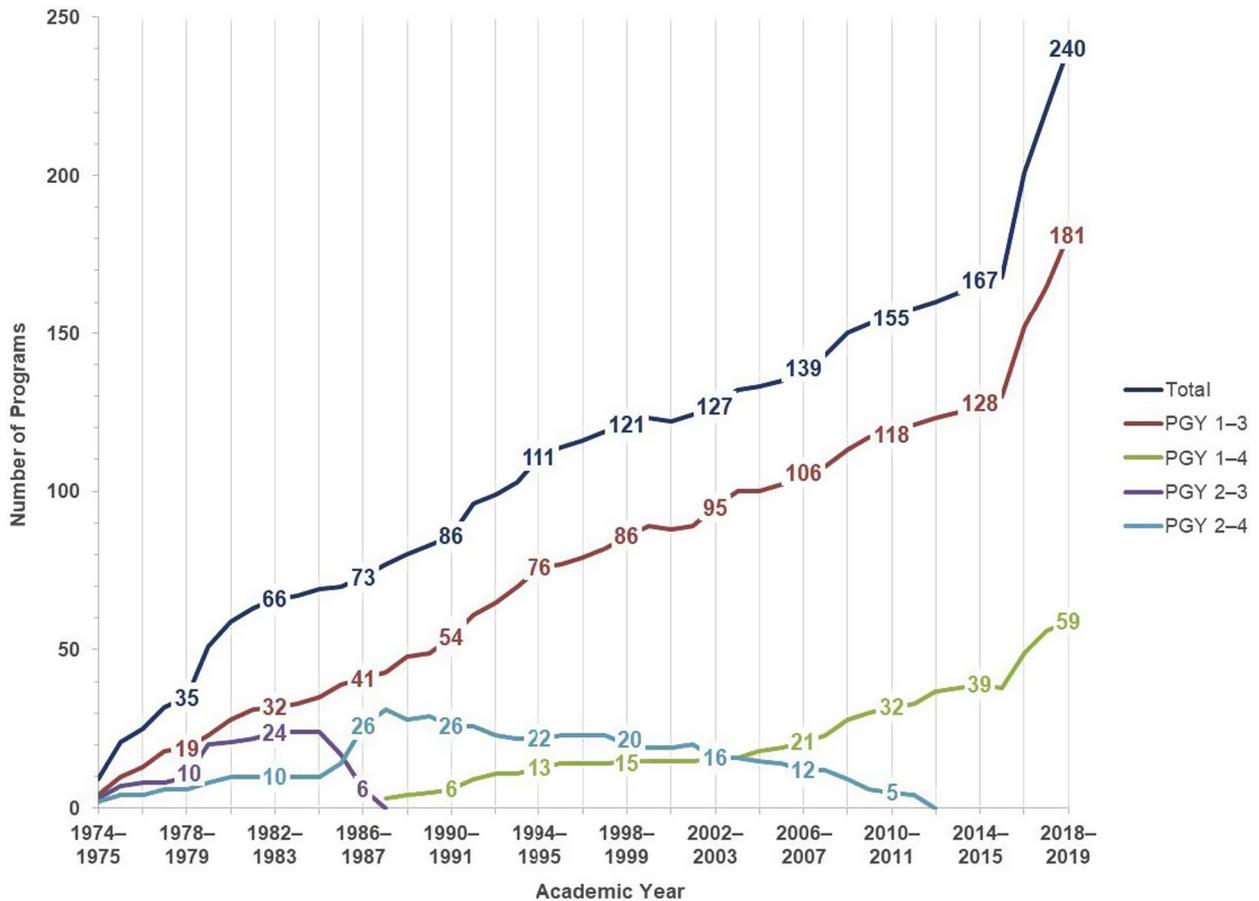
Programs were first endorsed in the early 1970s by the Liaison Residency Endorsement Committee and the ACGME began to accredit emergency medicine residency programs in 1981. [Figure 1](#) illustrates the change in the number of residency programs since the 1974-1975 academic year by program format type. The PGY 2 to 3 format ended in 1986-1987 because a 36-month residency was first required in 1988. The PGY 2 to 4 format was discontinued in 2011-2012. The Single Accreditation System (SAS) began July 1, 2015, allowing previously American Osteopathic Association (AOA)–approved emergency medicine residency programs to apply for ACGME accreditation. As a result, there has been a notable increase in the number of ACGME-accredited residency programs.

Of the 240 ACGME-accredited US categorical emergency medicine programs, 181 (75%) have a PGY 1 to 3 program format and 59 (25%) have a PGY 1 to 4 program format. The numbers of PGY 1 to 3 and PGY 1 to 4 programs increased from last year by 10% (165 to 181) and 5% (56 to 59), respectively. This reflects both an increase in allopathic programs and the transition of AOA programs under the SAS.

[Table 1](#) summarizes the number of ACGME-approved positions, applications received, and interviews held for first-year residents, as reported by categorical residency programs during the last 5 years. Applications and interviews are the number reported by programs for the academic year. The table also contains the count of reported enrolled first-year residents, which increased by 22% across all program formats from calendar years 2014 to 2018.

[Figure 2](#) presents the geographic distribution of accredited US categorical emergency medicine training programs and their enrolled residents by region within the United States. ACGME Regions 4, 5, and 7 have the greatest number of programs, with Region 4 containing 17% (N=40) of programs, whereas Regions 5 and 7 each contain 18% (N=44 and N=42, respectively) of the total programs. Regions 2 and 3 contain the smallest proportion of programs, 9%

<sup>†</sup>ACGME. March 5, 2019. Available at: <https://apps.acgme.org/ads/Public/Reports/ReportRun>.



**Figure 1.** The growth and development of ACGME-accredited residency training programs in emergency medicine (academic years 1974-1975 to 2018-2019).

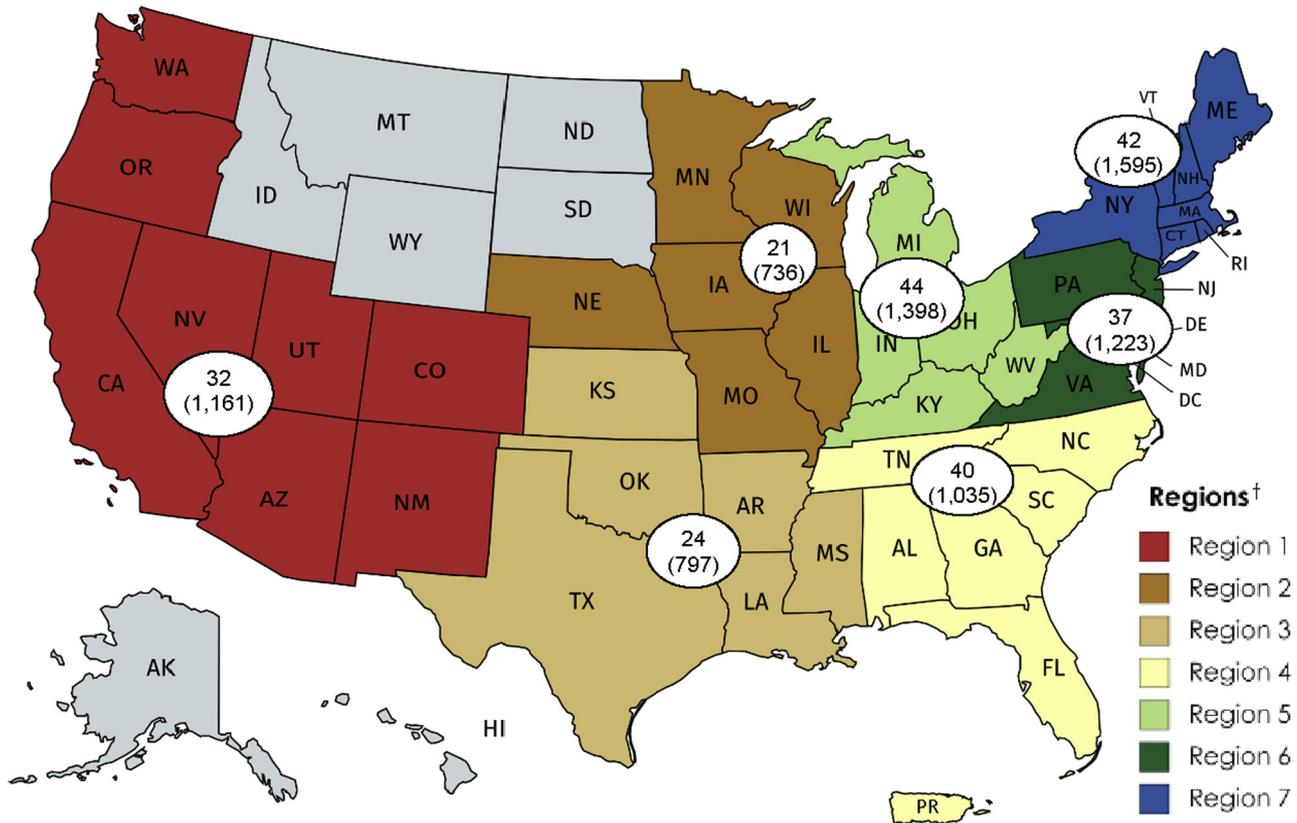
(N=21) and 10% (N=24), respectively. Compared with last year, the number of programs in Region 4 increased by 14% (35 to 40).

The full list of current ACGME-accredited US categorical emergency medicine residency training programs is contained in [Appendix 1](#). [Appendix 2](#) contains

**Table 1.** The number of first-year ACGME-approved positions, applications received, interviews held, and enrolled residents for all accredited US categorical emergency medicine training programs as reported by programs, by academic year.

Academic Year	ACGME-Approved Positions	Applications	Interviews	Enrolled First-Year Residents
<b>Program format 1-3</b>				
2014-2015	1,452	90,571 (nr=8)	15,779 (nr=8)	1,426
2015-2016	1,543	98,096 (nr=10)	17,118 (nr=10)	1,499
2016-2017	1,649	118,208 (nr=15)	19,084 (nr=14)	1,614
2017-2018	1,884	119,663 (nr=28)	19,021 (nr=25)	1,797
2018-2019	1,999	138,913 (nr=19)	21,202 (nr=18)	1,899
<b>Program format 1-4</b>				
2014-2015	495	30,423 (nr=1)	5,549 (nr=1)	667
2015-2016	536	30,630 (nr=8)	5,575 (nr=8)	702
2016-2017	657	40,152 (nr=19)	6,943 (nr=19)	690
2017-2018	708	42,119 (nr=16)	7,245 (nr=15)	648
2018-2019	678	45,705 (nr=7)	7,783 (nr=6)	665

nr, Number of programs not reported are considered missing data.



**Figure 2.** The geographic distribution of ACGME-accredited US categorical emergency medicine training programs and residents currently training in those programs (in parentheses) for 2018-2019 (see Appendix 2). Gray states (all in Region 1) do not have any emergency medicine training programs or residents.

†The regions are based on the American Medical Association (AMA) regional designations used for national level analyses (<https://www.ama-assn.org/member-groups-sections/medical-students/medical-student-section-mss-regions>).

the number of programs and residents currently training by state.

**Overview of Residents in Emergency Medicine**

As of December 31, 2018, there were 7,945 residents enrolled in ACGME-accredited US categorical emergency medicine programs, with 5,280 (66%) in PGY 1 to 3 programs and 2,654 (33%) in PGY 1 to 4 programs. Additionally, 11 (<1%) residents are completing their PGY 2 to 4 program formats.

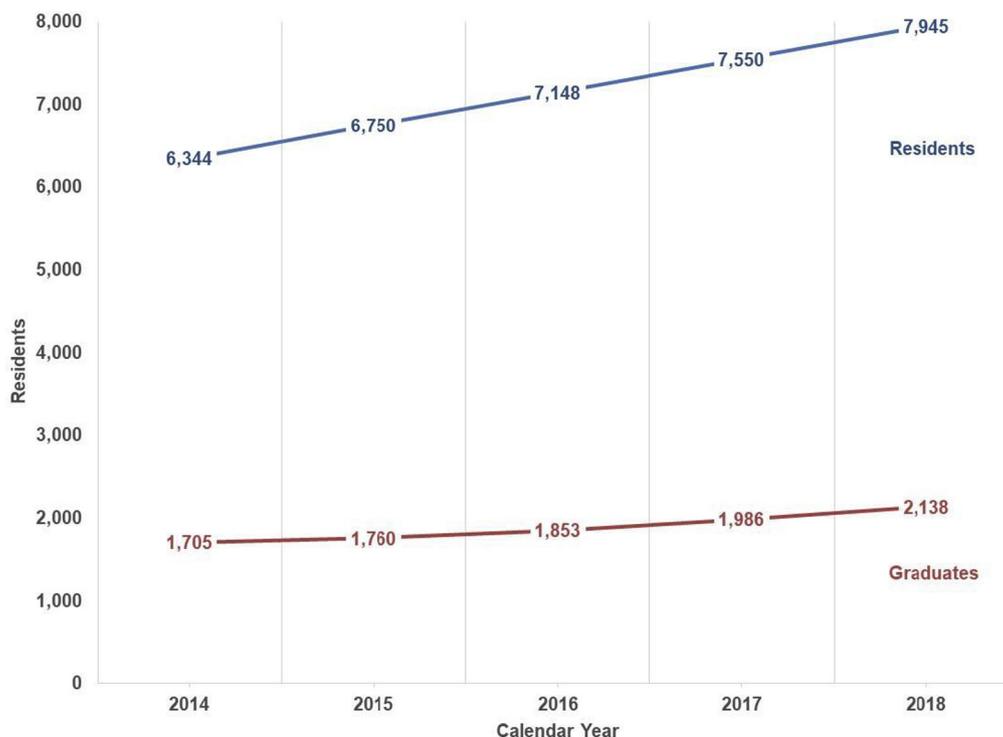
The geographic location of residents currently training in ACGME-accredited US categorical emergency medicine training programs by region is presented in Figure 2. The largest portion of residents (20%) are training in Region 7, followed closely by Region 5 (18%). Regions 1 and 6 each have 15% of residents, whereas Regions 2, 3, and 4 combined contain 32% of residents. More information at the state level is available in Appendix 2. Multiple states do not have ACGME-accredited categorical emergency medicine training programs.

From January 1, 2018, to December 31, 2018, there were 2,138 residents who graduated from categorical

emergency medicine programs. Figure 3 presents the trend in the total number of residents and residency graduates. There has been a 25% increase in residents enrolled in emergency medicine residencies during the past 5 calendar years. The increase in the total number of residents can partially be attributed to the increasing number of residents in SAS programs. As seen in Figure 3, the number of graduates has not increased at a rate parallel to that of residents. However, the number of graduates is expected to increase as SAS residents finish their programs.

Table 2 contains the distribution of emergency medicine residents by training level year, stratified by program format. The number of residents in PGY 1 to 3 programs increased with each new training year. In contrast, the number of residents in PGY 1 to 4 programs was fairly evenly distributed across the 4 training years.

In each of the previous 5 academic years, residents transferred into categorical or combined emergency medicine programs from other specialties; transferred between emergency medicine programs; or transferred out of emergency medicine categorical or combined programs.



**Figure 3.** The number of residents and graduates from ACGME-accredited US categorical emergency medicine training programs for the last 5 calendar years.

The numbers of residents transferring into emergency medicine across categorical and combined programs were 43 in 2014, 57 in 2015, 58 in 2016, 74 in 2017, and 46 in 2018. Emergency medicine resident attrition, defined as residents transferring out of emergency medicine across categorical and combined programs, was as follows: 31 in 2014, 45 in 2015, 40 in 2016, 38 in 2017, and 30 in 2018.

Figure 4 presents the composition of residents by sex and calendar year. The proportion of men and women in 2014 (64% and 36%, respectively) was equal to the proportion of men and women in 2018 (64% and 36%, respectively). The number of men from 2014 to 2018 increased by 27%, whereas the number of women from 2014 to 2018 increased by 22%. The increasing number of residents over time is partially attributed to SAS residents, as well as newly accredited training programs.

Figure 5 presents the age distribution for residents as of December 31, 2018. The median age that year was 29 years, with 59% (N=4,668) of residents being 27 to 30 years of age. The ethnic composition of residents during the past 5 calendar years is presented in Figure 6. In 2018, the largest percentage of residents were categorized as white (63%) and the second largest group identified as Asian or Pacific Islander (12%). During the last 5 years, the proportion of residents classified as other has increased by

59%, whereas the proportion of residents identified as Hispanic has increased by 39%.

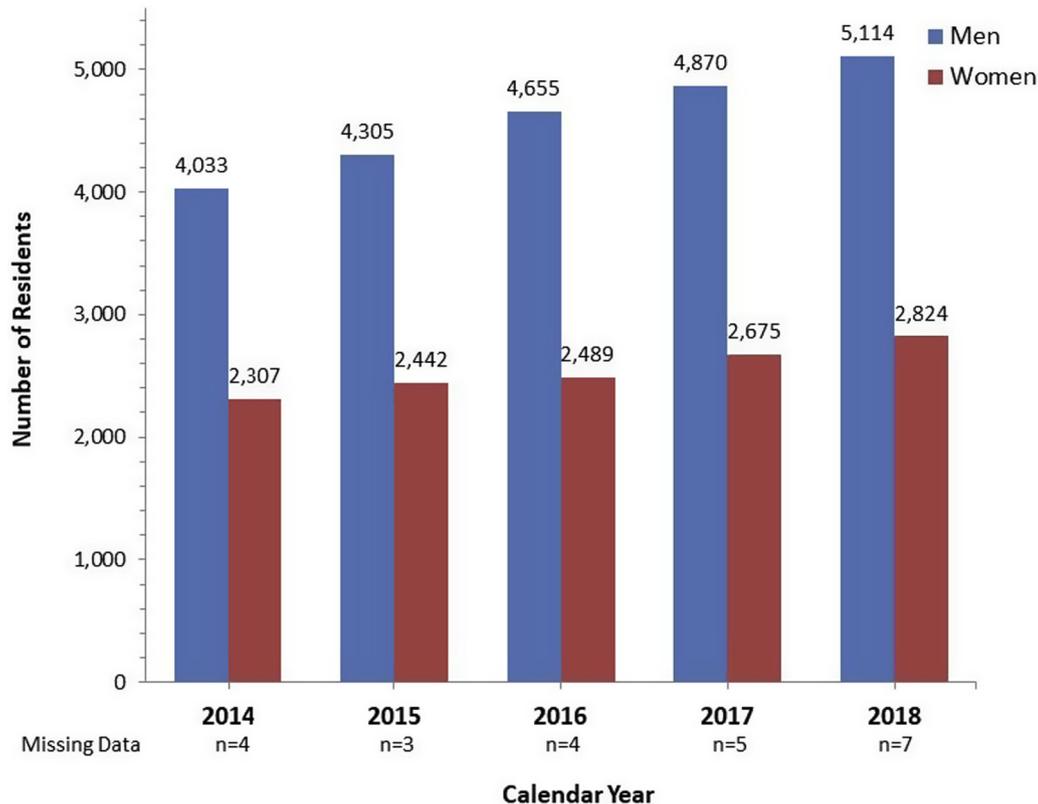
Table 3 presents ethnic composition and sex comparisons for several specialty areas of medicine in the previous academic year (2017-2018). The comparisons are made with boards of various sizes including related specialty areas of medicine. The comparison data are derived from the Graduate Medical Education report that is published annually in *JAMA* and are used with permission. *JAMA* reports ethnicity with slightly different categories than those on the ABEM residency program survey (see Figure 6). Comparisons between Figure 6 and Table 3 will also vary because of different data sources, as

**Table 2.** The number of emergency medicine residents enrolled in ACGME-accredited categorical programs, categorized by program format, for the 2018 calendar year.

PGY	PGY 1-3	PGY 1-4	Total
1	1,899	665	2,564
2	1,799	642	2,441
3	1,582	676	2,269*
4	NA	671	671
<b>Total</b>	<b>5,280</b>	<b>2,654</b>	<b>7,945*</b>

PGY, Postgraduate year; NA, not applicable.

\*Eleven residents are completing their PGY 2-4 program format. All are in PGY 3.



**Figure 4.** Comparison of residents in ACGME-accredited US categorical emergency medicine training programs, stratified by sex, for the last 5 calendar years.

well as different collection windows (academic year 2017-2018 versus calendar year 2018, respectively).

Table 4 illustrates the distribution of various degree types held by residents. From 2014 to 2018, the number of residents with DO degrees increased by 91%, whereas the number of residents with MD degrees increased by only 12%. The large increase in the number of residents with DO degrees is due to the integration of residents from programs approved via the SAS.

Table 5 presents the total number of residents by location of birth (foreign born versus US born) and location of medical school (international medical graduate versus US medical graduate) during the past 5 years. Since 2014, US-born resident numbers have steadily increased, by 29%. In contrast, foreign-born resident numbers increased by only 7% during the last 5 years. Similarly, since 2014, US medical graduate numbers have steadily increased, by 27%, whereas the number of international medical school graduates increased by only 5% during the last 5 years.

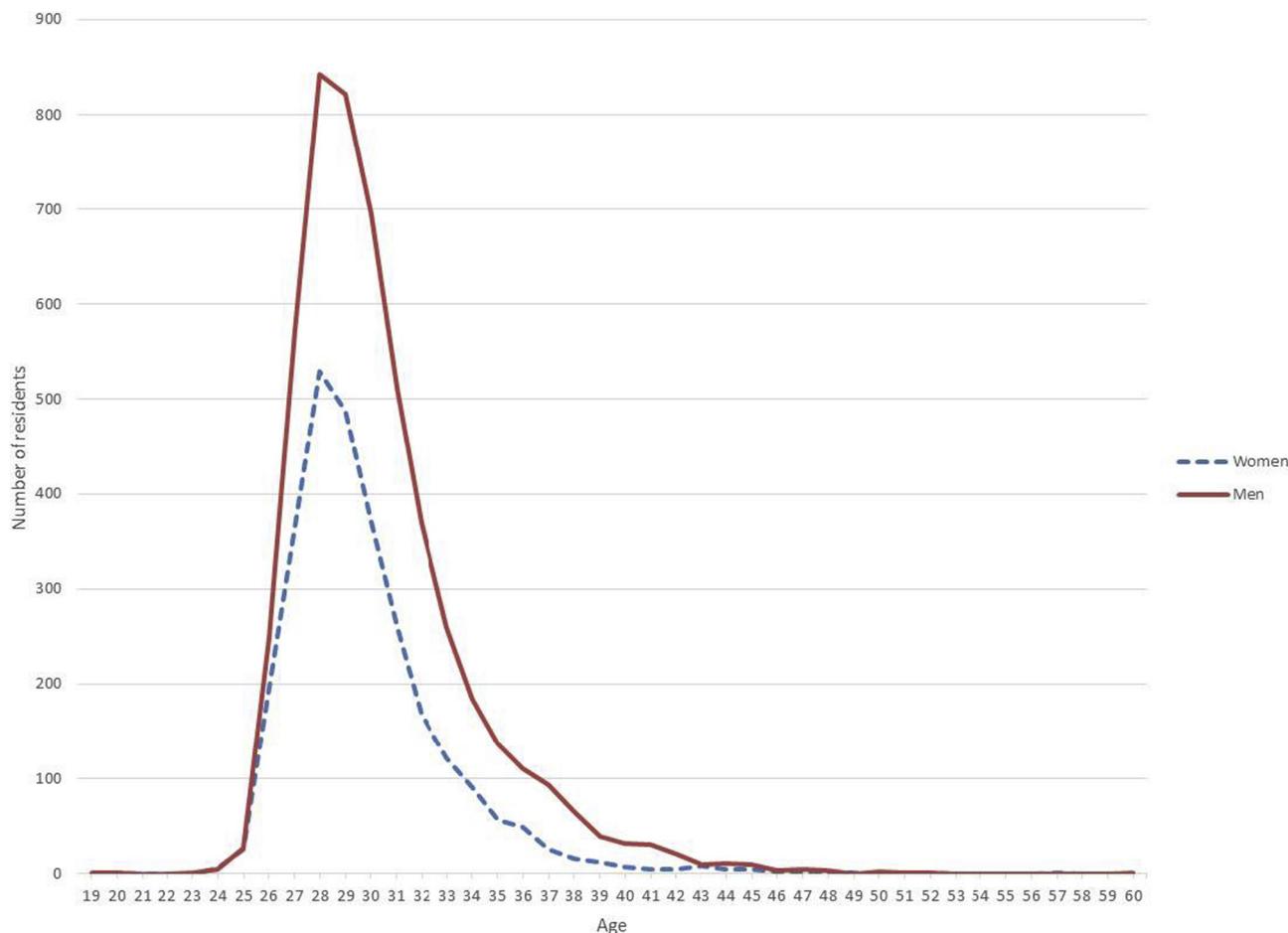
### Combined Programs

Table 6 contains data that ABEM collects from the combined emergency medicine programs. In calendar

year 2018, the combined training programs had the following numbers of residents enrolled: emergency medicine/family medicine (N=35), emergency medicine/internal medicine (N=146), emergency medicine/internal medicine/critical care medicine (N=16), and emergency medicine/pediatrics (N=41). In addition, a new combined training program format in emergency medicine/anesthesiology approved to begin training residents in the 2018-2019 academic year have 2 residents. More information in regard to the distribution of combined emergency medicine residency training programs and residents by state is available in Appendix 3.

### Examination Performance

ABEM certification examinations, the Qualifying Examination and Oral Certification Examination, are criterion referenced. Candidate pass rates are based on a board-determined standard for acceptable achievement and are independent of other candidates' performances. First-attempt pass rates in 2018 were 95% for the Qualifying Examination and 97% for the Oral Certification Examination. Pass rates for those with multiple attempts were 68% and 92%, respectively.



**Figure 5.** Distribution of age for residents currently training in ACGME-accredited US categorical emergency medicine training programs, stratified by sex, as of December 31, 2018.

**Fellowship Training Programs**

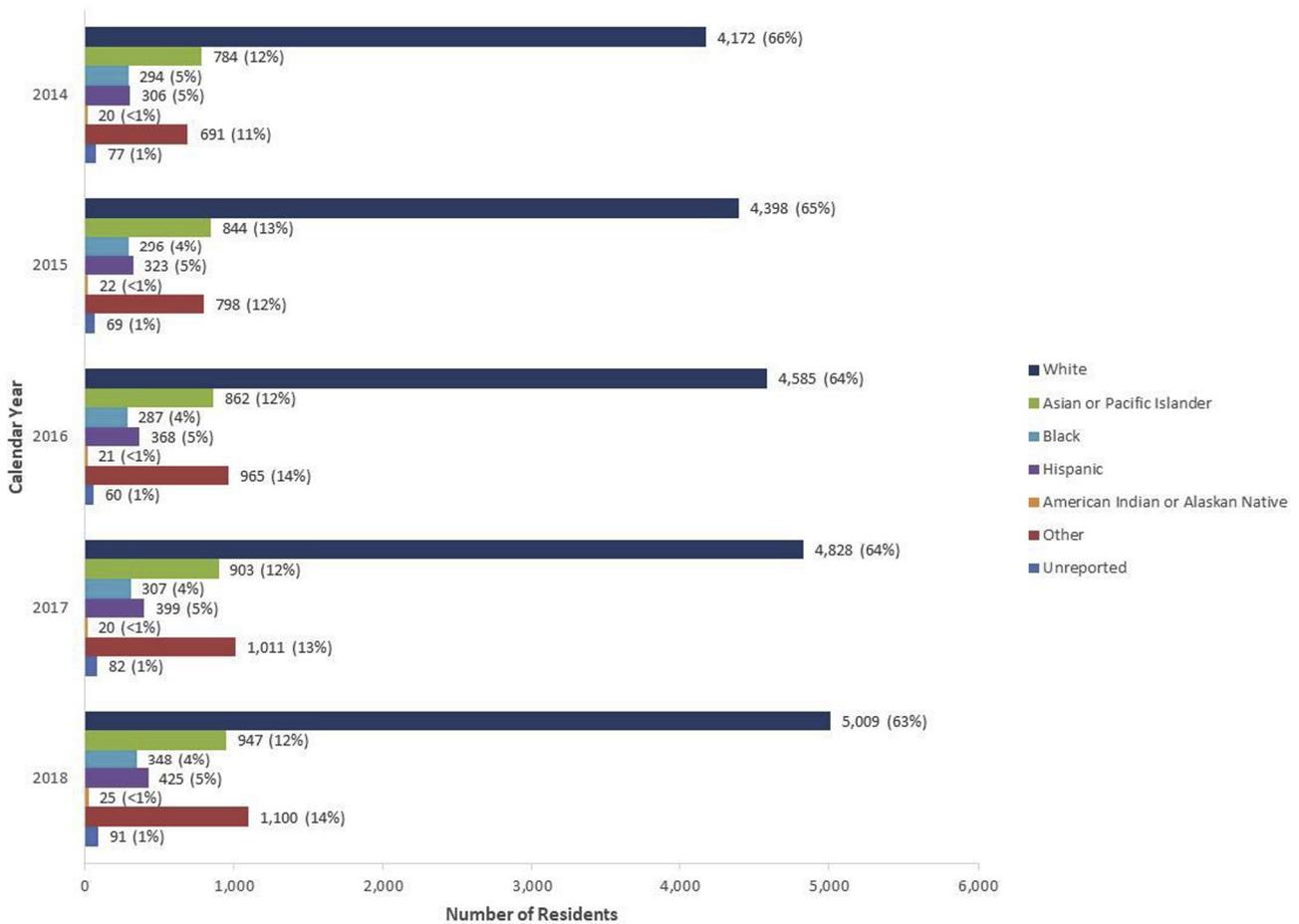
Table 7 presents the change in number of accredited emergency medicine–sponsored fellowship programs by subspecialty during the past 5 academic years.

Emergency medicine sponsors 136 ACGME-accredited fellowship programs in the subspecialties of clinical informatics (N=4), emergency medical services (N=63), medical toxicology (N=27), pediatric emergency medicine (N=26), sports medicine (N=9), and undersea and hyperbaric medicine (N=7). During the last 5 academic years, the number of emergency medicine–sponsored fellowships has increased at various rates. For example, the number of emergency medical services fellowships increased at a faster rate than the number of medical toxicology fellowships. In contrast, the number of undersea and hyperbaric medicine fellowships appears to have plateaued at 7 since 2016-2017.

Table 8 presents the reported numbers of fellows enrolled in ACGME-approved fellowship programs, by

subspecialty, during the last 5 calendar years who are eligible to apply for an ABEM-issued certification. In 2018, there were at least 455 fellows enrolled in ACGME-accredited fellowship programs whose fellows are eligible for ABEM-issued certification in these 9 subspecialties: anesthesiology critical care medicine (N=37), emergency medical services (N=111), hospice and palliative medicine (N=35), internal medicine–critical care medicine<sup>‡</sup> (N=90), medical toxicology (N=100), pain medicine (N=4), pediatric emergency medicine (N=44), sports medicine (N=30), and undersea and hyperbaric medicine (N=4). The number of fellows enrolled in these subspecialties increased between 2014 and 2018 except for pediatric emergency medicine, sports medicine, and undersea and hyperbaric medicine. Specifically, during

<sup>‡</sup>The number of fellows in internal medicine–critical care medicine is a combination of the total number of fellows in internal medicine–critical care medicine and critical care–pulmonary medicine.



**Figure 6.** Ethnic composition of enrolled residents in ACGME-accredited US categorical emergency training programs during the last 5 calendar years, from the ABEM residency training information survey.

5 years, the number of fellows enrolled in pediatric emergency medicine decreased by 19% (54 to 44); in sports medicine, by 12% (34 to 30); and undersea and hyperbaric medicine, by 64% (11 to 4). A tenth subspecialty in neurocritical care was approved to begin training in the 2018-2019 academic year; currently, there are no programs or fellows to report.

Other subspecialty certifications are available to ABEM emergency medicine diplomates through other ABMS boards, such as addiction medicine, clinical informatics, brain injury medicine, and surgical critical care.

**DISCUSSION**

The number of US categorical emergency medicine programs has grown steadily since 1975 until approximately 2015, when the formerly AOA-accredited programs began to transition to ACGME-accredited programs under the SAS initiative. The opportunity for AOA-approved programs to make the

transition will be completed by 2020. Of the 2 program formats currently offered, PGY 1 to 3 and PGY 1 to 4, both had a marked increase in the number of ACGME-accredited programs in 2018.

During the last 5 years, there has been a general upward trend in the number of residents and graduates in which the number of residents is increasing at a faster rate than the number of graduates. Resident growth is due to a combination of an increase in programs and the implementation of the SAS, whereby traditionally AOA-approved residencies are becoming ACGME accredited. The number of graduates is expected to start increasing at a faster rate in a few years as these residents finish their programs. Like the increase in residency programs and residents, the number of graduates from fellowship programs in specialties for which ABEM issues a certification has also increased for most of the subspecialties.

During the last 5 calendar years, demographic characteristics have changed slightly compared with those

**Table 3.** Demographic comparisons for emergency medicine residents and residents in related specialty areas of medicine for the previous academic year (2017-2018), from the National GME Census.\*

Specialty	Emergency Medicine No. (%)	Family Medicine No. (%)	Internal Medicine No. (%)	Obstetrics and Gynecology No. (%)	Orthopedic Surgery No. (%)	Pediatrics No. (%)	Psychiatry No. (%)	Surgery, General No. (%)
<b>Ethnicity</b>								
Black	316 (4)	874 (8)	1,522 (6)	461 (9)	157 (4)	511 (6)	408 (7)	447 (5)
American Indian /Alaskan Native	6 (<1)	34 (<1)	17 (<1)	10 (<1)	5 (<1)	20 (<1)	7 (<1)	18 (<1)
White	4,992 (70)	6,505 (57)	11,214 (43)	3,437 (64)	2,848 (73)	5,263 (59)	3,058 (54)	5,641 (64)
Asian	1,015 (14)	2,572 (23)	9,615 (37)	797 (15)	519 (13)	1,949 (22)	1,522 (27)	1,716 (19)
Native Hawaiian /Pacific Islander	6 (<1)	20 (<1)	31 (<1)	3 (<1)	2 (<1)	5 (<1)	3 (<1)	8 (<1)
Multiracial†	223 (3)	356 (3)	641 (2)	173 (3)	106 (3)	271 (3)	208 (4)	248 (3)
Other /unknown	578 (8)	1,020 (9)	3,188 (12)	465 (9)	252 (6)	839 (9)	495 (9)	733 (8)
Hispanic origin‡	546 (8)	1,023 (9)	2,029 (8)	542 (10)	216 (6)	881 (10)	517 (9)	748 (8)
<b>Sex</b>								
Male	4,605 (65)	5,270 (46)	15,233 (58)	920 (17)	3,290 (85)	2,491 (28)	2,844 (50)	5,285 (60)
Female	2,531 (35)	6,111 (54)	10,995 (42)	4,426 (83)	599 (15)	6,367 (72)	2,857 (50)	3,526 (40)
<b>IMG</b>	356 (5)	3,268 (29)	9,928 (38)	493 (9)	73 (2)	1,593 (18)	1,459 (26)	1,324 (15)
<b>Total Resident Physicians</b>	<b>7,136</b>	<b>11,381</b>	<b>26,228</b>	<b>5,346</b>	<b>3,889</b>	<b>8,858</b>	<b>5,701</b>	<b>8,811</b>

IMG, International medical graduate.

Includes resident physicians on duty as of December 31, 2017, reported through the 2017 National GME Census.

\*Source: Adapted from Brotherton SE, Etzel SI. Graduate Medical Education, 2017-2018. *JAMA*. 2018;320(10):1051-1070. ©2018. American Medical Association. All rights reserved.

†“Multiracial” refers to residents who have self-identified as more than one race.

‡Following the US Census Bureau, the National GME Census asked for race and Hispanic ethnicity in 2 separate questions. A person of Hispanic ethnicity can be of any race. Hispanic origin counts are not included in the total count of resident physicians.

of the 2014 residents. The number of men in emergency medicine has continued to increase at a faster rate over time (27%) compared with that of women (22%). Compared with 2014, the proportion of residents identified as white has slightly declined, whereas the proportion of residents identified as other has slightly increased.

**SUMMARY**

These data portray the recent status of training within the specialty, as well as the activity of emergency

**Table 4.** Medical degree held by residents training in ACGME-accredited US categorical emergency medicine training programs during the last 5 calendar years.\*

Calendar Year	MD No. (%)	DO No. (%)	Other Degrees† No. (%)
2014	5,210 (82)	1,075 (17)	59 (1)
2015	5,328 (79)	1,369 (20)	53 (1)
2016	5,473 (77)	1,622 (23)	53 (1)
2017	5,650 (75)	1,845 (24)	55 (1)
2018	5,829 (73)	2,050 (26)	66 (1)

\*Percentages may not total 100 because of rounding.

†Bachelor of medicine, bachelor of surgery, PhD, or a combination of these.

physicians across various subspecialties. The information presented in this article yields 3 main conclusions. First, there is continuous growth within the specialty of

**Table 5.** Location of birth and medical school for residents currently training in ACGME-accredited US categorical emergency medicine training programs for the last 5 calendar years.

Calendar Year	Foreign Born No. (%)	US Born No. (%)
<b>IMG</b>		
2014	143 (42)	200 (58)
2015	145 (41)	205 (59)
2016	146 (39)	229 (61)
2017	138 (38)	224 (62)
2018	128 (35)	233 (65)
<b>USMG</b>		
2014	730 (12)	5,157 (88)
2015	786 (13)	5,484 (87)
2016	865 (13)	5,757 (87)
2017	916 (13)	6,122 (87)
2018	804 (11)	6,651 (89)

IMG, International medical graduate; USMG, US medical graduate.

Missing data: 2014, n=114; 2015, n=130; 2016, n=151; 2017, n=150; and 2018, n=129.

**Table 6.** The number of residents enrolled in combined training programs, stratified by sex, for the last 5 calendar years.\*

Calendar Year	Emergency Medicine/ Family Medicine		Emergency Medicine/ Internal Medicine		Emergency Medicine/ Internal Medicine/ Critical Care Medicine		Emergency Medicine/ Pediatrics		Emergency Medicine/ Anesthesiology	
	Men No. (%)	Women No. (%)	Men No. (%)	Women No. (%)	Men No. (%)	Women No. (%)	Men No. (%)	Women No. (%)	Men No. (%)	Women No. (%)
2014	12 (52)	11 (48)	77 (65)	42 (35)	12 (63)	7 (37)	18 (49)	19 (51)		
2015	14 (52)	13 (48)	90 (70)	39 (30)	14 (61)	9 (39)	18 (46)	21 (54)		
2016	15 (50)	15 (50)	96 (70)	42 (30)	16 (76)	5 (24)	18 (47)	20 (53)		
2017	15 (47)	17 (53)	90 (64)	51 (36)	16 (76)	5 (24)	19 (46)	22 (54)		
2018	16 (46)	19 (54)	95 (65)	51 (35)	12 (75)	4 (25)	19 (46)	22 (54)	1 (50)	1 (50)

\*Percentages may not total 100 because of rounding.

**Table 7.** Number of ACGME-accredited fellowship programs sponsored by emergency medicine, stratified by subspecialty, for the last 5 academic years.

Academic Year	Clinical Informatics	Emergency Medical Services	Medical Toxicology	Pediatric Emergency Medicine	Sports Medicine	Undersea and Hyperbaric Medicine
2014–2015	1	41	25	22	6	6
2015–2016	1	46	26	22	7	6
2016–2017	3	53	26	25	7	7
2017–2018	4	58	26	26	8	7
2018–2019	4	63	27	26	9	7

emergency medicine postgraduate training community. Second, the SAS has had a significant influence on growth of ACGME-accredited programs. Third, demographic characteristics of emergency medicine residents have not substantially changed during the last 5 years; most residents are white men. It is ABEM's desire

that the information contained in this publication (1) inform educators in regard to training issues in emergency medicine; (2) assist policymakers in arriving at well-informed decisions; (3) provide investigators with descriptive data that may facilitate further inquiry; and (4) offer the emergency medicine community, as well as

**Table 8.** Number of fellows eligible for an ABEM-issued certificate enrolled in ACGME-accredited fellowship programs, stratified by subspecialty, for the previous 5 calendar years.

Calendar Year	Anesthesiology Critical Care Medicine	Emergency Medical Services	Hospice and Palliative Medicine	Internal Medicine– Critical Care Medicine*	Medical Toxicology	Pain Medicine	Pediatric Emergency Medicine	Sports Medicine	Undersea and Hyperbaric Medicine
2014	14	84	26	87	85	1	54	34	11
2015	26	99	32	91	92	2	54	43	10
2016	33	110	27	91	86	1	52	47	12
2017	34	110	34	84	95	2	45	35	10
2018	37	111	35	90	100	4	44	30	4

\*The number of fellows in internal medicine–critical care medicine combines fellows in internal medicine–critical care medicine and critical care–pulmonary medicine fellowships.

the medical community at large, a better understanding of the evolution and dynamic nature of residency and fellowship training in emergency medicine.

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This article was not peer reviewed by the *Annals of Emergency Medicine* editorial board or reviewers.

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## APPENDIX

**Appendix 1.** Currently accredited US categorical residency training programs in emergency medicine: accredited by the ACGME as of March 5, 2019.\*

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Adena Regional Medical Center
Advocate Health Care (Advocate Christ Medical Center)
Akron General Medical Center/NEOMED
Alameda Health System–Highland Hospital
Albany Medical Center
Albert Einstein Healthcare Network
Allegheny Health Network Medical Education Consortium
Allegheny Health Network Medical Education Consortium (AGH)
Arnot Ogden Medical Center
Arrowhead Regional Medical Center
Ascension Macomb-Oakland Hospital
Ascension St John Hospital
Atlantic Health (Morristown)
Aventura Hospital and Medical Center
Baylor College of Medicine
Beaumont Health (Farmington Hills)
Beaumont Health (Royal Oak)
Beaumont Health (Trenton and Dearborn)
Beth Israel Deaconess Medical Center/Harvard Medical School
Boston University Medical Center
Brookdale University Hospital and Medical Center
Brooklyn Hospital Center
Brown University
Campbell University/Cape Fear Valley Medical Center
Campbell University/Southeastern Regional Medical Center
Carilion Clinic–Virginia Tech Carilion School of Medicine
Carolinas Medical Center
Case Western Reserve University (MetroHealth)
Case Western Reserve University/University Hospitals Cleveland Medical Center
Central Michigan University College of Medicine
Charleston Area Medical Center
Christiana Care Health Services
CHRISTUS Health/Texas A&M College of Medicine/Spohn Hospital
Conemaugh Memorial Medical Center
Cook County Health and Hospitals System
Cooper Medical School of Rowan University/Cooper University Hospital
Creighton University School of Medicine/Maricopa Medical Center (Phoenix)

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**Appendix 1.** Continued.

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Crozer-Chester Medical Center  
Darnall Army Medical Center  
Denver Health Medical Center  
Desert Regional Medical Center  
Detroit Medical Center/Wayne State University (Detroit Receiving Hospital)  
Detroit Medical Center/Wayne State University (Sinai Grace)  
Doctors Hospital/OhioHealth  
Drexel University College of Medicine/Hahnemann University Hospital  
Duke University Hospital  
Eastern Virginia Medical School  
Eisenhower Medical Center  
Emory University School of Medicine  
Florida Atlantic University Charles E. Schmidt College of Medicine  
Florida Hospital Medical Center  
Florida State University College of Medicine  
Geisinger Health System  
Genesys Regional Medical Center  
George Washington University  
Good Samaritan Hospital Medical Center  
Grand Strand Regional Medical Center  
Hackensack University Medical Center  
HCA West Florida GME Consortium/Brandon Regional Hospital  
HCA West Florida GME Consortium/Oak Hill Hospital  
HealthPartners Institute/Regions Hospital  
Hennepin Healthcare  
Henry Ford Allegiance Health  
Henry Ford Hospital/Wayne State University  
Henry Ford Macomb Hospital  
Henry Ford Wyandotte Hospital  
Hospital Episcopal San Lucas/Ponce School of Medicine  
Icahn School of Medicine at Mount Sinai  
Icahn School of Medicine at Mount Sinai (Beth Israel)  
Icahn School of Medicine at Mount Sinai/St Luke's–Roosevelt Hospital Center  
Indiana University School of Medicine  
Inspira Medical Center Woodbury  
Integris Health  
Jackson Memorial Hospital/Jackson Health System  
Jefferson Health Northeast  
John Peter Smith Hospital (Tarrant County Hospital District)  
Johns Hopkins University  
Kaiser Permanente Southern California  
Kaweah Delta Health Care District (KDHCD)  
Kendall Regional Medical Center  
Kent Hospital  
Kern Medical Center  
Kettering Health Network  
Lakeland Health  
Lehigh Valley Health Network/University of South Florida College of Medicine

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**Appendix 1.** Continued.

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Lincoln Medical and Mental Health Center  
Loma Linda University Health Education Consortium  
Los Angeles County–Harbor–UCLA Medical Center  
Louisiana State University  
Louisiana State University (Baton Rouge)  
Louisiana State University (Shreveport)  
Loyola University Medical Center  
Madigan Army Medical Center  
Maimonides Medical Center  
Maine Medical Center  
Mary Hitchcock Memorial Hospital/Dartmouth-Hitchcock  
Massachusetts General Hospital/Brigham and Women’s Hospital/Harvard Medical School  
Mayo Clinic College of Medicine and Science (Rochester)  
McGaw Medical Center of Northwestern University  
McLaren Health Care/Macomb/MSU  
McLaren Health Care/Oakland/MSU  
Medical College of Georgia  
Medical College of Wisconsin Affiliated Hospitals  
Medical University of South Carolina  
MedStar Health/Georgetown–Washington Hospital Center  
Memorial Health System  
Mercy Health  
Mercy St Vincent Medical Center/Mercy Health Partners  
Merit Health Wesley  
Metro Health University of Michigan Health (Metro Health)  
Midwestern University Osteopathic Postdoctoral Training Institute  
Montefiore Medical Center/Albert Einstein College of Medicine (Jacobi/Montefiore)  
Mount Sinai Medical Center of Florida, Inc.  
Mountain State Osteopathic Postdoctoral Training Institutions (MSOPTI)/Ohio Valley Medical Center  
Nassau University Medical Center  
Naval Medical Center (Portsmouth)  
Naval Medical Center (San Diego)  
New York Medical College (Metropolitan)  
New York Presbyterian Hospital  
New York University School of Medicine  
New York–Presbyterian Brooklyn Methodist Hospital  
New York–Presbyterian/Queens  
Newark Beth Israel Medical Center  
NYCOMEC  
Ohio State University Hospital  
Oklahoma State University Center for Health Sciences (Lawton)  
Oklahoma State University Center for Health Sciences (Norman)  
Oklahoma State University Center for Health Sciences (Tulsa)  
Orange Park Medical Center  
Oregon Health & Science University  
Orlando Health  
Palm Beach Consortium for Graduate Medical Education  
Palmetto Health/University of South Carolina School of Medicine

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**Appendix 1.** Continued.

Penn State Milton S Hershey Medical Center  
 Presence Resurrection Medical Center  
 Prisma Health–Upstate/University of South Carolina School of Medicine Greenville  
 ProMedica Monroe Regional Hospital  
 Reading Hospital  
 Riverside Community Hospital/University of California Riverside School of Medicine  
 Rowan SOM/Jefferson Health/Our Lady of Lourdes Health System  
 Rush University Medical Center  
 Rutgers New Jersey Medical School  
 Rutgers Robert Wood Johnson Medical School  
 San Antonio Uniformed Services Health Education Consortium  
 Sidney Kimmel Medical College at Thomas Jefferson University/TJUH  
 Southern Illinois University School of Medicine  
 Sparrow Hospital/Michigan State University  
 Spectrum Health/Michigan State University  
 St Barnabas Hospital  
 St Elizabeth Boardman Hospital  
 St Joseph's Medical Center  
 St Joseph's University Medical Center  
 St Louis University School of Medicine  
 St Luke's Hospital  
 St Mary Mercy Hospital  
 St. John's Riverside Hospital  
 Stanford Health Care–Sponsored Stanford University/Kaiser Permanente Medical Center  
 Stony Brook Medicine/University Hospital  
 Sunrise Health GME Consortium  
 SUNY Health Science Center at Brooklyn  
 SUNY Upstate Medical University  
 Temple University Hospital  
 Texas A&M College of Medicine–Scott and White Medical Center (Temple)  
 Texas Tech University Health Sciences Center–PLFSOM  
 UCLA David Geffen School of Medicine/UCLA Medical Center/Olive View  
 UMMS-Baystate  
 Unity Health–White County Medical Center  
 University at Buffalo  
 University Hospitals Osteopathic Consortium (UHOC)  
 University of Alabama Medical Center  
 University of Arizona College of Medicine–Tucson  
 University of Arizona College of Medicine–Tucson (South Campus)  
 University of Arkansas for Medical Sciences  
 University of California (Irvine)  
 University of California (San Diego) Medical Center  
 University of California (San Francisco)/Fresno  
 University of California (San Francisco)/San Francisco General Hospital  
 University of California Davis Health  
 University of Central Florida/HCA GME Consortium (Gainesville)  
 University of Central Florida/HCA GME Consortium (Greater Orlando)  
 University of Central Florida/HCA GME Consortium (Ocala)

**Appendix 1.** Continued.

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University of Chicago

University of Cincinnati Medical Center/College of Medicine

University of Connecticut

University of Florida

University of Florida College of Medicine Jacksonville

University of Illinois College of Medicine at Chicago

University of Illinois College of Medicine at Peoria

University of Iowa Hospitals and Clinics

University of Kansas School of Medicine

University of Kentucky College of Medicine

University of Louisville School of Medicine

University of Maryland

University of Massachusetts

University of Michigan Health System

University of Mississippi Medical Center

University of Missouri–Columbia

University of Missouri–Kansas City School of Medicine

University of Nebraska Medical Center

University of Nevada Las Vegas (UNLV) School of Medicine

University of New Mexico School of Medicine

University of North Carolina Hospitals

University of Oklahoma School of Community Medicine (Tulsa)

University of Pennsylvania Health System

University of Puerto Rico

University of Rochester

University of South Alabama Hospitals

University of South Florida Morsani

University of Southern California/LAC+USC Medical Center

University of Tennessee College of Medicine at Chattanooga

University of Tennessee College of Medicine at Memphis

University of Tennessee College of Medicine at Murfreesboro

University of Texas at Austin Dell Medical School

University of Texas Health Science Center at Houston

University of Texas Health Science Center San Antonio Joe and Teresa Lozano Long School of Medicine

University of Texas Southwestern Medical School

University of Toledo

University of Utah Health

University of Vermont Medical Center

University of Virginia Medical Center

University of Washington

University of Wisconsin Hospitals and Clinics

UPMC Medical Education (Erie)

UPMC Medical Education (Pittsburgh)

Vanderbilt University Medical Center

Vidant Medical Center/East Carolina University

Virginia Commonwealth University Health System

Wake Forest University School of Medicine

Washington University/B-JH/SLCH Consortium

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**Appendix 1.** Continued.

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WellStar Kennestone Regional Medical Center

West Virginia University

Western Michigan University Homer Stryker MD School of Medicine

Wright State University

Wyckoff Heights Medical Center

Yale–New Haven Medical Center

York Hospital

Zucker School of Medicine at Hofstra/Northwell

Zucker School of Medicine at Hofstra/Northwell A

Zucker School of Medicine at Hofstra/Northwell at Southside Hospital

Zucker School of Medicine at Hofstra/Northwell at Staten Island University Hospital

\*Names of emergency medicine programs as they appeared on the ACGME Web site (<http://www.acgme.org>) on March 5, 2019.

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**Appendix 2.** ACGME-accredited US categorical residency training programs and residents by state.\*

State <sup>†</sup>	USMG in Categorical Programs		IMG in Categorical Programs		Not Reported <sup>‡</sup>	Emergency Medicine Resident Total		Categorical Programs	
	N	(%)	N	(%)	N	N	(%)	N	(%)
Alabama (AL) <sup>§</sup>	30	(<1)	0	(0)	0	30	(<1)	2	(<1)
Arizona (AZ)	122	(2)	0	(0)	1	123	(2)	4	(2)
Arkansas (AR)	38	(<1)	1	(<1)	0	39	(<1)	2	(<1)
California (CA) <sup>§</sup>	737	(10)	9	(2)	2	748	(9)	20	(8)
Colorado (CO)	66	(<1)	1	(<1)	1	68	(<1)	1	(<1)
Connecticut (CT)	106	(1)	8	(2)	0	114	(1)	2	(<1)
Delaware (DE)	37	(<1)	0	(0)	0	37	(<1)	1	(<1)
Florida (FL) <sup>§</sup>	386	(5)	30	(8)	2	418	(5)	18	(8)
Georgia (GA)	108	(1)	6	(2)	0	114	(1)	3	(1)
Illinois (IL) <sup>§</sup>	376	(5)	4	(1)	3	383	(5)	10	(4)
Indiana (IN)	59	(<1)	2	(<1)	0	61	(<1)	1	(<1)
Iowa (IA)	28	(<1)	0	(0)	1	29	(<1)	1	(<1)
Kansas (KS)	24	(<1)	0	(0)	0	24	(<1)	1	(<1)
Kentucky (KY)	64	(<1)	1	(<1)	0	65	(<1)	2	(<1)
Louisiana (LA)	106	(1)	5	(1)	0	111	(1)	3	(1)
Maine (ME)	29	(<1)	0	(0)	1	30	(<1)	1	(<1)
Maryland (MD)	77	(1)	10	(3)	0	87	(1)	2	(<1)
Massachusetts (MA)	226	(3)	2	(<1)	2	230	(3)	5	(2)
Michigan (MI)	693	(9)	44	(12)	19	756	(10)	24	(10)
Minnesota (MN)	92	(1)	0	(0)	0	92	(1)	3	(1)
Mississippi (MS)	55	(<1)	4	(1)	2	61	(<1)	2	(<1)
Missouri (MO)	131	(2)	5	(1)	1	137	(2)	4	(2)
Nebraska (NE)	29	(<1)	0	(0)	0	29	(<1)	1	(<1)
Nevada (NV)	41	(<1)	0	(0)	0	41	(<1)	2	(<1)
New Hampshire (NH)	18	(<1)	0	(0)	0	18	(<1)	1	(<1)
New Jersey (NJ)	227	(3)	37	(10)	0	264	(3)	9	(4)
New Mexico (NM)	36	(<1)	1	(<1)	0	37	(<1)	1	(<1)
New York (NY) <sup>§</sup>	1,005	(13)	101	(28)	18	1,124	(14)	30	(13)
North Carolina (NC)	211	(3)	8	(2)	0	219	(3)	7	(3)
Ohio (OH) <sup>§</sup>	419	(6)	16	(4)	15	450	(6)	14	(6)
Oklahoma (OK)	116	(2)	0	(0)	1	117	(1)	5	(2)
Oregon (OR)	32	(<1)	1	(<1)	0	33	(<1)	1	(<1)
Pennsylvania (PA)	560	(7)	15	(4)	16	591	(7)	18	(8)
Puerto Rico (PR)	35	(<1)	16	(4)	0	51	(<1)	2	(<1)
Rhode Island (RI)	76	(1)	3	(<1)	0	79	(<1)	2	(<1)
South Carolina (SC)	100	(1)	0	(0)	1	101	(1)	4	(2)
Tennessee (TN)	99	(1)	2	(<1)	1	102	(1)	4	(2)
Texas (TX)	419	(6)	22	(6)	4	445	(6)	11	(5)
Utah (UT)	25	(<1)	1	(<1)	1	27	(<1)	1	(<1)
Vermont (VT) <sup>§</sup>	0	(0)	0	(0)	0	0	(0)	1	(<1)
Virginia (VA)	171	(2)	2	(<1)	1	174	(2)	5	(2)
Washington (WA)	84	(1)	0	(0)	0	84	(1)	2	(<1)

**Appendix 2.** Continued.

State <sup>†</sup>	USMG in Categorical Programs		IMG in Categorical Programs		Not Reported <sup>‡</sup>	Emergency Medicine Resident Total		Categorical Programs	
	N	(%)	N	(%)	N	N	(%)	N	(%)
Washington, DC (DC)	66	(<1)	4	(1)	0	70	(<1)	2	(<1)
West Virginia (WV)	66	(<1)	0	(0)	0	66	(<1)	3	(1)
Wisconsin (WI)	66	(<1)	0	(0)	0	66	(<1)	2	(<1)
<b>Total</b>	<b>7,491</b>		<b>361</b>		<b>93</b>	<b>7,945</b>		<b>240</b>	

\*This report reflects the status of data contained in the ABEM Residency Training Information System as of March 5, 2019. Percentages may not total 100 because of rounding.

<sup>†</sup>States not listed do not have a US categorical residency program.

<sup>‡</sup>Programs did not report a resident's medical school location.

<sup>§</sup>Includes a new categorical program that has not yet begun training residents.

**Appendix 3.** ABEM-approved combined emergency medicine residency training programs and residents by state.\*

State <sup>†</sup>	USMG in Combined Programs		IMG in Combined Programs		Not Reported <sup>‡</sup>	Combined Resident Total		Combined Programs	
	No.	(%)	No.	(%)	No.	No.	(%)	No.	(%)
Arizona (AZ)	11	(5)	4	(24)	0	15	(6)	1	(4)
Delaware (DE)	22	(10)	1	(6)	1	24	(10)	2	(7)
Illinois (IL)	15	(7)	0	(0)	0	15	(6)	1	(4)
Indiana (IN)	8	(4)	2	(12)	0	10	(4)	1	(4)
Louisiana (LA)	22	(10)	4	(24)	0	26	(11)	3	(11)
Maryland (MD)	20	(9)	1	(6)	0	21	(9)	4	(14)
Michigan (MI)	10	(5)	2	(12)	0	12	(5)	3	(11)
Minnesota (MN)	10	(5)	1	(6)	0	11	(5)	2	(7)
New York (NY)	29	(13)	1	(6)	2	32	(13)	4	(14)
North Carolina (NC)	11	(5)	1	(6)	0	12	(5)	2	(7)
Ohio (OH)	10	(5)	0	(0)	1	11	(5)	1	(4)
Pennsylvania (PA)	41	(19)	0	(0)	0	41	(17)	3	(11)
Virginia (VA)	10	(5)	0	(0)	0	10	(4)	1	(4)
<b>Total</b>	<b>219</b>		<b>17</b>		<b>4</b>	<b>240</b>		<b>28</b>	

\*This report reflects the status of data contained in the ABEM Residency Training Information System as of March 5, 2019. Percentages may not total 100 because of rounding.

<sup>†</sup>States not listed do not have a US combined residency program.

<sup>‡</sup>Programs did not report a resident's medical school location.