

ILLINOIS GRADUATE MEDICAL EDUCATION PROGRAMS: 1999/2000

Illinois Regional

Health

Workforce

C e n t e r

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EXECUTIVE SUMMARY

Graduate medical education (GME) programs prepare physicians for practice in their specialty. Illinois institutions sponsor about five percent of all GME programs and residents in the country, and train many Illinois medical school graduates, as well as graduates of other US medical schools (USMGs) and international medical graduates (IMGs). Policy-related interest in Illinois GME programs has increased during the 1990s, in part stimulated by concerns about the disproportionately high number of medical students choosing specialty training over primary care; decreasing federal financial support (principally Medicare) threatening sponsoring hospitals' financial position; and concerns that hospital consolidations and other health care restructuring were affecting training program stability.

This study of Illinois GME programs builds on prior work and describes the programs, sponsors, and physicians in training during 1999/2000.¹⁻³ It is the first Illinois study that uses data from the American Medical Association (AMA) through a data collaborative between the Illinois Center for Health Workforce Studies (Center) at the University of Illinois at Chicago (UIC) and the Division of Graduate Medical Education at the AMA.

Graduate Medical Education in Illinois

During AY 1999-2000, there were 411 GME programs in Illinois, training 5,519 physicians in 27 specialties, 58 subspecialties, and 5 combined specialties. These programs represented 5.2% of the 7,946 Accreditation Council for Graduate Medical Education (ACGME) accredited or combined specialty residency programs in the US, training 5.6% of the nation's 97,982 residents.

GME programs were sponsored by 32 institutions in Illinois, principally hospitals and medical centers, that were classified for this study as community hospitals (17), major teaching hospitals (7), and medical school or academic medical center affiliated hospitals (7). The medical school affiliated hospitals sponsored 78% of all programs and trained 73% of all residents. Major teaching hospitals sponsored 15% of all programs distributed across almost all major specialties and many subspecialties. Community hospitals sponsored only seven percent of all programs, yet they sponsored over one-third of all family practice programs.

The greatest number of specialty training programs were in family practice (31), internal medicine (22), obstetrics and gynecology (14), pediatrics (12), diagnostic radiology (11), general surgery (10), psychiatry (9), pathology (8), anesthesiology (7), emergency medicine (7), ophthalmology (6) and orthopedic surgery (6). The programs in these 12 specialties comprised 35% of all the programs, and 77% of all residents in Illinois. Subspecialty training had fewer programs, with many subspecialties having only one or two programs within Illinois. The larger subspecialty programs were in internal medicine specialties, such as cardiovascular disease (11 programs), gastroenterology (8), endocrinology (8), and hematology and oncology (7); and one subspecialty of pediatrics, neonatal-perinatal medicine (6).

The largest numbers of residents were in internal medicine (1,408), family practice (608), pediatrics (418), general surgery (355), anesthesiology (283), emergency medicine (245), and obstetrics and gynecology (237). The number of residents per program varied by specialty, and to a lesser extent by the number of years of training, with the following programs having the largest average program size: internal medicine (64 residents), anesthesiology (40), general surgery (36), emergency medicine (35), and pediatrics (35). With the exception of subspecialties of internal medicine and a few subspecialties of pediatrics, most subspecialty programs had only one or two residents.

Sixteen percent of programs were in primary care specialties: family practice, internal medicine, and pediatrics, with another three percent of programs in obstetrics and gynecology. About 44% (2,434) of residents were in the three primary care specialties. However, this number would be reduced if one considers the number of residents that go on to subspecialty training. Based on comparable national data, these numbers are estimated to be 45% for internal medicine and 24% for pediatrics.⁴ Taking these estimates into account, only 27% (1,482) of Illinois residents may be estimated to be in primary care training.

Resident Characteristics

Forty percent of Illinois residents were women. Specialties particularly attractive to women were obstetrics and gynecology (73%), pediatrics (68%), and pathology (52%). Illinois residents were ethnically and racially diverse with about 51% White, 26% Asian/Pacific Islander, 6% Black, 4% Hispanic, 14% had an unstated race/ethnicity. Specialties with relatively higher numbers of under-represented racial and ethnicity groups (i.e., Black, Hispanic or Native American) included obstetrics and gynecology (23%) and family practice (18%).

Thirty-four percent of residents were graduates of Illinois medical schools and in total, 62% of residents were graduates of US medical schools (USMGs). Thirty-two percent of residents were graduates of international medical schools (IMGs). Specialties that had a majority of IMGs included pathology (72%), anesthesiology (68%), and psychiatry (55%). Graduates of osteopathic medical schools made up 5% of all residents and a higher percent (9%) of family practice residents.

Time Trends: 1988-1999/2000

Between 1988 and 1999/2000, there was an increase in the number of residents training in Illinois. However, due to differences in data sources, the reported increase (from 4,362 to 5,519) should be considered an estimate. Resident counts were higher in 1996 than in 1992 or 1999/2000.

The largest overall increases were seen in internal medicine, family practice, and emergency medicine; modest decreases were seen in ophthalmology and orthopedic surgery. For the past several years, approximately 31% of residents training in Illinois graduated from Illinois medical schools. However, in 1999/2000 this percentage increased to 34%, with 170 more residents from Illinois medical schools taking training in-state compared to the previous year.

Conclusions

Illinois GME programs provide a diverse range of training opportunities and prepare substantial numbers of physicians. About one third of all residents in training in Illinois attended medical school in Illinois. When compared to national programs, Illinois has a larger number of IMG physicians (32% vs. 26%). Overall, the number of residents in training appears to have declined between 1996 and 1999/2000.

It is anticipated that this study will provide useful information on the size and composition of Illinois GME programs and characteristics of physicians in training. Nationally, physicians in training comprise about 15% of all physicians in active practice, thus they provide substantial amounts of health care services. It is anticipated that future Illinois GME studies can use this report as a basis for comparisons, assisting key stakeholders such as medical educators, health care providers, professional associations, and others involved in physician workforce planning.

INTRODUCTION

Background

Prior studies of Illinois GME programs have examined 1) the selection and completion of primary care residencies by Illinois medical students between 1988 and 1995; 2) the characteristics and changes over time (1988-1996) among the twelve largest Illinois GME specialties; and 3) factors associated with retention of Illinois medical students for in-state GME training (over 1988-1995).¹⁻³ Interest in GME programs and the physician supply remains high within the state of Illinois and at the national level. The current study examines Illinois GME programs in a single year, 1999/2000, and compares findings from this year to prior studies and to a national study of the same year.

National and State Level GME Studies

Several national public and private agencies and health services research groups have assessed GME related policy issues, particularly as they pertain to the nation's physician supply and distribution. The American Medical Association, Division of Graduate Medical Education, sponsors annual GME program surveys and publishes analyses of GME programs in the *Journal of the American Medical Association (JAMA)*.⁴ The Bureau of Health Professions of HRSA has developed physician supply models and assessed policy aspects of GME.⁵ The Council on Graduate Medical Education (COGME) was authorized by Congress in 1986 to provide ongoing assessments of physician workforce trends, GME training issues, and financing policies.⁶ COGME has issued fifteen reports, most recently describing GME financing in a changing health care environment, physician distribution in rural and inner city areas, minorities in medicine, physician workforce policies, the effects of the 1997 Balanced Budget Act (BBA) on GME, and the impact of IMGs on the physician workforce. The Medicare Payment Advisory Commission (MEDPAC), established by the BBA, issued a report in 1999 that redefined Medicare's role in GME funding.⁷

Health workforce researchers also have examined state level GME programs. Salsberg and colleagues have studied New York GME programs and their relationship to the New York physicians supply.⁸ Researchers in California have described California GME programs.⁹

The race and ethnicity of physicians in training is of interest since several groups are working to increase the number of under-represented minority physicians (Blacks, Hispanics, and Native Americans) to more closely reflect the US population. Medical schools and the Association of American Medical Colleges (AAMC) have sponsored a project to increase the racial and ethnic diversity of US medical school graduates.¹⁰ Healthy People 2010, the US public health agenda, has set a goal of increasing minority representation among all health professionals to match the US population.¹¹

Growth in GME Programs and Residents: 1965 through 1995

National data show that the number of physicians in US GME training programs increased dramatically from about 41,568 in 1965, to 61,189 in 1980, and to 98,035 in 1995.² This growth, which more than doubled the number of residents, was due to several factors: new specialties and expanded years of training; a doubling in the number of US medical school graduates (from 7,800 in 1965 to 16,145 in 1980); and a marked increase in the number of IMG physicians in US training programs (from about 9,100 in 1965, to 12,100 in 1980, to almost 25,000 in 1995).² Medicare funding of GME costs was also a significant factor in the expansion in the number and size of GME programs in teaching hospitals.

Snapshot: National Graduate Medical Education Study: 1999/2000

In 1999/2000 there were 7,946 ACGME accredited and combined specialty GME programs in the US, with 97,989 residents.⁴ The total number of residents from 1995 through 1999 experienced a slight decline, in contrast to increases in earlier years. However the number of programs increased from 7,657 in 1995 to 7,946 in 1999/2000, with most of the increase (about 83 programs per year) due to new subspecialty programs.⁴

- USMGs accounted for 69% of residents, IMGs for 26%, osteopathic physicians (USDOs) for 4%, and 1% Canadian graduates or unknown graduation locale.⁴
- The racial and ethnic diversity of USMGs entering GME showed declines among physicians who were White (2%) and Black (7%), and increases among physicians who were Hispanic (10%) and Asian (11%).

The 1999/2000 national study reported the following.

- Specialties accounted for 54% (4,268) of programs and 87% (85,460) of residents, with subspecialties accounting for the remainder.
- About 42% of all residents are in primary care specialties (internal medicine, pediatrics, and family practice).
- The percent of residents finishing internal medicine and pediatrics that planned to go on to subspecialty training was 43% for internal medicine and 24% in pediatrics, with IMGs more likely to pursue additional training.
- Subspecialty programs increased in number; although on average these programs had only 3 to 4 residents per program and about one in five programs had no residents.
- Overall, IMGs with temporary visas were more likely to pursue another residency after completing their first residency, at a rate of 44% compared to 27% of all residents.

The study concluded that in 1999/2000, GME programs continued to grow in both number and size and that the financial impacts of recent Medicare cutbacks of GME funding had not yet shown an effect on the number of physicians in training. Of note was the continued growth in subspecialty programs despite prior physician workforce policy recommendations warning of a projected physician surplus and maldistribution between specialists and primary care physicians.

Study of Illinois GME Programs 1999/2000

Data Sources

This study used GME data from the Graduate Medical Education Database of the American Medical Association (AMA) for academic year 1999-2000 for all Illinois programs. These data are obtained through an annual survey of all Accreditation Council of Graduate Medical Education (ACGME) accredited specialty programs, as well as combined specialty programs, with a response rate of 95% (Brotherton 2000). The survey was conducted in July 1999, and it allowed program directors to respond in electronic or written formats. Illinois' comparison data for previous years came from the Association for American Medical Colleges' (AAMC) Graduate Medical Education Tracking Census (Tables 11 and 12), and from the Graduate Medical Education Database of the AMA for 1996/97, 1997/98, and 1998/99. The AAMC and AMA now conduct a single survey of residency program directors, which replaces the two separate surveys previously conducted. This study used this combined survey data. The 1999/2000 findings for Illinois are also compared to published findings on the 1999/2000 survey of all US GME programs.⁴

Terms Used in This Report

All physicians in residency or fellowship training programs at any year of training are referred to as “residents.” Residents that graduated from US allopathic medical schools have been defined as US medical school graduates (USMGs). Residents who graduated from US osteopathic medical schools have been defined as US Doctors of Osteopathy (USDOs). Residents that graduated from foreign medical schools, not including Canada, have been defined as international medical graduates (IMGs). Residents who graduated from Canadian medical schools, who have a similar medical educational system to the US, have been defined as Canadians.

The citizenship status of residents is of interest in that approximately one-quarter of residents in US GME are IMGs, many of whom are subject to visa stipulations that require a return to their home country, so their numeric addition to the physician workforce supply is uncertain. Residents who were born in the US have been defined as citizens. Residents who have become naturalized citizens, or are now permanent residents, are defined as such. Residents who are training in US GME on the primary educational or training visas, J or H, are defined as such. Residents with unknown citizenship/visa status, or are training with relatively uncommon visas (student, refugee), are classified as other or unknown citizenship status.

Foreign national physicians training in the US with a J-1 exchange visa are sponsored by the Educational Commission for Foreign Medical Graduates (ECFMG). The duration of training for residents with J-1 visas is the “time typically required” to complete the program, which generally refers to specialty and subspecialty certification requirements. The maximum duration is limited to seven years. To train more than seven years requires the program to demonstrate “exceptional” need. Once the J-1 visa resident completes training, he or she must return to the home country for a minimum of two years before being able to return to the US to obtain a different visa or other status (e.g., permanent resident). It is possible to get a waiver for the home residence requirement by working in a US Health Professional Shortage Area for a specified period of time.

Foreign national physicians training in the US with H-1B visas are fewer in number than J-1 visa residents. Residents with H-1B visas are sponsored by the graduate medical education program, and thus the visa is not transferable to other programs. The total amount of continuous time permitted with a H-1B visa is six years, with no extensions permitted.

Training institutions for graduate medical education vary in their level of sponsorship. Most GME programs have a medical school affiliation, however this report identifies the sponsoring institutions as that organization which has the ultimate responsibility for a program of GME, as defined by the ACGME. Illinois has 32 sponsoring institutions, and 36 additional institutions that either provide training as part of a required rotation (major participating institutions), or provide specific learning experiences as part of a multi-institutional GME program (clinical sites).

For this report, sponsoring institutions were divided into three types: community hospitals, major teaching hospitals, and medical schools. The following category criteria were used for this study: community hospitals were those that sponsored one to three GME programs, major teaching hospitals sponsored four or more programs, but were not part of a medical school or university, and medical school institutions were considered the major teaching hospital affiliate of the medical school or university.

FINDINGS

Specialty Distribution of Illinois GME Programs and Residents

- In 1999-2000, there were 411 residency programs, 32 institutions sponsoring residency programs, and 5,519 residents training in the state of Illinois. These programs represented 5.2% of the 7,946 ACGME-accredited or combined specialty residency programs in the US, training 5.6% of the nation's 97,989 residents. Table 1 presents the specialties Illinois residents trained in, as well as the number of programs in each specialty.
- The greatest number of training programs were in: family practice (31), internal medicine (22), obstetrics and gynecology (14), pediatrics (12), diagnostic radiology (11), general surgery (10), psychiatry (9), pathology (8), anesthesiology (7), emergency medicine (7), neurology (7), ophthalmology (6) and orthopedic surgery (6).
- The 12 largest specialties as measured in resident counts (expressed as a percent of total Illinois count) were internal medicine, 25.5%, family practice, 11.0%, pediatrics, 7.6%, general surgery, 6.4%, anesthesiology, 5.1%, emergency medicine, 4.4%, obstetrics and gynecology, 4.3%, psychiatry, 3.7%, diagnostic radiology, 3.1%, orthopedic surgery, 2.3%, pathology, 2.2%, and ophthalmology, 1.2%. Table 2 shows the rank order and actual resident counts by specialty.
- The average number of residents per program/program size, varied considerably by specialty (Table 2). Internal medicine programs were the largest, averaging 64 residents in each, with approximately 21 residents in each of the three training years. Other specialties with large program sizes were anesthesiology (40), general surgery (36), emergency medicine (35), and pediatrics (35). Subspecialty programs on average have relatively few residents (5).

Table 1. Illinois GME Programs and Residents, 1999-2000

Specialty	# of Programs	%	# of Residents	%
Allergy and immunology	2	0.5	11	0.2
Anesthesiology	7	1.7	283	5.1
Pediatric anesthesiology	2	0.5	3	0.1
Critical care medicine	1	0.2	5	0.1
Pain management	6	1.5	12	0.2
Colon and rectal surgery	2	0.5	4	0.1
Dermatology	6	1.5	37	0.7
Dermatopathology	1	0.2	1	0
Emergency medicine	7	1.7	245	4.4
Family practice	31	7.5	608	11
Sports medicine	2	0.5	2	0
Medical genetics	1	0.2	1	0
Internal medicine	22	5.4	1,408	25.5
Cardiovascular disease	11	2.7	120	2.2
Critical care medicine	3	0.7	14	0.3
Endocrinology, diabetes, and metabolism	8	1.9	21	0.4
Gastroenterology	8	1.9	50	0.9
Infectious disease	6	1.5	23	0.4
Nephrology	5	1.2	25	0.5
Pulmonary disease	2	0.5	6	0.1
Rheumatology	5	1.2	13	0.2
Geriatric medicine	6	1.5	25	0.5
Interventional cardiology	4	1	6	0.1
Clinical cardiac electrophysiology	5	1.2	6	0.1
Hematology and oncology	7	1.7	52	0.9
Pulmonary disease and critical care	6	1.5	46	0.8
Neurological surgery	6	1.5	38	0.7
Neurology	7	1.7	66	1.2
Child neurology	3	0.7	2	0
Clinical neurophysiology	6	1.5	5	0.1
Nuclear medicine	4	1	7	0.1
Obstetrics and gynecology	14	3.4	237	4.3
Ophthalmology	6	1.5	66	1.2
Orthopaedic surgery	6	1.5	127	2.3
Adult reconstructive orthopaedics	1	0.2	1	0
Hand surgery	1	0.2	1	0
Pediatric orthopaedics	2	0.5	1	0
Orthopaedic surgery of the spine	2	0.5	1	0
Orthopaedic sports medicine	4	1	2	0
Musculoskeletal oncology	1	0.2	1	0
Otolaryngology	6	1.5	59	1.1
Pathology-anatomic and clinical	8	1.9	124	2.2
Blood banking/transfusion medicine	1	0.2	1	0
Cytopathology	4	1	4	0.1
Forensic pathology	1	0.2	1	0
Hematology	4	1	5	0.1
Medical microbiology	1	0.2	0	0
Neuropathology	2	0.5	1	0
Pediatric pathology	1	0.2	1	0

Table 1. Continued

Specialty	# of Programs	%	# of Residents	%
Pediatrics	12	2.9	418	7.6
Pediatric critical care medicine	5	1.2	15	0.3
Pediatric emergency medicine	1	0.2	0	0
Pediatric cardiology	2	0.5	9	0.2
Pediatric endocrinology	3	0.7	3	0.1
Pediatric hematology/oncology	2	0.5	6	0.1
Pediatric nephrology	1	0.2	0	0
Neonatal-perinatal medicine	6	1.5	31	0.6
Pediatric pulmonology	2	0.5	0	0
Pediatric rheumatology	2	0.5	0	0
Pediatric gastroenterology	2	0.5	4	0.1
Pediatric infectious diseases	2	0.5	0	0
Physical medicine and rehabilitation	6	1.5	97	1.8
Spinal cord injury medicine	1	0.2	0	0
Plastic surgery	6	1.5	43	0.8
Hand surgery	1	0.2	1	0
Preventive medicine	3	0.7	8	0.1
Psychiatry	9	2.2	206	3.7
Addiction psychiatry	2	0.5	1	0
Child and adolescent psychiatry	4	1	22	0.4
Forensic psychiatry	1	0.2	2	0
Geriatric psychiatry	3	0.7	0	0
Radiology-diagnostic	11	2.7	172	3.1
Neuroradiology	5	1.2	10	0.2
Pediatric radiology	1	0.2	0	0
Nuclear radiology	2	0.5	0	0
Vascular and interventional radiology	4	1	10	0.2
Radiation oncology	4	1	24	0.4
Surgery-general	10	2.4	355	6.4
Surgical critical care	1	0.2	1	0
Pediatric surgery	2	0.5	2	0
Vascular surgery	5	1.2	8	0.1
Thoracic surgery	4	1	14	0.3
Urology	6	1.5	54	1
Pediatric urology	1	0.2	0	0
Combined specialties				
Internal medicine/pediatrics	7	1.7	112	2
Internal medicine/emergency medicine	1	0.2	11	0.2
Internal medicine/psychiatry	2	0.5	24	0.4
Neurology/physical medicine and rehabilitation	1	0.2	0	0
Internal medicine/preventive medicine	1	0.2	8	0.1
Transitional year	10	2.4	70	1.3
Total	411	100	5,519	100

Table 2. Specialties Ranked According to Number of Residents and Average Number of Residents per Program in Illinois GME, 1999/2000

Specialty	#of Residents	Average # of Residents per Program	Accredited Length of Training (yrs)
Internal medicine	1408	64	3
All other specialties	1270	6	
Family practice	608	21	3
Pediatrics	418	35	3
Surgery-general	355	36	5
Anesthesiology	283	40	3/4*
Emergency medicine	245	35	3/4†
Obstetrics and gynecology	237	17	4
Psychiatry	206	23	4
Radiology-diagnostic	172	16	4
Orthopaedic surgery	127	21	4/5‡
Pathology-anatomic and clinical	124	15	4
Ophthalmology	66	11	3/4*
Total	5519	15	

* These specialties require a "base" year, which is sometimes provided by the program.

† Some programs offer a fourth year.

‡ Until July 1, 2000, orthopaedic surgery programs could be 4 or 5 years in length.

Resident Demographic Characteristics

- Overall, 40% of residents in Illinois were women (Figure 1). Of the 12 specialties, orthopedic surgery had the lowest proportion of women residents (9%), and obstetrics and gynecology had the highest (73%). Other programs with 50% or more women were pediatrics (68%) and pathology (52%).
- Overall, 51% of residents were White, 26% were Asian/Pacific Islanders, 6% were Black, 4% were Hispanic, and 14% were Other (Table 3). Few residents in any specialty were under-represented minorities (Black, Hispanic, or Native American). Specialties that had the highest proportions of under-represented minority residents were obstetrics and gynecology (23%) and family practice (18%). The race and ethnicity among USMGs was 62% White, 18% Asian/Pacific Islander, 7% Black, 2% Hispanic and 11% unknown or other.
- Sixty-two percent of residents training in Illinois were graduates of US allopathic medical schools (USMGs) (Table 4 and Figure 2). Over 90% of residents in orthopedic surgery, ophthalmology, emergency medicine, and general surgery programs were USMGs. Over half of the USMGs, and 34% of all residents, were graduates of Illinois medical schools.
- Nearly one-third of residents were graduates of international medical schools (IMGs). Specialties that had majorities of IMGs training in them were pathology (73%), anesthesiology (69%), and psychiatry (57%) (see Table 4 and Figure 2).

- Five percent of residents were graduates of osteopathic schools of medicine (USDOs). Nearly 10% of family practice residents were USDOs. Only one percent of residents graduated from Canadian medical schools.
- Fifty-five percent of residents training in Illinois were native citizens of the US, and another 25% were naturalized citizens or permanent residents (Table 5). Specialties with significant numbers of residents with visas were anesthesiology (29%), pathology (28%), psychiatry (27%) and internal medicine (27%).

Figure 1. Specialties Ranked According to Gender Distribution in Illinois Graduate Medical Education, 1999/2000

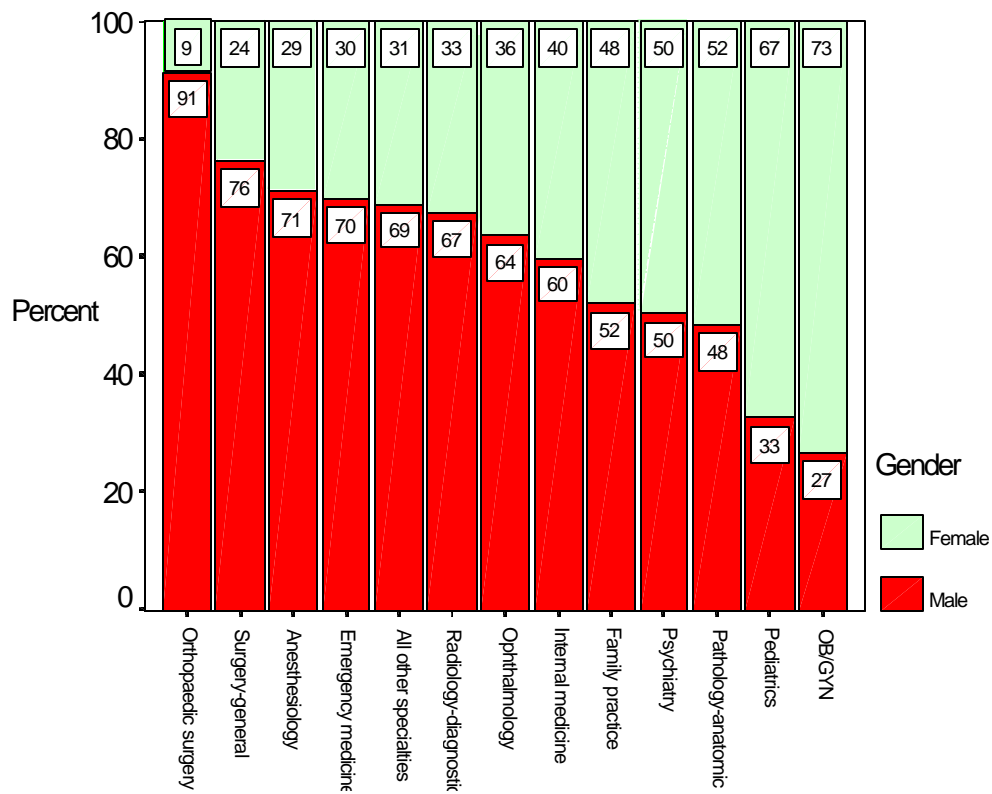


Table 3. Race/Ethnicity of Residents per Specialty in Illinois GME, 1999/2000*

Specialty	White %	Asian/PI %	Hispanic %	Black %	Other Unknown %
Anesthesiology	46	28	5	4	18
Emergency medicine	78	8	2	7	5
Family practice	58	16	8	10	8
Internal medicine	44	33	4	5	14
Obstetrics and gynecology	59	14	6	17	5
Ophthalmology	54	21	2	3	20
Orthopaedic surgery	72	14	0	0	13
Pathology-anatomic and clinical	40	44	1	6	10
Pediatrics	47	24	5	8	16
Psychiatry	35	25	5	8	27
Radiology-diagnostic	48	34	2	1	16
Surgery-general	63	17	4	5	12
Total 12 specialties	51	25	4	6	25
Total all other specialties	48	28	2	4	17
Grand Total	51	26	4	6	14

*n=2,793 (White), 1,410 (API), 212 (Hispanic), 330 (Black), and 774 (Other)

Medical School Origin of Residents per Specialty in Illinois GME, 1999/2000

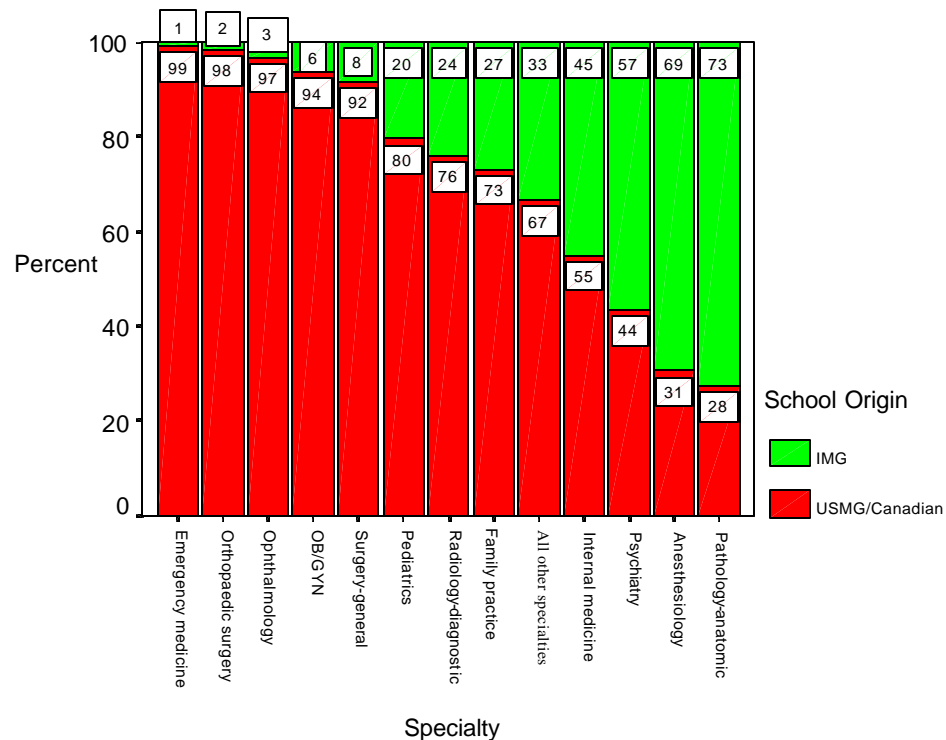
Specialty	Illinois % of Total	All USMGs* %	IMGs %	DOs %	Canadians Others %
Anesthesiology	13	28	68	2	2
Emergency medicine	43	92	1	6	2
Family practice	44	62	26	9	2
Internal medicine	32	48	45	6	1
Obstetrics and gynecology	45	90	6	4	0
Ophthalmology	41	96	3	0	1
Orthopaedic surgery	45	98	2	0	0
Pathology-anatomic and clinical	14	25	72	2	2
Pediatrics	40	73	21	6	1
Psychiatry	27	41	55	2	2
Radiology-diagnostic	42	70	24	6	0
Surgery-general	43	91	8	1	0
Total 12 specialties	36	62	32	5	1
Total all other specialties	30	61	33	5	1
Grand Total	34	62	32	5	1

*This includes Illinois graduates

Table 5. Citizenship Status of Residents per Specialty in Illinois GME, 1999/2000

Specialty	US Citizen %	Naturalized/Permanent Resident %	Non-US Citizens (H or J Visas) %	Other/Unknown Status %
Anesthesiology	26	36	29	8
Emergency medicine	89	10	1	0
Family practice	68	27	2	4
Internal medicine	44	27	27	2
Obstetrics and gynecology	80	17	2	2
Ophthalmology	64	29	0	8
Orthopaedic surgery	84	14	2	0
Pathology-anatomic and clinical	27	40	28	6
Pediatrics	68	16	10	6
Psychiatry	36	32	27	4
Radiology-diagnostic	57	26	8	9
Surgery-general	65	21	4	10
Total 12 specialties	56	25	15	4
Total all other specialties	53	25	16	6
Grand Total	55	25	15	5

Figure 2. Medical School Graduates (USMGs/Canadian and IMGs) By Specialty



Sponsoring Institutions of Illinois GME Programs

- There were 32 institutions sponsoring residency training programs in Illinois (several other institutions provided clinical sites for residents, but were not primarily responsible for the training of residents). Seventeen of those institutions were community hospitals, seven were major teaching hospitals, and eight were medical schools (Table 6).
- Most programs were located in the greater Chicago metropolitan area, with programs also located in other Illinois cities that had medical schools (Peoria, Springfield, Rockford, Urbana). Family practice programs had the broadest geographic distribution including towns in downstate Illinois (Belleville, Decatur, Carbondale).
- Medical schools sponsored 321 (78%) of all programs and 4,017 (73%) of all residents. Major teaching hospitals sponsored 15% of all programs and 12% of all residents, and community hospitals sponsored 7% of programs and 8% of residents. Several specialties were exclusively or predominantly offered in medical schools, including orthopedic surgery (100%), general surgery (90%), psychiatry (89%), and pathology (88%).
- The most common specialty located in community hospitals was family practice (Table 7). Over one third of Illinois family practice programs were sponsored by community hospitals. Sixteen of the 29 programs in community hospitals were in primary care specialties. On the other hand, only 11% of programs sponsored by medical schools were in these specialties.
- Characteristics of residents varied depending by type of sponsoring institution (Table 8). The highest proportion of USMGs was at medical school programs (68%) as compared to community hospitals (47%) and major teaching hospitals (43%). Illinois medical school graduates made up about one third of residents across all three types of sponsors. Medical school programs had a lower proportion of IMGs (27%). All three types of institutions had equivalent gender distributions.
- Primary care residents accounted for 44% of all residents in Illinois and 81% of residents in community hospitals, 58% of residents in major teaching hospitals, and 37% of residents in medical school programs.

Table 6. Sponsoring Institutions, Programs and Residents in Illinois GME, 1999/2000

Sponsoring Institution	Location	# of Programs	# of Residents	% of Residents
Community Hospital		29	435	8%
Carle Foundation Hospital	Urbana	2	14	
Hinsdale Hospital	Hinsdale	1	26	
Jackson Park Hospital	Chicago	1	16	
La Grange Memorial Hospital	La Grange	1	21	
Louis A Weiss Memorial Hospital	Chicago	3	38	
MacNeal Memorial Hospital	Berwyn	3	32	
Mercy Hospital and Medical Center	Chicago	2	62	
Mount Sinai Hospital Medical Center	Chicago	3	42	
Provena St Joseph Medical Center	Joliet	1	7	
Ravenswood Hospital Medical Center	Chicago	2	38	
Rehabilitation Foundation Inc	Wheaton	1	8	
Schwab Rehabilitation Hospital and Care Net.	Chicago	1	16	
Shriners Hospitals for Children (Chicago)	Chicago	1	0	
St Elizabeth's Hospital	Chicago	1	16	
St Mary of Nazareth Hospital Center	Chicago	1	19	
Swedish Covenant Hospital	Chicago	2	23	
West Suburban Hospital Medical Center	Oak Park	3	57	
Major Teaching Hospital		61	1067	19%
Catholic Health Partners	Chicago	6	127	2%
Christ Hospital and Medical Center	Chicago	4	74	1%
Cook County Hospital	Chicago	24	421	8%
Illinois Masonic Medical Center	Chicago	7	108	2%
Lutheran General Hospital	Park Ridge	11	167	3%
Resurrection Medical Center	Chicago	4	89	2%
St Francis Hospital	Evanston	5	81	1%
Medical School		321	4017	73%
Chicago Medical School	N. Chicago	8	135	3%
Loyola University Medical Center	Maywood	41	488	12%
Northwestern University Medical School	Chicago	70	795	20%
Rush-Presbyterian-St Luke's Medical Ctr	Chicago	49	573	14%
Southern Illinois University School of Med.	Springfield	26	258	6%
St Louis University School of Medicine	E.St.Louis	1	39	1%
University of Chicago Hospitals	Chicago	54	506	13%
University of Illinois College of Medicine	Rockford, Peoria, Urbana, Chicago	72	1223	30%
Total		411	5519	100%

Table 7. Specialty Programs by Sponsoring Institution, Illinois GME, 1999/2000

Specialty	Community Hospital	%	Major Teaching Hospital	%	Medical School	%	Total
Anesthesiology	0	0	2	29	5	71	7
Emergency medicine	0	0	3	43	4	57	7
Family practice	11	36	5	16	15	48	31
Internal medicine	4	18	6	27	12	54	22
Obstetrics and gynecology	2	14	5	36	7	50	14
Ophthalmology	0	0	1	17	5	83	6
Orthopedic surgery	0	0	0	0	6	100	6
Pathology-anatomic and clinical	0	0	1	12	7	88	8
Pediatrics	1	8	4	33	7	58	12
Psychiatry	0	0	1	11	8	89	9
Radiology-diagnostic	0	0	3	27	8	73	11
Surgery-general	0	0	1	10	9	90	10
Total 12 largest specialties	18	13	32	22	93	65	143
Total all other specialties	11	4	29	11	228	85	268
Total	29	7	61	15	321	78	411

Table 8. Numbers and Characteristics of Residents by Sponsoring Institution, Illinois GME, 1999/2000

	Community Hospital	%	Major Teaching Hospital	%	Medical School	%	Total
Medical School Origin							
USMGs	204	47	463	43	2736	68	3403
Illinois Graduates (included in USMGs)	141	32	368	34	1397	35	1906
US DOs	22	5	98	9	151	4	271
IMGs	198	46	492	46	1092	27	1783
Canadians/others	11	2	13	1	38	1	62
Specialties							
Residents in 12 largest specialties	377	87	926	87	2496	73	4249
Residents in Primary Care Specialties*	352	81	613	58	1469	37	2434
Training in all other specialties	58	13	141	13	1071	27	1270
Total Residents	435	8	1067	19	4017	73	5519
*AN, EM, FP, IM, OB/GYN, OPH, ORTHO, PATH, PEDS, PSYCH, RADIO & SURG, Included in count of 12 specialties							

Time Trends in Illinois GME, 1988 to 1999/2000

- The time trend data must be interpreted with caution since the two data sources have somewhat different programs included. The AAMC data (1988-1996) includes programs that may not be in the AMA survey (1999/2000). Among the 12 largest specialties, the programs should be the same and should be comparable.
- Between 1988 and 1992, the number of residents increased by 1,173, between 1992 and 1996, there was a further gain of 489 residents (Table 9). The overall resident counts from 1996 and 1999/2000 cannot be compared due to differences in data sources. Among the twelve largest specialties, there was a loss of 192 positions between 1996 and 1999/2000.
- Specialties which increased the number of residents between 1996 and 1999/2000 were general surgery (56), family practice (45), pediatrics (14) and emergency medicine (11).
- Nine of the twelve specialties lost one to four programs between 1988 and 1999/2000. However, family practice added eight new programs, emergency medicine also gained one new program, and pediatrics had a stable program count (Table 10).
- Between 1988 and 1999/2000, the largest increases in total residents were seen in internal medicine (291 residents), family practice (224), emergency medicine (139), anesthesiology (84), and pediatrics (80). Modest to slight declines were seen in orthopedics (25), obstetrics/gynecology (21), ophthalmology (20), psychiatry (17), and radiology (4).
- The average number of residents per program (“program size” in Table 10) increased substantially in all specialties (except ophthalmology) between 1988 and 1999/2000, with the largest gains on emergency medicine and internal medicine (gains of 17 and 21 residents per program). This increase held despite slight declines in program size among ten specialties between 1996 and 1999/2000.
- Over the past five years, the number of Illinois medical school graduates in Illinois GME programs was stable at about 31% to 34% of all residents.

Table 9. Number of Residents in Illinois GME Specialties, 1988 to 1999/2000*

Specialty	1988*	1992*	1996*	1999**	Increase (Decrease) 1988-1999	Increase (Decrease) %
Anesthesiology	199	363	293	283	84	42%
Emergency medicine	106	180	234	245	139	131%
Family practice	384	400	563	608	224	58%
Internal medicine	1117	1363	1505	1408	291	26%
Obstetrics and gynecology	258	265	291	237	(21)	(8%)
Ophthalmology	86	92	98	66	(20)	(23%)
Orthopaedic surgery	152	141	167	127	(25)	(16%)
Pathology-anatomic and clinical	97	119	137	124	27	28%
Pediatrics	338	392	404	418	80	24%
Psychiatry	223	228	239	206	(17)	(8%)
Radiology-diagnostic	176	196	214	172	(4)	(2%)
Surgery-general	317	299	296	355	38	12%
Total 12 specialties	3453	4038	4441	4249	796	23%
Total all other specialties***	909	1497	1583	1270***	361	40%
Grand Total	4362	5535	6024	5519***	1157***	27%***

Source of data is the *AAMC GME Tracking Census for years 1988 through 1996; **AMA Annual Survey of GME Programs for year 1999.

*** Differences in data sources will be most notable with these programs/residents.

Table 10. Number of Programs and Residents per Program for Illinois GME, 1988-1999/2000*

	1988		1992		1996		1999-2000		Increase in Pgm Size 1988 to 99-00
	Pgms	Res/Pgm	Pgms	Res/Pgm	Pgms	Res/Pgm	Pgms	Res/Pgm	
Anesthesiology	8	25	7	52	77	42	7	40	15
Emergency medicine	6	18	6	30	7	33	7	35	17
Family practice	23	17	24	17	26	22	31	20	3
Internal medicine	26	43	26	52	24	63	22	64	21
Obstetrics and gynecology	16	16	15	18	15	19	14	17	1
Ophthalmology	7	12	7	13	7	14	6	11	-1
Orthopaedic surgery	8	19	6	24	6	28	6	21	2
Pathology – anatomic & clinical	11	9	9	13	8	17	8	16	7
Pediatrics	12	28	11	36	11	37	12	35	7
Psychiatry	10	22	10	23	9	27	9	23	1
Radiology	12	15	11	18	11	19	11	16	1
Surgery - general	11	29	11	27	10	30	10	36	7
Total 12 Specialties	150	23	143	28	141	31	143	30	7

*Source of data is the AAMC GME Tracking Census for years 1988 through 1996; AMA Annual Survey of GME Programs for year 1999.

CONCLUSIONS

Illinois GME programs provide a diverse range of training opportunities and train substantial numbers of physicians. About one third of all residents in training in Illinois attended medical school in Illinois. When compared to national programs, Illinois has a larger number of IMG physicians (32% vs. 26%). Overall, the number of residents in training appears to have declined between 1996 and 1999/2000.

It is anticipated that this study will provided useful information on the size and composition of Illinois GME programs and characteristics of physicians in training. Nationally, physicians in training comprise about 15% of all physicians in active practice, thus they provide substantial amounts of health care services. It is anticipated that future Illinois GME studies can use this report as a base for comparisons, assisting key stakeholders such as medical educators, health care providers, physician groups, and others involved with physician workforce planning.

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