

ALLERGIST

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REPORT

AMERICA FACES ALLERGY/ ASTHMA CRISIS

Demand for allergists will
increase 35% by 2020

Supply of allergists
expected to decline

Attempts have failed to
distribute allergists to areas
of greatest need

The American College of Allergy
Asthma & Immunology calls
for additional funding of A/I
GME positions and innovative
federal initiatives



American College of Allergy, Asthma & Immunology

The ACAAI is a not-for-profit professional 501(c) (3) association of 5,200 allergist/immunologists. Established in 1942, the ACAAI is dedicated to improving the quality of patient care in allergy and immunology through research, advocacy and professional and public education.

Mission Statement

ACAAI promotes excellence in the practice of the subspecialty of allergy and immunology.

Vision Statement

ACAAI fosters a culture of collaboration and congeniality in which its members work together and with others toward the common goals of patient care, education, advocacy and research.

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Graduate Medical Education

and Workforce Issues in Allergy and Immunology



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Executive Summary

Critical Shortage of Allergists

There is a growing shortage of allergists in the United States. Without intervention, it is estimated that the number of full-time equivalent (FTE) allergist/immunologists will decline about 7% from 3,660 in 2006 to 3,400 in 2020. Meanwhile, demand for these physicians is projected to increase by 35% over the same period (to more than 5,550 in 2020). New and larger residency programs are needed in allergy and immunology to meet growing patient demand.

Allergic and Immunologic Diseases Have Become Much More Common

Asthma and other allergic diseases have become much more common in the United States in the last 40 years. These diseases affect 40 to 50 million people or more than 20% of the population. Asthma alone has more than tripled over the past 25 years and affects more than 22 million people.

While asthma and other allergic diseases have grown dramatically, the number of allergist/immunologists is projected to fall because the number and size of training programs have decreased. There is also a growing shortage of primary care and other physicians who also provide care for people with allergic diseases.

In 1994, there were 85 allergy and immunology training programs in the U.S. Now, there are just 71. Limited funding is cited as the primary reason for these drastic reductions which are projected to continue unless action is taken.

To keep pace with the growing demand for allergist/immunologists, training programs will need to increase the number of specialists trained by an additional 120 per year.

Attempts to Solve the Problem

Attempts to solve the problem – which have fallen short of addressing the need – include: Self-funding (no salary); support from practicing allergists; pharmaceutical industry funding; local endowment funds; funding by national allergy-immunology organizations; hospital funding and local, state and federal funding.

Despite innovative funding mechanisms, policy changes are required at the national level to provide additional support for Graduate Medical Education (GME) programs in allergy and immunology.

Action Required

A coordinated public-private initiative to fund additional GME positions, including subspecialty positions such as allergy and immunology, deserves the attention of federal policy makers. We at ACAAI are eager to participate in efforts to find solutions for this pressing problem. It calls for immediate action.

Allergic and Immunologic Diseases

have become much more common

in the United States in the last 20-40 years. Asthma affected 6.8 million Americans in 1980, 13.7 million in 1994 and 22 million in 2005. While the number of Americans with allergic diseases including asthma has grown dramatically, the number of allergist/immunologists to treat these conditions is projected to fall because the number and size of training programs has decreased.

This white paper reviews the growing problem of educating physicians to treat allergic diseases including asthma in the United States. It includes ACAAI's supply and demand forecast for allergists and the geographic distribution of allergy and immunology training programs. It also summarizes the evolution of federal policies with respect to Graduate Medical Education (GME), outlines strategy options for solving the physician shortage and presents ACAAI's position on improving patient outcomes in treating allergic and immunologic diseases by increasing the number of certified allergist/immunologists.

Our nation is facing a critical shortage of certified allergist/immunologists. Unless action is taken, there will not be enough allergists to treat the growing number of patients who desperately need their care. The most effective response must combine private and public resources. We are disseminating this white paper to increase awareness of this critical problem, especially among federal policy makers, in the hope that concerned people working together will find solutions.

Without intervention, it is estimated that the number of full-time equivalent (FTE) allergist/immunologists will decline 6.8% from 3,661 in 2006 to 3,413 in 2020, while demand for these physicians is projected to increase by 35% to 5,558 in 2020. Moreover, there is a continuing and growing shortage of primary care physicians, who also provide care for people with allergic diseases such as asthma, and of physicians in general.

Under current training and practice patterns, the Council on Graduate Medical Education (COGME) expects the supply of practicing physicians in the U.S. to rise to 971,800 full-time equivalent (FTE) physicians in 2020. At the same time, demand for physicians is likely to grow even faster. COGME estimates that demand for physician services will range between 1,057,000 and 1,068,000 physicians in 2020. Therefore, the projected shortage of physicians ranges from 85,000 to 96,000. Major factors driving physician demand include:

- Growth of the U.S. population. An increase of 50 million people (18%) is expected between 2000 and 2020.
- Aging of the population. It is estimated that the number of Americans over 65 will increase from 35 million in 2000 to 54 million in 2020.
- Changing age-specific per capita physician utilization rates. Those under age 45 will use fewer services and those over age 45 will use more services.

Large future needs require a large response. The health care education system needs more medical colleges, more students per class, more residency slots and more residency slots for specialties including allergy and immunology. The major factors constraining physician supply and its ability to grow include the following:

- Very long lead times. Many years are required to increase physician supply due to the length of training.



Growth of the U.S. population. An increase of 50 million people (18%) is expected between 2000 and 2020.

- Capacity problems. There has been no substantial medical school growth in 25 years.
- A significant shortfall in medical school slots. Some schools have responded in the last two years with modest growth of 8 to 10%.
- Massive medical student indebtedness. This discourages qualified applicants with limited resources.
- Capped residency positions. The number of funded resident slots is capped at 100,000 by the Balance Budget Act of 1997. This cap does not apply to a residency program but to a teaching hospital. For

example, if a hospital wants to expand its residency program for allergy and immunology, it must lower the number of internal residents in another area. Furthermore, it should be noted that subspecialty positions are reimbursed at only 50%.

- Restrictive Residency Review Committee (RRC) requirements. Issues affecting RRC accreditation of residency programs affect the ability of programs to maintain accreditation or to expand, especially with faculty shortages.
- Physician attrition. The Association of American Medical Colleges

(AAMC) reports that one in every three active doctors is likely to retire by 2020 and new generations of physicians are choosing to work less hours.

The number of allergy and immunology training programs in the United States was 85 in 1994. This figure decreased to 72 by 2006 and dropped to 71 in 2007. The corresponding number of trainees declined 6% from 316 in 1994 to 298 in 2007. Funding issues contributed to these reductions. New and larger allergy and immunology residency programs are needed to meet growing patient demand. ■

Impact of Allergic and Immunologic Diseases

The challenge of managing asthma and the other allergic diseases in the United States is becoming more difficult:

Asthma²

- Asthma, one of the allergic diseases, strikes 22 million Americans, including 7 million children under age 18.
- The frequency of asthma increased 75% from 1980-1994, as asthma rates in children under the age of 5 rose more than 160%.
- In 2003, physician office visits and outpatient visits due to asthma totaled more than 12.7 million and 1.2 million, respectively. Asthma-related visits to emergency departments totaled more than 1.9 million in 2002.
- Deaths due to asthma exceed 5,000 annually.
- Annual direct and indirect health care costs for asthma in the United States total more than \$11.5 billion and \$4.6 billion, respectively. The combined total exceeds \$16.1 billion. The largest single direct medical expenditure is prescription drug costs which exceed \$5 billion annually.

- An estimated 12.8 million school and 24.5 million work days are missed annually due to asthma.
- Successful outpatient management of asthma by an allergist/immunologist can reduce emergency department visits, hospital admissions for asthma and asthma mortality. The cost savings is significant.
- More than 70% of people with asthma also suffer from other allergic diseases, such as rhinitis and atopic dermatitis (eczema).

Other Allergic Diseases³

- The various allergic diseases affect as many as 40 to 50 million people in the U.S. — more than 20% of the population.
- Allergic diseases are the sixth leading cause of chronic disease in the United States.
- Allergic rhinitis (hay fever) affects more than 35.9 million people and accounts for more than 14.1 million physician office visits each year.
- Overall costs related to allergic rhinitis in the United States were approximately \$6 billion in 1996.
- In 1998, allergies cost more than \$250 million due to absenteeism and reduced productivity.
- Nearly 35 million people are affected by chronic sinusitis in the United States, which causes workers to miss an average of four days of work each year and accounts for more than 18 million primary care physician office visits.
- In 1996, health care expenditures attributable to sinusitis in the U.S. were estimated to be over \$5.8 billion.
- The most common skin condition in children younger than 11 years of age is allergic dermatitis (eczema; itchy rash). Prevalence has increased from 3% in the 1960s to 10% in the 1990s.
- Hives affect 10 to 20 percent of the population at some time in their lives. Many (about 50%) continue to have symptoms for more than six months. ■

Who Will Care for Asthma & Allergy Patients?

ACAAI predicts a shortfall of more than 2,100 allergists with no solution in sight

ANALYSIS OF SUPPLY AND DEMAND FOR ALLERGIST/IMMUNOLOGISTS ⁴

Year	Estimated Supply of A/I Physicians	Estimated Supply of A/I FTEs	Estimated Capacity in Office Visits	Estimated Total Demand for Office Visits	Estimated Demand for A/I's in FTEs	Estimated Shortage of A/I's in FTEs
1999	4,356	3,561	12,221,400	12,221,400	3,561	-
2000	4,334			12,469,847	3,633	
2001	4,313			12,724,659	3,708	
2002	4,291			12,996,029	3,784	
2003	4,269			13,254,155	3,862	
2004	4,245	3,698	12,691,536	13,529,241	3,942	244
2005	4,224	3,680	12,629,760	13,811,501	4,024	344
2006	4,203	3,661	12,564,552	14,101,153	4,109	448
2007	4,182	3,643	12,502,776	14,398,923	4,195	552
2008	4,161	3,624	12,437,568	14,704,065	4,284	660
2009	4,140	3,606	12,375,792	15,017,303	4,376	770
2010	4,120	3,588	12,314,016	15,338,886	4,469	881
2011	4,099	3,570	12,252,240	15,669,072	4,566	996
2012	4,078	3,552	12,190,464	16,008,128	4,664	1,112
2013	4,058	3,535	12,132,120	16,356,329	4,766	1,231
2014	4,037	3,517	12,070,344	16,713,960	4,870	1,353
2015	4,017	3,499	12,008,568	17,081,314	4,977	1,478
2016	3,997	3,482	11,950,224	17,458,697	5,087	1,605
2017	3,977	3,465	11,891,880	17,846,422	5,200	1,735
2018	3,957	3,447	11,830,104	18,244,814	5,316	1,869
2019	3,938	3,430	11,771,760	18,654,209	5,436	2,006
2020	3,918	3,413	11,713,416	19,074,949	5,558	2,145
Change from 2006	-6.8%	-6.8%	-6.8%	+35.3%	+35.3%	Up 1,697



approximately 0.5 % per year between 1999 and 2004, but the number of FTEs increased as A/I physicians started to practice longer hours and lengthen their career to compensate for growing demand. It should be noted that the trend toward longer hours and lengthening of careers is contrary to trends for physicians in general.

Requirements for allergy/immunology services can be forecasted using simple extrapolation (population ratios), trend analysis (time series or regression), needs models which assume that non-insured patients will have the same utilization patterns as insured patients and demand models that take into account physician productivity and trends in demand for services. ACAAI used a demand model, which was based on trends in office visits as reported by the CDC and physician productivity expressed in office visits (66 patient visits per week). Demand for allergists in FTEs is projected to increase 35% from 4,109 in 2006 to 5,558 in 2020. The supply of allergists in FTEs is expected to decline 6.8% from 3,661 in 2006 to 3,413 in 2020. Although the shortage of allergists does not affect all geographic locations, it is widespread and growing worse.

The supply of allergist/immunologists was forecasted by the American Academy of Allergy, Asthma and Immunology, through its 2000 Allergy and Immunology Physician Workforce Survey conducted by SUNY-Albany's Center for Health Workforce Studies. The 2000 workforce study identified two distinct groups of physicians that provide allergy-related services: those whose practice is devoted exclusively or almost exclusively to providing allergy and asthma-related services and physicians who provide these services on a part-time basis and/or provide non-allergy related services as well. Core allergists were defined as physicians providing 30 or more hours per week in allergy and immunology patient care or 20-29 hours per week if those hours rep-

resent a majority of a physician's patient care time per week. Core allergists accounted for 88% of allergist FTEs and 86% of the estimated patient visits to allergists/immunologists.

A follow-up survey was sponsored by AAAAI and was conducted by SUNY-Albany's Center for Health Workforce Studies in 2004 to update the information collected 5 years ago, as well as to assess A/I physician perspectives on several additional issues to better understand the forces affecting U.S. A/I practices. The new survey shows that there were 4,245 allergist/immunologists nationwide in 2004 compared to 4,356 in 1999. The study concluded that the number of allergist/immunologists declined at a rate of

Distribution of Allergy and Immunology Training Programs by State

2006 ANALYSIS ON DISTRIBUTION OF ALLERGY AND IMMUNOLOGY TRAINING PROGRAMS

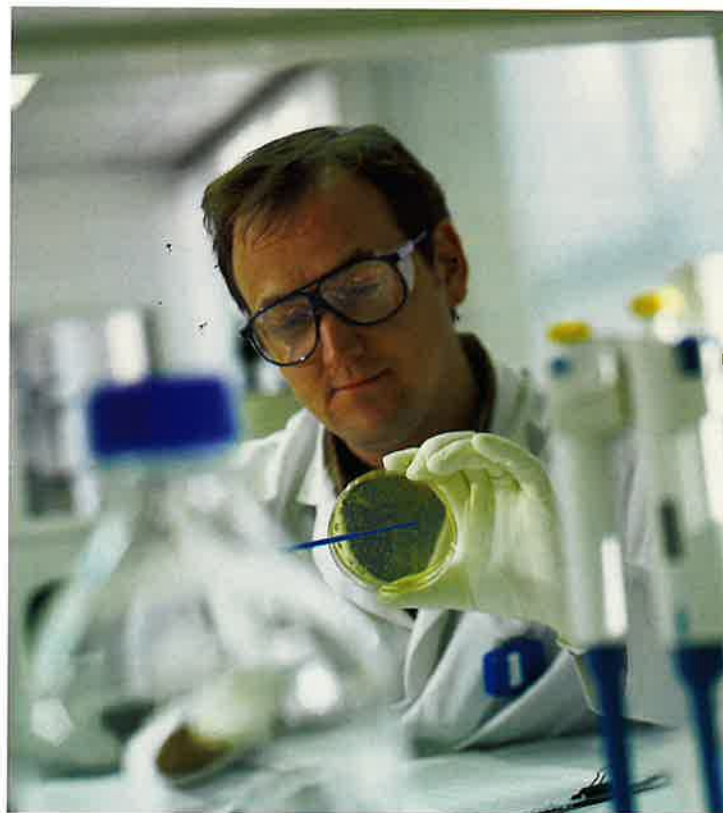
State	AAMC Medical Colleges	Resident Programs (ACGME)	Approved Positions (ACGME)	Residents on Duty (ACGME)
Alabama	2	1	4	2
Alaska	-	-	-	-
Arizona	1	-	-	-
Arkansas	1	-	-	-
California	8	9	33	26
Colorado	1	2	16	11
Connecticut	2	1	3	1
Delaware	-	-	-	-
District of Columbia	3	1	8	8
Florida	4	2	10	8
Georgia	4	1	4	5
Hawaii	1	-	-	-
Idaho	-	-	-	-
Illinois	7	2	14	14
Indiana	1	-	-	-
Iowa	1	1	3	3
Kansas	1	1	4	3
Kentucky	2	-	-	-
Louisiana	3	3	15	14
Maine	-	-	-	-
Maryland	3	2	14	16
Massachusetts	4	4	14	12
Michigan	3	3	11	11
Minnesota	2	2	6	6
Mississippi	1	1	4	2
Missouri	4	3	15	14
Montana	-	-	-	-
Nebraska	2	1	4	3
Nevada	1	-	-	-
New Hampshire	1	-	-	-
New Jersey	2	1	6	4
New Mexico	1	-	-	-
New York	12	9	34	30
North Carolina	4	3	14	7
North Dakota	1	-	-	-
Ohio	6	2	10	10
Oklahoma	1	-	-	-
Oregon	1	-	-	-
Pennsylvania	6	5	21	17
Rhode Island	1	-	-	-
South Carolina	2	-	-	-
South Dakota	1	-	-	-
Tennessee	4	2	8	8
Texas	7	4	25	25
Utah	1	-	-	-
Vermont	1	-	-	-
Virginia	3	2	8	7
Washington	1	1	4	-
West Virginia	2	1	2	1
Wisconsin	2	2	10	10
Wyoming	-	-	-	-
Total	122	72	324	278

In 2006, the Accreditation Council for Graduate Medical Education (ACGME) reported that 22 states did not have allergy and immunology training programs. Because many physicians have a tendency to practice in the communities where their families live and where they were trained, all states with medical schools should be targeted for placement of training programs. This strategy should help to distribute allergists in rural and underserved areas. However, no definite plan or mechanism to distribute allergists and other physicians to areas of greatest need has been developed. ■

Revenue Sources

for Medical Education

Congress continues to be concerned with developing a national health care workforce policy to: (1) improve the distribution and quality of the health care professionals needed to provide health services in underserved areas, (2) enhance the production and distribution of physicians to improve the state and local health infrastructure, and (3) provide accountability based on uniformly agreed upon outcome measures. This policy could be achieved by improving the national supply of physicians, improving the geographic distribution of physicians in certain urban and rural areas and increasing minority representation in the pool of practicing physicians.



Under current law, 44 separate Federal programs support health care education and training through individual and institutional support authorized under the Public Health Service (PHS) Act in titles VII and VIII. The programs are administered by the Health Resources and Services Administration (HRSA) at the Department of Health and Human Services (HHS).

Title VII of the PHS Act provides Federal support for education in the fields of allopathic and osteopathic medicine, dentistry, veterinary medicine, optometry, podiatric medicine, chiropractic, pharmacy, public health, graduate programs in clinical psychology and health administration, physician assistant training and allied health. Title VII provides two forms of assistance: institutional support to medical colleges in the form of grants and contracts and student assistance in the form of loans, loan guarantees, traineeships and scholarships for students enrolled in these schools. Title VII appropriations peaked between 1972 and 1974. Then they plateaued at \$250 million per year (in 2006 dollars) between 1982 and 2005.⁵

GME influences the future of the health care system by determining the composition and competencies of the future physician workforce. The major funding initiatives that have influenced the supply of physicians are listed below:

Health Professions Educational Assistance Act of 1963

The Health Professions Educational Assistance Act of 1963 (P.L. 88-129), authorized a 3-year program for medical school construction and loan programs for students in schools of medicine, dentistry and osteopathy. This initial enactment of federal support for education of health care professionals was in response to a critical shortage of manpower and the 1963 legislation was designed to increase enrollment at various medical schools and assure the financial viability of these schools. However, by the mid-1970's when studies began to indicate that the supply of health care professionals would be sufficient to meet the nation's future needs, the focus of support under title VII began to change. Two areas of need were emerging: first, rural and inner-city

communities experiencing shortages of health care professionals and second, a relative shortage of primary care providers. Support also was provided for minority and disadvantaged students and area health education centers.

Subsequent extensions of Title VII programs began to focus federal institutional and student assistance to increase the number of primary care providers. In particular, the 1992 reauthorization provided a preference for those programs, which trained the greatest numbers of individuals who enter practice in underserved areas. Despite these programs, distribution of physicians to areas of greatest need continues to be a problem.

Medicare Program Implementation - 1966

In 1966, policymakers concluded that it was inappropriate to pay the costs of GME through Medicare funds. However, they also decided that until a permanent source of funding for GME could be found, Medicare would pay its share of these costs because educational activities enhance the value of patient care. A series of commissions on the future of

Medicare have revisited this issue approximately every four years and have reached the same conclusion.⁶

After Medicare, Medicaid is the second largest explicit payer of GME. States spend an estimated 7% of Medicaid inpatient hospital expenditures to support GME.

Graduate Medical Education National Advisory Committee – 1981

The prediction of a physician surplus in the United States may be traced to the 1981 Report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human Services. Following this report came a series of studies in the 1980s and 1990s, often conducted on behalf of COGME, which reached similar conclusions. These studies indicated that by the year 2000 there would be a 15%-30% surplus of physicians (70,000 by 1990 and 145,000 by 2000). It was further concluded that the surplus would be greater for specialists and that there would be some degree of shortage for primary care physicians. These studies influenced a significant reduction in the supply of physicians in the 1980s. Instead of the predicted surplus, we now have a significant shortage.

Why was the need for physicians so underestimated? An answer to this question is given by Dr. Richard Cooper and colleagues (Health Affairs 2002; 21:140-153). These writers argue that the models used in these studies were flawed because they were based on an analysis at the "micro" level. Studies focused on how many physician FTEs would be needed if they provided services according to good medical practice at an efficient rate, given a population with specified demographics and associated health risks. Analysis of the adequacy of the physician workforce, they argued, should not be based on what the number of physicians ought to be in an idealized world. It should depend on the forces that are actually at work. In other words, the projected surplus did not materialize because the idealized models never played out in the real world.⁷

GME Payments Incorporated into the Medicare Prospective Payment System – 1984

In spite of the initial decision to only temporarily fund GME from the Medicare Trust funds, funding for GME remains in Medicare. Spending for GME has increased every year since 1984, when explicit payments for GME by the Medicare program were incorporated into the Medicare prospective payment system.

Medicare pays hospitals for GME through two payment streams – direct GME payments and an indirect medical education adjustment. Direct payments compensate a teaching hospital for overhead costs related to GME and salaries and fringe benefits for residents, teaching physicians and GME administrative staff. The indirect medical education adjustment compensates teaching hospitals for the higher operating costs associated with the presence of a residency program such as more complicated cases, additional tests ordered by



residents as part of the learning process and reduced patient care productivity by all staff members. Medicare GME spending has remained flat. In 2002, 2003 and 2004, direct-GME averaged \$2.6 billion and indirect-GME averaged \$5.6 billion per year.⁸

Health Profession Education Extension Amendments – 1992

With the passage of the Health Profession Education Extension Amendments of 1992, Congress restructured Title VII of the Public Health Service Act to fund programs to encourage primary care and promote ethnic and racial diversity among physicians.

Workforce Development Act – 1999

In 1999, Congress authorized approximately \$300 million in annual grants to support workforce development. Funding for these programs has fluctuated in recent years, but has generally remained in the \$300 million range. Authorized programs include the following: guaranteed loans for the educational

cost of physicians, nurses, pharmacists and other health care professionals; direct loans through medical, pharmacy and other professional schools for minority students who agree to complete a residency in primary care and to practice in such fields until the loan is repaid; scholarships for students of exceptional financial need; support for area health centers; fellowships in family medicine, general internal medicine, general pediatrics and support for allied health care professionals.

Additional Federal Funding Sources

There are 130 Veteran's Affairs medical centers that have affiliation agreements with 105 medical schools. Nearly 32,000 residents receive some training in a VA facility each year. The VA funds 8,900 residency positions, or about 10% of the nation's residency slots. It also provides partial salary support for teaching physicians who provide patient care, supervise residents and perform research at VA medical centers. Affiliation and financial arrangements between the VA, other teaching hospitals and medical schools are negotiated on a hospital-by-hospital basis. The VA has recently announced a plan to fund additional residency training. Allergy programs could comprise some of these additional slots or programs.

The Department of Defense and the NIH also provide GME funding. It is difficult to estimate the level of financial support because the GME payments are not always separately identifiable. The total amount could be \$1 to 2 billion. Most NIH programs, however, fund positions for future researchers, rather than clinicians or clinician-educators.⁹

Third-Party Payers

In the past, third-party payers, whose payments were based on hospital charges, implicitly supported GME through higher payments to teaching hospitals. As managed care plans achieved high market penetration, they were generally less willing to pay these higher amounts and the level of private-payer support for GME declined. However, some managed care companies report that they continue to pay higher rates to academic health centers. It is difficult to determine how much GME support private insurers currently provide. Estimates are that managed care plans pay 5 -10% more to teaching hospitals than to community hospitals.¹¹ ■

Solutions to Increase the Number of Physicians

On a macro level, population growth, the number of Baccalaureate and Medical Degrees and the number of residency programs and slots drive the supply of physicians. These can be viewed as a series of levers in sequential order. The number of practicing physicians is driven by career opportunities in clinical practice versus those in research, education and industry. Policy makers can develop a variety of strategies to enable each of the drivers. ■

Drivers of Physician Supply	Enablers	Factors that Federal and State Policy Makers Can Influence
Population Growth	Birth Rate	
	Immigration	Immigration Policy
Baccalaureate Degrees	Growth of 1-18 Age Group	
	U.S. Economic Growth	National and Local Economy
	Job Prospects	Job Creation
	College Capacity	Growth of State Colleges
	Student Funding Options	Student Loans and Subsidies
	College Attrition Rate	
Medical Degrees	Physician Job Prospects	Job Creation in Health Care including Diversity and Rural Programs
	Positive Image of Physicians	
	Potential Economic Rewards	Tort Reform
	Student Funding Options	Student Loans and Subsidies
	Medical College Capacity	Funding of Medical Colleges
	Medical College Attrition Rate	
Residency Programs and Slots	Number of Programs and Slots	Funding GME
Specialty Certifications	Job Prospects by Specialty	
	Specialty Slot Capacity	Funding GME for Critical Specialties Such as Allergy / Immunology
	Hospital Needs and ROI	
Practicing Physicians	Incentives Supporting Clinical Practice	Balancing Support for Physician Placements in Clinical Practice, Research, Academia and Industry

Solutions to Reduce Physician Attrition

On a macro level, early retirements, physician death rates and career changes drive reductions in the supply of physicians. Departures can be reduced by improving job satisfaction, removing liability concerns, encouraging healthier lifestyles and working fewer hours (through improvements in productivity). ■

Drivers of Physician Attrition	Reasons	Factors that Policy Makers Can Influence
Early Retirements	Declining Job Satisfaction	
	Liability Concerns	Tort Reform
	Working Long Hours	Increasing the Supply and Use of Nurse Practitioners, Physician Assistants and other Non-Physician Clinicians
Death Rates	Stress and Lifestyle	Encouraging Healthier Lifestyles
Career Changes	Cost of Liability Insurance	Tort Reform
	Desire to Work Fewer Hours	Technology Breakthroughs

Alternative Funding Sources for GME Programs

There have been numerous calls over the years to find alternative sources of funding for GME. Private-sector funding has been explored many times. Although there has been general agreement that GME is a public good, there has been no consensus on policy issues relating to financing.

In their excellent review of the policy debate on graduate medical education,¹⁰ Gerald F. Anderson, George D. Greenberg and Barbara O'Wynn identified these proposals:

- An all-payer fund to support GME was proposed by the late Senator Daniel Patrick Moynihan (D-NY). Legislation would establish an all-payer fund using Medicare payment methodologies. The proposal called for non-Medicare funding through a 1.5% tax on private health insurance premiums and ERISA plans as well as a transfer of 5% of federal spending for Medicaid acute care. These resources would supplement existing Medicare funds and would be allocated according to current Medicare payment formulas.
- In 1999, a special committee of the Bipartisan Commission on Reform of Medicare recommended that GME be removed from the entitlement portion of Medicare and appropriated directly. This

proposal would separate GME funds from patient care payments and make the recipients more accountable for the funds.

Opposition came from teaching hospitals, who argued that this plan did not provide stable funding for education.

- The Medicare Payment Advisory Commission (MPAC) proposed eliminating Medicare's explicit payments for GME, and combining GME costs with other patient care costs. The MPAC also proposed adopting Diagnosis Related Group (DRG) refinements that would pay hospitals caring for more severely ill patients at higher rates while operating within a budget-neutral system. Medicare's prospective payments would be adjusted to reflect the higher costs of providing enhanced patient care in teaching hospitals not paid through the refined case-mix system. Under this plan, current subsidies for teaching hospitals would

continue to be paid through patient care funds and hospitals with the most severely ill patients would receive a greater share of funds.

- The Association of American Medical Colleges (AAMC) continues to call for the removal of the cap on the number of residency training programs funded by Medicare. "Increased public support of graduate medical education is essential to guarantee a sufficient supply of doctors to care for the growing number of elderly," said AAMC President Jordan J. Cohen, M.D.

Health care economists, policymakers and hospital managers have debated ways to calculate the incremental cost of GME. The rationale and methods for calculating the cost of GME have evolved over time. Additional work is required to develop a better method for setting Medicare payment rates for GME. ■

Solutions to Increase the Supply of Allergist/Immunologists

ACAAI evaluated the following strategy options to address the shortfall of allergist/immunologists:

Self-Funding

Under this scenario, fellows are obligated to work fulltime in a training pro-

gram, but are not paid. They are expected to secure their own income by whatever means they can. This is the historical model for fellowship funding. Many current allergists were trained this way.

Advantages — The satisfaction of doing it yourself.

Disadvantages

- Accreditation requirements address resident employment and salary issues.
- This concept has limited appeal. Fellows have completed college,

medical school and a three-year residency in pediatrics or internal medicine. They have already accumulated substantial debt. They are at least 28-30 years old. Many of their college friends have had well-paying jobs for many years.

- Many fellows have spouses and children to support making self-funding requirements unattainable.
- Grants for clinical allergy and immunology training appear to be few and far between.
- Unless they are independently wealthy, fellows would also have to make a substantial moonlighting commitment that would interfere with the reading commitment of fellowship training.
- This model could create disparities by attracting a high percentage of fellows from wealthy families.

Support from Practicing Allergists

This option requires an allergy practice or an individual to make a donation that covers expenses for a 2-year allergy and immunology fellowship. A specific, named fellow is paid from the donation at a salary equivalent to other institutional PGY-4 and PGY-5 salaries.

Advantages

- The fellow is paid at the same rate as peers in other subspecialty fellowships.
- This may serve as an excellent recruiting tool for the practice.

Disadvantages

- Accreditation requirements address resident selection issues.
- An agreement needs to be made to ensure that the entire grant is received or otherwise guaranteed before the fellow signs an institutional training contract.
- When the donor is an allergy practice group, it is likely that the fellow would be contractually obligated to join that practice after training, and repay the cost of training over a period of time. If, in the course of training, the fellow decides not to join that practice, there could be issues. This potential event would have to be addressed prospectively in any agreement between the fellow and

the allergy practice, as well as in the fellow's contract with the institution.

- Fellow candidates with this kind of funding would have an unfair advantage over more highly qualified candidates without funding.

Pharmaceutical Industry Funding

Pharmaceutical companies can be approached to provide educational grants to institutions to fund training.

Advantages

- Funding is available at many pharmaceutical companies for educational grants.
- The fellow is paid the same rate as peers in other subspecialty programs.

Disadvantages

- There can be perceptions of strings attached to educational grants.
- There can be a clear potential for conflict of interest. Even in the best of circumstances, it is not clear how there could not be some sense of obligation on the part of the fellow, faculty, or institution.

Local Endowment Funds

Former fellows from a training program, foundations and other interested private donors can contribute to a university endowment fund. The income from this fund provides income for fellows-in-training.

Advantages

- Development campaigns can be designed to secure funds.
- Security is a major advantage.

Disadvantages

- To generate \$60,000 per year to train one fellow, there needs to be at least \$1.2 million in principal.
- The endowment fund must be protected to prevent diversion of funds to other programs.
- There must be a plan in place to determine what will happen to the endowment account in the event that the allergy and immunology training program closes for some reason.

Funding by National Allergy-Immunology Organizations

Both the American College of Allergy, Asthma & Immunology (ACAAI) and the American Academy of Allergy, Asthma and Immunology (AAAAI) have foundations and other sources of funds that can be used for fellowship training.

Advantages

- Some funds are currently available.
- Additional funds can be raised.

Disadvantages

- Funding would support a very limited number of fellows.
- Association resources would be diverted from other important areas.

Hospital Funding

Subspecialty training can be funded from local university hospital budgets.

Advantages

- There would be perceived and actual "equality" with other programs in the institution.
- Having local control is preferable to federal control over how training might be conducted.

Disadvantages

- The cognitive, non-procedural, outpatient-based specialties do not generate substantial income for the hospital or university.
- In the specific case of allergy and immunology, many university practices do not give the practitioner credit for income generated by skin testing or immunotherapy injections because these do not have a physician work component.
- Allergy/immunology is an outpatient-based specialty. Admission of a patient to the hospital is considered a failure of outpatient management.
- Emergency room and inpatient charges for management of acute asthma are readily reimbursed by third-party payers. Patients with mild or moderately severe episodes of asthma do not require substantial resources for inpatient management.

- From the viewpoint of hospital management systems, funding allergy and immunology training might be considered disadvantageous.

- Good outpatient care costs the government less in the long run.
- Multiple sources of funding are available.

Local, State and Federal Funding

Federal funds were once the major source for subspecialty funding, before they were reduced by the Balanced Budget Act of 1997. Many states fund GME through the Medicaid program.

Advantages

- There would be perceived and actual "equality" with other programs in the institution.

Disadvantages

- NIH funding is for training tomorrow's scientists, and clinician-scientists.
- There is no clear program for training tomorrow's clinician-educators in academic medical centers.

In summary, programs are attempting to address the shortfall of allergist/immunologists through several mechanisms with limited success. They are falling short of addressing the need. In 2007, the number of trainees increased to 298, covering only a very small portion of the shortfall. Despite innovative approaches in funding, it is unlikely that the problem will be addressed without policy changes at the national level that provide additional support for GME programs in allergy and immunology. ■

Endnotes

¹ The supply forecast started with the 1999 to 2004 trend line in the American Academy of Allergy, Asthma and Immunology's 2004 Workforce Study. Projections from 2004 to 2020 were prepared by ACAAI.

² Sources for data in this section include:

- American Lung Association. Epidemiology & Statistics Unit, Research Program and Services. *Trends in Asthma Morbidity and Mortality*, May 2005.

- Summary Health Statistics for U.S. Children: National Health Interview Survey, 2002. Series 10, Number 221.2004-1549.

- Centers for Disease Control. Surveillance for Asthma – United States, 1960 – 1995, MMWR. 1998; 47 (SS-1).

- National Library of Medicine. Understanding Allergy and Asthma. National Institutes of Health, Website, 2006.

³ Sources for data in this section include:

- American Academy of Allergy, Asthma and Immunology (AAAAI). *The Allergy Report: Science Based Findings on the Diagnosis & Treatment of Allergic Disorders*, 1996-2001.

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- Nathan, R.A., Meltzer, E.O., Selner, J.C., Storms, W. "Prevalence of Allergic Rhinitis in the United States." *Journal of Allergy and Clinical Immunology* (1997) 99:S808-14.

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- Horan, R.F., Schneider, L.C., Sheffer, A.L. "Allergic Disorders and Mastocytosis." *Journal of the American Medical Association*. (1992) 268:2858-2868.

⁴ Data for 1999 and 2004 in the first column was derived from the American Academy of Allergy, Asthma and Immunology's [April 2006 press release](#) on the 2004-2005 A/I workforce survey conducted by the Center for Health Workforce Studies, State University of New York-Albany. Data for all other years in column one was an ACAAI extension of the trend line from the 2004-2005 A/I workforce survey (1999 to 2004).

FTE data for 1999 and 2004 in column two was derived from the American Academy of Allergy, Asthma and Immunology's 2004-2005 A/I workforce survey. The study concluded that A/I physicians have compensated for their shrinking numbers by practicing longer hours per week and lengthening their career. This resulted in an increase in the FTE count between 1999 and 2004. (It should be noted that the trend toward longer hours and lengthening of careers is contrary to trends for physicians in general.) It was assumed that FTE's would decline after 2004 at the same rate as A/I physicians.

Supply data was also utilized from the American Academy of Allergy, Asthma and Immunology's Allergy and Immunology Physician Workforce Report 2000, Figure ES-1; www.aaaai.org

Demand in column four is based on the assumption that one third of patient visits are for asthma and that these visits to allergists will double every 20 years similar to the pattern reported by CDC (http://healthandenergy.com/asthma_increasing.htm), an average 3.5% annual increase;

also assumes that non-asthma allergy office visits will grow at an average of 1.3% per year similar to the pattern reported by CDC for all visits (<http://www.cdc.gov/nchs/pressroom/01news/olderpat.htm>).

⁵ Fitzhugh Mullan, MD, George Washington University, "Fat Years, Lean Years and the Need to Reinvent Title VII," presented at the AAMC Physician Workforce Research Conference: 2020 Vision, Focusing on the Future, May 4-5, 2006, Washington, DC.

⁶ Graduate Medical Education: The Policy Debate, Gerald F. Anderson, George D. Greenberg and Barbara O Wynn, *Annual Review of Public Health*, Vol. 22: 35-47 (Volume publication date May 2001), page 38, 2001.

⁷ David S. Guzick, MD, PhD, *Deans' Newsletter*, University of Rochester Medical Center, October 28, 2004.

⁸ The American Medical Student Association, "Graduate Medical Education Funding," 2005, p.3.

⁹ Anderson, Greenberg and Wynn, p.38.

¹⁰ Ibid.

¹¹ Ibid.

Conclusion

There is a growing shortage of allergist/immunologists in the United States. ACAAI estimates that the number of allergist/immunologists (FTEs) will decline 6.8% from 3,661 in 2006 to 3,413 in 2020, while demand for these physicians is projected to increase by 35% to 5,558 in 2020. New and larger residency programs are needed in allergy and immunology to meet growing patient demand. Some programs can train more fellows. They should be identified and financially supported. Many programs cannot expand. Therefore, the number of training programs in the system needs to increase to balance supply and demand.

The shortage of allergist/immunologists is part of the general shortage of physicians. An expansion in medical education and federal initiatives will be needed to address chronic problems in shortages of specialty physicians (such as allergist/immunologists), shortages of primary care physicians, physician distribution and workforce diversity.

Citing growing evidence of a national physician shortage, the Association of American Medical Colleges (AAMC) recommends that enrollment in medical schools be increased 30% by 2015. This expansion would result in an additional 5,000 new M.D. students annually and should be accomplished by boosting enrollment at existing schools, as well as by creating new allopathic medical schools.

ACAAI Position: Increase Supply of Allergists by 120 Annually

Current supply cannot keep up with the current retirement and death rate of practicing allergists. To cover attrition (an estimated net loss of 20 allergists per year) and to keep up with new demand (a need for 100 additional allergists each year), training programs (existing and newly established) should *increase* the annual production rate by 120 allergy/immunology physicians.

A coordinated public-private initiative to fund additional GME positions, including subspecialty positions such as allergy and immunology, now deserves the urgent attention of federal policy makers. We at ACAAI are eager to participate in efforts to find solutions for this pressing problem. It calls for immediate action.

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