

COUNCIL ON GRADUATE MEDICAL EDUCATION

Third Report

Improving Access to
Health Care Through
Physician Workforce Reform:

Directions for the 21st Century

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Health Resources and Services Administration

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**Improving Access to Health Care
Through Physician Workforce Reform:
*Directions for the 21st Century***

- **Changing the Physician Supply**
- **Increasing Minority Representation in Medicine**
- **Reforming Medical Education**

October 1992



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
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The views expressed in this document are solely those of the Council on Graduate Medical Education and do not necessarily represent the views of the Health Resources and Services Administration nor the U.S. Government

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HIGHLIGHTS

The Council on Graduate Medical Education (COGME) was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends and to recommend appropriate Federal and private sector efforts to address identified needs. The legislation calls for COGME to serve in an advisory capacity to the Secretary of the Department of Health and Human Services (DHHS), the Senate Committees on Labor and Human Resources and Finance, and the House of Representatives Committees on Energy and Commerce and Ways and Means. By statute, the Council terminates on September 30, 1996.

The legislation specifies that the Council is to comprise 17 members. Appointed individuals are to include representatives of practicing primary care physicians, national and specialty physician organizations, international medical graduates, medical student and house staff associations, schools of medicine and osteopathy, public and private teaching hospitals, health insurers, business, and labor. Federal representation includes the Assistant Secretary for Health, DHHS; the Administrator of the Health Care Financing Administration, DHHS; and the Chief Medical Director of the Veterans Administration.

Charge to the Council

Although called the Council on Graduate Medical Education, the charge to COGME is much broader. Title VII of the Public Health Service Act in Section 799(H), as amended by Public Law 99-272, requires that COGME provides advice and makes recommendations to the Secretary and Congress on the following:

1. The supply and distribution of physicians in the United States.
2. Current and future shortages or excesses of physicians in medical and surgical specialties and subspecialties.
3. Issues relating to foreign medical school graduates.
4. Appropriate Federal policies with respect to the matters specified in (1), (2), and (3) above, including policies concerning changes in the financing of undergraduate and graduate medical education programs and changes in the types of medi-

cal education training in graduate medical education programs.

5. Appropriate efforts to be carried out by hospitals, schools of medicine, schools of osteopathy, and accrediting bodies with respect to the matters specified in (1), (2), and (3) above, including efforts for changes in undergraduate and graduate medical education programs.

6. Deficiencies in, and needs for improvements in, existing data bases concerning the supply and distribution of, and postgraduate training programs for, physicians in the United States and steps that should be taken to eliminate those deficiencies. The Council is to encourage entities providing graduate medical education to conduct activities to voluntarily achieve the recommendations of this Council under (5) above.

Previous Reports

The Council was asked by Congress to issue its first report by July 1, 1988, and subsequent reports every three years. Since its establishment, COGME has submitted the following reports to Congress:

- First Report of the Council, Volume I and Volume II (1988).
- Second Report: The Financial Status of Teaching Hospitals and the Underrepresentation of Minorities in Medicine (1990).
- Addendum to the Second Report: The Financial Status of Veterans Administration Teaching Hospitals (1990).
- Scholar in Residence Report: Reform in Medical Education and Medical Education in the Ambulatory Setting (1991).

Principles of the Council

In making these recommendations to Congress and the Secretary, the Council's deliberations have been guided by the following principles:

- The primary concern of the Council must be the health of the American people. There must be ensured access to quality health care for all. Concern for the well-being of the health professions, medical schools, and teaching hospitals, while important, must be secondary to the previously mentioned concerns.

- The Council should consider the diverse needs of the various geographic areas and segments of the population, such as rural and inner-city areas and minority and disadvantaged populations.

- A goal of the Council is increased representation of minorities in the health professions. Targeted programs are appropriate and a necessary means of achieving this objective.

- The Council must consider the interrelationship between services provided by physicians and those provided by other health professions.

- Although the Council supports the continuation of successful private sector initiatives, it recognizes that an active Federal and State role has been and will continue to be needed to address the specific problems of distribution, quality, and access to health care.

- The Council should be concerned about effects on total health care costs in the Nation. The Council must also consider the financial and programmatic impact of its recommendations on the Federal budget, both short and long term.

- The Council recognizes that health care in the United States is not a closed system; therefore, its deliberations must be guided by an international perspective.

- The Council must consider changes in demographics (e.g., the aging population), disease patterns (e.g., increasing prevalence of the acquired immunodeficiency syndrome [AIDS]), patterns of health care delivery (e.g., increased emphasis on ambulatory care), and the unmet needs for prevention and care.

- The Council believes that a strong system of medical education must be maintained in order to expand medical knowledge and provide access to quality medical care through an adequate supply of appropriately educated physicians.

- American medical education should provide a basis for physicians of the future to be able to deliver continually improving patient care through a better understanding of disease processes and their clinical manifestations. The education system should prepare physicians to appropriately apply new techniques of diagnosis, treatment, and prevention in a compassionate and cost-effective manner.

Findings

The Council's seven major findings identify a series of deficiencies in the current physician supply, medical education financing, and health care

reimbursement systems, which hinder health care access. The Council's findings conclude that the Nation has:

- Too few generalists (i.e., family physicians, general internists, and general pediatricians) and too many nonprimary care specialists and subspecialists.

- Access to care problems in inner-city and rural areas that are growing despite substantial increases in the total physician supply.

- Too few underrepresented minority physicians.

- Shortages in certain nonprimary care medical specialties, including general surgery, adult and child psychiatry, and preventive medicine, and among generalist physicians with additional geriatrics training.

- An increasing physician-to-population ratio, which will do little to improve the public's health or increase access and will hinder cost-containment efforts.

- A system of undergraduate and graduate education that can be more responsive to these regional and national workforce needs.

- No national physician workforce plan or sufficient incentives in medical education financing and health care reimbursement to attain the appropriate specialty mix, racial/ethnic composition, and geographic distribution of physicians.

Goals

Based on these findings, COGME recommends adoption of the following national physician workforce goals. The United States should:

- Move toward a system in which 50 percent of physicians practice in the generalist disciplines of family medicine, general internal medicine, and general pediatrics.

- Increase to at least 50 percent the percentage of residents who complete a three-year training program in family medicine, general internal medicine, and general pediatrics and enter generalist practices.

- Improve physician distribution to eliminate primary medical care shortage areas and urban/rural disparities.

- Double the number of entering underrepresented minority medical students from 1,500 to 3,000 by the year 2000, a goal established by the Association of American Medical Colleges.

- Increase the number of general surgeons, preventive medicine specialists, adult and child psychiatrists, and general internists and family physicians with additional geriatrics training.

- Maintain the osteopathic and allopathic physician-to-population ratio at current levels.

Recommendations for the Nation

The centerpiece of COGME's recommendations is the establishment of a national physician workforce plan, rational medical education infrastructure, and financing strategy to attain the national physician workforce goals. Recommendations include:

- Establishing a National Physician Workforce Commission and State Commissions to determine local, regional, and national needs.

- Implementing the workforce plan through local, State, or regional academic consortia, which might include one or more medical schools, teaching and community hospitals, health maintenance organizations (HMOs), community health centers, and other educational and teaching institutions or agencies.

- Allocating residency positions and graduate medical education (GME) funding based on State and regional workforce needs and national goals for aggregate physician supply, minority recruitment and retention, and specialty distribution.

- Encouraging allopathic and osteopathic medical schools to not increase enrollment.

- Capping Medicare (and other) funded first-year residency positions at 10 percent more than the number of U.S. allopathic and osteopathic medical graduates.

- Providing undergraduate financial incentives, including loan and scholarship programs, to recruit and retain more underrepresented minorities and graduate more generalists.

- Providing GME financial incentives, through Medicare and other payers, to train more generalists and fewer nonprimary care specialists and subspecialists.

- Increasing incentives for primary care practice and service in inner-city and rural areas, through physician payment reform, reduction of administrative burdens, National Health Service Corps (NHSC) scholarship and loan programs, tort reform, and differential Medicare and Medicaid reimbursement for practice in shortage areas.

Specific Recommendations for Medical Educators

A physician workforce plan and financing strategy will help our Nation respond to societal needs for more minority and generalists physicians and for access to more primary care services, particularly in underserved inner-city and rural areas. Achieving these national workforce goals will also require the commitment and leadership of our Nation's medical educators. The Council's vision of a medical education system that is responsive to our Nation's health care needs in the 21st century will be reflected in the institution's:

- Mission statement and strategic plan.
- Recruitment, admissions, and retention policies.
- Medical education objectives and curricula.
- Faculty composition and reward system.
- Medical education and teaching environment.
- Linkages with a variety of teaching sites.

Issues for Further Exploration

The Council recognizes that there are a number of issues requiring further exploration. Among these are the following:

- The Nation's voluntary system of specialty certification, medical education accreditation, and licensure, which have a significant impact on physician workforce supply and distribution.

- The important role of physician assistants, nurse practitioners, and certified nurse midwives in delivering primary medical care.

- Representation of women in medicine, particularly in academic roles.

- The State's role, including model initiatives, in addressing workforce data needs, supply, and distribution.

- Other financing and infrastructure approaches that have potential to attain the stated workforce goals.

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CHAPTER I - Introduction: The Crises in Health Care Delivery and Physician Workforce Supply

In 1988, when COGME issued its first report to the Secretary and Congress, it expressed concern that physician specialty and geographic maldistribution was growing despite an increasing aggregate supply of physicians. At that time, concerns about access to health care and rising health care costs had not yet been so prominently thrust into the national spotlight. Similarly, physician workforce policy was not high on the national agenda.

The historical context of this report is vastly different. Today, the health care system is acknowledged to be in crisis. While health care expenditures exceeded \$650 billion in 1990 and are projected to reach \$1 trillion in 1995, 37 million Americans remain medically uninsured, and millions more face barriers to basic health care. Furthermore, the Nation's basic health status indicators, which are in some measure influenced by access to health care, lag behind most economically developed countries. There is now recognition that health care reform to ensure access to basic care for all Americans is not possible without physician workforce reform. It is in this context that COGME has been examining physician workforce supply and distribution and its impact on ensuring access to care for all Americans.

The Crisis in Health Care Delivery

Within the community of nations, the United States leads in biomedical research, technology development, and some aspects of health care delivery. The United States produces excellent physicians and leads in the development, application, and diffusion of new technologies for disease diagnosis and treatment. The United States also is recognized for innovations in health care delivery systems such as HMOs and other managed care systems.¹

Nevertheless, the health care system has notable flaws. Although the United States spends far more per capita on health care than any other nation, millions of Americans face significant barriers trying to obtain basic health services. The United States pioneers in biomedical research and sophisticated medical technology, funded through the National Institutes of Health (NIH), but basic health

status indicators lag far behind other developed countries. Although the Centers for Disease Control has led advances in epidemiology and disease prevention and control, the actual performance of the health care system in providing basic screening, counseling, and immunization services is considered to be far below target levels.²

Today, public concern about the health care crisis is expressed through the sheer number of national health care reform proposals that have been introduced. The major elements of the health care crisis include:

- Inadequate access to care.
- Poor and/or unequal health status within the population.
- The high cost of health care.

Inadequate Access to Health Care

The problems associated with access to health care have deeply rooted social, economic, and educational implications. Significant numbers of people do not have access to affordable and quality health care, and the numbers continue to increase. Availability of insurance or other third-party coverage is a necessary means of access for preventive and medical services. Yet, 37 million Americans lack health insurance, three-fourths of them are full-time workers and their families, and another 16 million have inadequate coverage. In 1990, 17 percent of the nonelderly U.S. population did not have private or public coverage.³ In 1988, two-thirds of the uninsured population were in families of full-year steadily employed workers.⁴ These individuals and their families face barriers in obtaining medical care and are less likely to get preventive care or adequate care when faced with serious illness.

Studies have shown that lack of insurance coverage is the major barrier to health care. Without insurance coverage, many individuals and their families forgo medical care or opt for reduced care. One recent study showed data indicating that lack of access to basic care in Washington, D.C., and the United States resulted in excess needless premature deaths among African Americans from common treatable conditions such as asthma, pneumonia,

Fig. 1 – Age-Adjusted Selected Indicators of Health Status and Medical Care Utilization, by Race and Poverty Status, 1986

<i>Indicator and poverty status</i>	<i>White</i>	<i>Black</i>	<i>Hispanic</i>
Acute conditions (per 1,000)			
Nonpoor	2083	1204	1651
Poor	2342	1514	1745
Difference*	259	310	94
Restricted Activity Days (per person)			
Nonpoor	14.3	15.5	14.6
Poor	26.6	26.6	16.5
Difference	12.3	11.1	1.9
Fair or Poor Health (percent)			
Nonpoor	7.7 %	13.5 %	10.5 %
Poor	20.2 %	25.8 %	24.7 %
Difference	12.5 %	12.3 %	14.2 %
Physician Contacts (per person)			
Nonpoor	5.6	7.6	4.4
Poor	7.3	6.2	4.7
Difference	1.7	-1.4	0.3
Hospitalization (percent)			
Nonpoor	8.3 %	7.1 %	7.6 %
Poor	12.1 %	14.6 %	10.7 %
Difference	3.8 %	7.5 %	3.1 %

* Poor - Nonpoor. The NHIS defines an acute condition as a health condition that caused a restriction in activity or physician contact in the past two weeks. Persons were classified as poor if their family income was below the official poverty threshold.

Source: National Center for Health Statistics, National Health Interview Survey, 1986.

hypertension, and tuberculosis.⁵ Similarly, studies in New York City indicate that residents in low-income census tracts were significantly more likely to be hospitalized for common conditions that can be treated with access to basic health care.⁶

Poor and/or Unequal Health Status Within the Population

Many socioeconomic factors affect health status, including poverty, unemployment, lack of education, poor housing, and unsafe neighborhoods. Figure 1 displays indicators of health status and medical care utilization by race and poverty status. This information provides evidence that the health status of individuals in the population varies according to race and socioeconomic status. Simply stated, our Nation's most vulnerable citizens—minorities, the poor, the unemployed, and the poorly educated—are at greatest risk for poor health.

However, health problems are exacerbated by barriers to regular primary and preventive care. Unfortunately, our Nation's most vulnerable citizens are also the mostly likely to be uninsured. Although Medicaid is often considered to be the

catchall program for the poor, in reality, this is not the case. At the time it was enacted as Title XIX of the Social Security Act in 1965, Medicaid was not intended to pay for medical services of all poor Americans. Instead, it was designed to provide medical assistance to those in the welfare program categories of the aged, blind and disabled, and poor women or families with children, thus leaving out poverty-stricken single people and childless couples. The restricted financial criteria for Medicaid eligibility have excluded the employed poor. For reasons that include these limitations on eligibility, about 60 percent of the poor do not receive Medicaid benefits. This leaves a significant gap between the number of people living below the poverty level and the actual number of Medicaid recipients. Consequently, substantial numbers of individuals do not benefit from any health program coverage for major portions of the year. The resulting lack of health care is associated with worse health status among the poor.⁷

International comparisons also provide much ammunition for critics of the U.S. health care system. The United States fares poorly as compared

with other developed countries in several major health indices:

- In 1988, the United States ranked 23rd out of 40 selected countries in terms of infant mortality⁸ (see figure 2 for U.S. comparison of infant mortality among five selected countries belonging to the Organization for Economic Cooperation and Development [OECD]).

- The United States ranks in the bottom half among the OECD countries in terms of male and female life expectancy at birth (figure 3).⁹

The High Cost of Health Care

Policymakers agree that strategies to expand access and control costs must proceed together. To pursue one goal without the other is to further undermine a system already under serious stress. The

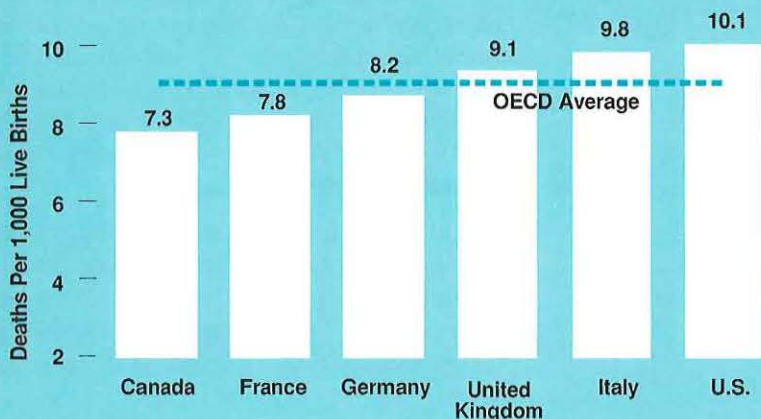
persistent and substantial increases in the costs of health care continue to alarm economists, elected officials, business, labor, and the public. Expenditures in the health care system are growing at a rate that is regarded as unsustainable by both private and public payers. Health care expenditures are estimated to exceed \$1 trillion in 1995 and \$1.8 trillion in the year 2000. In every year from 1950 to 1985 except three (1973, 1978, 1984), the inflation in national spending for health care outpaced the rest of the economy. Put differently, in 1950 the United States spent about \$1 billion per month in health care; by 1985 it was spending more than \$1 billion per day.¹⁰

When compared with other industrialized nations, the United States spends significantly more of its gross domestic product (GDP) for health care. Furthermore, health care costs continue to escalate to the detriment and sacrifice of other national goals. The per capita spending for the United States is 40 percent higher than Canada, 90 percent higher than Germany, and 127 percent higher than Japan (figure 4). Perhaps even more troubling is the continued increase in percentage of GDP in the United States through 1989, when the percentages for other industrialized countries appear to have stabilized since the early 1980s (figure 5).¹¹

A comparative analysis of the health care costs in selected countries reveals key features that distinguish the United States from other nations in providing health care services. Compared with other countries, many more physicians in the United States choose to practice in highly focused medical specialties and subspecialties. Studies suggest that the cost of physician services is much greater in the United States and that patients undergo more intense medical services per visit because of the exceptionally high proportion of nonprimary care specialists in this country.¹²

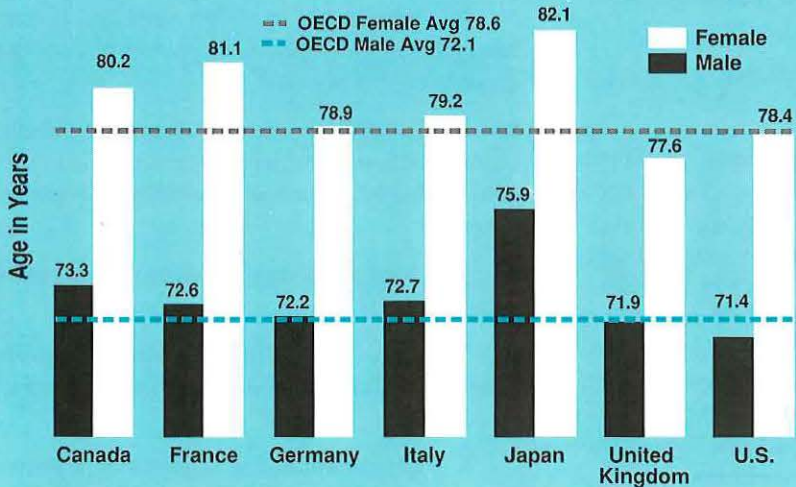
Considering the staggering health care costs that continue to escalate, it is no wonder why health care issues command frontline national attention. Despite all the billions spent on health care and the remarkable increase in expenditures for biomedical research, new technology, and medical care, the United States has a rather dismal health status scorecard due to its failure to provide routine, on-going primary care to surprisingly large segments of its population.

Fig. 2 – Infant Mortality by Selected Country, 1987

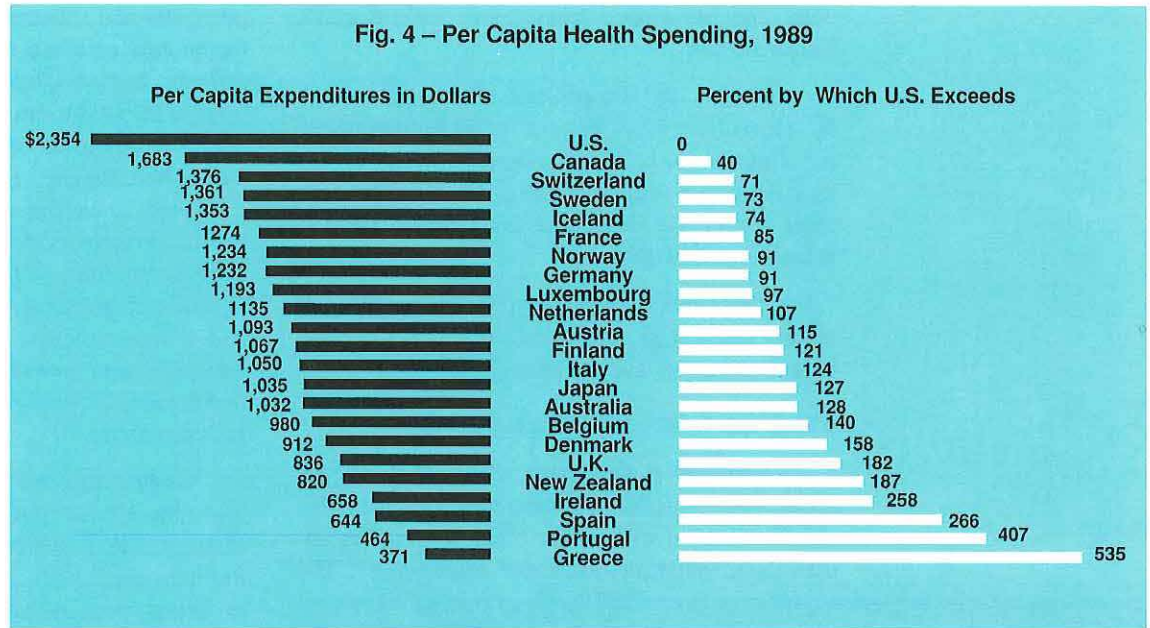


Source: Health, United States, 1990, NCHS, 1991.

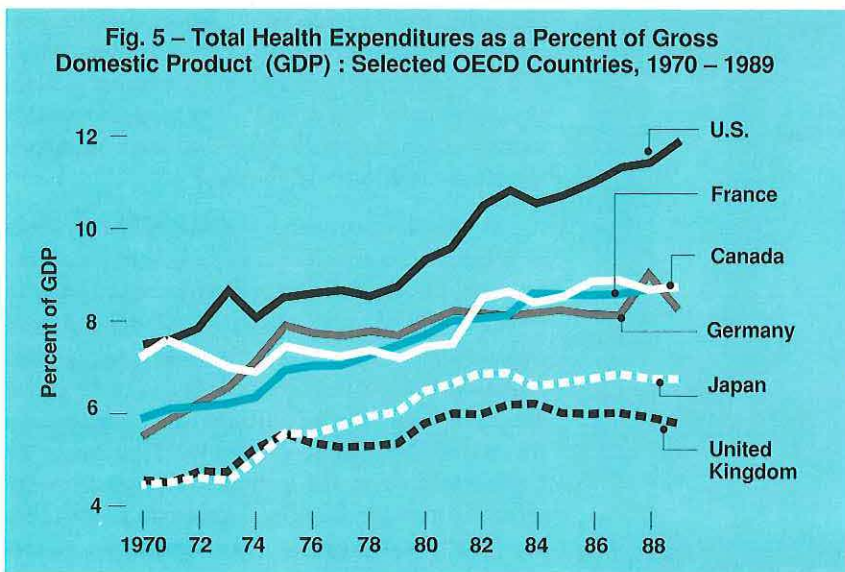
Fig. 3 - Life Expectancy at Birth in Selected OECD Countries, 1987



Source: Health, United States, 1990, NCHS, 1991



Source: Schieber, G.J., Poullier J.-P., *Health Affairs*, Spring 1991. "International health spending: Issues and trends".



Source: Pre-1988 data: OECD, Health Data File, 1989, from Health Care Financing Administration. 1988-89 data: Schieber, G.J. and Poullier, J.-P., "International health spending: Issues and trends." *Health Affairs*, Spring 1991.

The Crisis in Physician Workforce Supply

Physician and health professional workforce considerations are fundamental to any discussion of health care reform strategies. The ability to provide essential health care services to all Americans depends upon the proper supply, racial/ethnic composition, specialty mix, and geographic distribution of physicians and other health professionals. If a system of insurance was provided tomorrow for all Americans to ensure access to essential health care at a reasonable societal cost, would the right mix of physicians be available to provide quality and cost-effective care? Furthermore, is our medical educa-

tion system producing the right mix and supply of physicians to meet our Nation's health care needs in the 21st century? Clearly, efforts to solve the trio of inadequate access to care, skyrocketing costs, and poor relative health status would be significantly hindered if America is also facing a crisis in physician workforce supply.

It is in this context that COGME has been examining physician workforce supply and distribution and its impact on ensuring access to care for all Americans. Over the past two years, the Council has focused on the following seven major questions:

1. Do we have an adequate mix of generalists and specialists to provide the most efficient and the most cost-effective system of quality care for all Americans?
2. What implications do problems of access have for recommendations on physician workforce, supply, and distribution?
3. What is the status of minority representation in medicine and what effect does it have on minority health as well as the health of the public in general?
4. What are the supply needs of specific medical specialties?
5. Do we currently have adequate numbers of total physicians? Will the projected supply of physicians be adequate?
6. Can our medical education system be more responsive to the health care needs of the Nation?

7. What are the factors that have hindered efforts to attain the appropriate composition, specialty mix, and geographic distribution of physicians to ensure access to care for all Americans?

Over a two-year period since its last report, the Council received a broad range of input. This included solicited papers covering supply and demand for physicians, barriers to access to physician services, and updated need-based requirements for selected specialties. The Council limited its review of workforce assessments to the following specialties: general/family practice, general internal medicine, general pediatrics, general surgery, obstetrics/gynecology, adult and child psychiatry, preventive medicine, and geriatrics.

The Council received significant testimony at plenary sessions and before its three subcommittees on Physician Manpower, Medical Education Programs and Financing, and Minority Representation in Medicine. Representatives from major organizations and policy-making bodies, including the major allopathic and osteopathic hospital and medical education organizations and major specialty organizations, have testified on aspects leading to this third report. Major foundations have provided testimony, including the Josiah Macy, Jr. Foundation, the Robert Wood Johnson Foundation, the Pew Charitable Trusts, and the Kellogg Foundation. Representatives of State and local interests, such as the New York State Council on Graduate Medical Education and the National Conference of State Legislatures, also testified. In addition, COGME has reviewed the latest recommendations from medical educators and policymakers on medical education reform policy.

This third report to Congress and the Secretary provides the Council's principles and subsequent findings, goals, and recommendations to address these major physician workforce issues of today. Chapter II contains the Council's first six major findings and goals. Chapter III contains the Council's seventh major finding and goal, which describes the major barriers to policy change that must be addressed to attain the goals and new directions. Chapter IV describes the Council's recommendations for the Nation, as well as specific recommendations for our Nation's medical educators. The appendix contains projections of the total physician supply and specialty mix if COGME's recommendations were adopted.

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Chapter II - Findings of COGME

Finding No. 1:

The Nation has too few generalists and too many specialists.

• The growing shortage of practicing generalists (i.e., family physicians, general internists, and general pediatricians) will be greatly aggravated by the growing percentage of medical school graduates who plan to subspecialize. The expansion of managed care and provision of universal access to care will only further increase the demand for generalist physicians.

• Increasing subspecialization in U.S. health care escalates health care costs, results in fragmentation of services, and increases the discrepancy between numbers of rural and urban physicians.

• A rational health care system must be based upon an infrastructure consisting of a majority of generalist physicians trained to provide quality primary care and an appropriate mix of other specialists to meet health care needs. Today, other specialists and subspecialists provide a significant amount of primary care. However, physicians who are trained, practice, and receive continuing education in the generalist disciplines provide more comprehensive and cost-effective care than nonprimary care specialists and subspecialists.

Many Americans lack access to basic primary health care, which includes a comprehensive range of public health, preventive, diagnostic, and rehabilitative services. The goal of these services is to prevent premature death and disability, preserve functional capacity, and enhance overall quality of life.

Building a health care system that ensures the availability of these services is a fundamental goal. Ensuring the right mix of health professionals to deliver these services is another prerequisite. A wide variety of health professionals can and should be delivering primary health care services using both individual and public health approaches. For example, important clinical preventive services, such as immunizations, are frequently delivered in the public health sector by preventive medicine/public health physicians and public health nurses.

The emphasis on high-cost, disease-oriented, hospital-based, subspecialty medical care at the expense of low-cost, person-oriented, community-based primary care is a growing cause for concern. The limited number of primary care providers in the United States intensifies the barriers to access for all Americans.

A critically important element of any health care system is primary medical care. Primary medical care is characterized by the following elements:

- First-contact care for persons with undifferentiated health concerns.
- Person-centered, comprehensive care that is not organ or problem specific.
- An orientation toward the longitudinal care of the patient.
- Responsibility for coordination of other health services as they relate to the patient's care.

Physicians who provide primary medical care are trained as generalists. They are trained in, practice, and receive continuing education in the following competencies:

- Health promotion and disease prevention
- Assessment/evaluation of common symptoms and physical signs.
- Management of common acute and chronic medical conditions.
- Identification and appropriate referral for other needed health care services.

Once the elements and competencies of primary care are clearly defined, the physician specialties that compose the "primary care" disciplines become evident. Physicians who provide these comprehensive primary care services are trained in and practice as "generalists." Generalist physicians who attain these competencies through specific training and certification, practice, and continuing education include family physicians, general internists, and general pediatricians. In addition, other nonphysician providers meet this definition, including primary care physician assistants, nurse practitioners, and certified nurse midwives. The important role of these nonphysician primary care providers is beyond the scope of this report. It will be addressed in a future report.

Once defined as such, these generalist physicians and nonphysician primary care providers are distinguishable from a diverse spectrum of other

essential health professions that are needed to deliver health care, such as cardiologists, obstetrician/gynecologists, psychiatrists and other physician specialists, public health nurses, social workers, dentists, and pharmacists. These other professionals receive training in and provide some important aspects of what we have defined as primary medical care, such as the cardiologist managing a patient's angina, the surgeon providing followup for a woman with a breast lump, the dentist performing an oral exam, or the public health nurse providing immunizations. However, these professionals are not trained in, practice, and receive continuing medical education in the broad competencies of primary medical care.

In addition to their regular three-year residency, generalist physicians may acquire additional training to deliver primary medical care to specific populations. For example, although all family physicians and general internists acquire substantial residency training experience in caring for the elderly, some obtain additional training in geriatrics. Although all family physicians and general pediatricians are trained during residency to care for adolescents, some obtain additional training in adolescent medicine. Furthermore, some family physicians, general internists, and general pediatricians acquire additional training in preventive medicine/public health.

These areas of additional primary care training differ significantly from subspecialty training (e.g., cardiology, nephrology, and gastroenterology). They are person-, family-, and community-centered rather than organ-specific. They focus on building additional competencies and skills in the elements of primary medical care.

There has been a general consensus for many years in the policy-making community that, as a Nation, we have been training too many subspecialist physicians and not enough generalist physicians to provide primary medical care. Over the last 60 years, the change in the national specialty distribution of physicians has been dramatic. In 1931, more than four out of five private practice physicians were in general practice. By 1965, the proportion had dropped to less than one-half. By 1988, the proportion of physicians in the generalist specialties had decreased to approximately one out of three (figure 6).¹

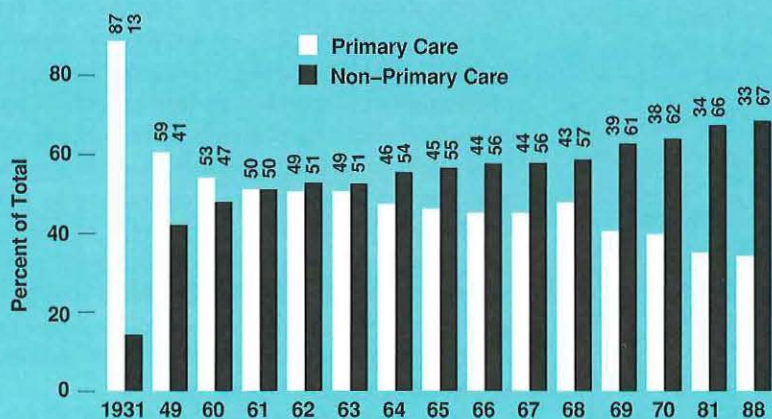
In 1990, 33.5 percent of the 547,310 active allopathic physicians were generalists. They consisted of 76,295, or 13.9 percent general internists, 70,480 or 12.9 percent family physicians, and 36,519 or 6.7 percent general pediatricians. Of the 22,653 active osteopathic physicians reporting a specialty in 1990, 55.4 percent were in general practice.

This declining generalist physician infrastructure significantly hinders access to basic primary medical care. Physicians in these generalist specialties provide over half of all ambulatory patient contacts. The 1985 National Ambulatory Medical Care Survey found that approximately 30.5 percent of ambulatory visits were to family physicians, 11.6 percent to internists (excluding cardiologists), and 11.4 percent to pediatricians.

The roots of these trends can be traced to initiatives previously described that resulted in the increased production of physicians. Following World War II, the Nation invested unprecedented amounts of funds in biomedical research. The Federal Government became the dominant source with funds principally channeled to the Nation's medical schools through NIH. While this investment has produced many of the world's greatest advances in research and medical care, it has also proved to be a key factor in the rise of specialization.²

Concern over the generalist erosion in the physician supply has been expressed for at least two decades. The Report of the Citizens Commission on Graduate Medical Education (the Millis Report) in 1966 cited the increasing specialization in the physician supply as the chief factor in the asynchrony between the availability of medical services and the health care needs of society.³ Indeed, much of the health workforce Federal legislation since the 1960s has been created to correct the following perceived impediments: (1) an insufficient number of generalist physicians; (2) a disproportionately large number of specialists relative to generalists; and (3) an uneven geographic distribution of physicians.^{4,5}

Fig. 6 – A Steady Decrease in Primary Care MDs* Compared to Other Specialties: Selected Years 1931-88



* Family physicians, general internists and general pediatricians

Note: The AMA reclassified MDs in 1968 causing a 3.5% change in primary and non-primary care.

Source: Pre-1965 data from *Health Manpower Sourcebook: Section 14, Medical Specialists*, Division of Public Health Methods, U.S. Public Health Service, DHEW, 1962. 1965-88 data from *Physician Characteristics and Distribution*, annual editions, AMA.

Yet, the goal of shifting specialty distribution toward primary care has not been achieved. In its most recent report, the Physician Payment Review Commission (PPRC) notes that some past policies may have been ineffective because they were underfunded, had insufficient support, or the problems they were intended to address were no longer considered priorities. These policies were also unsuccessful because they were undermined by other policies that created additional and more substantial financial incentives for growth in subspecialty residency positions. Such policies included biomedical research funding, financing GME through the hospital, and payment policies that overpaid surgical and technical procedures relative to evaluation and management services.⁶

Even if the supply of new physicians is significantly reduced, the total supply of physicians will continue to increase well into the next century. Currently, over twice as many physicians enter practice annually as retire. Consequently, the generalist/specialist mix of physicians becomes important, not only in addressing specific health needs of the population but also to contain health care costs. The following observations are particularly relevant:

- In its first report in 1988, COGME recommended increased numbers of physicians in family practice and general internal medicine to assist in meeting problems of access to primary care services.⁷

- The demand for practicing generalists would markedly increase if a program of universal health insurance is to be implemented. (One estimate is for a 13- to 15-percent increase in primary physician patient contacts.⁸)

- Interest by medical school graduates is rapidly increasing in procedurally oriented subspecialties and in subspecialties that are perceived to offer more controllable lifestyles.^{9,10} (The surgical specialties in which the number of residency positions has not increased are exceptions to this trend.)

- Interest in the primary care specialties is declining dramatically among U.S. medical students.¹¹

The Association of American Medical Colleges' (AAMC's) Graduation Questionnaire, which is an accurate aggregate predictor of specialty choice,¹² indicates that interest in family practice, general internal medicine, and general pediatrics has fallen from 36 percent of graduating seniors in 1982 to 22.7 percent in 1988 and 14.6 percent in 1992.¹³ Long-term trends in specialization and subspecialization in medicine suggest that the cur-

rent declining interest in primary care is not transitory.

Current Health Resources and Services Administration (HRSA) projections of physician workforce are based upon the 1986 American Medical Association (AMA) Physician Master File and the assumption that physicians in residency training will follow historical trends of subspecialization. These projections indicate that 32 percent of physicians will describe themselves as primary care physicians in 2010. However, when this model of physician supply is modified to utilize a scenario that 20 percent of graduates will become generalists, then the percentage of primary physicians is predicted to drop to 28 percent in 2010 and to 26 percent in 2020.

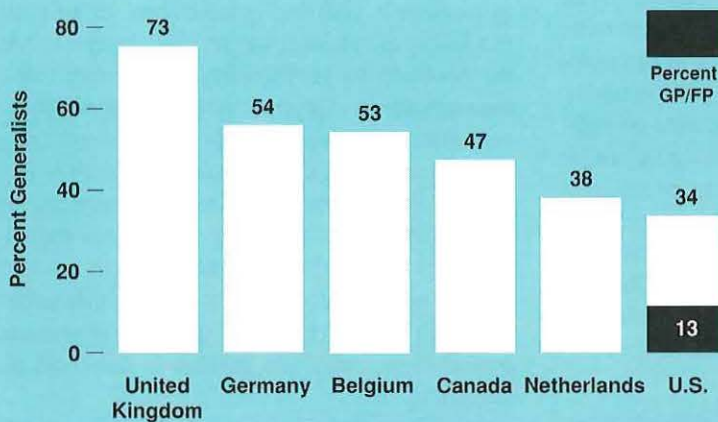
The result of this movement among medical school graduates toward increasing subspecialization suggests that our health care system in the next century will be even more subspecialty based with only one-fourth of physicians viewing themselves as primary physicians. Current trends toward subspecialization are accompanied by the following health care concerns:

- Primary care services increasingly will be provided by subspecialists who will have had little or no education for primary care.

- Primary care services provided by subspecialists can be expected to cost more. Subspecialists providing primary care are likely to seek consultation more frequently because of the narrower focus of their education. Services provided will increase and will result in fragmentation and replication of care as patients shop from subspecialist to subspecialist.^{14,15,16,17}

- An oversupply of subspecialists would be more costly than would an oversupply of generalists. Subspecialists would be expected to use the technology and procedures of their subspecialty and to use hospital resources more than would generalists. A recent study showed that, even after controlling for patient mix and illness acuity, subspecialists such as endocrinologists and cardiologists perform more tests, prescribe more medications, and hospitalize more frequently than general internists, and general internists tend to use similar but slightly more health care resources than family physicians.¹⁸ An editorial on this study argued that the differences in utilization almost certainly understated the true differences in costs between specialists and generalists because the study measured resource use, not charges, and because specialists charge and are paid more for identical services provided by generalists.¹⁹

**Fig. 7 – Generalists as a Percentage of Physicians:
Selected Nations, Early 1980s**



Source: Schroeder, S.A., and *Physician Characteristics and Distribution*, AMA, 1983. JAMA, 252:373-84. "Western European responses to physician oversupply".

- Increasing specialization will result in a growing discrepancy between the rural and urban physician workforce because subspecialists practice in urban areas. Current AMA projections anticipate a 24-percent increase in metropolitan physicians between 1987 and 2000 and only a 17-percent increase in rural physicians.²⁰ These differences are understated because the projections do not take into account the declining interest in family practice—the specialty most likely to serve rural populations.

- Subspecialists providing more generalist services will devote less time to their preferred subspecialty area. This plus the oversupply of subspecialists reduces an individual subspecialist's opportunity to care for the more complex and rare problems in the field.²¹ This may have negative implications for competence in the subspecialty area as well as for physician satisfaction.

Experimental data do not exist to define the ideal proportion of generalists and specialists needed to provide optimal access to primary care services and optimal availability of secondary and tertiary services in the most cost-effective manner.²² However, in most Western nations, the percentage of generalist physicians far exceeds that of the United States. Fifty percent of Canadian physicians and 70 percent of British physicians are general practitioners or family physicians (figure 7).^{23,24,25}

Furthermore, the most cost-efficient delivery systems within the United States are closed-panel HMOs that employ approximately 50 percent primary care physicians.²⁶ The rapid proliferation of HMOs in which primary care physicians rather than subspecialists serve as case managers suggests that

coordinated care by generalist physicians are less costly. In addressing possible future changes in the health care system, utilization review, development of coordinated care programs, funding for preventive services, increased consumer cost sharing in health insurance, and the implementation of universal health insurance all will impact more positively upon the need for more generalist physician services than for specialty physician services.²⁷

The 1978 Institute of Medicine (IOM) study on primary care workforce supported the Federal initiative at that time that 50 percent of medical school graduates should enter residencies in primary care specialties.²⁸ The study also indicated that it would be desirable for 60 to 70 percent of graduates to enter primary care specialties, in view of a shortage of primary physicians.

However, the IOM did not anticipate the extent to which subspecialization would occur in internal medicine and pediatrics by the 1990s. Recent survey data indicate that 40 percent of those planning careers in pediatrics expect to subspecialize and at least 60 percent of those planning on careers in internal medicine expect to subspecialize.²⁹

By contrast, family medicine has no subspecialties. More than 95 percent of those who enter family medicine residencies practice as generalists. In addition, family physicians are trained to provide primary medical care to all ages and both sexes, while pediatricians are trained to care for children and adolescents, and internists are trained to care for adults and the elderly.

Family practice differs in another key dimension: it is the only specialty to be evenly distributed across all county types and sizes. While the per capita physician-to-population ratio for family physicians is actually higher in nonmetropolitan areas, these same areas have, per capita, in comparison with metropolitan counties, fewer than one-third as many general internists, approximately one-fourth as many general pediatricians, and slightly more than one-fifth as many obstetricians/gynecologists.³⁰

Finding No. 2:

Problems of access to medical care persist in rural and inner-city areas despite large increases in the number of physicians nationally.

- Access to primary care services is especially difficult in rural and inner-city areas. Many factors contribute to the problems of access, including economic and social circumstances of rural and inner-city areas as well as the short-

age of minority and generalist physicians. Minority physicians and physicians in the three primary care specialties (family practice, general internal medicine, and general pediatrics) are more likely to serve inner-city populations.

- Family physicians and general surgeons are more likely than other specialties to serve rural populations. The decline in numbers of general surgeons entering rural practice is little recognized and has significant implications for access to trauma, obstetrical and orthopedic services in rural settings and to the fiscal viability of rural hospitals.

- Consequently, more minority and generalist physicians must be educated and educational programs should specifically address skills

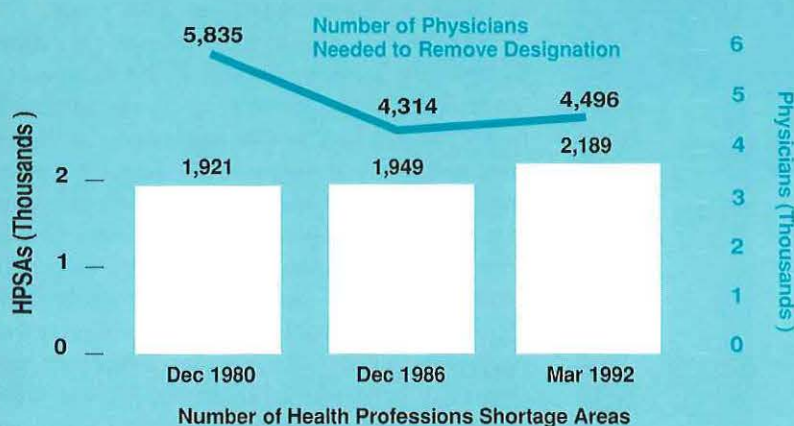
needed in these settings. This must be accompanied by sufficient incentives to enter and remain in inner-city and rural practice and by the development of adequate health care systems in which they can practice.

- Access to one important component of primary medical care, obstetrical services, has been in the national spotlight. Problems are greatest in rural and inner-city areas. Causes include economic and sociocultural factors and the availability of obstetricians, family physicians, and nurse midwives. While the total number of obstetricians continues to increase, the proportion providing obstetrical services decreases dramatically with the number of years in practice. Less than 10 percent of obstetricians practice in rural settings. Consequently, family physicians historically provide the majority of rural obstetrical care. In recent years, however, the proportion of family physicians providing obstetrical services has also declined markedly. While rising malpractice claims clearly have contributed to the decreasing provision of obstetrical care, other factors, such as unpredictable hours, also seem to have contributed to these decisions.

The issue of an unbalanced geographic distribution of physician resources has been the topic of research and an issue for policymakers for quite some time.³¹ A paper prepared for the Council indicated that, while perceptions of shortages of physicians in rural America date as far back as the late 18th century,³² and the relative shortage of physicians outside of cities was accepted as a reflection of the comparative attractiveness of practice in urban areas, the degree of differences were not considered crucial until the 1960s. At that time, studies showed that urban/rural and inner city/suburban differences were increasing and that the time may come when the American rural generalist would disappear.

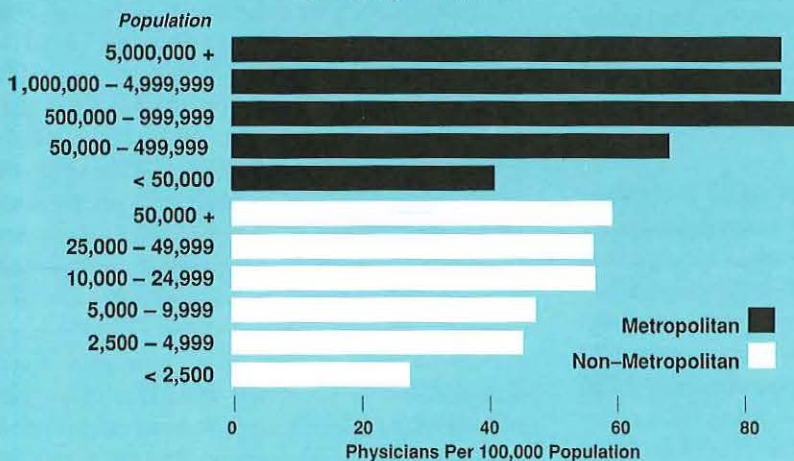
The response to this problem during the 1960s was to increase the size of medical school classes, to provide new Federal funding for the production of primary care physicians, and to open new medical schools that would emphasize primary care training. The result was a sharp increase in the number of physicians. Several studies showed a pattern of "diffusion" of physicians into rural and geographically isolated areas.^{33,34,35} More recent studies have addressed the limitations of these reports and have concluded that this diffusion has not been sufficient to resolve the shortage problem in rural areas.^{36,37} Indeed, as seen below, the number of Health Professions Shortage Areas (HPSAs) in the United States actually increased despite a doubling of the

Fig. 8 – Number of Health Professions Shortage Areas (HPSA) and Number of Physicians Needed to Remove HPSA Designation



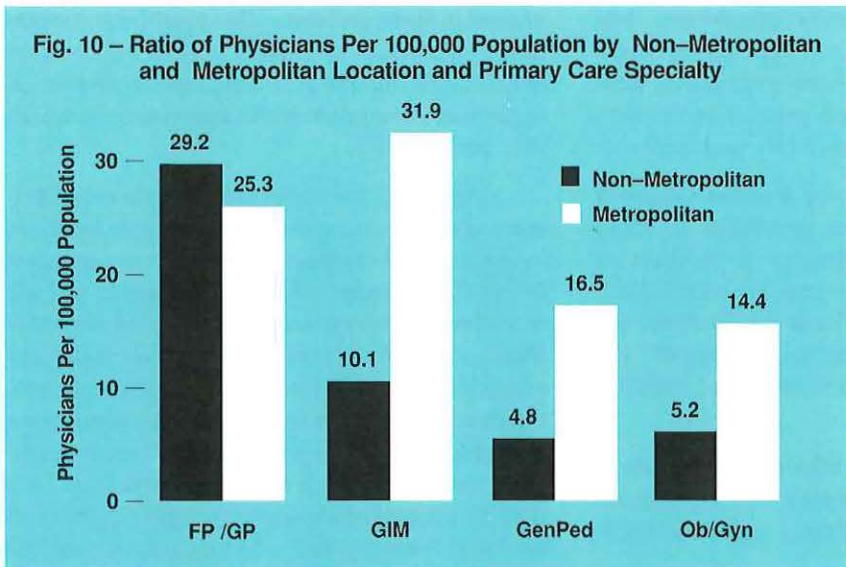
Source: HRSA, Bureau of Primary Health Care.

Fig. 9 – Non-Federal Primary Care Physicians (MD & DO), by County Size, 1988



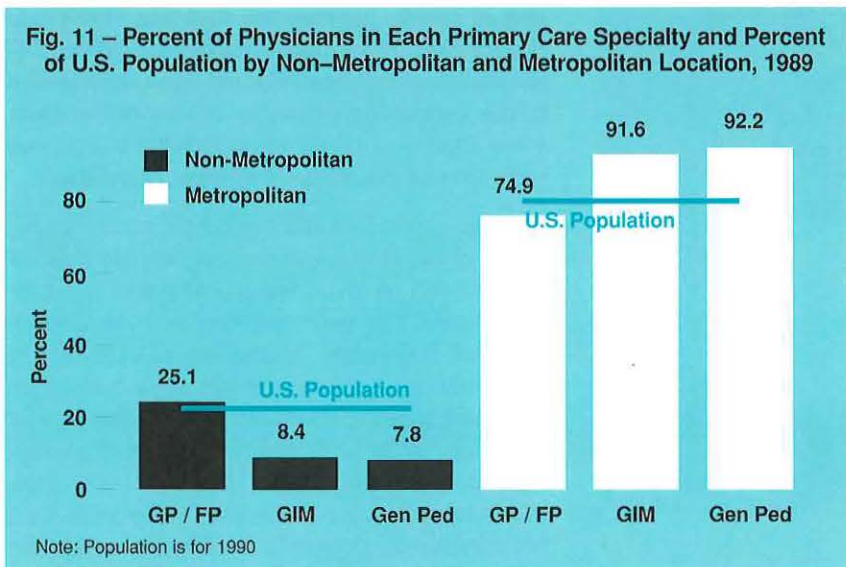
Source: Ricketts, T.C. *Barriers to Access to Services Provided by Physicians in General/Family Medicine, General Internal Medicine, General Pediatrics, General Surgery, Obstetrics/Gynecology, and General and Child Psychiatry*, 1991.

Fig. 10 – Ratio of Physicians Per 100,000 Population by Non-Metropolitan and Metropolitan Location and Primary Care Specialty



Source: HRSA, *Rural Health Professions Facts. Supply and Distribution of Health Professionals in Rural America*. HRSA, 1992

Fig. 11 – Percent of Physicians in Each Primary Care Specialty and Percent of U.S. Population by Non-Metropolitan and Metropolitan Location, 1989



Note: Population is for 1990

Source: HRSA, *Rural Health Professions Facts. Supply and Distribution of Health Professionals in Rural America*. HRSA, 1992

physician supply (figure 8). A background paper prepared for the Council noted that physician distribution is skewed significantly away from small towns and rural areas and that many Americans are too far from a physician who can see them on a timely basis.³⁸

Figure 9 reflects the substantial geographic variation of available primary care physicians to care for the Nation, with the large metropolitan areas in 1988 having three times the number per population compared with the smallest nonmetropolitan area counties. In that year, 176 counties with a combined population of 713,700 had no primary care physician.³⁹ All of these counties were nonmetropolitan with 25,000 or fewer residents; 166 counties had 10,000 or fewer residents.

Physician geographic diffusion has been limited. A study of physician availability in 684 counties with fewer than 10,000 population found that while the average level of physician availability increased by 34 percent in the United States between 1975 and 1985, it increased only 14 percent in these small rural counties. Primary care physician-to-population ratios increased by 27 percent in metropolitan counties, 42 percent in nonmetropolitan counties, and only 9.4 percent in counties with fewer than 10,000.⁴⁰

Family/general practitioners are the only specialists to be evenly distributed across all county types and sizes. Nonmetropolitan counties have fewer than one-third as many general internists and general pediatricians and slightly more than one-third as many obstetricians/gynecologists per capita, compared with metropolitan counties (figures 10 and 11).⁴¹

COGME, in examining these issues, reached the following conclusions in its 1988 report: (1) there is a geographic maldistribution of physicians, with too few in many rural and inner-city areas; (2) the problem is not as severe as it has been in the recent past and may well be ameliorated, at least in part, as the overall supply of physicians increases; and (3) geographic maldistribution remains, however, a serious problem, requiring more broadly based solutions than those focusing exclusively on medical education.⁴² Since then, as previously noted, the number of primary care physician shortage areas and the number of medically underserved persons have been increasing despite the continued growth in the physician supply. More focused and significant changes in the medical education, financing, and health care reimbursement systems are clearly now needed to eliminate these shortage areas.

Federal and State programs have been of critical importance in addressing the relative undersupply of physicians in rural and inner-city areas; they will continue to be needed for at least the remainder of the decade. Maintaining and increasing resources for these efforts will require ongoing political support at Federal, State, and local levels. These have taken the form of educational intervention at medical undergraduate and graduate levels, establishing public delivery systems in rural and inner-city areas, and providing financial incentives for practice in such areas. Examples of successful federally supported initiatives to increase primary care physician supply and services to needy areas include family practice residencies, the NHSC, Indian Health Service (IHS), the Area Health Education Centers (AHECs), community and migrant

health centers, and some financing strategies. Evaluation has not indicated which strategies are the most efficient, but it is believed that multiple integrated strategies are the most effective.⁴³

Problems of access to obstetrical services have proved to be of increasing concern. The availability of these services depends on access to obstetricians, family physicians, and nurse midwives. Less than 10 percent of all obstetrician/gynecologists practice in rural settings, and family physicians historically provided the majority of rural obstetrical care.^{44,45} In recent years, however, the number and proportion of family physicians providing obstetrical services have markedly declined. In addition, with increasing years of practice, many obstetricians/gynecologists decide to stop providing obstetrical care.

In the past several years, numerous State studies have documented a decline in the number of physicians providing obstetrical services in rural areas.⁴⁶ Several of these studies have linked this decline to rising medical malpractice costs. Constructing strategies in response to provider concerns over obstetrical liability is one essential component in shaping policies to reverse the shortage of obstetric services.⁴⁷

Finding No. 3:

The racial/ethnic composition of the Nation's physicians does not reflect the general population and contributes to access problems for underrepresented minorities.

- Although African Americans, Hispanic Americans, and Native Americans compose 22 percent of the total population and will constitute almost one-fourth of all Americans by the year 2000, they represent only 10 percent of entering medical students, 7 percent of practicing physicians, and 3 percent of medical faculty.

- Increasing the percentage of underrepresented minorities in the medical profession is vital as a means of improving access to care and health status of these vulnerable and underserved populations. Minority physicians tend to practice more in minority/underserved areas, reduce language and cultural barriers to care, and provide much needed community leadership.

- Strategies to increase minority enrollment must emphasize increasing and strengthening the applicant pool, the acceptance rate from within this pool, and the student retention rate. These strategies must take into account dispro-

portionately high rates of poverty, poor health status, poor schools, and a continued lack of access to educational and career opportunities. They must include both traditional short-term efforts and long-term strategies targeting younger students early in the education pipeline.

African Americans constitute 12.1 percent of the population, but only three percent of all physicians. Likewise, Hispanic Americans constitute nine percent of the population, but only four percent of physicians. Native Americans are 0.8 percent of the population but only 0.1 percent of all physicians.⁴⁸ Underrepresented minorities will continue to grow as a proportion of the total population. By the year 2000, African Americans are projected to rise to about 13 percent and Hispanics to about 11 percent of the total population, or over 24 percent of the total population for these two racial/ethnic groups.⁴⁹ Indeed, people of color will make up 29 percent of the new entrants into the labor force for the period between 1987 and 2000.⁵⁰

The predominant minority populations of the United States can be categorized as African Americans, Hispanic Americans, Asian and Pacific Islander Americans, and American Indian and Alaska Natives (the inclusive term for these last two groups is Native American). Within each racial or ethnic category, significant subgroup differences can be found.⁵¹ When we speak of underrepresented minorities we are referring to those individuals with lower representation in health and allied health professions schools than in the general population. Currently, African Americans, Hispanic Americans, and Native Americans are underrepresented; Asian Americans overall are not, although certain Asian American subgroups are underrepresented.⁵²

The chances for an underrepresented student to be admitted to medical school today have actually become more remote as their proportion of the total U.S. population increases.⁵³ It is not possible to understand this assertion nor the underrepresentation of minority physicians in medicine without a historical framework. The acceptance of underrepresented minorities in predominately "white" (i.e., majority) medical institutions in this country has been very slow. Majority medical schools have historically discriminated against these individuals, and in the case of African Americans—for whom the most documentation exists—majority medical schools have had a history of segregation, which resulted in segregated and overcrowded teaching institutions for African Americans.⁵⁴

History indicates that the colonizers came to the New World believing that people of color were inferior, and used that ideology to justify the en-

slavement of African Americans, the decimation of Indians and Mexicans, and the importation of Asians to perform work that was considered unfit for whites. By the 1900s, racist attitudes and practices were institutionalized in laws, religion, and in the very culture of America. The minority groups were made to feel inferior and alienated by the majority culture.⁵⁵ A psychiatrist who has spent a lifetime studying this phenomenon states that this social process of inferiorization is achieved through the imposition, from birth to death, of a stressful, negative and nonsupportive social/environmental experience upon the people who are to be inferiorized.⁵⁶ This negative and stressful social experience, which is structured to affect every aspect of life activity, produces a negative self-concept, a loss of self-respect, and the development of self-destructive and group-destructive behavioral patterns.

The conventional educational process (as an instrument for acculturation and entrance into careers in the United States) has historically been severely restricted for minorities.^{57,58} One must not underestimate the impact of this aspect of institutional racism on the psyches and the behavior of minority peoples in the United States. Although slavery became illegal more than 100 years ago, the 300-plus years of experiencing its brutality and unnaturalness has produced a severe and continuing psychological and social shock to African Americans. Psychologists and sociologists have failed to attend to the persistence of problems in the mental and social lives of African Americans, which clearly have their roots in slavery.⁵⁹

Minorities Enter U.S. Medical Schools

Although the first medical school in the United States was established in 1765 in what is now the University of Pennsylvania,^{60,61} African Americans and other minorities were not admitted to majority medical schools for more than three-fourths of a century. However, African Americans who had been trained in Europe practiced in the colonies in the 17th, 18th, and 19th centuries.^{62,63,64} The idea or value of training African Americans for medicine was generally frowned upon in the early 19th century. It was not until 1847 that the first African American received a medical degree from an American institution. This individual graduated from Rush Medical College in Chicago.^{65,66} However, up to the middle of the 19th century, in response to efforts of the American Colonization Society (Back to Africa), African Americans who wished to practice in Liberia were accepted for training in

preceptorships or schools. Not all of those who were trained elected to go to Liberia; some remained in the United States to practice.⁶⁷

Regarding other currently underrepresented minorities, one of the earliest Hispanic physicians to graduate from an American medical school was Cuban-born Carlos Juan Finlay. He was awarded the M.D. in 1865 by Jefferson Medical College in Philadelphia.^{68,69} It appears that the first Native American to receive an M.D. from an American medical school was an Omaha woman who received it in 1889 from the Women's Medical College in Philadelphia.⁷⁰ A Native American male of Santee Sioux descent received his M.D. a year later (1890) from Boston University.

Predominately Minority Medical Schools Are Founded

According to Petersdorf, et al., for many years America's medical schools mirrored the discrimination of society.⁷¹ Thus, they were primarily the preserve of white males. The chaotic conditions following the Civil War and the assassination of President Lincoln gave rise to a new dimension in American health care—separate and segregated medical schools. In 1868, the first African American medical school, Howard University, was founded as a coeducational, multiracial institution in Washington, D.C. Interestingly, the earliest medical classes had more students of European descent than of an African descent.^{72,73} Meharry Medical College in Nashville, the second African American medical school, was organized in 1866 and began to function in 1876.^{74,75}

It was in the highly segregated environment of the Post-Reconstruction era that African American medical schools and hospitals appeared.⁷⁶ In the late 1800s, there were 14 predominately African American medical schools.⁷⁷ Until 1950, majority medical schools had graduated fewer than 15 percent of African American physicians. The majority of the remaining African American physicians were graduates of Howard and Meharry medical schools.⁷⁸ Currently, the other African American medical schools in the United States are Drew Medical College in Los Angeles, founded in 1966, and Morehouse College of Medicine in Atlanta, founded in 1978.^{79,80} There are three Hispanic medical schools; all are located in Puerto Rico. These schools are the University of Puerto Rico School of Medicine in San Juan (1949); the Universidad Central de Caribe in Bayamon (1976); and Ponce School of Medicine (1980).⁸¹ There are no Native American medical schools.

Civil Rights and Minority Medical Students

It was not until after the landmark civil rights court decisions and the legislation of the 1950s and 1960s that all majority institutions were opened to minority candidates.⁸² As many as 200 historically African American hospitals have been identified dating to the 1800s. Prior to 1965, the African American hospitals were crucial. If they had not existed, many African Americans would have had no health care, and the African American medical profession would have been destroyed, because only a very small number would have been permitted internships and residencies in non-African American hospitals.⁸³

During the 1950s and 1960s, when 10 percent of the total U.S. population was African American, only 2.2 percent of all physicians were African American. The numbers would have been far more dismal if three-fourths of all African American physicians had not been produced by Howard and Meharry medical schools. Mexican Americans, mainland Puerto Ricans, and American Indians, which constituted about three percent of the total population in the mid-1960s, accounted for less than 0.2 percent of the total medical school enrollment.⁸⁴

career opportunities for women, minorities, and the economically disadvantaged.⁸⁵ As a result, affirmative-action programs were implemented by many medical institutions.

In 1970, an AAMC task force called for an increase in first-year underrepresented minority enrollment to 1,800 by the year 1976. This number would have corresponded with what was at that time the total percentage of the underrepresented minority groups in the United States (12 percent).^{86,87} Underrepresented minority medical school student enrollment rose to nearly 1,500 (10 percent of the entering class) by 1974. However, the 12 percent enrollment goal has never been met.

The increase in minority students during the 1970s resulted from the following:

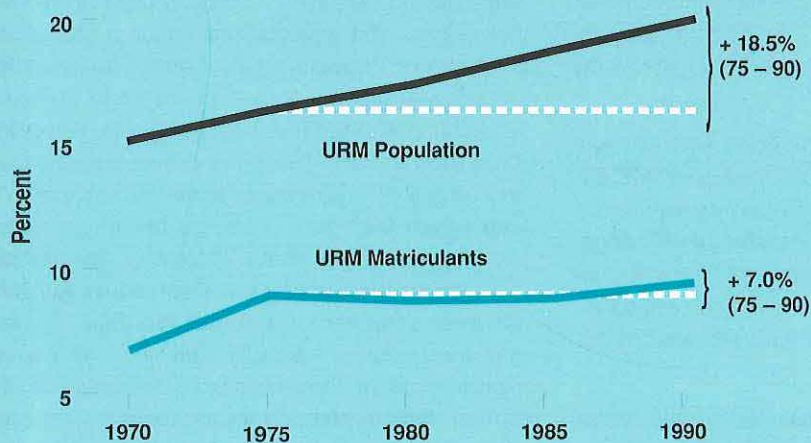
- An expansion of the minority applicant pool as well as a residue of qualified applicants from earlier years.
- An increase in the availability of scholarships and loans.
- Improved minority recruitment practices of medical schools.
- The establishment of special programs to assist minority students to strengthen their candidacy for health professions in general.⁸⁸
- A 50-percent increase in the number of first-year medical school positions made possible in part by the opening of 25 new medical schools between 1964 and 1974.⁸⁹

Minority Medical Students in the 1980s and 1990s

As affirmative action programs established a trend toward greater minority student participation in medical education, which approached the levels set by the AAMC, legal challenges to affirmative action surfaced.⁹⁰ In a landmark case in June 1978, the Supreme Court ruled against the University of California-Davis in the Bakke decision. The Supreme Court found that it was illegal to set "quotas" (setting aside of a set number each year) for minority enrollment, but appropriate to set an institutional goal for attaining greater diversity.⁹¹ The Bakke decision had a "chilling effect" on the entrance of underrepresented minority students in the health professions schools.⁹² In addition to the Bakke decision, actions by the Department of Justice in the civil rights area hindered the progress that had been made.^{93,94}

From 1975 to 1989, the proportion of minorities in the population increased by 18.5 percent while the proportion in medical school increased by

Fig. 12 – Underrepresented Minorities (URMs) as a Percent of the U.S. Population and Medical School Matriculants: 1970 – 1990



Source: Association of American Medical Colleges, Division of Minority Health, Education and Prevention.

A former president of the National Medical Association credits the 1954 Supreme Court decision to bar segregation in public schools in the *Brown v. Board of Education* case, the Civil Rights Act of 1964, the Voting Rights Act of 1965, and the assassination of Dr. Martin Luther King, Jr., in 1968, as leading to an intensified public interest in rectifying the past inequities in educational and

only seven percent (figure 12).⁹⁵ AAMC 1991 data indicate an increase of almost 14 percent in the number of medical school applicants,^{96,97} the largest increase since 1972. The number of underrepresented minorities who applied also increased by almost 14 percent—3,605 compared with 3,172 in 1990.⁹⁸

Academic Preparation of Underrepresented Minorities

The aspirations of underrepresented minority applicants may be reflected in the extent of college preparation in science by minority applicants. Approximately 80 percent of African Americans who apply to medical schools are science majors, as compared with about 40 percent of white applicants.⁹⁹ There appears to be no shortage of underrepresented minority young persons interested in medicine: 5.5 percent of African American college freshmen selected medicine as their first career choice, versus 3.2 percent of white freshmen.¹⁰⁰

To provide a clearer picture of minority medical school applicants and students, the following assesses how underrepresented minority applicants stand in relation to majority applicants with respect to numbers, Medical College Admission Test (MCAT) scores, and grade-point average (GPA).

Although the number and percentage of total applicants to U.S. medical schools fell substantially between 1975 and 1990, the number of minority applicants was fairly stable, and the percentage of all applicants rose slightly.¹⁰¹ In 1990, 51 percent of minority applicants were accepted compared with 59 percent of all applicants.¹⁰²

It has been reported that schools with low enrollments of minorities tend to emphasize MCAT scores, which excludes many minority applicants from consideration. According to this view, schools with high minority enrollments tend to emphasize more subjective factors such as character and background to identify applicants with potential to become quality physicians.¹⁰³

African American science GPAs and mean MCAT scores for all subtest areas have been consistently below the averages of the majority population.¹⁰⁴ General trends in medical school applicant data suggest that differences in mean total GPA between African Americans and whites narrowed slightly between 1981 and 1990, as have MCAT scores for nearly all the subtests, through slight increases for African Americans and slight declines for whites.¹⁰⁵ Yet, the acceptance rate of minorities relative to that of majority applicants has continued

to decline. Thus, while the academic credentials of minority applicants have improved, their acceptance rates have decreased.¹⁰⁶ This state of affairs for African Americans has been termed “a backwards drift.”¹⁰⁷

MCAT scores do a reasonably good job of predicting academic performance for minorities and majorities during the first two years of medical school.¹⁰⁸ However, for students who complete the basic sciences successfully, there is little evidence of any correlation between MCAT test scores or GPAs and performance in the clinical years.¹⁰⁹ Minority and nonminority students admitted with very low MCAT scores and marginal GPAs have progressed through the curriculum with no difficulty. Similarly, students with strong MCATs and high GPAs have encountered serious academic problems once they were in medical school.¹¹⁰

Matriculation and Retention Rates of Underrepresented Minority Students

Although the matriculation rates of minority and majority applicants who are accepted are similar, approximately 100 accepted minority students per year do not matriculate. More than twice as many minority students as majority students indicate that they abandoned their plans for a medical career because of financial considerations.¹¹¹

Most retention problems in medical school occur during the basic science portion of the curriculum, which traditionally is concentrated in the first two years. Minority students are in a precarious position when entering medical school because they are immediately immersed in the most stressful academic portion of their studies during the period when they are most likely to be more isolated than their majority counterparts from the support systems which they have depended upon, and which also depended upon them. Minority students are often the most successful members of their families and a major source of personal and financial support for relatives. Faculty and staff with great experience along these lines have indicated that one of their most important jobs at this time is to convince minority students to “be selfish” for a few years and concentrate on completing medical school.¹¹²

AAMC data indicate that the retention rate for all underrepresented minority medical students for the entering class of 1985 (the last for which complete data are available) after four years was 91 percent. The retention rate for all others was 97 percent.¹¹³

Current Status

Today, nearly 20 years after the AAMC 1970 task force report, the percentage of underrepresented minorities in the entering medical school class still remains at 10 percent although the proportion of underrepresented minorities in the general population has grown to 22 percent.¹¹⁴ We have not made the needed progress toward providing equitable access to medical school for these students; indeed, we have been losing ground.¹¹⁵

The AAMC indicates that the reason why minorities have been and continue to be underrepresented in medicine is because of our Nation's long history of excluding people of color from educational and career opportunities. Legally sanctioned discrimination has been eliminated. However, disproportionately high rates of poverty, poor schools, limited access to primary medical care, and a continued lack of access to educational and career opportunities still prevent many minority youngsters from achieving their goals and realizing their potential in the 1990s. Strategies to increase enrollment of underrepresented minorities must include both traditional short-term as well as long-term efforts targeting younger students very early in the medical education pipeline.¹¹⁶

One-fourth of today's U.S. adult population and one-third of the children are of African, Latin American, or Asian origin. It is the increase in Mexican Americans, African Americans, Native Americans, and mainland Puerto Ricans that accounts for the vast majority of the increase in the underrepresented minority population. Unfortunately, medical schools today are competing for the same small pool of academically qualified minority applicants. The number who ultimately apply to medical school is too small. Additionally, the number of those who graduate from college, and those who finish high school with sufficient skills to complete premedical courses is deficient.¹¹⁷

As a result of relative stagnation in minority medical school enrollment coupled with the growth in the minority population, these groups are more underrepresented today than they were 15 years ago. In an effort to increase the size and quality of the minority applicant pool, the AAMC has developed a campaign named *Project 3000 by 2000*, with the goal of doubling the number of first-year entering minority medical students by the year 2000. This project, if successful, will bring underrepresented minority first-year entrants to about 3,000 each year or roughly 19 percent of each medical school class.^{118,119}

While whites in general are accepted at higher rates than underrepresented minorities, approximately 90 percent of the minorities who have high GPAs (higher than 3.00) or high MCAT scores (greater than 7.00) are accepted. While this is a positive outcome, medical schools would have to accept virtually every minority that applied to reach parity (3,000 new entrants by the year 2000).¹²⁰ This further underlines the need to improve the applicant pool and to further improve affirmative action in medical school admissions.

Today's African American Men and Medical Education

There is increasing concern regarding the status of African American males in the United States. There has been discussion that the African American male is an "endangered species." Over half a million African American males are in prison or jail, and as many more could be sent or returned if their probation or parole is violated. There are perhaps a million more with felony records, and another large group is debilitated by substance abuse or mental illness. Also, the death rate for young African American males has reached a horrible level.¹²¹ Firearm homicide is the leading cause of death among African American males between 15 and 19 years old in the United States.¹²²

Unfortunately, for every 100 African American women currently being awarded bachelor's degrees, only 67 African American men are also receiving diplomas from U.S. colleges and universities.¹²³ Twenty-three percent fewer African American men enrolled in medical school in 1990 than in 1971. In recent years, African American men and women have had markedly divergent trends in their medical education. All of the gains in African American enrollment in medical school since the early 1970s were made by females. The number of African American men who matriculated in 1971 (626) has not been equalled since.¹²⁴

One researcher said that the difference in the enrollment of African American men in medical schools was partly the result of a greater acceptance by the majority culture of African American women over African American men. The male is stereotyped and perceived to be threatening while the female is generally perceived as taking care of the family and nonthreatening. The researcher also expressed the belief that science and medicine are lifestyles that do not "speak" to African American men.¹²⁵

Another social scientist writes that African American women have fared better because more

of them are seen as suitable for office positions. African American women, like all women, are seen to be less assertive and more accommodating and able to fit into the “white world.” The decreasing medical school enrollment levels for African American men are related to trends in higher education. Included in these trends are:

- Declining numbers of male applicants from nearly all racial and ethnic groups.
- Declining popularity of the predominant undergraduate premedical majors.
- Declining participation in college for African Americans, especially males.
- A high rate of poverty among African Americans.
- High stress indices among African American men.¹²⁶

It is imperative that serious efforts focusing on improving the plight of African American males be made. There must be a national commitment to bring about the appropriate change in the status of African American males in medical education.

Shortage of Minority Medical School Faculty

The Council on Graduate Medicine Education concluded in 1990 that minorities were severely underrepresented on the faculties of U.S. medical schools. It stated that this underrepresentation had a negative effect on both the recruitment, enrollment, and graduation of minority students and the professional development of all medical students.¹²⁷ The Council recommended to Congress that the Federal Government develop and support programs that encourage minorities to pursue careers in academic medicine. Specifically, incentives should take the form of fellowships, loan forgiveness, and loan repayment. The Council also recommended that the Federal Government provide support and incentives for medical schools that have demonstrated success in the recruitment and retention of minority faculty.¹²⁸

Unfortunately, little progress has been made in increasing the number of minority medical school faculty members. From 1975 through 1989, underrepresented minority medical faculty increased by only 0.3 percent, from 2.7 percent to 3.0 percent.¹²⁹ Currently, minority medical school faculty still averages only 3.2 percent. Of this, 2.1 percent are African Americans, 0.7 percent are Hispanic Americans, 0.3 percent are Mexican Americans, and 0.1 percent are Native Americans.¹³⁰ If one

does not include the traditional minority medical schools—Howard University, Meharry Medical College, Morehouse School of Medicine, and the University of Puerto Rico School of Medicine—minority faculty representation in the remaining allopathic medical schools falls to approximately 1.5 percent.¹³¹ One researcher reports that medical schools with more minority faculty members per student had higher minority graduation rates and lower faculty attrition. An increase in the number of minority faculty is likely to increase the number of ethnic minorities pursuing medical careers.¹³² It must be emphasized that role models are very important in efforts to increase the number of underrepresented minorities in medicine. There is a special commitment and a special understanding when mentors are also minorities.¹³³

The majority of academicians in medicine specialize in internal medicine. Minorities are 2.9 percent of the faculty in this specialty. In addition, a significant number of these minority faculty are serving primarily in clinical academic positions in ambulatory or primary care, HMOs, or hospitals.¹³⁴

Fellowship opportunities and faculty development training programs targeted to underrepresented minorities are available. Some are privately funded; some have significant support from HRSA.¹³⁵ By and large, however, lack of knowledge about financial support, research opportunities, and benefits of academic career pursuit may contribute to the underrepresentation of minorities in medical school faculty positions. Seventy-three percent of the respondents in one study reported that, while in medical school, they were unaware of research trainingships, awards, or scientific scholarship support that might have been available to minorities. At the same time, 73 percent reported that at the time of graduation they felt that there was inadequate financial support available for minority faculty. It was concluded that an improvement in medical student awareness of research opportunity and an increase in the availability of academic career discussion in frequency, content, and quality may be needed to increase the number of minority medical faculty.¹³⁶

Minority Community Has Insufficient Supply of Physicians

In November 1990, the Disadvantaged Minority Health Improvement Act was signed into law. This act highlighted the societal need to increase the number of minorities in the health care professions to serve many of the underserved and indigent communities. African American and minority medical school graduates have been more likely to serve

these underserved populations, especially the minority populations whose disparate health status has been well documented.¹³⁷

While it has been said that there is an oversupply of physicians in this country, what is true for the majority population is not so for African Americans.¹³⁸ This shortage of physicians exists for the Hispanic and Native American communities as well. The U.S. population is 80.3 percent white and whites are 86 percent of all physicians. African Americans comprise 12.1 percent of the population, but only three percent of all physicians. Hispanic Americans constitute nine percent of the population, but only four percent of all physicians. Native Americans constitute 0.8 percent of the population, but only 0.1 percent of all physicians.¹³⁹

In a presentation before COGME in January 1992, a representative of the National Medical Association stated that an increased health workforce in the African American community is clearly needed. There are physician shortages in every specialty and subspecialty in this community.¹⁴⁰ It must be stressed that the Hispanic and Native American communities also need increased physician workforces.

The Need for More Minorities in Medicine

The number of underrepresented minorities in the medical profession must be increased for the following reasons:

- Equity, justice, and morality.
- The much greater morbidity and mortality among minorities as compared with the white population.
- Minorities tend to practice more in minority/underserved communities where there is the greatest need for practitioners.
- Cultural and language differences are best addressed by physicians from the respective minority group, although all physicians should be sensitive to and competent in addressing such racial/ethnic differences.
- Minority physicians have historically provided much needed leadership to their communities that the Nation cannot afford to ignore.

Equity, justice, and morality: The issue of minority representation in the medical profession is vital for equity.¹⁴¹ The American society is becoming increasingly polarized by racial/ethnic division while the Nation is becoming more ethnically diverse. Some analytic newspaper articles have detailed certain aspects of ethnic strife and perception

gaps between ethnic/racial groups. One study indicates that about 50 percent of whites believe that they, not minorities, are more likely to be denied opportunities because of race, while most African and Hispanic Americans believe that their groups continue to suffer from discrimination.¹⁴² Focus groups on racial matters suggest that whites tend to feel discomfort around African Americans and are generally afraid of them.¹⁴³

The health care status of America's minorities is in dire need of attention.¹⁴⁴ Despite the progress of the last 25 years, racial prejudice has not been eliminated from this country. The health care system, like other elements of society, has not fully eradicated prejudice.^{145,146} Physicians in poor African American neighborhoods relate "horror stories" of 35-year-olds suddenly succumbing to commonplace pneumonia because they did not have the money or could not take off from work to see a doctor about a high temperature; or of 17-year-old girls, sexually active since their teens, who have multiple sexually transmitted diseases, have never had gynecological exams, and do not even know of the existence of Pap smears.¹⁴⁷

Health status of African Americans: In general, it appears that care provided for African Americans and whites differs along a number of dimensions. Although difficult economic circumstances of many African American families clearly contribute to the lack of access to health services, even African Americans above the poverty line have less access to medical care than their white counterparts.¹⁴⁸ White Medicare patients are far more likely to have coronary artery bypass surgery than African American Medicare patients, a disparity not reflected in either differences in frequency of heart disease between the races or the geographic proximity of heart surgeons. Research has found that racial prejudice accounts for some, though not most, of the difference in the rates of various medical procedures between African Americans and whites. Race may indicate low income, lack of insurance, relatively less education, and greater mistrust of doctors and hospitals—all perhaps affecting medical treatment.¹⁴⁹

Health status of Hispanics: The AMA Council on Scientific Affairs indicates that Hispanics are more likely than whites to live in poverty, be unemployed or underemployed, have little education, and no private insurance. Hispanics are at an increased risk for diabetes, hypertension, tuberculosis, HIV infection, alcoholism, cirrhosis, specific cancers, and vio-

lent deaths. Poverty and lack of health insurance are the greatest impediments to health care for Hispanics.¹⁵⁰ The first comprehensive survey of this group indicates that Hispanics tend to go to the doctor less often than white and black non-Hispanics largely because they are poor and lack health insurance.¹⁵¹ From one-third to one-fifth of various Hispanic populations (and one-fifth of the black non-Hispanic population) are uninsured for medical expenses compared with one-tenth of the white non-Hispanic population.¹⁵²

Health status of Native Americans: Access to health care for Native Americans is more difficult than for the rest of the U.S. population because of geographic isolation of villages and communities in large States and on large reservations, poor transportation, lack of efficient communications systems, and lack of running water and sewage disposal. Travel may require long distances on dirt roads or by air.¹⁵³ Native Americans are younger, less educated, less likely to be employed, and poorer. These factors, combined with high rates of STDs and drug use, may favor the spread of HIV.¹⁵⁴ Alcoholism exacts a terrible toll among many Native Americans. There is extraordinary tribal, cultural, educational, economic, and geographical diversity and multiple agencies and congressional committees share the oversight of Native Americans.¹⁵⁵

Health status of Asian Americans: Asian Americans, the third largest minority group, consist of 11 million people, more than 30 different languages, and many distinct cultures.¹⁵⁶ Chinese, Filipinos, and Japanese still rank as the largest groups, although Southeast Asians, Indians, Koreans, and other groups recently have registered much faster growth.¹⁵⁷ Important ethnic differences in risk factors indicate that Asian American groups should be targeted for public health efforts concerned with obesity, hypertension, hypercholesteremia, and smoking.¹⁵⁸

It has been stated that "we have one of the most advanced health care systems in the world and yet we have a poor health status, particularly among our poor and minority citizens."¹⁵⁹ The editor of the *Journal of the American Medical Association* stated that "...access to basic medical care for all of our inhabitants is still not a reality in this country. There are many reasons for this, not the least of which is long-standing, systematic, institutionalized racial discrimination."¹⁶⁰ The AMA Council

on Ethical and Judicial Affairs added that, "underlying the disparities in the quality of health among Americans [black vs white] are differences in both need and access. Moreover, recent studies have suggested that even when blacks gain access to the health care system, they are less likely than whites to receive certain surgical or other therapies. Whether the disparities in treatment decisions are caused by differences in income and education, socioeconomic factors, or failures by the medical profession, they are unjustifiable and must be eliminated."¹⁶¹ Generally, the factors that affect access to health care for African Americans are similar to those for Hispanic Americans, Native Americans, and Asian Americans.

Greater morbidity and mortality: The extent of health disparities suffered by minority groups in America was documented in the mid-1980s by the Secretary's Task Force on Black and Minority Health. The Task Force identified six causes of death (cancer, cardiovascular disease and stroke, chemical dependency, diabetes, homicide and accidents, and infant mortality) that disproportionately affect minority populations and are for the most part preventable. Together, the six areas accounted for more than 80 percent of the excess deaths for African Americans, Hispanic Americans, and Native Americans.¹⁶² One study of preventable deaths indicated that for 12 causes, the mortality rate for African Americans was 4.5 times that of whites.¹⁶³

Literature suggests that as Hispanic Americans become more acculturated, their health status worsens. There is an increase in tobacco usage and consumption of a less healthy diet. As their longevity in the United States increases, their mortality and morbidity rates for certain diseases increase.¹⁶⁴ As Hispanic Americans learn the English language and become assimilated into North American culture, the more likely they are to drink alcohol, smoke tobacco, and use illegal drugs.¹⁶⁵

Minorities tend to practice more in minority/underserved communities: The physician who comes from, has grown up in, or has experience in underserved communities is more likely to consider practicing there.¹⁶⁶ A study of 1975 U.S. medical school graduates found that over half of all minority graduates entered primary care specialties and that significantly more minority graduates are located in designated health workforce shortage areas (figure 13). Additionally, minority physicians saw proportionately more Medicaid recipients than did their white counterparts, and physicians of a particular racial/ethnic background cared for disproportionately more members of their own back-

ground.¹⁶⁷ Minority physicians tend to practice more in minority underserved locations.^{168, 169, 170, 171, 172}

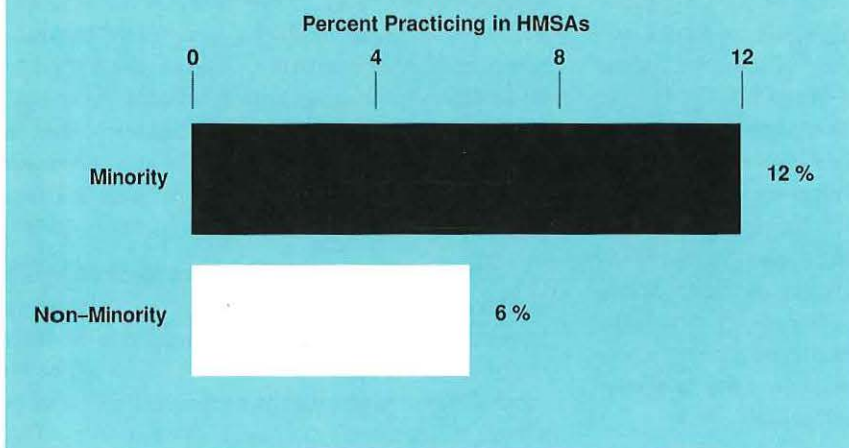
For example, almost 45 percent of minority graduates of New York State medical schools in 1989 indicated that they planned to practice in a socioeconomically deprived area, compared with

governs behavior in a number of domains, including decisions to seek health care. People who share similar cultural patterns, values, experiences, and problems are more likely to feel comfortable with and understand each other.¹⁷⁷ Minority health care providers are more likely to be culturally sensitive to their populations and to organize the delivery system in ways that better suit the needs of that minority population. Examples of this include establishing evening clinic hours so that persons will not have to choose between work and a clinic visit, or recognizing that a system that is dependent upon telephone contact is destined to fail because fewer than 50 percent of many minority households have telephones.¹⁷⁸

Most members of the medical profession will encounter persons from different cultural and ethnic backgrounds. To treat the person effectively, the provider must understand how the person's cultural values influence the provider/patient relationship. For example, studies have shown that African Americans use eye contact in patterns that differ greatly from that of Europeans. Europeans tend to maintain eye contact while listening and to look away while speaking. African Americans tend to maintain eye contact while speaking and to look away while listening.¹⁷⁹ Among African Americans, cultural influences may include greater tolerance of symptoms, necessitated by historically severe economic and prejudicial barriers to care, or negative feelings about the health care system resulting from access problems.¹⁸⁰ According to one physician, hesitancy in seeking medical care has roots in slavery: access to medical care was a privilege provided by the plantation owner. One did not abuse this privilege, and one did not ask unless it was absolutely necessary. Slave men often deferred to women and children for medical care. It was considered unmanly to be ill and to have to seek medical services.¹⁸¹

Folk medicine is another important tradition of health care. Among African Americans, the practices are often termed voodoo, root work, or roots.¹⁸² Many African Americans who might have visited a root doctor or other folk medicinalists in the rural South find themselves today treated by physicians who are not culturally sensitive to this practice. What is a cultural dilemma for the patient is a specific medical problem for the physician. The patient almost never volunteers to the physician that he or she believes that a hex or some external force is the cause of the illness.¹⁸³ Clearly, there is a need for greater information and communication between folk medicine practitioners and modern medical doctors.¹⁸⁴

Fig. 13 – Extent to Which Minority Physicians Practiced in HMSAs, Medical School Graduating Class of 1975



Source: Keith, S., Bell, R., Swanson, R. "Effects of affirmative action in medical schools." *New England Journal of Medicine* 313:1519-24, 1985.

only 15.6 percent of all surveyed students.¹⁷³ Young minority physicians tend to locate in areas with large minority populations of their own ethnic group.¹⁷⁴

An analysis of data from the AAMC's Graduation Questionnaire (GQ), which focused on the plans or aspirations of graduating medical students and the realities of their subsequent practices, provided revealing information. The 1991 GQ indicates that 34.1 percent of underrepresented minorities plan to practice in underserved areas versus 7.5 percent of all others.¹⁷⁵ Among the 1981-1983 GQ respondents, 100 percent of Mexican Americans were willing to practice among poor patients, although only 14.8 percent of this group subsequently had high percentages of patients whom they considered poor. More than 54 percent of African Americans, 93.9 percent of whom indicated willingness to serve the poor, ultimately did serve a high percentage of patients that they considered poor. In another study, African Americans and Mexican Americans were more likely to follow through with initial plans to practice in primary care medicine than other racial/ethnic groups.¹⁷⁶

Cultural and language differences: Culture is a learned system of beliefs and values that are transmitted from one generation to the next and

The first comprehensive health survey of Hispanic Americans indicates that this group tends to visit the doctor less often than non-Hispanic whites and African Americans partly because of such cultural factors as difficulty in speaking English, fear of medical technology, and, for illegal aliens, fear of deportation.¹⁸⁵

Belief and value systems of many Hispanic Americans make the discussion of some sexual matters taboo. For example, alleged traditional roles like *marianisma* (the obedient and submissive Hispanic martyr) may preclude Hispanic women from suggesting that their male partners use condoms. Furthermore, the use of condoms is considered "unmacho" by some Hispanic and African American men.^{186, 187} Such a state of affairs, if prevalent, could cause serious problems for AIDS education and prevention. When attempting to provide education and prevention activities in the Hispanic community, one must be aware that the Spanish language has certain nuances that must be understood and used properly. The standard message that would be appropriate for a white patient cannot be simply translated into Spanish without proper consideration of cultural appropriateness.¹⁸⁸

Native Americans, as mentioned previously, reflect extraordinary tribal, cultural, educational, and economic diversity. There are approximately 200 languages and dialect groups within the Native American population.¹⁸⁹ Because so many cultural differences exist between Native Americans and non-Native Americans, almost any cultural trait could be chosen to illustrate the differences. One example is that it is considered impolite for many Native Americans to look someone straight in the eye. Native Americans may say what they mean indirectly. Body language is very important and verbalization is often not necessary.¹⁹⁰

It is often asserted that Native Americans are not competitive, but in fact aggressive public demonstrations of competition are regarded as crude behavior. This could affect the perception of their performance in medical school.¹⁹¹ One illustration that demonstrates the clash of values between Native Americans in formal educational settings can be found in the anatomy lab. Navajos from the Southwest are prohibited from touching anything that is dead; therefore, cadavers pose problems for these students. Students must attend a ritual ceremony after touching cadavers to restore harmony within themselves. However, students from the Dakota nation do not have any aversion to cadavers.¹⁹²

Among the critical issues for Native Americans is how to reconcile spiritual values and formal education. Native American medical students often face alienation and are looked upon by their people as being in the "white man's world." When these students return home, friends treat them differently and many people do not know how to deal with them.¹⁹³

Value systems differ between Native American and non-Native American cultures.¹⁹⁴ Native American values extol a cooperative spirit, shared property (tribal lands), and living in the moment without inordinate emphasis upon future commitments entailing punctuality. These values tend to be in direct opposition to the Western value system.¹⁹⁵ Health education and promotion that is provided in accord with tribal values may do much to eliminate many of the medical problems that face Native American populations.¹⁹⁶

Minority physicians as valuable leadership resource: Minority physicians represent not only a respected profession, but also leadership to their various communities. These individuals serve on local school boards, mayor's commissions, and in other civic and community roles. The underrepresentation of minorities in medicine means that many minority communities may be deprived of the much needed leadership that these professionals have traditionally provided to their communities.¹⁹⁷

Finding No. 4:

Shortages exist in the specialties of general surgery, adult and child psychiatry, and preventive medicine and among generalist physicians with additional geriatrics training.

General Surgery

• **The future growth in general surgical services is likely to exceed the growth in the supply of general surgeons. Aging of the U.S. population will increase demand for surgical services, and the number of physicians in general surgery is inadequate to meet a growing need for trauma care services and for surgical care in rural areas. The training curricula for general surgery need to be broad-based to ensure that graduates have sufficient knowledge and skills to manage the wide array of surgical problems that may be seen in rural and inner-city areas.**

In presentations to the Council's Physician Manpower subcommittee, the American College of Surgeons (ACS) pointed to independently derived

studies that indicated that there may be a deficiency of general surgeons during the next 20 years.¹⁹⁸ For example, a 1988 AMA report projected general surgery as one of few specialties in which the future growth in the utilization of services is likely to exceed the future growth in the supply of physicians. The study projected that the number of general surgeons will increase by about six percent between 1985 and 2000, while utilization of the services provided by general surgeons will increase by an estimated 16 to 19 percent. That study based its utilization estimates on the demographic characteristics of the population and historical data on utilization patterns given these characteristics.¹⁹⁹ Another study indicated that, for general surgery, the projected increases in need over the next 20 years will be substantially greater than the increases in physician supply.²⁰⁰

cialties and subspecialties) has remained relatively constant over the past decade. Because of the increasing trend toward other surgical specialties, there has actually been a decrease in the number of residents training in general surgery.²⁰¹ Furthermore, the percent of general surgeons who practice in rural areas may be declining. A study of the percent of physicians, by specialty, who had graduated from medical school between 1976 and 1985 and were in rural practice in 1991, indicated a significant decline in the percentage of those who became general surgeons and practiced in rural areas in 1991 (figure 14).²⁰²

Adult and Child Psychiatry

• **The burden of psychiatric illness in both children and adults indicates a need for more psychiatrists and child psychiatrists. However, effective demand for psychiatric care is constrained by limited insurance coverage.**

Based on testimony and information, the Council concludes that there are current shortages of both adult and child psychiatrists in the United States. These shortages are projected to continue.

This conclusion is supported by reports that found requirements for adult and child psychiatrists to be substantially in excess of supply, both now and for the foreseeable future.²⁰³ In their presentations to the Council's Physician Manpower subcommittee, the American Psychiatric Association (APA) and the American Academy of Child and Adolescent Psychiatry supported its conclusion that there is an inadequate supply for adult and child psychiatry.^{204,205} Pertinent information items and the conclusions of the APA are the following:

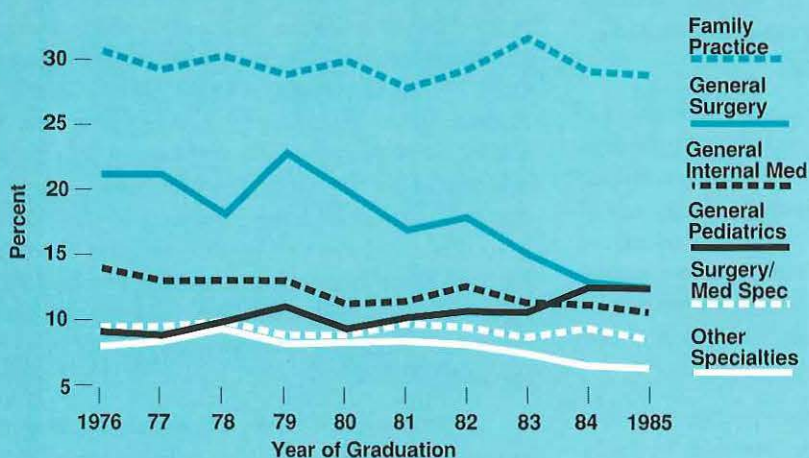
• The previously-cited AMA report projected an increase of 19.1 percent in the utilization of psychiatrists' services between 1985 and 2000, compared with a projected supply increase of 14 percent in the number of psychiatrists in this period.

• After showing a generally upward trend during most of the 1980s, the number of first-year residents in psychiatry is declining. In the late 1960s, 10 percent of medical students chose psychiatry residency training. This dropped to 4.5 percent in 1991 and fell further to 3.7 percent in 1992.

• In child psychiatry, the number of residents rose steadily during the 1980s, but not enough to greatly close the gap between supply and need.

• There are also problems to be addressed in the distribution of psychiatrists geographically and among work settings.

Fig. 14 – Percent of Physicians Graduating From U.S. Medical Schools 1976 – 1985 Practicing in Rural Counties in 1991 by Specialty



Source: Rosenblatt, R.A., Whitcomb, M.E., Cullen, T.J., Lisher, D.M., Hart, L.G. "Which medical schools produce rural physicians?" *Journal of the American Medical Association* 268(12): Sept. 23/30, 1992.

Contributing to the shortage, according to the ACS, will be the growing need for trauma care services. Access to such services continues to be a problem, particularly in the inner-city and rural areas, where general surgeons bear a major responsibility for emergency care and the organization of regional trauma centers. In particular, minority and rural populations suffer a disproportionate share of traumatic injuries. General surgeons, particularly in rural areas, are called upon to perform common procedures such as cesarean sections and basic orthopedic surgery.

Based on findings of the College's Longitudinal Study of Surgical Residents, as reported in the *Socio-Economic Factbook for Surgery*, the total number of residents in all surgical specialties (including general surgery and nine other surgical spe-

- The problems of image, cost, stigma, and length of training have contributed to this shortage.

- There is no indication that the need for services of child and adolescent psychiatrists will diminish. The factors that affect demand, such as the ongoing renewal of stigma, increasing public sophistication, and improving understanding resulting from research and advances, all indicate that the need for child and adolescent psychiatrists will increase. However, effective demand is limited by insurance coverage.

Preventive Medicine

- **Continued shortages remain in the field of preventive medicine, which includes specialty areas of public health, general preventive medicine, occupational medicine, and aerospace medicine. These physicians make significant contributions to our Nation's year 2000 health objectives. Although four qualified students apply for each training slot, the greatest barrier to training physicians in preventive medicine is the virtual absence of GME funding.**

The Council reconfirms its conclusion reached in its first report that the earlier Graduate Medical Education National Advisory Committee (GMENAC) assessments of shortages in the area of preventive medicine remain valid. It notes the findings of a 1991 national survey of preventive medicine residency graduates that documents their significant contributions to national health objectives.

These graduates remain heavily committed to the field as 90 percent continue to work in public health or preventive medicine. Graduates participate in a variety of activities that combine clinical, research, policy, and administrative skills. Nearly 70 percent of graduates are involved in direct patient care in public health-based maternal and child health, sexually transmitted disease, and tuberculosis clinics. One-third manage programs in public or community health. The majority of preventive medicine graduates (60 percent) are engaged in research and teaching activities in disease prevention and health promotion in their current positions.²⁰⁶

One-fifth of preventive medicine residency graduates work in State or local health departments helping medically underserved populations. In caring for these populations, it is particularly noteworthy that minority representation in preventive medicine exceeds national averages for physicians. A recent survey shows that 43 percent of preventive medicine residents are women and about 18 percent belong to an underrepresented minority.

While the number of residents in training has paralleled the increases in the supply of physicians trained in preventive medicine since 1978, residency program closures will bring the total number of accredited preventive medicine residency programs back to the 1978-1979 level. Moreover, several other programs, particularly those based in State or local health departments, perceive themselves to be in serious jeopardy. Overall, only 64 percent of Preventive Medicine Residency (PMR) program capacity was filled in 1989-1990 despite the fact that the number of qualified applicants was about four times the available number of training slots.

The major barrier in filling PMR positions is the lack of funding support for training and resident stipends. PMR programs piece together funding for residents from multiple sources, most of which are volatile and uncertain from year to year. Conventional Medicare reimbursement for direct and indirect graduate medical education costs is unavailable because the second and third years of training are not hospital-based and many of the residents' activities after the initial year do not involve direct patient care. Only 13 PMRs currently receive HRSA Title VII training grants as compared with 20 programs in 1983. Subsequently, there has been a significant decrease in the number of graduates from programs that no longer receive these grants, and two PMRs have shut down after losing this source of funding. At least two more programs have determined that they will close after this year, bringing the total number of programs down to nearly the 1978-1979 level of 73.²⁰⁷

A 1988 national survey of preventive medicine graduates highlighted the lack of information about preventive medicine residency training and careers available to medical students who eventually enter such training. Despite continued indications of a shortage of preventive medicine practitioners, considerable deterrents remain for medical students who seek to learn about the field.²⁰⁸ As the Council continues to assess national needs for physician workforce, it will further explore the important role of preventive medicine physicians in analyzing the health of particular populations, organizing and implementing population-based health measures, and providing or ensuring that necessary preventive services are delivered.

Geriatrics

- **Additional emphasis is warranted in the area of geriatrics, given the aging of the population. Family physicians and general internists must be trained to provide comprehensive care for the elderly. Strategies should be developed**

to train more generalist physicians and support those who are interested in pursuing additional training in geriatrics.

The Council endorses its conclusion made in its 1988 report that additional emphasis is warranted in the area of geriatric medicine.²⁰⁹ At a panel presentation on Aging and Physician Manpower given at the Physician Manpower subcommittee in January 1990, participants assessed the current and future supply of physicians trained in geriatrics in view of demographic trends and the medical needs of the elderly. All presenters supported the need for more emphasis on increasing the supply of physician workforce in geriatrics. To provide both direct care needed and the personnel to train the country's physicians, nurses, and other health professionals in the care of the elderly, about 10,000 physicians with additional geriatrics training are needed. This is well above the 1,150 such physicians reported by the AMA in this specialty as of January 1989.

It should be noted that family physicians and general internists are the two specialties already trained to provide comprehensive care to the elderly. Both specialties have developed geriatrics fellowship programs that are accredited by the Accreditation Council for Graduate Medical Education (ACGME). Family physicians and internists who complete these programs are eligible for certificates of added qualifications in geriatrics. The Council supports the development of strategies to train more generalist physicians and support those generalists who are interested in pursuing additional training in geriatrics.

Finding No. 5:

Within the framework of the present health care system, the current physician-to-population ratio in the Nation is adequate. Further increases in this ratio will do little to enhance the health of the public or to address the Nation's problems of access to health care. Continued increases in this ratio will, in fact, hinder efforts to contain costs.

• **Efforts to solve problems of access to health care by increasing the total physician supply have been largely unsuccessful. A growing physician oversupply is projected, which will hinder efforts to contain costs. Consequently, the number of physicians educated should be reduced. Strategies to improve access to care should, instead, focus on altering the specialty mix, racial/ethnic composition, and geographic distribution of physicians.**

The physician supply has grown rapidly over the past three decades. According to current projection analysis, it will continue to grow through 2020. The number of active allopathic and osteopathic physicians has more than doubled since the early 1960s and has grown significantly faster than the population. Between 1960 and 1988 the physician-to-population ratio increased by more than 70 percent. The ratio is projected to continue to rise, from an estimated 225 in 1986 to 298 per 100,000 in 2020.²¹⁰ This will represent an increase in the number of allopathic and osteopathic physicians from an estimated 544,530 in 1986 to 875,800 in 2020 (figure 15).

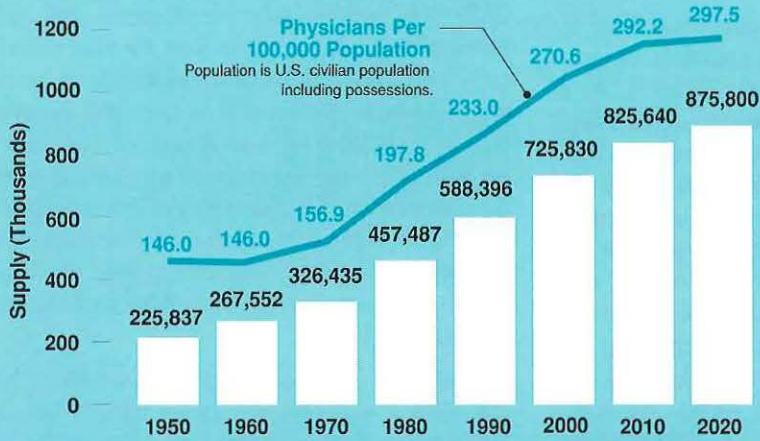
International medical graduates (IMGs) have contributed to this supply. In the last two decades, IMGs have composed about one-fifth of the U.S. physician supply. Based on projections of the Bureau of Health Professions (BHP), the proportion is expected to decline from 21.4 percent in 1986 to 17.1 percent in 2020. However, the absolute number is expected to grow overall by 2020 (figure 16).²¹¹

The sustained growth in physician supply is largely a result of policies made during the 1960s when policymakers had similar concerns about access to basic health services as they do today. Most analysts were convinced that there was a dire shortage of physicians.²¹² They assumed that increases in the total physician supply would be accompanied by greater numbers of generalist physicians and more diffusion into medically underserved areas.

New legislation was adopted to increase funding for medical education and training. For example, the Health Professions Educational Assistance Act of 1963 provided construction funds and capitation grants to enlarge the class size in medical schools. In 1965, amendments to that act supported operating costs of the medical schools and created medical scholarships. The Comprehensive Health Manpower Training Act of 1971 subsequently authorized capitation grants to increase medical school enrollments.²¹³ These initiatives were effective in producing more physicians. From 1965 to 1975 the number of medical schools increased from 89 to 114, medical school enrollment grew by 70 percent, and the number of graduates entering residencies nearly doubled.²¹⁴

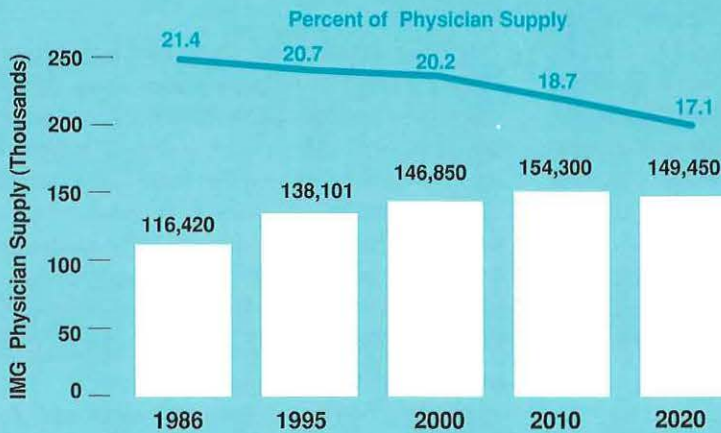
By the mid-to-late 1970s, concern had shifted to an emerging physician surplus. This culminated in the GMENAC report of 1980, which projected an oversupply of 70,000 physicians by 1990, rising to 145,000 by 2000. That study is considered by many to still be the most comprehensive examination of physician supply ever undertaken.^{215,216}

Fig. 15 – Supply of Active Physicians (MD & DO) and Ratio to Population Actual 1950 – 1990 and Projected 2000 – 2020



Source: 1950-90 data from AMA Masterfile adjusted by BHP to partially include unknown activity status or address. 2000-20 projected data from BHP Physician Forecasting Model.

Fig. 16 – Projected Supply of International Medical Graduates (IMG)



Source: 1986 data from AMA Masterfile. 1995-2020 projected data from BHP Physician Supply Forecasting Model.

Since the GMENAC report was published, health care researchers and policy analysts have debated whether there will in fact be a surplus of physicians. Some studies have suggested that the GMENAC study may have underestimated the surplus of physicians, because a growing proportion of the U.S. population receives health care from HMOs and other forms of health care that utilize physician services at far lower rates than assumed in the GMENAC analysis.^{217,218} Other analyses indicate that the projected growth may be absorbed by lower physician productivity and by a long-standing trend in the U.S. population to consume physician services at higher levels.²¹⁹

A second part of the debate is whether a physician surplus is likely to have adverse effects on the Nation's health care system. Some studies show

that the expanding supply of physicians promoted a diffusion of specialists into nonmetropolitan areas, thereby increasing the rural population's access to specialty services during the 1970s.^{220,221,222} Analysts have also thought that the GMENAC recommendation to decrease medical school enrollments could have a negative impact on efforts to increase the number of African Americans and other underrepresented minorities in the physician population.^{223,224} Even if a physician surplus should have undesirable effects, they would likely be far less than the consequences of a physician shortage, especially during an epidemic, war, or other national emergency.²²⁵

However, a physician surplus contributes to higher costs for health care,^{226,227,228,229} and greater competition among physicians could lead to "over-doctoring" of patients and atrophy of physician skills.^{230,231} Perhaps most importantly, the increased supply has not translated into improved access to physician services. Despite the enormous growth of the physician population, they are in short supply in many parts of the country^{232, 233} and a significant portion of the population lacks access to needed care.²³⁴ The most recent PPRC report has a working assumption that the number of physicians exceeds, or will exceed, that required to meet national health needs.²³⁵

Mindful of the policy debates concerning the adequacy of the aggregate physician supply and based on studies of both supply of and requirements for the physician workforce, the Council concluded in its 1988 report that "there is or soon will be an aggregate oversupply of physicians in the United States." At the same time, COGME noted the conflicting evidence as to whether an oversupply of physicians would necessarily lead to socially undesirable consequences. It recommended that the Federal Government not attempt to influence the physician workforce supply in the aggregate. Rather, COGME urged the public and private sectors to focus their efforts on influencing such clearly identified problems as the geographic maldistribution of physicians, the continued underrepresentation of minorities in medicine, specialty shortages, and concerns regarding quality of care.²³⁶

However, a number of indications and studies since the first report point to the need to reduce the current rate of increase in the aggregate physician supply. For example:

- Kletke, et al., projected a 19-percent increase in the physician-to-population ratio between 1985 and 2000.²³⁷ They estimated in 1987 that immediate elimination of all new IMGs and a reduction of U.S. medical school enrollment by 5,000 would be

necessary to maintain a physician-to-population ratio in 2000 similar to that of 1985. In fact, modest declines in U.S. medical school enrollment did occur in recent years.²³⁸ However, these declines have been reversed by the current upswing in applicants to these schools.

- Contrary to the expectations of some, new entrance examinations for IMGs did not result in fewer IMGs entering practice in the United States; the numbers are actually increasing. Although the number of IMGs in GME remained relatively constant throughout the 1980s, the reported number of IMGs in first-year residency positions in 1990 increased by 32 percent since 1989 to 3,540, or 19.3 percent of all first-year residents.²³⁹ This increase occurred during a decline in the number of U.S. nationals trained abroad who returned to the United States for GME.

- Considerable evidence indicates that further increases in physician supply are unlikely to enhance the health of the public. Wide ranges in physician supply exist in the United States with little evidence of differences in health outcomes. For example, physician density on the coasts exceeds that of the central and southern United States with no evidence of differences in health outcomes. Likewise, HMOs provide care with physician-to-population ratios one-fourth lower than currently utilized by the overall U.S. health care system—again with no evidence of differences in health outcomes.^{240, 241}

- Overall increases in physician supply also are unlikely to markedly improve access to care for the financially and geographically underserved. Minority groups and those of lower socioeconomic status have higher rates of morbidity and mortality and potentially can benefit most from improved access to care. However, physicians, like other professionals, concentrate their practices in more affluent suburban and metropolitan locations. Competition among urban specialists seems to have caused only modest diffusion into rural areas. Only family physicians are distributed in rural and urban areas in proportions similar to the population at large, and interest in this specialty is declining.²⁴² Other specialties require larger populations to support a practice and, therefore, are more likely to practice in urban settings. Other solutions such as increasing the proportion of primary physicians, incentives for physicians to practice in underserved areas, expansion of the NHSC and implementation of universal health insurance are more likely to assist in meeting needs of underserved populations.

- Evidence also indicates that further increases in physician supply may have adverse effects on

health care expenditures. Many economists contend that increasing numbers of doctors leads to “increased doctoring.”²⁴³ At present, only one-fifth of health care expenditures are paid directly to physicians, but physician impact upon health care expenditures is much greater. Each physician, in addition to direct services rendered, seeks consultations, orders tests and ancillary services, hospitalizes patients, and writes prescriptions. Thus, some estimate that 70-90 percent of health care expenditures are initiated by physicians.²⁴⁴ While the services provided by an individual physician might decrease in a setting of an oversupply of physicians, aggregate services provided will increase. Evidence from the U.S., Canadian, and German health care systems demonstrates that increasing the number of doctors increases the number of services provided and costs incurred.^{245, 246, 247, 248, 249,}

^{250, 251, 252, 253} Hughes’ recent analysis of increasing health expenditures in Quebec provides convincing evidence that most of Quebec’s increases can be explained by rapid increases in numbers of physicians.²⁵⁴ Twenty-five years ago, most Western nations perceived they had physician shortages. Now, many nations are concerned about escalating health expenditures caused by an oversupply of physicians.²⁵⁵

The fiscal implications of increasing numbers of physicians become even more relevant in a system that:

- Values fee-for-service.
- Already has an oversupply of physicians.
- Has a high percentage of subspecialists.
- Values patients’ ability to self-refer to specialists.
- Depends on subspecialists to provide significant amounts of primary care.
- Values technologies that specialists are uniquely trained to use.

Each of these factors stimulates the growth of medical services and the cost of care.

In all likelihood, the United States will follow the path of other industrialized nations in attempting to control health care expenditures. Mechanisms to limit Medicare hospital expenditures in the form of prospective hospital reimbursement were initiated in 1983. Medicare volume performance standards soon will govern physician payment. Expenditure controls almost certainly will be initiated by other third-party payers in efforts to control rising health care costs for the population below age 65. Even with cost containment measures, the experiences of Quebec and Germany suggest that

services and expenditures will continue to expand as increasing numbers of physicians provide additional services and also exert powerful political force to increase aggregate expenditures.^{256, 257, 258, 259}

The increases in health care expenditures associated with increasing numbers of physicians in the United States will contribute to the inability of this Nation to provide solutions for the uninsured and the underinsured.

Finding No. 6:

The Nation's medical education system can be more responsive to public needs for more generalists, underrepresented minority physicians, and physicians for medically underserved rural and inner-city areas.

• The Nation's system of undergraduate and graduate medical education, taking place in 141 osteopathic and allopathic medical schools and in more than 1,500 institutions and agencies, has responded effectively to many of the Nation's health care needs. During the past 25 years, our Nation's medical education system has responded to public demands to increase the numbers of physicians, advance biomedical research, and develop new medical technology. These responses have resulted in a doubling of the physician supply and the establishment of a biomedical research and medical technology infrastructure that is unsurpassed.

• Today, the medical education system must respond to the Nation's health care and physician workforce needs in the 21st century. These include the need for more minority and generalist physicians, more primary care research, and increased access to primary care, particularly in underserved rural and urban communities. Changes in the institutional mission, goals, admissions policies, curriculum, faculty composition and reward system, and the site for medical education and teaching are necessary to respond to these needs.

The Nation's undergraduate and graduate medical education system is entrusted by society to undertake important societal missions toward improving the health of the public including education, patient care, and research activities. During the past 25 years, the medical education system has responded effectively to public demands for more biomedical research, to increase the Nation's ca-

capacity to train physicians, and for the development of new medical technology.

In view of the crises and problems in the health care delivery system, the medical education system is challenged to respond to a specific additional set of health care needs in the 21st century. In this report, the Council identified deficiencies in physician composition, specialty mix, and geographic distribution that will significantly hinder efforts to ensure basic health care to all Americans. Specifically, the Council has identified the need for:

- More generalist physicians.
- More underrepresented minority physicians.
- More general surgeons, psychiatrists, and preventive medicine specialists, and family physicians and general internists with additional geriatrics training.
- Fewer other specialists and subspecialist physicians.
- More physicians practicing in underserved rural and inner-city areas.

The Council also identified significant barriers in our Nation's medical education financing and health care reimbursement system that hinder efforts to correct these physician workforce deficiencies. Despite these barriers, numerous examples exist of medical schools, community hospitals, HMOs, and other teaching institutions or agencies that successfully recruit substantially more underrepresented minority students, graduate significantly more generalist physicians, and have far more graduates practicing in rural and other underserved areas than the national average. Medical educators do have a sphere of influence in responding to societal needs and the leadership of our medical education system should be challenged to make a difference.

What would be the elements of a medical education system that are responsive to these societal physician workforce needs? This question is answered in the following section. These elements can serve to assist medical educators, faculty, medical students and residents, policymakers, and the public to work toward a more responsive medical education system.

Institutional Mission Statement

The institutional mission statement should recognize responsibility and accountability to societal needs for more generalist physicians, underrepresented minority physicians, primary care research, and the provision of more primary medical care, particularly to underserved communities.

Institutional Strategic Plan

The medical school's strategic plan should contain quantifiable outcome measures for these societal needs, including the percentage of graduates choosing generalist careers, underrepresented minorities who apply and matriculate, required educational experiences in community and underserved settings, and graduates who practice in underserved areas.

Recruitment, Admissions, and Retention Policies

The medical school admissions policy, structure, and function should reflect the need to recruit and admit more students who are inclined to select the generalist disciplines. Studies indicate that the type of medical students admitted influences the profile of specialty choices of graduating students.²⁶⁰ Therefore, the admissions process is critical in determining the kind of physician produced and the specialty selected. Many educators recommend broadening the admissions criteria to select prospective trainees more closely aligned and attuned to having the personal characteristics and aptitude sought in future primary care providers. One of the conclusions of the General Professional Education of the Physician (GPEP) report called for breadth and rigor in the natural and social sciences and in the humanities.²⁶¹ According to some studies, applicants from rural areas and those who are older and married tend to select family medicine specialties. Furthermore, those who enter family medicine tend to have a balance of humanistic and scientific interests.²⁶²

Medical school admissions committees should increase emphasis on the following characteristics in selecting potential candidates for admission: educational background in the social sciences/humanities; communication skills; and applicants who are underrepresented minorities and/or from rural communities. Schools should also use flexibility in considering results from standardized test scores such as the MCAT. Medical school student admission committees must have a more balanced representation by including generalist physicians, underrepresented minorities, and community representatives.

In addition, the medical school admissions policies, structure, and function should reflect the need to recruit and admit more minority students in medical school. Studies consistently demonstrate that schools with explicit minority admissions policies and minority recruitment/retention sections are effective in increasing minority candidates. Persons

who staff these sections do not have to be from an underrepresented minority; however, it does help. The main ingredients appear to be leaders who: (1) are dedicated and committed to minority recruitment and retention; (2) recognize and are responsive to the multifaceted needs of minority students (social, economic, educational, emotional, etc.); (3) provide appropriate support with high expectations for the students; and (4) provide mechanisms to enhance student self-esteem and self-worth.²⁶³

Emphasis should be placed on the development and support of programs that improve the size and quality of the minority applicant pool by focusing on early intervention. The school should participate in forums and networks involving students in high school, elementary school, and primary levels, including kindergarten, to expose minority youngsters to health professions role models, encourage their interests and pursuits in health, and provide networks of mentoring programs to assist and support students inclined toward health careers.

The effect of dedicated mentors for youngsters who are interested in the health professions cannot be overemphasized. In fact, many underrepresented minority youngsters have never had the opportunity to meet and spend time with a health professional who is a member of their particular ethnic group. Studies have shown that the assistance of dedicated and sincere role models and mentors often has the greatest impact on whether a youngster will enter a particular career. Mentors should be obtained at the earliest possible age for the students.²⁶⁴

Mentors need to continue to assist the student throughout their career. Partnerships among Federal, State, and local governments, private and business organizations, educational institutions (including school systems at all levels through medical school), and community and parent groups have been shown to be most effective in increasing minority/disadvantaged representation in the health professions. Finally, the school should provide ongoing support to ensure the successful progress of these students through their education.²⁶⁵

Faculty Composition and Reward System

With the exception of our Nation's osteopathic medical schools and teaching hospitals, most institution's departments and faculty composition need to be more balanced, with increased representation of generalist physicians, minority physicians, primary care researchers and physicians, and other health care providers from community settings.

The traditional approach in recognizing stellar faculty is built upon excellence in biomedical research and basic science publication, rather than on teaching excellence or contributions to primary care research. The emphasis on biomedical research and basic science funding through the NIH has contributed to the perspective that faculty from the highly specialized disciplines warrant special acclaim and distinction. With the relative paucity of funding for primary care research within the Agency for Health Care Policy and Research, generalist faculty with primary care research interests are unable to garner significant funding for the institution. Furthermore, faculty who devote special efforts to teaching and mentoring students and residents do that at the expense of potential institutional income. Thus, institutional financial concerns in an environment in which funding for biomedical and basic science research is more plentiful than primary care research have tended to create a system that does not adequately reward generalist faculty. With a shift in perspective toward a more balanced appreciation of the medical specialties, institutions should recognize accomplishments of faculty from the cognitive-based disciplines as well.

Cultural diversity among the faculty and balanced representation of generalist physicians on institutional committees are needed to redirect the efforts of institutions toward addressing the unmet national health care needs. Little progress has been made in increasing the number of minority faculty members in U.S. medical schools. Although 1990 Census Bureau data indicate that the total underrepresented minority population is approximately 21.9 percent, the representation of minority medical school faculty is approximately 3.2 percent.²⁶⁶ Programs that have been successful in increasing minority applicants in the medical profession have demonstrated the importance of role models in the process.²⁶⁷

Finally, institutions should involve larger numbers of community-based primary care physicians and other providers as preceptors, teachers, and role models for medical students and residents. They should give significant academic recognition and adequate reimbursement or other rewards (e.g., locum tenens coverage for continuing medical education for their contribution).

Medical Education Objectives

Institutions should incorporate the most effective adult education techniques. Self-directed learning and problem-solving directed skills should be emphasized throughout the curriculum for students

to learn to acquire detailed information and to apply such knowledge effectively. Medical faculties should offer educational experiences that require students to be active, independent learners and problem solvers rather than passive recipients of information. Some medical faculties have developed problem solving methods of teaching that require students to seek out, rather than to be given, information.^{268, 269, 270} These methods emphasize the formulation of hypotheses, the critical evaluation of data, and the integration and application of new knowledge to the analysis and solution of problems. Educators agree that encouraging students to strengthen their problem solving skills through independent learning will better prepare medical students and residents to use the vast resources and technologies available in caring for their patients.

Medical schools and residency training programs should emphasize effective communication skills to improve the doctor/patient relationship. The significance of mastering communication skills for an effective doctor/patient relationship to increase patient compliance and cooperation cannot be over emphasized. Physicians must be skillful at talking and relating to patients as human beings and should understand all the personal, psychological, and social factors of the problems patients bring to physicians.

Medical educators should progress beyond the view that teaching students and residents the technological content of medicine is the ultimate objective. Also of primary importance is the ability to relate effectively to patients. Such skills and abilities are important attributes for all physicians, and positive experiences must be integrated into the educational program. Effective communication skills will increase the physician's physical diagnostic and therapeutic abilities and will help the physician relate to all aspects of patient care. Effective communication skills will also improve the physician's ability to educate his/her patients and their families or social units.

The institution should provide mandatory multicultural awareness or sensitivity sessions for students, residents, and faculty. Recent studies that focus on race and racial attitudes indicate that there are differences in perceptions between the members of the various groups, which interfere in the quality of life for the various groups. One report clearly showed that while African Americans and whites agree that prejudice is widespread, they view its effects differently.²⁷¹ It is important to be aware of the practice of African American folk medicine and its impact on African American health.²⁷² Sig-

nificant differences exist among the Mexican American, Cuban, and Puerto Rican experiences. As Hispanics adopt more of the Western culture, their health tends to worsen (tobacco use rises, diets become worse, violence increases, alcoholism rises, etc.).²⁷³ Native Americans have much of this same worsening of health conditions based upon their acculturation, yet health education in accordance with tribal values could help eliminate many medical problems such as diabetes, obesity, and hypertension.²⁷⁴ With a population becoming increasingly diverse, these sessions are essential for our Nation's future physicians.

Medical Education Curricula

The basic sciences should be incorporated within a clinical context throughout the medical school curriculum. Today, medical educators are reexamining how basic sciences are taught. The traditional model isolates the study of basic science in a purely academic setting in the early years of medical training. A more practice-relevant model is being used in some medical schools where students begin their training with clinical experience followed by a thorough introduction to the basic sciences so that there will be a context to apply the technical and scientific information. These two contrasting models are often referred to as conventional versus problem-based medical curricula, where problem-based learning teaches basic science in the context of a clinical problem. Much of the rationale for problem-based learning focuses on its presumed ability to induce reasoning strategies that may be more effective for student learning.²⁷⁵

Undergraduate and graduate medical education curricula should include social, behavioral, and humanistic aspects of health and health care delivery. Instruction should be provided by faculty, researchers, and clinicians in fields such as nursing, psychology, public health, medical sociology, medical education, health services delivery, and bioethics. The educational program should be designed to provide future health care providers with a balanced educational curriculum that recognizes the social aspects of health care.

The student and resident curricula and clinical rotations should emphasize the importance of team approaches to health care delivery. These approaches should include experience working as a team member with other health care professionals and training in utilizing the skills and expertise of physician assistants, nurse practitioners, nurses, pharmacists, public health professionals, social workers, and other health care personnel.

Physicians should know how to utilize the expertise of other health care providers and should be knowledgeable of available resources. In the current era of specialization and subspecialization, the overall scope of "whole patient care" is sometimes overlooked. Doctors cannot practice effectively only from the narrow confines of their specific areas of expertise, but should, instead, recognize the significant contributions of other health care providers. Medical education training programs should reinforce the importance of team approaches in medical care throughout the curriculum. All physicians, but especially the primary care physician, must recognize and utilize the strengths of other health care providers, e.g., nursing staff, social work professionals, and others, as vital members of the medical care team.

Experimental primary care programs and curricula are offered that may help reach the identified goals. For example, such models emphasize generalist and community-based training and focus on improving the effectiveness and productivity of the fourth year of medical school. Today, medical educators are considering innovative program curricula to provide greater exposure to the liberal arts and social sciences in training the general internist, general pediatrician, and family physician. One approach identified as a B.S./M.D. pathway begins at the pre-doctoral level and introduces students to medicine in an integrated six-year medical curriculum from the first year of college to the completion of medical school. Another approach merges the fourth year of medical school and the first post-graduate year, blending the educational objectives that are usually so clearly demarcated in the two settings. In traditional programs, the fourth year of medical school is often underutilized for training purposes.

Undergraduate and graduate training programs should contain well-defined curricula, educational objectives, and evaluation methods to assess the effectiveness of the education experience. The evaluation should include outcome measures (e.g., numbers of residents who chose to practice in a rural community) to assess whether the training program addressed societal physician workforce needs.

Expanding the Medical Education Teaching Environment

Undergraduate curricula and clinical rotations should provide all students with a balance between hospital-based, subspecialty training and community-based, primary care training. A much greater

proportion of medical training should be shifted to outpatient and community-based sites where the majority of medical care is provided. The community-based educational experiences are developed and managed with significant community participation and involvement.

Medical educators are recognizing the importance of the ambulatory setting in preparing medical students and residents for the routine practice environment. Education in community-based office practices teaches residents about continuing care, which includes health promotion and preventive medicine, management of chronic disease, and development of personal interaction skills in caring for patients and their families. Education in the ambulatory setting is increasingly vital at both the medical student and the resident levels to properly prepare physicians to meet today's patient care needs.²⁷⁶

Experience in ambulatory settings is critical for both primary care and nonprimary care specialties because of the predominance of such settings in health care delivery. Effective clinical training requires access to a patient population with the diseases and illnesses that would be seen in a routine practice. Undergraduate and graduate curricula that prepare future generalist physicians for community practice must provide training in the management of common acute and chronic medical conditions in such areas as office gynecology, dermatology, orthopedics, and preventive medicine.

In addition, medical educators are recognizing the importance of continuity of care experiences for the future generalist physician. By being assigned individuals or families to follow over time, medical students learn the more natural course of health and illness in community-based settings and the more common encounters that patients have with the health care system. In family medicine residencies, 25 percent of the resident's entire time over the three-year training period is spent caring for his or her own panel of patients.²⁷⁷ Educators seeking to reverse the trend toward subspecialization in pediatrics and internal medicine are emphasizing more time in continuity of care experiences, which traditionally encompass 10 percent less of their time. Recognizing this, primary care internal medicine and pediatric training grants administered by the Division of Medicine, DHHS, require applicants to demonstrate at least 20 percent of continuity of care time over a three-year period.²⁷⁸ Studies have demonstrated that these primary care internal medicine and pediatric programs graduate significantly more generalists than the traditional training program.²⁷⁹

Academic Consortia

Today, institutions are developing academic consortia to link together the various settings in which undergraduate and graduate medical education is provided, including community hospitals, community health centers, HMOs, and public health departments. There have always been a variety of arrangements with institutions used in teaching programs. In most cases, these institutional agreements are designed to meet the immediate needs for education and training. The term "consortium" refers to a structured and formal relationship among institutions designed to meet specific goals and objectives. It also implies centralized data collection, administrative processing, and decision making factors to enable individual facilities to function as a collective unit.

Functionally, consortia provide a forum for discussing and prioritizing health professions issues related to the improvement of access to care. They also generate information on collaborative efforts and models for improved multidisciplinary training in primary health care settings. Because of their knowledge of the primary care needs of their area, the consortia provide a patchwork of resources to effectively serve the community while providing health care training within community-based service delivery systems.

Two viable examples of medical education consortia exist in New York State and involve the University of Buffalo and New York Medical College. These consortia were developed in an attempt to restructure the relationships among the hospitals and participating teaching institutions "to enhance the quality of education, improve efficiency, and make the system more responsive to current and future societal needs." In devising the general principles that define a consortium, the New York State Council on Graduate Medical Education acknowledged that the medical school, its affiliated teaching hospitals, and other teaching sites should be recognized as equal members and should all share equally in making decisions about the conduct of the educational programs.²⁸⁰

A consortium can define the educational needs of the trainees and determine the placement and allocation of educational resources accordingly. Furthermore, a consortium can coordinate administrative activities and even facilitate the coordinated development of curricula.

Once the basic administrative arrangements are accomplished on the local level, the consortium can attempt to be responsive to more expansive needs

involving a region or State. Considering that 15 percent of all residency positions in the United States are contained in New York State, administrative decisions involving GME in New York have significant national influence and are closely watched. The Buffalo consortium plans to increase the proportion of residents training in primary care to 50 percent by 1993, achieve and maintain a minimum enrollment of 11 percent of underrepresented minorities in GME programs, and increase education and care in chronic illness and geriatrics. In addition, as part of its "Initiatives in Primary Care," New York State sponsors a variety of programs that are designed to increase the number of primary care physicians in training and practice in underserved areas across the State. The success of these and other programs depends largely upon the coordination of resources and collective efforts of institutions involved in the consortium.

Area Health Education Centers

Models of consortia can be found in the network of Area Health Education Center (AHEC) programs, which covers over 40 States. Funded through a program administered by the Division of Medicine, AHECs bring together representation from the academic health science centers, including public health and primary health care delivery systems to assess and improve the distribution, supply, and quality of health personnel by encouraging the regionalization of educational responsibilities of health professions schools and training sites. They may work with other State-level efforts, such as primary care associations, rural health associations, and health departments. The networks include policy-makers such as members of the legislature, community leaders, and consumers of services to broaden the understanding of the area health needs and services. Most of the AHECs also have State or local financial support to ensure their viability.

North Carolina: The North Carolina AHEC Consortium is a system of nine regional centers that were federally funded from 1973 to 1983. It is now State and regionally supported with more than \$30,000,000 annually. It is an academic consortium with full participation of and considerable input from the deans and faculty of the schools of Public Health, Nursing, Dentistry, and Pharmacy and all four medical schools in the State. Each medical school has developed a partnership in a designated geographic region with a community hospital designated and functioning as a regional education and training center in affiliation with an academic health science center. In recent years, the North Carolina General Assembly has

looked to the AHEC to convene appropriate entities to explore State health workforce issues related to such diverse topics as mental health, nursing, and allied health.

Although a formal statewide health consortium is not in existence in North Carolina at the present time, the linkages and relationships are sufficiently identified in both the education and service sectors so that informal or ad hoc consortia are regularly meeting within the State to address health professions and service delivery needs. The professions represented include medicine, nursing, pharmacy, allied health, public health, dentistry, and learning resources personnel. They participate in multidisciplinary teaching and provide consultation and technical assistance to health practitioners in the AHEC region. Prior to the North Carolina AHEC Program, 50 counties experienced a worsening of physician-to-population ratio. Since the inception of the AHEC Program, 86 counties have experienced an improved physician-to-population ratio.²⁸¹

California: The California statewide AHEC Consortium was initiated in 1972 as the Central San Joaquin Valley AHEC. Some years later, through Federal funding, it became a statewide endeavor that included the eight California medical schools and a constellation of 18 regional centers. The overarching policy entity was the California State Policy Advisory Committee, which met quarterly to review progress and resources allocation. With the stimulation of the statewide AHEC, numerous other colleges, universities, community colleges, hospitals, and clinics, 26 new degree-granting nursing programs, and 48 residency training programs actively participate through a centralized planning consortium. This consortium has been tied together by more than 1,300 contracts written and or administered by the Fresno office. The California AHEC, in response to the tremendous need for Mexican American health professionals, founded the multidisciplinary Hispanic Medical Education and Training (HISMET) program, including the first Hispanic family practice residency, located at White Memorial hospital in Los Angeles.

Virginia: In 1988, the Commonwealth of Virginia convened a Primary Care Policy Forum of State policymakers, medical providers and educators, public and private sector organizations, and representatives from rural and urban areas of Virginia. The Forum developed a

five-point plan that included: (1) establishing a physician loan repayment plan; (2) strengthening the State Medical Scholarship Program; (3) increasing Medicaid reimbursement for primary care physicians; (4) establishing a primary care center construction fund; and (5) developing a statewide AHEC program. This is probably the most broadly based formal statewide consortium among the AHECs. It is also a strong recognition of the nexus between primary care training and public health training.

In 1990, the Federal Government funded the Virginia statewide AHEC Consortium. It includes all three medical schools in the State. Two important features should be noted: the AHEC is part of an overall State health plan, and it is one of the first statewide efforts to look at financing issues as well as the status of the uninsured. It also includes agencies such as the Primary Care Association and the State Health Department to closely link legislative planning to a body that more totally represents health issues in a comprehensive way. The Virginia statewide AHEC effort is an example of a forum that can more appropriately address health professions workforce education and training as they relate to the overall health services delivery within the State.

The major strength of a consortium lies in the direct access to shared resources and allocation of such agreed upon goals. A significant and ongoing challenge is getting diverse institutions to submit to extensive structural rearrangement and reorganization to meet the collective local or regional physician workforce needs. Specific funding needs to be available to allow institutions and agencies to build such consortia arrangements that link and rationalize the current disarticulated systems of undergraduate and graduate medical education.

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Chapter III – Finding No. 7: Barriers to Change — New Directions

Finding No. 7:

The absence of a national physician workforce plan combined with financial and other disincentives are barriers to improved access to care.

- There is no national physician workforce plan for the United States to meet the current and projected future health care needs of the American people. In addition, there is no coordinated financing strategy and integrated medical education system to implement such a plan. Instead, such critical policy issues as the aggregate physician supply and specialty mix are the result of a series of individual decisions made by the 126 allopathic and 15 osteopathic medical schools and nearly 1,500 institutions and agencies that currently sponsor or affiliate with GME training programs.^{1,2} The medical education financing and health care reimbursement systems create significant disincentives to students who wish to become generalists, physicians who wish practice in underserved areas, and to the provision of basic primary and preventive services to all Americans.

The six findings in the previous section identify the deficiencies in the current physician workforce supply and the medical education system. Correcting these deficiencies is essential if our Nation is to build a physician infrastructure to meet the health care needs of all Americans.

What will it take to recruit more underrepresented minorities, train more generalists, and encourage their diffusion into medically underserved areas? The answer to the question is complex because many structural factors are involved. Before recommendations can be made, an understanding of the following major barriers to change are necessary:

- The absence of a national physician workforce plan and system.
- A lack of consensus on who delivers quality primary medical care.
- Disincentives in the reimbursement system.
- A biomedical research- and subspecialty-oriented medical education.

- Disincentives in the accreditation, certification, and licensure system.

- Disincentives in the medical education financing system.

Many of the policies that led to the current system were enacted in the 1950s and 1960s. They were derived from a national consensus on the need to train more physicians, increase biomedical research, and improve the quality of medical education and practice. These policies built a system of biomedical research and medical technology, and a subspecialty and biomedically advanced physician workforce supply that is, arguably, the best in the world at what it is designed to do. However, the same structural factors reinforced a set of disincentives for maintaining a physician workforce needed to deliver basic primary care and preventive services to this country. A brief description of these major structure forces, and how they reinforce each other, are summarized in this section.

Absence of a National Physician Workforce Plan and System

In America there is no national physician workforce plan or system. Aggregate physician supply and specialty mix results from a series of independent and individual decisions by medical schools, hospitals, and medical students, which are disconnected from each other or from local physician workforce needs. The absence of a master plan to determine the number and mix of residency slots distinguishes the U.S. GME system from the Canadian system where 50 percent of physicians are generalists and the United Kingdom system where 70 percent of physicians are generalists.

In Canada, the provinces have targeted a goal that 50 percent of graduates should enter primary medical practice. For the most part, this objective has been maintained through the government's control of residency positions, medical immigration, and resource allocation.³ Of these three factors, the determination of the mix of residency slots by each province has been, by far, the most effective factor in the production of more primary care physicians. In Canada, physician workforce planning and the concomitant reallocation of residency positions has been a long process extending over many years.^{4,5}

National Physician Workforce Commission:

In recent times, the Nation has not had an ongoing council or commission on physician workforce supply and requirements except for GMENAC and COGME.

In 1976, the Graduate Medical Education National Advisory Committee (GMENAC) was created administratively, i.e., without legislation, by the Secretary of the then-Department of Health, Education and Welfare (DHEW). GMENAC reported only to the Secretary of DHEW and remained in existence for only five years, until the release of its landmark final report in 1980. The charge to GMENAC was to advise the Secretary regarding five national health planning issues:

- The number of physicians required to meet health care needs.
- The most appropriate specialty distribution of these physicians.
- How to achieve a more favorable geographic distribution of physicians.
- Appropriate ways to finance graduate medical education.
- Strategies to achieve the recommendations formulated by the Committee.

COGME faces very similar issues, and some have viewed COGME as a successor. Similarities exist in membership composition and use of staff from DHHS. However, differences between the two bodies are key and significant: statutory authorization and the amount of financial support.

COGME was created by Congress and has a statutory authorization in Title VII of the Public Health Service Act. Unlike GMENAC, COGME reports simultaneously to Congress and the Secretary of DHHS. In addition, COGME's legislation includes a 10-year life span, in contrast with an initial two-year charter for GMENAC, renewed piecemeal before GMENAC was finally phased out after five years.

Conversely, a major advantage for GMENAC was the amount of resources available. GMENAC had about 25 professional analysts and support staff and about \$5 million in total financial support. COGME-related expenditures in six years have been more limited with budgets around \$100,000 annually and five staff.

The Physician Payment Review Commission (PPRC) is an advisory committee created by Congress to advise on Medicare financing policy. While the PPRC is generally charged with advising Congress on methods to reform physician payment un-

der the Medicare program, it was recently given the additional responsibilities to "review and consider the number and practice specialties of physicians in training and payments under Medicare for GME costs" and to study payment incentives under Medicare and Medicaid to increase patient access to primary care and other physician services in large urban and rural areas.

Like COGME, the PPRC meets in public forum, receives public input, and has a mix of staff and contract support for its activities. Unlike COGME, it reports only to Congress. However, the most important difference between the two is that PPRC spends about \$3 million annually and has about 25 professional and support staff.

The need for a national-level commission dealing with the physician workforce is directly related to the need to pull together the disparate forces affecting and supporting the GME system in the United States. Because of the marked fragmentation in the governance, accreditation, certification, and financing of GME enterprises, and the current difficulty and inability to marshal a national health workforce policy under the current circumstances, an adequately staffed and funded national commission is needed to effectively implement and monitor the attainment of the recommended physician workforce goals for the Nation.

Current State physician workforce activities: A key recommendation included in this report is to encourage States to establish State or regional Physician Workforce Commissions to study physician workforce needs and set workforce goals for their respective areas. Through the collaboration between these State Commissions and the proposed National Physician Workforce Commission, residency slots and funding could be allocated to GME entities to attain both State and national goals.

This recommendation reflects the Council's view that responding to policy issues of physician supply, recruitment, and specialty distribution must involve and be responsive to State and regional workforce needs and efforts. Indeed, virtually every State has enacted some form of legislation to counter trends that have produced physician geographic and specialty maldistribution and difficulties in access to care.⁶ The following summarizes some of these activities:

- Twenty-five States have task forces, recruitment centers, rural health boards, etc., aimed at a more balanced distribution of physician workforce in specialty practices and in geographic areas.⁷ Many of these States have formed State workforce commissions, several of which have been charged with

studying the physician specialty needs in the State and for providing recommendations for GME funding.⁸

- Thirty-one States offer medical education loans or scholarships to physicians with service obligation payback options.

- Seven States provide for grants to be awarded to students, residency programs, and physicians to encourage primary care practice in shortage areas.

The following three State Commissions have been in operation for the last several years and are presented as illustrations of what can be implemented to respond to issues of physician supply, specialty mix, and GME funding at the State level.

New York: In 1987, the New York State Council on Graduate Medical Education was established by Executive Order of the Governor. This Council was charged with providing guidance to State policymakers regarding the composition, content, supply, and distribution of physician training programs in New York State. Its charter called for the Council to consist of at least 12 members appointed by the Governor, representing health professional, hospital, and public interests.⁹ The Council was asked to consider the following:

- The relationship of teaching hospitals to medical schools.

- GME programs including the composition, supply, and distribution of residency programs, subspecialty programs, and subspecialty training.

- Efforts to increase the number of minority physicians in training in New York and to improve the training of physicians who will serve in underserved areas of the State and will serve populations with special health needs.

- The number and specialties of physicians needed in New York State.

- Policies and programs to increase the training of primary care physicians and of physicians in nonhospital settings.

- Promotion of high-quality, residency and training programs.

In its first year, this Council concentrated on three topics: the development of GME consortia, the training of primary care physicians, and minority participation in GME. Many of its subsequent activities have been spent in implementing its goals and recommendations developed for its first report in these three areas.

In its first report, the New York State Council concluded that the effective administration of GME

requires a collaborative relationship, or consortium, among a medical school, affiliated hospitals, and other teaching sites. It recommended that demonstration projects be developed to assist institutions within the State to develop these consortia.¹⁰ As a result of the Council's subsequent activities, two consortia are currently operational and more are in various stages of development.¹¹

The New York Council's first report also recommended that a majority of all residency positions in each consortium be in the primary care specialties. To accomplish this, it advocated changes in the State methodology for funding the costs of GME to encourage an increase in the percentage of residents training in primary care. In subsequent reports it recommended various initiatives needed in developing well-organized, attractive primary care practice sites in underserved communities.

In response to this Council's recommendations, the New York State Legislature provided that, in 1992, the methodology for reimbursing the indirect costs of GME be changed to give greater weight to physicians in training in primary care specialties and in emergency and preventive medicine. The weighting system is budget-neutral, with no specialty weighted at less than 90 percent of what it otherwise would have been reimbursed (see below).

In addition, the legislature created several new programs to promote primary care services, especially for underserved populations. Combining these programs with existing primary care efforts, the State Department of Health has established a comprehensive New York State Primary Health Care Initiative. This initiative includes programs to enhance reimbursement for primary care services and to support practice site development.¹²

New Jersey: In 1977, the New Jersey Legislature created the Advisory Graduate Medical Education Council (AGMEC). Its charge was to make recommendations to the New Jersey Board of Higher Education regarding:

- Support through Federal, State, and private funds of GME programs in private nonprofit and public hospitals in the State.

- The development and implementation of new GME programs that meet the needs of the citizens of the State.

- Establishing standards for participation by New Jersey hospitals.

- Determining the number and types of hospitals meeting the needs of the State.

- Reviewing applications and making awards to support GME programs relevant to the needs of the citizens of the State.

The Council consists of 15 members, 11 ex-officio and 4 appointed by the Governor. The ex-officio members represent the State's medical schools, allopathic and osteopathic medical communities, State hospital association, and various State agencies concerned with GME. The four appointees include three public members and a medical resident.

AGMEC has made considerable progress in implementing the legislative mandate for which it was established. In an advisory capacity to the State's Department of Health, it has led to controls on the number of residents and residencies within New Jersey, the introduction of mechanisms to monitor the growth of GME, and changes in reimbursement for GME. It plans to continue its work in 1992 in building a comprehensive data base on which to build a State GME workforce plan and developing a credible and publicly defensible methodology for allocating resources available to GME according to program quality and New Jersey health care needs.¹³

California: The California Health Manpower Policy Commission was created in 1973. Unlike New York and New Jersey, this commission deals only with family practice. Principal functions include determining where in the State unmet priority needs for family physicians exist and making recommendations to the State Office of Statewide Health Planning and Development concerning the funding of family practice programs.

California does not have workforce and financing regulatory programs such as New York and New Jersey. Instead, considerable efforts have been made to foster the training of more primary care physicians, notably through support under the Song-Brown Act of 1973 of 24 family practice residency programs, which are training 499 family medicine residents at the present time. However, in mid-1992, the State Legislature passed legislation that would require that 20 percent of University of California slots be reserved for family medicine residents and another 30 percent for other primary care physicians. The goal is that 50 percent of medical graduates of the University of California enter primary care residency training.¹⁴ While the future of this legislation is unclear, the long history of this issue and the involvement of the State legislature suggests continued pressures in California to set and reach a goal of training 50 percent of physicians to practice generalist medicine.

Lack of Consensus on Who Delivers Primary Medical Care

Unlike the health care system in many other countries, the United States does not clearly define the primary care physician in terms of role, regard or reimbursement. Canada, the United Kingdom and many Western European countries clearly distinguish between generalist physicians and consultant specialists.¹⁵ The patient traditionally sees generalist for all conditions. The generalist serves as the entry point into the system and the coordinator of care and will temporarily refer to a consultant as needed. The elements of primary medical care and the competencies of a generalist are previously mentioned. The generalist physician temporarily refers the patient to a consultant when indicated and maintains continuity of care.

In these countries, generalists usually compose about one-half of all practicing physicians. The role of the generalist as the entry point into the system and the nonprimary care specialist or subspecialist as consultant tends to be reinforced by system characteristics, including the structure of the medical education system, referral and relationship patterns, and the physician payment system.

In the United States, three medical specialty groups are broadly trained, practice, and receive continuing education to deliver quality primary medical care: family physicians, general internist and general pediatricians. The training programs differ in some significant ways. First, family physicians are trained to provide primary medical care for all ages and both sexes, pediatricians are trained to care for children and adolescents, and internists are trained to care for adults and the elderly. Second, the career pathways are different. While more than 95 percent of students who enter three-year family medicine residencies enter practice as generalist, recent survey data indicate that 40 percent of those planning careers in pediatrics expect to subspecialize, and at least 60 percent of those planning on careers in internal medicine expect to subspecialize.¹⁶ However, studies suggest that those who remain generalists have competencies and practice styles more similar to each other than to the subspecialty colleagues.¹⁷

The issue has sometimes been complicated by the lack of consensus whether other specialists who are not trained in the generalist competencies can and should deliver quality generalist care. For example, Aiken, et al., suggested that many types of specialists provide primary care, based on the concept of "principal care" encounters from a study in the late 1970s.¹⁸ Principal care was characterized by continuity of care in that the patient has

been seen before, was a regular patient, and received the majority of his or her care from that physician.¹⁹ In this concept, principal care is attributed to physicians in many specialties and subspecialties whether they were trained for and received continuing education in primary care or not, e.g., medical and pediatric subspecialists (cardiologists and hematologists); obstetricians/gynecologists; and surgeons. Persons who are cared for by these nonprimary care trained physicians may believe they are receiving the broad essential elements of primary care they need, as defined in Chapter II.

The need for a more rational health care system that separates primary care functions from more specialized care and generalist physicians from consultant specialists and subspecialists is increasingly being recognized as an essential part of health professions and health care reform. A recent article evaluated studies on the role of the primary care provider at the entry point into the health care system. The studies document the important role they play as patient advocate and coordinator of appropriate and quality care.²⁰

In more than 90 percent of all HMOs in the United States, generalist physicians serve as the entry point into the system. However, for the most part in the United States, patients may seek primary medical care from any kind of specialist. Countries that health policymakers point to as models with features to emulate, including Canada and others, have decided that seeing a nonprimary care specialist or subspecialist in a narrow discipline with an undiagnosed complaint or for ongoing care is not good for the patient or the health care system.

Reimbursement System Disincentives

The traditional health care insurance system, reimbursed on a fee for service basis, has several disincentives for the provision of primary and preventive care. Up-front deductibles and copayments discourage individuals from seeking primary care. Most traditional plans do not discourage persons from seeking primary care from a subspecialist nor a subspecialist from providing such care. Many counseling and screening services are omitted from Medicare and other reimbursement systems. Although the new Medicare Fee Schedule based on a resource-based relative value scale may have some effect, insurance plans still reimburse procedural services provided by subspecialists at a higher level than the cognitive services provided by generalists.²¹

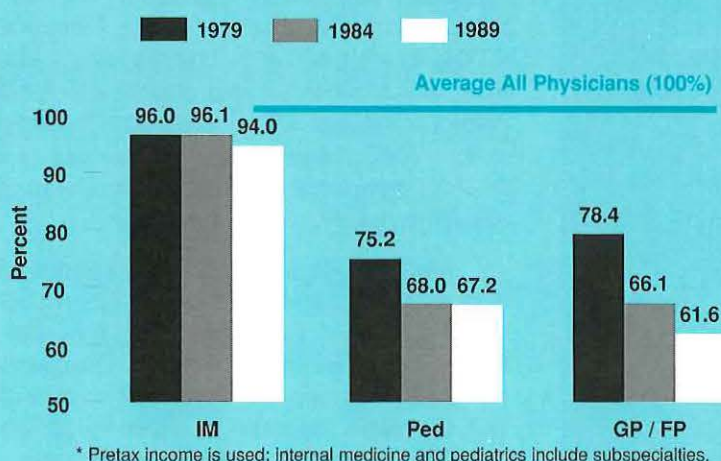
Consequently, generalists earn considerably less than subspecialists. In addition, the income differential has widened over time (figure 17), and reimbursement is less in rural areas. All of these provide disincentives to become a generalist or to practice in a rural area. A thorough analysis of reimbursement system incentives and disincentives for primary care is beyond the scope of this report and is addressed by others, such as the PPRC. However, correcting these imbalances is essential to encourage more future physicians to become generalists.

Biomedical Research and Subspecialty-Oriented Medical Education System

The enormous growth and expansion in U.S. medical schools during the past 30 years was fueled in large measure by Federal funding for biomedical research. Most of the Federal funding available to medical schools supports highly specialized areas of biomedical research. To compete for such funding, schools naturally gravitate toward accomplishments in this area, often to the detriment of more cognitive and generalist specialty areas. Consequently, the medical education environment is biomedical research and subspecialty oriented.

As a result of these incentives, the number of basic science and subspecialty-trained medical school faculty has increased dramatically as compared with community-based, practicing generalists, such as family physicians and general internists. Today, the number of medical school faculty in basic science departments is seven times greater than the number of family physicians (figure 18). Although the numbers of internal medicine and pediatric faculty are large, an increasingly larger proportion of them are subspecialists. Only 10 of

Fig. 17 – Income of U.S. Physicians — Percent of Average Physician Income for General / Family Practice, Internal Medicine, and Pediatrics *



the 126 pediatric department chairmen today are general pediatricians. Only 2 of the 126 medicine department chairmen today are general internists. Twenty medical schools in the Nation still do not have Departments or Divisions of Family Medicine. In contrast with allopathic medical schools, osteopathic general practice/family medicine is the predominant clinical specialty in the faculty of schools of osteopathic medicine (figure 19). Not surprisingly, almost 60 percent of osteopathic graduates practice as generalists as compared with 33 percent of allopathic graduates.

Disincentives in the Accreditation, Licensure, and Certification Systems

Medical school accreditation: The system of accreditation for the Nation's medical schools rein-

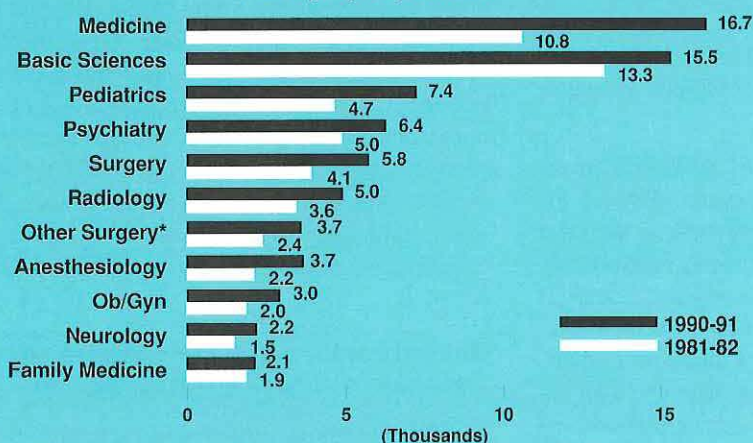
forces the current orientation of medical school curricula. The Liaison Committee on Medical Education (LCME) accredits our Nation's allopathic medical schools based on review standards in the *LCME Manual of Structure and Functions*. However, the LCME standards do not provide for parity for family practice with other major specialties, i.e. internal medicine, obstetrics/gynecology, pediatrics, psychiatry, and surgery. In addition, the standards stress the need for medical students to be educated in the basic sciences, which historically discouraged innovative primary care programs that educate first-year students in community-based primary care settings.²²

Recently proposed changes to LCME standards recognize the need for a better balance between generalist and subspecialist training and for more ambulatory training. A proposal now under consideration would specifically encourage medical schools to offer experiences in family medicine, general internal medicine, and general pediatrics; another would have added family medicine to the list of required core clerkships. Adoption of such a proposal should help foster generalist training in all medical schools. Others are already proceeding along these lines: the Robert Wood Johnson Foundation is offering grant support to medical schools to expand generalist curricula, and schools that have considered themselves to be research-oriented and not appropriate for training generalists are now beginning to emphasize primary care training.²³

State licensure: In order to practice, a medical school graduate must be licensed by a State. A principal requirement for a license is the satisfactory completion of the State's examination requirements. Most U.S. medical school graduates have satisfied this requirement with the two-part National Board of Medical Examiners (NBME) examination, which is now being replaced by the United States Medical Licensure Examination (USMLE). Because of their key role in licensure, these examinations are also perceived to set standards for medical school curricula. In addition, many schools require students to pass one or both levels of these exams in order to complete medical school and receive the M.D. degree.

The first part of the NBME, usually taken after the second year, focuses almost exclusively on basic science. The second part, taken after the fourth year, is clinically oriented. The questions for the second part are developed by question writing boards representing clinical specialties. This NBME format has reinforced the notion that the first two years of medical school should focus

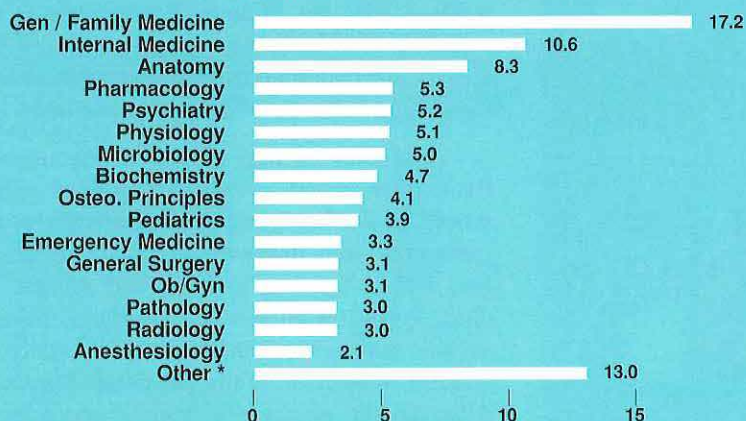
Fig. 18 – U.S. Medical School Faculty – Number of Full-Time Faculty by Department



*Other surgery consists of urology, otolaryngology, orthopedics, and ophthalmology.

Source: "Undergraduate medical education." *Journal of the American Medical Association* 248:3246, 1982 and 266:914, 1991.

Fig. 19 – Osteopathic Schools of Medicine — Full-Time Faculty by Discipline, 1990 – 1991 (Percent)



* Other disciplines include dermatology, geriatrics, neurology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine & rehabilitation, and urology.

Source: American Association of Colleges of Osteopathic Medicine, 1991 Annual Statistical Report.

on basic sciences and the last two on specialties other than primary care. The new USMLE exam can potentially influence medical schools to alter their curriculum more toward primary care. The NBME has indicated that future examinations will include more primary care questions, including the establishment of a family practice writing board, which, unlike other specialties, does not exist for family practice.²⁴

Residency program accreditation and board certification: The accreditation of GME or residency programs and the certification of candidates who have completed the training and other requirements have also been driven by priority attention to the specialties and subspecialties. The Accreditation Council for Graduate Medical Education (ACGME), which reviews and accredits residency and subspecialty programs, works through the 24 specialty-based Residency Review Committees (RRCs). At the same time, 23 individual, independent specialty boards examine and certify specialists and subspecialists. The specialty boards are represented by the American Board of Medical Specialties (ABMS).

The number of core specialty categories reviewed by ACGME and the number of primary ("general") certificates granted by the boards have remained relatively stable, having increased only from 22 to 26 in 26 years. The number of accredited subspecialty program categories, however, has increased steadily, from three in 1966 to 42 in 1988 and 54 in 1992. The total number of categories of subspecialty certificates issued by specialty boards has also increased since the mid-1960s, from 10 in 1965 to 67 in 1992.

It is probably not coincidental that research advances in modern medicine in the 1970s and 1980s, the information explosion, and the major achievements in technology and equipment, have correlated with the sharp increase in the number of subspecialty areas approved and certificates given. Accreditation or certification of a new specialty or subspecialty has turned largely on whether it represents a sufficiently new and well-defined medical content area, such as critical care medicine, and/or a distinctly specialized skill such as cardiovascular surgery or transplantation.

As indicated earlier, subspecialty training is supported and reinforced throughout the medical education continuum as well as in the practice setting. Some argue that the only way to achieve balance among the specialties is for the ACGME and ABMS to take aggressive and even regulatory stances to curb the proliferation of subspecialty

areas rather than passively allow the numbers to steadily increase. Officials of the ABMS counter that the public's interest is best served with assurance of certified competencies among practitioners.

At its meeting in June 8-9, 1992, ACGME acknowledged the need to examine the issue of increased subspecialization and voted to impose a one-year moratorium on the recognition of new subspecialty areas, pending further study. The Chairperson of ACGME stated that the organization is responding to public and professional concerns that medicine is being excessively fragmented and that more generalists and fewer subspecialists are needed to deliver care.²⁵

GME Financing System and Disincentives

Background: GME is the training provided to post-medical school graduates for them to reach an acceptable level of competence in medical practice, which cannot be reached through undergraduate medical education and the attainment of the M.D. degree alone. At least one or two years of GME is the minimum required for licensure in nearly all States. GME is made up of multiyear programs in a specialty or subspecialty designed to lead to certification by the relevant medical specialty board, after other requirements such as successful board examination are met. Nearly all GME programs are accredited, either by ACGME in the case of allopathic medicine or by the American Osteopathic Association in the case of osteopathic medicine.

GME programs are predominantly sponsored by and based in teaching hospitals. The major source of revenues for hospital-based GME programs is payment to hospitals for patient care services. (The faculty, another key component of GME, is also financed primarily by payments for patient care services, as described below.) However, payments to hospitals by most payers, notably excepting Medicare, do not currently separate or identify portions for medical education. Because of this, and because education activities of residents cannot be clearly separated from their services activities, GME support must be implicit in hospital revenues from all sources.²⁶

A related issue is the commingling of GME funds with other hospital revenues. Because these funds are not tracked separately, hospitals can support GME in a largely discretionary manner.²⁷ One result is that residency program directors are generally not aware of the amount of GME funds provided through the hospital, and must negotiate for hospital support, often in the context of hospital service needs.

As noted, Medicare under its prospective payment system (PPS) makes separate payments for medical education (see below). Some of these payments (see Medicare indirect payments, below) represent a budget neutral shift of GME funds from nonteaching to teaching providers. These approaches explicitly address the concentration in teaching institutions of a portion of total health services payments to support GME. (GME expenditures are probably less than two percent of all health care expenditures but represent a much higher percentage of payments to the relatively small number of teaching hospitals.³²⁸) Some are concerned that other payers may not share a view that these higher payments are a way for society to pay for GME.

Two components of GME costs are frequently defined: those that can be attributed to medical education in hospital accounting systems; and the less identifiable increases in hospital operating costs that cannot necessarily be tied to medical education and must be estimated with data from multiple teaching and nonteaching hospitals. The current parlance for these definitions is dominated by Medicare, which calls the first "direct" costs and the second "indirect" costs. However, other definitions may be used that alter and may even reverse the Medicare definitions (see below).

Direct cost financing: Total spending for GME direct costs, as Medicare would define them, is very large. Bureau of Health Professions staff have estimated that total direct GME costs in 1990 were about \$4.7 billion. These costs were covered by a combination of all third-party revenue sources including Medicare and Medicaid and line items in the budgets of Federal, State, and local government agencies including the Department of Defense and Veterans Administration.²⁹ The prominence of patient care revenues in GME financing is suggested by data from the Council of Teaching Hospitals (COTH) of the AAMC, showing that the large non-Federal teaching hospital members of COTH that reported such data received about 86 percent of resident stipends and benefits from patient care revenues in 1989-1990. This percentage is likely to be higher in non-COTH teaching hospitals because many COTH hospitals are State or municipal institutions with, on average, large State or local appropriations. More comprehensive data from 1979 showed that over 90 percent of resident stipends were covered by patient care revenues, compared with less than 80 percent as reported by COTH at that time.³⁰

Medicare direct cost financing: Prior to the implementation of the PPS, Medicare direct medi-

cal education (DME) reimbursement was part of overall cost reimbursement to hospitals by Medicare. When the PPS was implemented beginning with hospital cost-reporting years occurring in FY84, DME payments and some other cost components initially were paid as cost-reimbursement pass-throughs. However, the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) changed the DME pass-through, effective for cost-reporting periods beginning on or after July 1, 1985, from cost reimbursement to per-resident amounts based on each hospital's FY84 base year costs and updated by the Consumer Price Index.

The COBRA legislation also attempted to decrease Medicare DME support for subspecialty training, by placing limits on full Medicare payment for residency training to that required for certification in an initial board plus one year, to a maximum of five years, with an exception for geriatric training for up to two years. Subsequent years are paid at one-half of the full per-resident payment rate. The combination of initial certification plus one year and the 0.5 rate thereafter still provides substantial support for some programs, e.g., 1.5 of the two years required for most internal medicine subspecialty fellowships. COBRA also phased out Medicare GME payment for IMG residents who have not passed the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) or other examinations administered by the Educational Commission for Foreign Medical Graduates (ECFMG) such as the ECFMG examination or the Visa Qualifying Examination (VQE). This may have had little effect since IMGs have had to pass these tests in order to undertake GME in any case.

In response to concerns about financing training in ambulatory settings, the Omnibus Budget Reconciliation Act (OBRA) of 1986 provided for Medicare payment to a hospital for DME in a nonhospital setting if the hospital incurs all or substantially all of the costs of the training program. However, there continues to be no provision for Medicare financing of GME costs not incurred by hospitals.

Indirect cost financing: Indirect costs are the additional operating costs of hospitals associated with the training of interns and residents. They probably include the increased use of tests and ancillary services in the educational process and a greater severity of illness. These costs are positively correlated with teaching intensity as measured by the ratio of the number of residents per bed. Again, only Medicare nationally pays separately for these costs, although some State Medicaid programs identify either or both direct and indi-

**Table 1 – Medicare Expenditures for Direct and Indirect Medical Education*
Fiscal Years 1984-1992 (in millions)**

Fiscal Year	Direct Med Ed**			Indirec Med Ed***	Total Med Ed
	GME	Other	Total		
1984	\$ 371	\$123	\$ 494	\$ 285	\$ 779
1985	\$ 641	\$214	\$ 855	\$ 740	\$1,595
1986	\$ 870	\$290	\$1,160	\$1,300	\$2,460
1987	\$ 964	\$321	\$1,285	\$1,470	\$2,755
1988	\$ 975	\$325	\$1,300	\$2,020	\$3,320
1989	\$1,030	\$340	\$1,370	\$2,260	\$3,630
1990	\$1,073	\$417	\$1,490	\$3,065	\$4,555
1991	\$1,110	\$370	\$1,480	\$3,325	\$4,805
1992	\$1,200	\$400	\$1,600	\$3,600	\$5,200

*Reflects the expenditures for DME and IMEA only in hospitals phased into the PPS, and of the IMEA on the Federal share portions of the PPS payment. Excludes Maryland and New Jersey, which have experimental hospital payment waiver systems. Part-year costs in FY84 because initial hospital phase-ins took place throughout the year effective with the beginning of individual hospital cost-reporting years. (PPS implementation took place in individual hospital cost-reporting years that began in a specified Federal fiscal year. Thus, if a hospital's cost-reporting year began in July, a provision effective for a given Federal fiscal year [which begins each October 1] was not fully effective until the end of the next June some nine months into the next Federal fiscal year.) Excludes hospitals in New York and Massachusetts from FY84 and FY85 estimates due to reimbursement waivers that expired in FY85, partly includes them in FY86, and completely includes them in FY87 and following years.

**Through 1989, DME is made up of approximately 75 percent supporting physician GME ("GME"), and 25 percent supporting nursing and allied health programs ("Other"). The latter is estimated to have risen to 28 percent in 1990 but fell back to 25 percent in 1991 and 1992 due to statutory changes in programs allowed.

***Estimated expenditures for IMEA to teaching hospitals under the PPS. Paid only on the federally determined (DRG-based) share of hospital payments, not the hospital-specific cost share. See Table 2.

Source: Health Care Financing Administration, 1988 and 1992.

rect cost payments as they begin to consider how to deal with issues of specialty mix in GME programs within their States (see below). There is no way to estimate the total amount paid nationally for indirect costs.

Medicare financing of indirect costs: The indirect medical education adjustment (IMEA, also called the "teaching adjustment") is the method under the PPS to compensate teaching hospitals for the higher operating costs associated with GME activities. Other payers may use other methods, such as group rates, to pay higher amounts to teaching hospitals.

Although the Medicare indirect adjustment is complex and includes other factors in addition to medical education, reimbursement is triggered by the number of filled residency slots. Under Medicare, teaching hospitals receive an additional per-case payment of 7.7 percent for every 0.1 in their ratio of interns and residents per bed (IRB). Because the IME percentages become quite large in major teaching hospitals, a large portion of major

teaching hospital reimbursement comes from the IMEA. In FY92, the IMEA accounted for over 20 percent of major teaching hospital Medicare PPS payments.³¹

The IRB ratio is based on counting all interns and residents in a teaching hospital setting, even those falling outside the DME time and training limitations. It includes podiatry and dental residents because these are physicians under Medicare. It includes residents in hospital ambulatory teaching settings, but does not include those in nonhospital settings.

In response to concerns over ambulatory training, COBRA required that interns and residents assigned to hospital outpatient departments be counted in determining a hospital's IMEA. An IMEA is not currently extended to nonhospital facilities even while the teaching hospital is reimbursed for nonhospital DME costs.

Estimated Medicare payments for direct and indirect GME: Tables 1 and 2 show estimated

Table 2 – Medicare Expenditures for Indirect Medical Education¹
Fiscal Years 1984-1992 (in millions)

<i>Fiscal Year</i>	<i>Indirect Medical Education Factor**</i>	<i>Federal Share***</i>	<i>Hospital-Specific Share</i>	<i>Expenditures</i>
1984	11.59%	25%	75%	\$ 285
1985	11.59	50	50	\$ 740
1986	11.59 8.1****	50 55	50 45	\$1,300
1987	8.1	75	25	\$1,470
1988	8.1	100	—	\$2,020
1989	7.7*****	100	—	\$2,260
1990	7.7	100	—	\$3,065
1991	7.7	100	—	\$3,325
1992	7.7	100	—	\$3,600

*Estimated expenditures for IMEA to teaching hospitals under the PPS. Paid only on the federally determined (DRG-based) share of hospital payments, but not on the hospital-specific cost share, which was increased in teaching hospitals in other ways. Maryland and New Jersey excluded due to experimental hospital payment waiver systems. Part-year costs in FY84 and 1985 because initial hospital phase-ins took place throughout the year effective with the beginning of individual hospital cost-reporting years. Excludes hospitals in New York and Massachusetts from FY84 and FY85 estimates due to payment waivers that expired in FY85, partly includes them in FY86, and completely includes them in FY87 and following years.

**Percentage for the first 0.1 in a formula based on the number of 0.1th IRBs to yield a percentage of the Federal share added to it in paying the hospital.

***Percentage of the Federal (DRG-based) share in the hospital's combined payment rate; the companion percentage is the hospital's specific historical allowable costs. Since the IME is paid only on the Federal share, IME expenditures increased from FY84 through FY88 as the share increased from 25 percent to 100 percent over the period. Thus, IME expenditures increased when the IME factor decreased primarily because of this factor. The actual transition of these shares over time lags behind that indicated for the Federal fiscal years because of the lag between the beginning of the Federal fiscal years and the hospital cost-reporting years (see footnote to Table 1).

****The IME factor and Federal share both changed effective May 1, 1986.

*****Effective October 1, 1988.

Source: Health Care Financing Administration, 1988 and 1992.

Medicare expenditures for the IMEA for FY84 through FY92. Table 2 also includes the changes in the IMEA percentage factors over this period. It should be noted that these are only PPS payments and do not include the portions of payments that were still made under the previous reasonable cost reimbursement method. The PPS was phased in over a two- to four-year period, and the apparent rapid increase in GME payments in the early years of the PPS is due to this. In 1991, the estimated \$4.8 billion in direct and indirect GME amounted to about seven percent of the \$69 billion spent under Part A in that year.³²

Medicare financing of GME in prepaid health plans: Medicare reimburses prepaid health plans or HMOs on behalf of enrolled Medicare beneficiaries through either cost reimbursement contracts or risk-based contracts.³³ In the case of a *cost-reimbursement* HMO, a hospital used by and

reimbursed on behalf of the plan is paid under current Medicare hospital payment rules, also always by the Medicare fiscal intermediary (FI). Accordingly, these teaching hospitals receive direct and indirect GME payments in the same way as all teaching hospitals, and hospital-related ambulatory teaching facilities receive a portion of Medicare GME reimbursements as well. Policy issues regarding teaching costs in a cost-reimbursement HMO have apparently not arisen.³⁴

However, *risk-based* HMO's receive a comprehensive payment for providing hospital and physician services to eligible Medicare enrollees. This payment is based on using the geographic area average Medicare Part A and Part B beneficiary costs to determine the adjusted average per capita cost (AAPCC) for the area. The AAPCC is then adjusted according to the HMO's enrollee profile to determine that HMO's monthly payment. Dire

and indirect GME costs are not specifically entered into the calculation, but are automatically included in the area's hospital costs as incorporated in the AAPCC. No additional payments or adjustments are made to HMOs for GME activities. Because the payment rate reflects the area's outlays for services, geographic areas with more and more intensive teaching hospital services will have a higher AAPCC base irrespective of the HMO's GME activities.³⁵

As a result, GME reimbursement in risk-based HMOs is treated differently than in other Medicare providers including cost reimbursement HMOs. Thus, while Medicare GME funds are paid to teaching providers, risk-based HMOs receive GME funds only incidentally, unlabeled, and only in proportion to the level of teaching hospital services in the area.

This appears to result in a relative financial disincentive for risk-based HMOs to engage in GME activities or to use teaching hospitals. The strength of this disincentive may vary with the overall level of teaching activity in the AAPCC area. This disincentive would become increasingly important as larger numbers of Medicare beneficiaries enroll in risk-based plans. At the present time, two-thirds of the 2.255 million Medicare beneficiaries in HMOs are enrolled in risk-based plans.³⁶

Faculty financing: Faculty financing falls outside the scope of this report, but was discussed extensively in the Council's first report.³⁷ However, it should be noted that specialty differentials in reimbursements for physician services may markedly affect the amount of financial support for a faculty and department. The lower reimbursements for primary care specialties and the greater time spent in earning them appear to greatly disadvantage the financing of primary care faculty and departments and their influence in medical education institutions and faculty practice plans (FPPs). The picture is complicated by the fact that two Medicare funding streams are available for paying faculty: payments to faculty by the hospital for teaching time, which would have been built into the direct supervisory costs by Medicare Part A; and payments to faculty for patient care services by Medicare Part B. The hospital payments are based on a labor market rate and are lower for primary care faculty.

Financial disincentives to primary care training: A significant amount of Federal funds are directly or indirectly associated with medical education and training. Most funding for GME is provided through payments for hospital inpatient services. Thus it is difficult for ambulatory facili-

ties and entities other than those owned or operated by hospitals to secure financing for the additional costs of operating in the presence of a teaching program.

At the same time, higher reimbursements are made to faculty as well as practicing physicians in specialties that emphasize procedural services and inpatient care. Primary care programs in contrast emphasize nonprocedural skills and the use of ambulatory settings for almost all patient care. Because payments to faculty for physician services are an important component of financing faculty and departments, those departments with more highly reimbursed faculty are at a relative advantage in program financing. For the same reason, the present financing system decreases the attractiveness of the primary care disciplines as a choice for eventual practice.³⁸

The information available on financing residency training programs strongly suggests problems in supporting GME in the primary care specialties, especially family medicine. Each of the major sources of financing for family medicine residency programs—physician services to patients, hospital support, and public dollars—provides about one-third of training program revenues.³⁹ Revenues from physician services are very unlikely to exceed one-third of program costs, and hospitals are unlikely to pay a bigger share because primary care programs do not generate much revenue for them. In addition, there are notable variations among family practice residency training programs in the amount of income from each of these sources, which further suggests uncertain patterns of financing for this specialty.⁴⁰

Because primary care is largely an ambulatory practice, the overall pattern of its reimbursement tends to be lower. There is generally less third-party coverage of ambulatory care. Third-party plans usually do not cover certain services typical of ambulatory care, such as prevention or counseling. Payment levels are frequently lower for similar or identical services in ambulatory settings as compared with inpatient settings. Historically, requirements that patients share a portion of payments for services have tended to be greater for ambulatory services, reducing the amount of third-party income to the outpatient setting. In addition, many outpatient clinics provide care to individuals who have no insurance.

Similar differentials produce different incentives for hospitals to help finance them. Evidence from one academic medical center suggests that the amount of hospital revenues generated per resident

was substantially less for family practice than for internal medicine or pediatrics programs, and much less than for departments of surgery.⁴¹ Less information is available on financing GME in internal medicine or other primary care specialties, and little has been written about funding residency training programs specifically in nonprimary care specialties.

In addition to revenue concerns, ambulatory education is more inefficient and costly because of increased time demands on faculty and other staff in relation to the volume of care delivered, not to mention the time spent by patients in receiving care. There is often insufficient space for conferences and small group discussions in clinics, and there are few incentives to build adequate teaching space there. Teaching in ambulatory settings may be economically disadvantageous in competitive environments. This contrasts with inpatient teaching in which patient time and the volume of patient services are less affected by teaching and there is a less adverse effect on revenues relative to costs. Costs of teaching in ambulatory settings are further increased when medical student education is involved.

Obviously, major changes must take place if there is to be a balanced production of generalist to specialty-based physicians. Shifts in the direction and emphasis of such financing could have a great potential to shape the output of residency training in the United States. Past recommendations of COGME and several current initiatives at the State level seek to effect changes through shifts in GME payment policies.

Previous COGME recommendations on GME financing: As noted, the first COGME report covered this subject in considerable depth, but the Council wishes to reemphasize its indications in that report that the financing of GME be less tied to inpatient hospital care. The Council also does not intend its recommendations in this area to increase the costs of GME through "add-on" payments. Rather, it recommends a redistribution of current GME payments to ambulatory settings not sponsored by hospitals in such a manner that total amounts are not increased.

DHHS proposals: The Administration's FY91 budget included a proposal to increase the amount of DME reimbursement going to primary care residency programs. Unlike weighting approaches that have been proposed in the past or are in operation in New York State, the FY91 budget proposed reim-

bursing primary care residency training at 240 percent of national average resident salary costs, and nonprimary care residency training at 140 percent of those costs. This would have had the effect of reimbursing the primary care programs at the national average of the current DME funding except that it would have excluded hospital payments to teaching physicians. (Part B payments would not be affected.) Nonprimary care programs would have received reduced DME amounts.

The proposal was not passed by Congress and was not repeated in the President's FY92 budget. However, the President's Comprehensive Health Reform Program stated that "GME payments should be reshaped to help ensure that teaching hospitals meet the Nation's needs for primary care physicians in the next century. Teaching hospitals should be encouraged through payment policy to shift the primary care/specialist training mix back toward more sensible ratios that will produce more primary care physicians."⁴²

State Initiatives in GME Financing and Allocation of Residency Positions

The following discusses certain State initiatives to shape the output of GME.

New Jersey: New Jersey takes a regulatory approach through its all-payer plan, under which the New Jersey State Department of Health (NJDOH) regulates hospital payment rates of all payers except Medicare. NJDOH data indicate that GME financing under this plan amounts to \$350 million, or about six percent of the State's \$5.8 billion in hospital expenditures. New Jersey's definitions of direct and indirect are roughly reversed from those of Medicare. "Direct" costs in New Jersey are the additional costs of having residents presumably because of an increased number of tests etc., and are paid by a percentage added to the hospital's payment rate. "Indirect" costs are the salaries, overhead, and administrative costs of residents.

New Jersey's direct rates currently are determined by a factor based on the number of residents and types of programs. The number of residents was added to the computation of the factor in 1992. Because these rates are tied to the hospitals' cost of the residency programs, nonprimary care residency programs, such as orthopedic surgery, receive higher direct rates than primary care programs, e.g., family practice residency programs which have shown very low costs. Having this kind of specialty differential is being reexamined.⁴³

In response to a belief that residency training was growing faster than needed, New Jersey capped the number of medical residency slots that the system would reimburse at 2,556 beginning in 1985. This is seen as a starting point for addressing future change in numbers and types of programs and has led to the implementation of a reallocation program for controlled growth of GME programs and a shift toward primary care residency training. Few positions have been freed up for reallocation, however. Only primary care programs are being considered for receiving reallocated slots. Nevertheless, the actual number of slots has increased to 2,739, suggesting a willingness of some programs to fund slots independently of non-Medicare third-party payers. Because the allowed number of residents was added to the direct cost computation in 1992, the financial penalty for having residents above the cap has been greatly increased.⁴⁴

The New Jersey all-payer system has required that all payers except Medicare pay hospitals at rates determined by the NJDOH. However, this appears to conflict with section 514 of Title I of the Employee Retirement Income Security Act of 1974 (ERISA), which comprehensively exempts certain "self-insuring" employee benefit plans from any State regulation. A U.S. District Court case has found that New Jersey's hospital rate-setting system is not enforceable for such payers.⁴⁵ Officials in the New Jersey government, legislature, and health care industry are actively engaged in examining next steps.⁴⁶

New York: New York State also has a regulatory approach with an all-payer system. Its applicability for ERISA payers apparently has not yet been challenged.⁴⁷ Unlike New Jersey, New York does not allocate residency positions, but relies on financial incentives to shift the mix of residency training toward primary care.

The New York State Department of Health (NYSDOH) has the responsibility of determining the reimbursement rates for each hospital. Although its definitions of direct and indirect costs are similar to Medicare's, total direct and indirect reimbursements are more equal, at about \$800 million each. The total \$1.6 billion for GME represents a higher proportion, over 15 percent, of approximately \$8 to \$9 billion in New York annual hospital reimbursements.⁴⁸ It should be noted that the GME payments are incorporated into a complex rate structure that may make it difficult for hospitals to determine how much they receive for GME.

New York upweights the IME, not the DME, for primary care residency programs. Based on

recommendations by the New York State Council on Graduate Medical Education, the IME is currently upweighted by a factor of 1.5 (150 percent) for allopathic family/osteopathic general practice, primary care (by National Residency Matching Program designation) internal medicine and general pediatric residency programs, and general internal medicine and general pediatrics residency programs that have received PHS Title VII grants in the past five years. Other pediatric residencies and added training in geriatrics are upweighted by a factor of 1.27. Emergency medicine and preventive medicine programs are upweighted by a factor of 1.1 and other internal medicine programs by 1.0 (i.e., no change). All other specialties and subspecialties are weighted by a factor of 0.9, i.e., a slight decrease.⁴⁹

To discourage hospitals from raising their GME funding by increasing the number of residents, the IME is paid only on the hospital's number of residents and beds as of September and January 1990, respectively.⁵⁰

The determination of which care residency programs are primary is shifting from meeting NRMP and PHS criteria as indicated above to an application process that involves review by the New York State Council.⁵¹

The NYSDOH has a demonstration project with the Buffalo Graduate Medical and Dental Education Consortium in which the consortium pools DME and IME payments from all payers. The hospitals remit their DME and IME payments to the consortium to centralize the payroll for all residents and create a fund to help meet consortium goals in primary care, geriatrics, and minority recruitment and retention.⁵²

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Chapter IV – Findings, Goals, and Recommendations

Findings and Goals

An adequate supply, mix, and distribution of physicians and other health professionals are needed to ensure basic and essential health care to all citizens. Deficiencies in the Nation's physician workforce and medical education, training, and financing system as well as the Nation's health care reimbursement system, significantly hinder our ability to achieve this fundamental goal. The Council recommends the following measures which, if implemented, would establish a national physician workforce plan and infrastructure to meet the Nation's basic health care needs in the 21st century.

1. Finding: The Nation has too few generalists and too many specialists.

Goal: The United States should move toward a system in which 50 percent of physicians practice in the generalist disciplines of family practice, general internal medicine, and general pediatrics. Consequently, at least 50 percent of residency graduates should complete a three-year training program and enter practice as generalists.
2. Finding: Problems of access to medical care persist in inner-city and rural areas despite large increases in the number of physicians nationally.

Goal: All primary care shortage areas should be eliminated and disparities between the metropolitan and nonmetropolitan distribution of physicians should be reduced.
3. Finding: The racial/ethnic composition of the Nation's physicians does not reflect the general population and contributes to access problems for underrepresented minorities.

Goal: The racial/ethnic composition of the physician population should reflect the overall population's diversity. The Nation should adopt the goal of the Association of American Medical Colleges to double the number of first-year entering underrepresented minority medical students from 1,500 to 3,000 by the year 2000.
4. Finding: Shortages exist in the specialties of general surgery, adult and child psychiatry, and preventive medicine and among generalist physicians with additional geriatrics training.

Goal: The percentage of physicians trained and certified in the specialty fields of general surgery, adult and child psychiatry, and preventive medicine, and the percentage of family physicians and general internists with additional geriatrics training should be increased.
5. Finding: Within the framework of the present health care system, the current physician-to-population ratio in the Nation is adequate. Further increases in this ratio will do little to enhance the health of the public or to address the Nation's problems of access to health care and will, in fact, hinder efforts to contain costs.

Goal: The aggregate allopathic and osteopathic physician-to-population ratio should be maintained at current levels.
6. Finding: The medical education system can be more responsive to public needs for more generalists, underrepresented minority physicians, and physicians for medically underserved rural and inner-city areas.

Goal: Undergraduate and graduate medical education should increase its emphasis upon meeting regional and national physician workforce needs.
7. Finding: The absence of a national physician workforce plan combined with financial and other disincentives are barriers to improved access to care.

Goal: In order to improve access to care, a national physician workforce plan, infrastructure, and approach

should be established that combines financial and other incentives and disincentives to achieve national physician workforce goals.

Recommendations for the Nation

An adequate supply, mix, and distribution of physicians and other health professionals is needed to ensure basic and essential health care to all citizens. Deficiencies in the Nation's medical education financing and health care reimbursement systems significantly hinder our ability to achieve this fundamental goal. The Council recommends the following measures which, if implemented, would establish a national physician workforce plan and infrastructure to meet the Nation's basic health care needs in the 21st century.

National Physician Workforce Goals

1. The Nation should adopt the following overall national physician workforce goals to ensure the proper supply, mix, and distribution of physicians needed to ensure access to basic and affordable health care for all Americans.

- a. The provision of health care in the United States should be based upon a system in which 50 percent of physicians practice in the generalist disciplines of family practice, general internal medicine, and general pediatrics.
- b. All primary care shortage areas should be eliminated and disparities between the metropolitan and nonmetropolitan distribution of physicians should be reduced.
- c. The racial/ethnic composition of the physician population should reflect the overall population's diversity. The Nation should adopt the Association of American Medical Colleges' goal of increasing the number of first-year entering underrepresented minority students from 1,500 to 3,000 by the year 2000.
- d. The percentage of physicians trained and certified in the specialty fields of general surgery, adult and child psychiatry, and preventive medicine should be increased.
- e. The percentage of family physicians and general internists who receive additional training in geriatrics should be increased.
- f. The aggregate allopathic and osteopathic physician-to-population ratio should be maintained at current levels. Consequently:

- There should be no increase in the aggregate number of first-year enrollments in U.S. medical and osteopathic medical schools. At the same time, medical schools should maintain and expand their commitment to recruiting minority students and training generalists.

- The total number of entry residency positions should be limited to the number of U.S. allopathic and osteopathic medical school graduates plus 10 percent (exceptions should be made for exchange visitor international medical graduates).

Physician Workforce Infrastructure

2. Congress should establish a National Physician Workforce Commission to develop and recommend the necessary policies to attain the national physician workforce goals, project and monitor physician workforce trends, and revise the workforce goals and policies as necessary. This new entity should:

- a. Serve in an advisory capacity to the Secretary of DHHS and all appropriate congressional committees with jurisdiction involving undergraduate and graduate medical education.
- b. Make recommendations on Federal and other financing of medical education.
- c. Have broad representation, including physicians, medical educators, students, residents, and representatives of hospitals, HMOs, community health centers, business, labor, government, third-party payers, and consumers.
- d. Have an adequate State and regional physician workforce data base from which to evaluate trends and make recommendations.
- e. Have sufficient staff and funding to permit its effective operation.
- f. Coordinate its recommendations with the Physician Payment Review Commission and the Prospective Payment Assessment Commission.
- g. Replace COGME and assume its charge.

3. States should be encouraged to establish State or regional Physician Workforce Commissions to study physician workforce needs and trends and set workforce goals. The State Commissions should have broad representation of key leaders in medical education, and representatives of professional communities, hospitals, HMOs, community health centers, business, labor, government, third-party payers, and consumers.

4. The National Physician Workforce Commission should be responsive to the workforce needs identified by State Commissions and develop a mechanism to facilitate cooperation and collaboration between itself and the State and regional entities.

5. General principles that should be considered by the National Physician Workforce Commission include the following:

- a. The national workforce plan could be implemented through local, State, and regional academic consortia. Each academic consortia might include one or more medical schools, teaching and community hospitals, community health centers, HMOs, and educational institutions from primary school through college.
- b. Under this plan, residency positions and GME funding should be allocated based on State and regional workforce needs and national goals for aggregate physician supply, minority recruitment, and specialty distribution.
- c. All payers should contribute to GME, including Medicare, Medicaid, private insurers, self-insured employee plans, and HMOs and other managed/coordinated care systems.
- d. The funds from the Public Health Service, Health Care Financing Administration, and private sources should be utilized to assist in meeting overall physician workforce goals.

Financing the Physician Workforce Plan

6. A multifaceted incentive/disincentive approach should be used to achieve these workforce goals. The net impact of any financing strategy must, therefore, be to support the following goals:

- To increase the number of underrepresented minorities recruited.
- To increase the number of medical graduates entering generalist medical practice to at least 50 percent and concurrently decrease the percentage who choose subspecialties.
- To increase the number of general surgeons, adult and child psychiatrists, and preventive medicine specialists.
- To increase the number of family physicians and general internists receiving additional training in geriatrics.
- To eliminate primary medical care shortage areas.

Financing strategies must address undergraduate and graduate medical education, as well as the physician practice setting. The following is one approach toward achieving these goals. The Council expects to continue to study additional options as part of its future work.

A. Undergraduate Medical Education

7. Each medical school should establish and attain objectives for the composition and specialty mix of its graduates in support of the above national goals.

8. Financial incentives must be realigned to reward medical schools for recruiting more underrepresented minorities and for graduating more future family physicians, general internists, and general pediatricians. The major revenue sources of undergraduate medical school budgets are Federal and State funds and income generated from faculty practice plans. Federal and State strategies to increase minority representation and the production of generalists must focus on these funding streams.

9. Primary care scholarships and/or low interest rate loans should be established for students who commit themselves to generalist careers. Funding would have to be repaid if the graduate chooses a nonprimary care specialty or subspecialty.

10. Public and private incentives should be increased to assist medical schools in raising the minority applicant pool, selecting more minorities, retaining more minority students, and expanding the number of minority faculty.

- a. Funding to the DHHS Centers of Excellence program should be increased to reward medical schools for demonstrated excellence in educating minority medical students.
- b. Funding to the DHHS Health Careers Opportunity Programs should be increased, and the program expanded to secondary schools, such as magnet high schools, with expertise in preparing underrepresented minority youngsters for the health professions.
- c. A national minority recruitment/counseling/advisory clearinghouse should be established to assist and better prepare potential medical school applicants from underrepresented minority populations.
- d. The private sector should be encouraged to support the nationwide replication of programs that have been successful in increasing the minority applicant pool.

e. Active collaboration among major medical groups, such as the American Medical Association, Association of American Medical Colleges, National Medical Association, Association of American Indian Physicians, and the InterAmerican College of Physicians and Surgeons, should be encouraged with the goal of increasing minority recruitment and retention.

11. Government should assist medical schools in developing a critical mass of faculty in the generalist disciplines. This critical mass of strong academic faculty will assist in providing an educational milieu that fosters selection of a primary care specialty.

a. Funding through the National Institutes of Health and the Agency for Health Care Policy and Research should be increased for research in primary care, health services delivery, and patient care outcomes, as well as for the development of research faculty in the primary care disciplines.

b. Title VII grants to assist in the development of Departments of Family Medicine should be maintained and new funding should be made available to assist in strengthening Divisions of General Internal Medicine and Pediatrics.

c. Physician payment reform must continue and should be extended to private payers to correct the imbalance between the income generated by generalist and subspecialist faculty practice plans.

12. Government should assist medical schools in their efforts to increase education in ambulatory and community settings.

a. Title VII grants for predoctoral education should be expanded to assist medical schools in enhancing education in the primary care specialties.

b. Legislation for Area Health Education Centers should be modified and expanded to facilitate community-based primary care education for medical students at every medical school.

B. Graduate Medical Education

13. The number of Medicare and other funded first-year entry residency positions should be capped at 10 percent more than the number of U.S. allopathic and osteopathic medical school graduates.

14. Financing strategies should support the goal that at least 50 percent of medical graduates should complete a three-year residency program

and enter generalist practice and that the percentage who choose subspecialties should concurrently decrease. The following is one approach toward these goals:

a. Medicare direct and indirect GME payments should be limited to residency training for initial certification or five years, whichever is less. Residency programs in preventive medicine should also receive Medicare GME payments. There should be exceptions to initial certification limits for training in child psychiatry and geriatrics.

b. Increased direct medical education (DME) payments should be allocated to family practice residency programs.

c. Increased DME payments should be allocated to internal medicine and pediatric residency programs that develop an agreed-upon curriculum that specifically prepares graduates for primary care practice. These increased payments will reimburse programs for the higher costs of training in the primary care setting.

d. Incentive salaries should be made available to residents in family practice, internal medicine, and pediatrics, who sign a contract indicating their intention to complete their three-year program and enter generalist practice, with a year-by-year payback for those who choose to subspecialize.

e. Because residents in allopathic family practice and osteopathic general practice programs are more likely to remain generalist physicians and practice in needy rural areas than other physicians, incentives to increase the number of family practice and osteopathic general practice residents should be a high, short-term priority.

f. Because of the significant decline in internal medicine and pediatric graduates completing three-year residencies and entering generalist careers and the concurrent growth in those choosing to subspecialize, both disciplines are strongly encouraged to review their workforce needs for generalists and subspecialists and to develop curriculum and training opportunities commensurate with those needs.

15. To facilitate the expansion of ambulatory/outpatient GME and to encourage innovative program development and growth, all approved GME programs, including those based in community settings, should be eligible for Medicare direct and indirect GME reimbursement.

16. Changes in the Medicare portion of GME financing should be budget neutral. Savings in direct and indirect GME from capping slots and eliminating payments beyond the initial certification or five years (with the previously noted exceptions) should be directed to:

- a. Training conducted in primary care ambulatory/community training sites.
- b. Innovative programs to train generalist physicians for rural and urban medically underserved areas.
- c. Innovative programs to increase minority representation in the physician workforce pool.

17. Financing strategies should support the goal of increasing the percentage of residency graduates in the specialty fields of general surgery, adult and child psychiatry, and preventive medicine, and the percentage of family physicians and general internists with additional geriatrics training. In addition to the previously mentioned approaches:

- a. Incentive salaries should be made available to residents who sign a contract indicating their intention to complete their program in the above fields, with a year-by-year payback for those who choose to train and practice in another specialty or subspecialty.
- b. Increased direct GME payments should be allocated to general surgery programs that contain an agreed-upon curriculum that specifically prepares graduates for general surgical practice, especially in rural and inner-city areas.
- c. Increased direct GME payments should be allocated to adult and child psychiatry programs.
- d. Preventive medicine residency training programs should receive Medicare GME reimbursements for the entire three-year period. (Currently, Medicare payments are made only for residents in their clinical training year, which takes place only in the first year.)

18. Primary care residency programs providing substantial training in urban or rural underserved areas or serving a substantial percentage of medically underserved populations should be reimbursed for generalist residents under Medicare DME at a higher rate.

C. Practice Environment

19. The economic incentives to enter generalist fields must be increased and incentives to spe-

cialty practice must be reduced by extending physician payment reform to include all third-party payers.

20. Partial loan forgiveness should be provided for residents entering practice as family physicians, general internists, and general pediatricians.

21. Solutions must be found to reduce the administrative burdens in medical practice imposed by the third-party payers. These burdens are primary causes of the increasing disillusionment among generalist physicians in practice.

22. Tort reform must be implemented to reduce malpractice barriers to the provision of needed primary care services, such as prenatal care.

23. Major incentives in Medicare and Medicaid reimbursement should be implemented to encourage physicians to provide primary care services to underserved rural and urban populations. These additional payments would assist in offsetting the heavy burden of unreimbursed care provided by physicians in these settings.

24. Federal and State programs, including the NHSC Scholarship and Loan Forgiveness Program, must be maintained, enhanced, and expanded to address the relative undersupply of physicians in rural and inner-city areas. Such programs should be maintained indefinitely in the most severe shortage areas that have little likelihood of attracting physicians.

25. Physicians in shortage areas are overworked, isolated, and frequently overwhelmed by the complex business of medicine. Systems of health care delivery and professional support will enhance attractiveness of primary care in shortage areas.

Specific Recommendations for Medical Educators

The attainment of these workforce goals will require a partnership between government and the medical education system, which comprises medical schools, hospitals, and other educational institutions and agencies. It will require government to establish and implement a national workforce plan with a set of goals, a rational educational infrastructure, and a financing mechanism, as previously recommended. It will also require the commitment and leadership of our Nation's medical educators. The following recommendations describe the Council's vision of a medical education system that is responsive to our Nation's physician workforce needs in the 21st century.

Mission Statement and Strategic Plan

26. The institution's mission statement recognizes responsibility and accountability to societal needs for more generalist physicians, underrepresented minority physicians, primary care research, and the provision of more primary medical care, particularly to underserved urban and rural communities.

27. The strategic plan contains quantifiable outcome measures for these societal needs, including the percentage of:

- a. graduates choosing generalist careers;
- b. underrepresented minorities who apply, matriculate, and graduate;
- c. required educational experiences in community and underserved settings; and
- d. graduates choosing to practice in underserved rural and urban areas.

Recruitment, Admissions, and Retention Policies

28. The medical school's admissions policy, structure, and function reflect the need to recruit and admit more students who are inclined to select the generalist disciplines of family practice, general internal medicine, and general pediatrics.

29. The medical school's admissions policies, structure, and function reflect the need to recruit and admit more minority students in medical school.

a. The school establishes a minority recruitment/retention section with underrepresented minority participation, or individuals committed to the goals, and minority participation on the admissions committee.

b. Emphasis is placed on the development and support of programs that improve the size and quality of the minority applicant pool by focusing on early intervention. The school participates in forums and networks involving students in high school, elementary school, and primary levels, including kindergarten, to expose minority youngsters to health professions role models, encourage their interests and pursuits in health, and provide networks of mentoring programs to assist and support students inclined toward health careers.

c. The school provides ongoing support to ensure the successful progress of these students through their education.

Faculty Composition

30. The institution's departments and faculty composition are more balanced, with increased representation of generalist physicians, minority physicians, primary care researchers and physicians, and other health care providers from community settings.

31. The institution's system of advancement and tenure rewards faculty with demonstrated excellence in teaching in the same manner it recognizes excellence in biomedical research.

32. The institution involves large numbers of community-based primary care physicians and other providers as preceptors, teachers, and role models for medical students and residents and gives significant academic recognition and adequate reimbursement or other rewards (e.g., locum tenens coverage for continuing medical education for their contribution).

Medical Education Objectives

33. The institution incorporates effective adult education techniques in its curriculum. Self-directed learning and problem-solving directed skills are emphasized throughout the curriculum for students and residents to learn to acquire detailed information and to apply such knowledge effectively.

34. The institution emphasizes effective communication skills to improve the doctor/patient relationship.

35. The institution provides mandatory multicultural awareness/sensitivity sessions for students, residents, and faculty.

Achieving a More Integrated and Balanced Medical Education Curriculum

36. The basic sciences are incorporated within a clinical context throughout the undergraduate curriculum.

37. Undergraduate and graduate training includes social, behavioral, and humanistic aspects of health and health care delivery. Instruction is provided from faculty, researchers, and clinicians in fields such as nursing, psychology, public health, medical sociology, medical education, health services delivery, and bioethics.

38. Undergraduate and graduate training emphasizes the importance of team approaches to health care delivery. They include experience working as a team member with other health care professionals and training in utilizing the skills and expertise of nurses, pharmacists, public health professionals,

social workers, and other health care professionals and ancillary personnel.

39. Experimental primary care programs and curricula are offered that may help reach the identified goals. Such models emphasize generalist practice and community-based training. The effectiveness and productivity of the fourth year of medical school should be examined.

40. Undergraduate and graduate training contains well-defined curricula, educational objectives, and evaluation methods, including outcome measures, to assess the effectiveness of the education experience.

Expanding the Medical Education Teaching Environment

41. The curricula and clinical rotations provide all students and residents with a balance between hospital-based, subspecialty training and community-based, primary care training. A much greater proportion of medical training is shifted to outpatient and community-based sites where the majority of medical care is provided.

42. The community-based educational experiences are developed and managed with significant community participation and involvement.

43. Academic consortia are developed to link together the various settings in which undergraduate and graduate medical education are provided, including community hospitals, community health centers, HMOs, and public health departments.

Appendix – Assumptions of Illustrative Modeling Scenarios of Physician Supply Projections to Conform to COGME’s Goals

In this report, COGME has developed several specific goals and recommendations which, if implemented, would reduce the rate of growth in the physician supply and change the specialty distribution. The BHP_r physician supply projections model was utilized for projections based on extrapolation of current trends. (For a detailed description and analysis of basic forecasts from this model, see *The Eighth Report to the President and Congress on the Status of Health Personnel in the United States*, 1992.)

The model was also utilized in an illustrative manner, referred to as the “goal-oriented” scenario, to obtain greater insight into the types of changes that might have to be made in medical and osteopathic enrollments, IMG entry, and specialty selection to achieve illustrative goals not necessarily approved by COGME.

Projections of Present Trends

The following represented the outcome of present trends as currently projected by the BHP_r physician supply projection model:

1. If present trends continue, the total number of active M.D. and D.O. physicians will increase from 601,000 in 1990 to 875,950 by 2020. The physician-to-population ratio would continue to rise from 240 to 298 per 100,000 during that time. The total number of M.D. physicians would increase from 572,900 in 1990 to more than 811,000 by 2020, and the M.D. physician-to-population ratio would continue to rise from 229 to 276 per 100,000 (figure 20). The number of osteopathic physicians for 1990 was estimated at 28,100, or 4.7 percent of the active physician supply, and is projected to increase to 64,360, or 7.3 percent, of the total active supply in 2020.

2. If present trends continue, only one-third of all practicing allopathic and osteopathic physicians will be generalists, i.e., general/family physicians, general internists, and general pediatricians by the year 2020 (figure 21). This projection assumes that, without any policy intervention, 59 percent of medical school classes will enter family practice, internal medicine, and pediatrics in PGY-1 over the next several years, and that by PGY-10, only 30 percent will be in generalist careers.

Goal-Oriented Supply Projections

The following assumptions and the resulting implications for the “goal oriented” exercise are illustrative and should not be construed as representing specific measures that must be implemented for the Council’s goals to be achieved.

Assumptions for the Aggregate Supply Projections

1. The M.D. growth in the physician supply will approximate U.S. population growth between 1995 and 2020, so that the projected 1995 M.D. physician-to-population ratio of 242 M.D.s per 100,000 persons will be obtained in 2020. A decline in the numbers of first-year enrollees in U.S. medical schools and permanent immigrant physicians newly licensed each year are necessary to produce this result.

2. If the number of first-year enrollees and consequent graduates in U.S. medical schools must decline in order to obtain the above goal, the percentage reduction in the number of osteopathic graduates will not exceed the percentage reduction in the number of M.D. graduates.

3. The total number of allopathic first-year GME positions will equal the number of U.S. allopathic medical school graduates plus 10 percent. The increment is to make additional first-year residency positions available for Canadian medical school graduates, fifth pathway students, IMGs, etc.

4. The approximately 800 exchange visitor IMGs in first-year residency positions are not included in the 10 percent limit because most are required to return home after completing their training. The approximately 160 who obtain waivers and remain are factored into both the current projections and the exercise.

Assumptions for the M.D. Specialty Supply Projections

1. Fifty percent of U.S. medical school graduates and IMGs in 1997 and beyond will be trained in and enter primary care practice so that by 2006

Fig. 20 – Growth in the MD and DO Physician Supply Basic and COGME Physician Projections

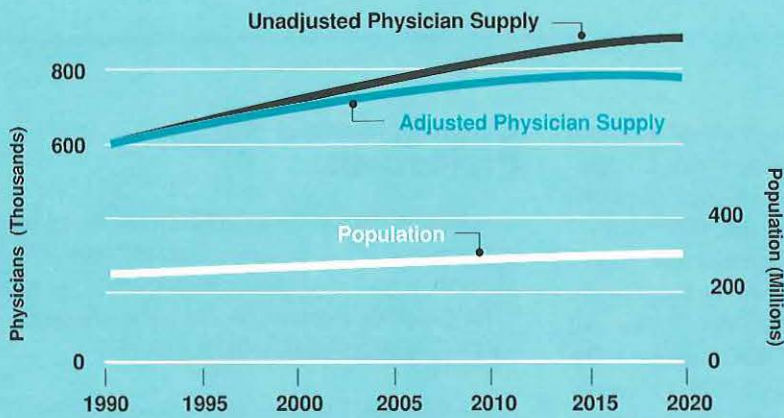


Fig. 21 – Physician Supply in 2020 (Basic) Percent Primary and Non-Primary Care

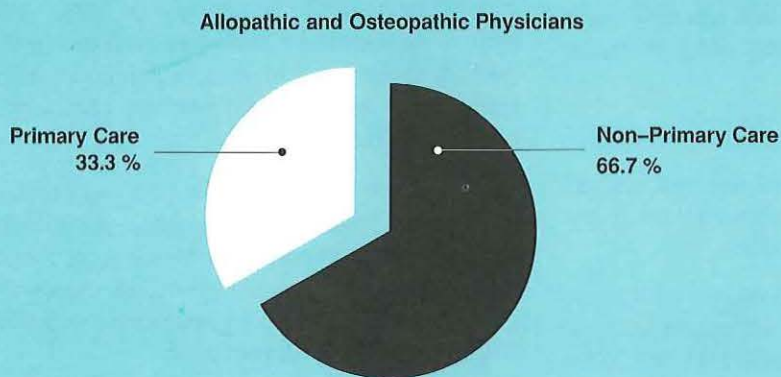
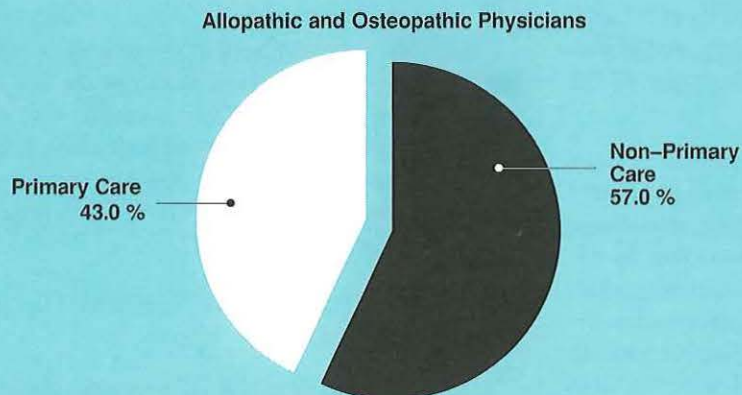


Fig. 22 – Physician Supply in 2020 (COGME) Percent Primary and Non-Primary Care



and beyond, 50 percent of those in PGY-10 will be in primary care.

2. Of the 50 percent in primary care, half the number will become family physicians.

3. The number of general pediatricians will grow at not less than the rate of the general population between 1993 and 2020.

4. General internal medicine will make up the difference between 50 percent and the FP share plus the pediatrics share in PGY-10.

5. The number of general surgeons will grow at the rate of population growth plus 10 percent between 1993 and 2020.

6. The numbers of child and adult psychiatrists will grow at the rate of population growth plus 10 percent between 1993 and 2020.

7. The number of general preventive medicine physicians will grow at the rate of the population plus 50 percent between 1993 and 2020.

Assumption for the D.O. Specialty Supply Projections

Osteopathic graduates will train and practice in specialties in similar proportions as they have in the recent past—60 percent primary and 40 percent nonprimary care.

Results of the Goal-Oriented Aggregate Supply Projections

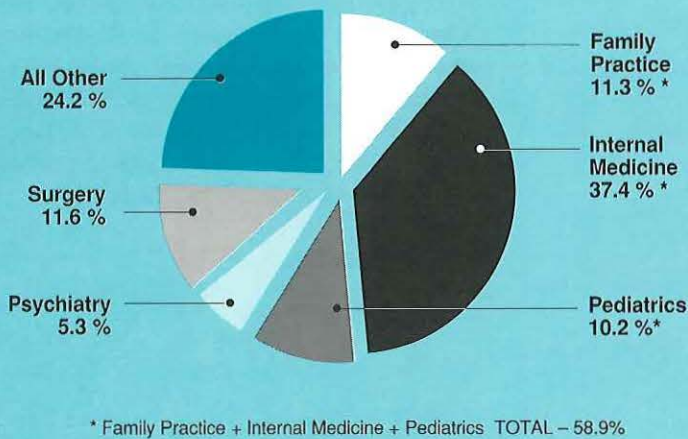
The following are the results concerning the impact of the above assumptions on medical and osteopathic school enrollments, IMG entry, physician supply, and specialty selection and distribution:

1. To maintain the M.D. physician-to-population ratio at the estimated 1995 level of about 242 per 100,000, the projected physician supply would have to decrease by about 101,670 from the current 2020 projection of 875,950. The total M.D. supply would rise to 713,000 by 2020; with the D.O. supply included, the total number of physicians would rise to 774,300 in 2020.

2. Because of faster growth in the number of D.O.s, the total physician-to-population ratio in this scenario would still grow slightly, from 254 in 1995 to 263 in 2020.

3. Limiting the number of available first-year allopathic residency slots to 10 percent above the currently forecasted number of U.S. allopathic medical school graduates under the goal-oriented scenario would yield about two-thirds of the 101,670

Fig. 23 – U.S. Medical School Class of 2000
PGY – 1 Residents: Basic



decrease for 2020. This decrease reduces the number of slots for physicians other than graduating senior students from over 5,000 (filled by over 3,000 additional residents in 1990) to 1,475. As is the case now, these slots would be filled by graduating Canadian students, U.S. physicians other than graduating seniors, fifth pathway students, U.S. and foreign national IMGs, etc.

4. The remaining one-third of the 101,670 decrease would require a reduction in medical and osteopathic school class size. In this scenario, first-year enrollment in allopathic and osteopathic medical schools would have to decline by 9.1 percent over the nine-year period beginning in 1991, leveling off in the year 2000 and remaining at that level through the year 2020. This translates to a decline from 17,071 allopathic first-year enrollees in 1991 to 15,500 in 2000, and from 1,974 to 1,796 osteopathic enrollees in this period.

5. Without a reduction in medical school class size, it appears that the goal cannot be attained without totally eliminating the 10-percent increment in first-year residency slots.

Alternative Measures of Physician Supply—Full-Time Equivalent Physicians

The number of hours that physicians work each week varies with such demographic characteristics as age and gender. Thus, changes in the demographic composition of the physician supply affect the amount of physician services available to the U.S. population. To examine the effects of the projected changes in the demographic composition of the physician supply on available physician services, a current and projected full-time equivalency

measure of physician supply was developed using data recently developed by the AMA. (For a full description of the methodology and data utilized, see *Physician Supply and Utilization by Specialty: Trends and Projections*, published by AMA Center for Health Policy Research in 1988.)

Using 1986 as a base year so that the full-time equivalent (FTE) counts are equal to the traditionally defined headcounts of physician supply for that year, projections were developed for 2020 using FTE measures for both the COGME goal-oriented scenario as well as that based on extrapolating from current trends. The FTE projections for both scenarios are lower than their respective headcount supply projections, due to a projected decrease in the average amount of time that physicians work. The decrease is the result of increasing proportions of older physicians and particularly female physicians projected, who currently work fewer hours per week than the physician population as a whole.

The projected number of FTE physicians under both scenarios range from 28,000 to 30,000 fewer than the respective headcount supply projections. While substantial in size, the differences as a percent of their base are relatively small, ranging from 3.4 to 3.6 percent.

Results of the Goal-Oriented Specialty Mix Supply Projections

1. Even if COGME's initiative begins in 1993 with a mix of 70 percent of first-year allopathic residents entering residency training in family practice, internal medicine, and pediatrics, so that 50 percent of all residents will be practicing as generalists by PGY-10, only 43 percent of all practicing physicians will be generalists in 2020 (figure 22). The 50-percent goal will not be attained until some time between 2020 and 2030.

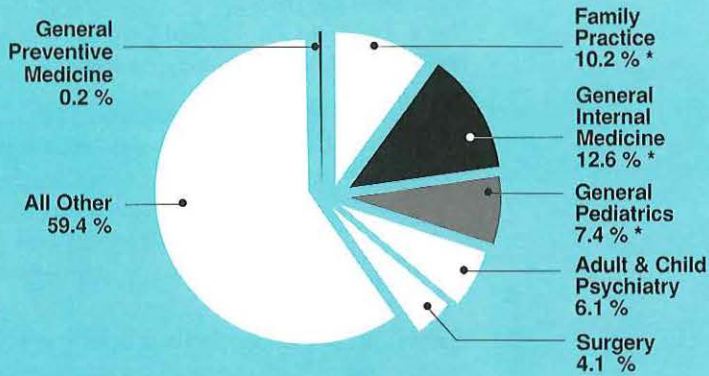
2. To reach even this mix in this set of illustrative projections, a significant change in the current trends would have to occur. For example, for U.S. medical school classes:

- The percentage of filled family practice residency positions will have to increase from 11 percent to 26 percent, or by 2,000 additional filled positions.

- The percentage of internal medicine graduates choosing generalist careers will have to increase from 34 percent to over 50 percent.

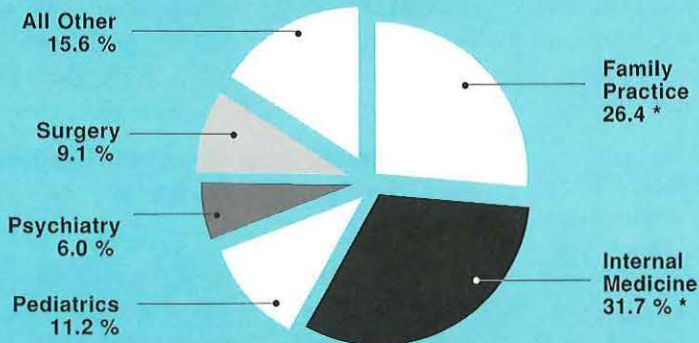
- The percentage of pediatric graduates choosing generalist careers will have to increase from 72 percent to over 80 percent.

Fig. 24 – U.S. Medical School Class of 2000 Graduate Year 10: Basic



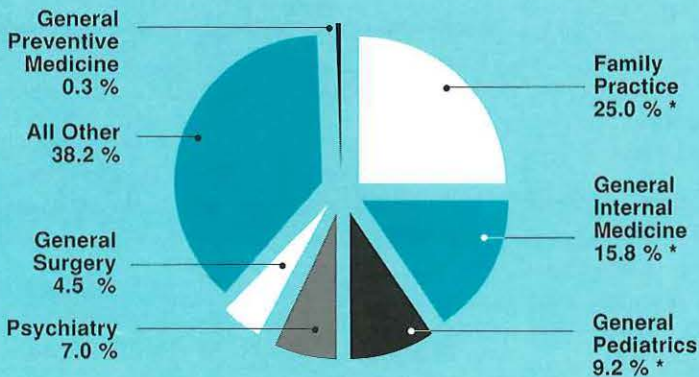
* Family Practice + Internal Medicine + Pediatrics TOTAL – 30.2 %

Fig. 25– U.S. Medical School Class of 2000 PGY – 1 Residents: COGME Goal Oriented



* Family Practice + Internal Medicine + Pediatrics TOTAL – 69.3 %

Fig. 26 – U.S. Medical School Class of 2000 Graduate Year 10: COGME Goal Oriented



* Family Practice + Internal Medicine + Pediatrics TOTAL – 50 %

3. To reach the mix of 50-percent generalists, a 50-percent increase in filled preventive medicine positions and 10-percent increase in psychiatry and general surgery filled positions, significant changes will be necessary in the distribution of specialties for future medical school classes, as illustrated in the pie charts for the PGY-1 and PGY-10 years for the U.S. medical school class of 2000 for both the current (“basic”) and “goal-oriented” projections (figures 23, 24, 25, and 26).



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