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BY THE COMPTROLLER GENERAL

# Report To The Congress

OF THE UNITED STATES



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## Progress And Problems In Improving The Availability Of Primary Care Providers In Underserved Areas

Because of problems in adequately assessing the unmet demand for health care in HEW-designated health manpower shortage areas, many National Health Service Corps physicians are underused in terms of patients served. This raises serious questions about the extent of unmet demand for health care in some of these areas, and therefore, the number of additional physicians with scholarship service obligations that will be needed.

This report contains recommendations to the Secretary of HEW regarding improvements needed in several Federal programs designed to affect physician distribution. It also recommends that the Congress reconsider the need for continuing the Federal Loan Repayment Program for physicians and the need for HEW to complete its study of physician extended reimbursement provided for in the Social Security Amendments of 1972.



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COMPTROLLER GENERAL OF THE UNITED STATES  
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To the President of the Senate and the  
Speaker of the House of Representatives

This report examines trends in the geographic distribution of physicians who recently established medical practices and factors they considered important in making these decisions. It also discusses progress made and opportunities for improving several major Federal programs designed to improve availability of physician services in underserved areas, and several projects funded by State and private organizations that rely extensively on physician extenders (that is, physician assistants and nurse practitioners) to provide primary care medical services in rural areas otherwise unable to attract or retain physicians.

Our review was made because of the congressional concern over the geographic maldistribution of physicians in the United States and the substantial commitment of Federal funds to deal with this problem. We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Director, Office of Management and Budget, and the Secretary of Health, Education, and Welfare.

  
Comptroller General  
of the United States

D I G E S T

The geographic distribution of health manpower, particularly physicians, is one of today's most complex and important issues facing health care planners, policymakers, and providers.

The Congress has expressed a commitment to insuring that physicians are located so as to be accessible to virtually the entire population. Programs to hire and place physicians in shortage areas and to provide exposure to shortage-area practice during medical education are but two examples of efforts by the Congress to affect physician distribution. During fiscal years 1972-77 more than \$430 million in Federal funds were obligated in an attempt to increase the supply of physicians in shortage areas.

In addition to examining trends in the geographic distribution of physicians that recently established practices, this report also examines:

- Factors newly established physicians considered important in selecting practice locations.
- Progress made by Federal programs to improve the availability of physician services in underserved areas.
- Projects which rely primarily on physician extenders (physician assistants and nurse practitioners) for increasing the availability of health care services in underserved areas.

PHYSICIANS ARE NOT  
EVENLY DISTRIBUTED

In 1976 there were an estimated 384,900 non-Federal physicians in the United States--

369,800 doctors of medicine and about 15,100 doctors of osteopathy. Of the 369,800 MDs, about 292,200 (79 percent) were providing patient care--or 137 physicians for each 100,000 persons. This physician supply is not distributed equitably in relation to the population, however.

A disproportionately large number of physicians are located in the urban areas where physician-to-population ratios are significantly higher than in rural areas. The physician population is also inequitably distributed within urban centers. (See pp. 2 and 6.)

#### DISTRIBUTION OF NEW PHYSICIANS--LITTLE CHANGE

Generally following the path of their predecessors, the more than 20,000 new physicians <sup>1/</sup> on whom data was available continued to concentrate in urban areas. Although the urban areas contained about 75 percent of the people, a disproportionate 90 percent of the 1967-71 U.S. medical school graduates and foreign medical school graduates licensed during this period located in these areas.

The urban concentration of recent graduates results primarily from the fact that the large number of physicians other than general and family practitioners choose urban practice locations. The distribution of general and family practitioners is more uniform between urban and rural areas. (See p. 13.)

#### FACTORS AFFECTING PHYSICIAN PRACTICE LOCATIONS

Preference for rural or urban living and the availability of clinical support facilities and personnel were equally important factors

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<sup>1/</sup>U.S. medical school graduates and foreign medical school graduates licensed between 1967 and 1971 who subsequently completed graduate medical education and began practice.

most affecting the location decisions of a sample (1,066) of physicians licensed in 1971. As a group, however, professional considerations, including clinical support, contact with other physicians, and continuing education opportunities, played the largest role. Overall, the physicians stated they had not been greatly influenced by economic factors, such as income potential and the availability of loans. (See p. 15.)

#### IMPACT OF FEDERAL PROGRAMS

##### National Health Service Corps

The Corps has undoubtedly increased the availability of physicians' services in communities designated by HEW as having a critical shortage of health manpower. However:

- The Corps has not adequately considered the demand for medical services when assessing the need for physicians in shortage areas. This, coupled with its decision to place a minimum of two physicians at most sites to the extent possible, has resulted in many physicians being underused in terms of patients served at sites in operation 1 year or longer. (See pp. 20 and 22.)
- The Corps has experienced difficulty in recruiting physicians willing to voluntarily practice in the more remote, less populated areas. Consequently, many of these sites have remained unstaffed for periods ranging up to 4 years. (See p. 27.)
- Corps officials look to the HEW scholarship program with its shortage area service obligation to provide a sufficient supply of physicians in the future. But, because of deferments for graduate medical education, HEW officials do not expect a substantial number of physicians to be available until fiscal year 1979. (See p. 33.)

It should be recognized, moreover, that the number of physicians authorized by the Corps for its unstaffed sites may exceed the number needed as evidenced by the low use of Corps physicians at many sites in operation 1 year

or longer. This raises serious questions to GAO concerning the extent of unmet demand for health care in some of these areas and, therefore, the number of additional physicians with scholarship service obligations that will be needed to serve in HEW-designated shortage areas.

--From inception through July 1976, only 42 physicians--out of a total of about 800 who served in the Corps--remained in the shortage areas or were planning to do so, as private practitioners, which is a major program objective. (See p. 29.)

#### Loan repayment

As of October 31, 1977, the Federal loan repayment program attracted only 762 physicians (about 1.7 percent of those eligible) to shortage areas in return for loan repayment. Moreover, the majority of those who participated through February 1976 probably would have established practices in those shortage areas anyway. Thus, it seems the program provided financial benefits predominately to physicians who already had decided on shortage area practice. (See p. 48.)

#### Area health education centers

The long-term nature of the program, the lack of clearly defined national strategy, and different developmental stages and program strategies among the 11 area health education centers make identifying and assessing the program's impact difficult. Nevertheless, GAO believes this program conceptually has considerable long-term potential to indirectly improve health manpower distribution by overcoming some of the important professional objections to shortage area practice. (See p. 58.)

#### Preceptorship and family medicine training programs

Both the preceptorship and family medicine training programs were too new at the time

of GAO's review to determine their impact on increasing the supply of physicians in shortage areas. Since the programs began in 1972, very few students have completed medical training and established practices. However, preliminary indications are that:

- The experiences provided by the preceptorship program are generally too brief and too far away from the location decision in terms of time to substantially affect location choices. (See p. 72.)
- The family medicine program offers potential for increasing the supply of physicians in rural areas and small towns because of the tendency for many family practitioners to locate in such areas. The extent to which recent family practitioners located in HEW-designated shortage areas, however, is unknown. (See p. 76.)
- Two remote site training programs (the Washington, Alaska, Montana, and Idaho Medical Education Program and the Minnesota Rural Physician Associate Program) show indications of influencing the decisions of some participants to locate in rural areas. (See p. 79.)

ALTERNATIVE PROGRAMS FOR PROVIDING PRIMARY CARE MEDICAL SERVICES IN RURAL AREAS

Many States and private organizations have attempted to increase access to primary care medical services in rural areas through programs largely using nonphysician providers, including nurses and physician extenders.

GAO visited four such programs--the North Carolina Rural Health Centers, Kentucky Frontier Nursing Service, Checkerboard Area Health System, and East Kentucky Health Services Center--which use physician extenders as principal providers of health care in rural clinics. The physician extenders provide services under the supervision of physicians, but physicians are not always present when the services are performed. (See p. 89.).

The inability to receive reimbursement from Medicare (part B) and some other third-party payers for physician extender services at independent sites such as those discussed above had apparently restricted their potential widespread use.

#### REIMBURSEMENT FOR PHYSICIAN EXTENDER SERVICES

In 1965, when the Medicare legislation was enacted, there were few if any physician extenders working and no allowance was made for their reimbursement. Responding to this problem, the Congress in the Social Security Amendments of 1972 provided that a study be undertaken to determine appropriate circumstances, methods, and rates for reimbursing physician extenders.

Although a contract covering the first phase of the study was let in February 1974 and the study itself began in November 1974, a June 1977 HEW report stated there have been significant delays in the study and it will be at least until 1979 before definitive findings are available. The HEW study discussed the fact that difficulties had been experienced in getting physicians that use physician extenders to participate in the study and questions were raised about the potential validity of the results because of the way in which the sample practices had been selected for inclusion in the study. (See p. 104.)

On December 13, 1977, the President signed into law the "Rural Health Clinic Services Act," authorizing reimbursement under Medicare (part B) and Medicaid for services rendered in certain rural health clinics in underserved areas. Among the services covered are those of physician assistants and nurse practitioners, whether or not a physician is physically present at the time the service is provided. The act also requires the Secretary of HEW to conduct demonstration projects in urban medically underserved areas with respect to reimbursement on a cost basis for services provided

by physician-directed clinics which employ physician assistants and nurse practitioners. (See p. 106.)

In GAO's view, now that reimbursement for physician extender services rendered in rural clinics in underserved areas has been authorized projects such as those discussed above which rely extensively on physician extenders at satellite clinics or in mobile units with backup from physicians in larger neighboring communities could constitute an approach for providing health care to communities in the Nation otherwise unable to attract or retain physicians.

RECOMMENDATIONS TO THE SECRETARY OF HEW

The Secretary of Health, Education, and Welfare should:

- Develop guidelines for assessing under what circumstances it would be appropriate to assign health care providers to entities requesting Corps assistance and the number and type of provider(s) that would be most appropriate. (See p. 36.)
- Require communities and other entities requesting Corps health care providers to conduct studies which identify, to the extent possible, the number and types of residents located therein who are likely to seek care from a Corps-sponsored practice. (See p. 37.)
- Develop multiyear projections to assess the total number of physicians with scholarship commitments that will be needed to serve in shortage areas. (See p. 37.)
- Make an analysis of the extent to which family practitioners and other specialists are locating in HEW-designated shortage areas and, based upon this analysis, submit to the Congress recommendations for financially supporting those programs which constitute the greatest resource for providing health care to medically underserved areas. (See p. 87.)

--Work with the States to identify those areas having health manpower distribution problems and develop a strategy for marshaling resources--Federal, State, and private--to establish an integrated program designed to provide health services in the manner most appropriate to each area. (See p. 107.)

--Examine those programs which rely on physician extenders to help deliver health services to those areas otherwise unable to attract physicians and consider seeking legislation which would provide Federal funds to help develop those programs found to be most useful. (See p. 104.)

Additional recommendations to the Secretary are included in chapters 3 and 6.

#### RECOMMENDATIONS TO THE CONGRESS

GAO believes it is doubtful that a separate loan repayment program is still needed to attract physicians to shortage areas in view of the (1) expanded Corps scholarship program and number of physicians expected to be available for shortage area service and (2) discretion available to the Secretary of HEW under the Health Professions Educational Assistance Act of 1976 to repay the newly authorized federally insured health professions student loans. Therefore, the Congress should reconsider whether the loan repayment program for physicians needs to be continued since

--it has not induced substantial numbers of physicians to enter shortage area practice and

--many physician participants apparently received windfall repayment of their education loans by the Federal Government since they would have established their practices in those shortage areas anyway. (See p. 57.)

The Congress should also reconsider the necessity for HEW to complete its study

on physician extender reimbursement as required by the Social Security Amendments of 1972 in view of the

--recent legislation enacted that provides for (1) Medicare (part B) and Medicaid reimbursement for physician extender (physician assistants and nurse practitioners) services rendered in certain rural health clinics in medically underserved areas and (2) demonstration projects to be conducted with respect to reimbursement for services provided by physician-directed clinics in urban medically underserved areas which employ physician assistants and nurse practitioners and

--questions raised in an HEW report about the potential validity of the study results because of the way in which the sample practices have been selected for inclusion in the study and the limited number of practices that agreed to participate. (See p. 110.)

#### AGENCY ACTIONS AND UNRESOLVED ISSUES

HEW agreed with most of the recommendations in the report (see app. XIII).

HEW stated it was also concerned about the possible underuse of Corps physicians and that it must consider alternative health care delivery modes or staffing arrangements for those HEW-designated shortage areas which cannot sustain full-time medical practices or retain physicians. HEW expects some progress toward improved use to occur as major barriers to the use of physician extenders are reduced (i.e., eligibility for reimbursement and limitations of licensure). HEW also stated that existing National Health Service Corps sites will not be continued if sufficient support for the Corps project has not been demonstrated over the period of Corps involvement.

As indicated in chapters 3, 6, and 7, GAO believes HEW needs to give further consideration to the recommendations dealing with

the National Health Service Corps program, preceptorship training program, and alternative approaches to increasing the number of primary care physicians in rural areas.

HEW was not in favor of GAO's recommendation that the Congress reconsider the necessity for HEW to complete its study on physician extender reimbursement under the Social Security Act as requested by the Congress in 1972. HEW said that, although there are some administrative and substantive problems with the study, it is the only major study to obtain data on costs of services of physician extenders and the impact of reimbursement on the use of these practitioners. HEW believes useful data will be forthcoming from the study. Nevertheless, for the reasons previously discussed GAO still sees limited value in continuing the HEW study and suggests that the Congress consider terminating it.

Officials of the programs and projects reviewed and the American Medical Association were given an opportunity to comment on sections of the GAO report. Their comments have been considered in this report.

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ABBREVIATIONS

AHEC	Area Health Education Center
AMA	American Medical Association
AOA	American Osteopathic Association
CAHS	Checkerboard Area Health System
CCU	Community Clinic Unit
DO	doctor of osteopathy
EKHSC	East Kentucky Health Services Center
FMG	foreign medical graduate
FNP	family nurse practitioner
FNS	Kentucky Frontier Nursing Service
FP	family practitioner
GAO	General Accounting Office
GP	general practitioner
HEW	Department of Health, Education, and Welfare
HPEA	Health Professions Educational Assistance Act of 1976
IHS	Indian Health Services
MD	doctor of medicine
MRPAP	Minnesota Rural Physician Associate Program
NHSC	National Health Service Corps
ORHS	North Carolina Office of Rural Health Services

ABBREVIATIONS

PE	physician extender
PHS	Public Health Service
RN	registered nurse
SSA	Social Security Administration
UNC	University of North Carolina
UNM	University of New Mexico
UWSM	University of Washington School of Medicine
WAMI	Washington, Alaska, Montana, and Idaho Medical Education Program

GLOSSARY

Primary care physicians    In our report this refers  
to general practitioners,  
family practitioners,  
general internists, general  
pediatricians, and obstetricians  
and gynecologists.

## CHAPTER 1

### THE PHYSICIAN DISTRIBUTION

#### PROBLEM IN PERSPECTIVE

The geographic distribution of health manpower, particularly physicians, is one of today's most complex and important issues facing health care planners, policy-makers, and providers. Evidence of widespread concern over physicians' location patterns can be found at all levels of government, within the medical schools, and among physicians themselves. Much has been published about cities, towns, and counties trying to recruit physicians.

The Congress has expressed a commitment to insure that physicians are located so as to be accessible to virtually the entire population. Programs to hire and place physicians in shortage areas and provide exposure to shortage-area practice during medical education are but two examples of programs established by the Congress to affect physician distribution. During fiscal years 1972-77 more than \$430 million in Federal funds were obligated in an attempt to increase the supply of physicians in shortage areas.

Not only is it important to have access to a physician but also to have access to the type of physician needed. The American Medical Association (AMA) directory of approved residencies for school year 1974-75 shows 69 physician specialties and subspecialties. Generally, these can be separated into two broad categories--primary care and nonprimary care. The medical profession has defined a "primary care physician" as one who establishes a relationship with an individual or a family and provides continuing surveillance of their health care needs, comprehensive care for the acute and chronic disorders which he/she is qualified to care for, and access to the health care delivery system for those disorders requiring the services of other specialists. The profession generally considers primary care physicians to be general practitioners (GPs) and family practitioners (FPs), general pediatricians, general internists, and obstetricians/gynecologists.

Certain other specialists, such as dermatologists and general surgeons, may also provide a considerable amount of primary care. However, they are not identified either by education or practice as fulfilling consistently all the requirements of primary care physicians and therefore are not recognized by the medical profession as primary care physicians.

AGGREGATE SUPPLY AND GEOGRAPHIC  
DISTRIBUTION OF PHYSICIANS

In 1976 there were an estimated 384,900 non-Federal physicians in the United States--369,800 doctors of medicine (MDs) and about 15,100 doctors of osteopathy (DOs). Of the 369,800 MDs, about 292,200 1/ (79 percent) were providing patient care--or 137 physicians for each 100,000 persons. This physician supply, however, is not distributed equitably in relation to the population. Some areas, such as the northeastern and Pacific coast States and urban areas across the Nation, have substantially more physicians relative to the population than other areas, such as the southern and midwestern States and rural areas in general.

The inequitable distribution causes substantial differences in the availability of physicians living in different areas. However, sometimes people in areas with relatively fewer physicians may receive medical care from physicians located in other areas. Nevertheless, the number of physicians in patient care for each 100,000 persons allows a general comparison of relative physician availability in different geographic areas.

Dis ribution of MDs

The New England, mid-Atlantic, and Pacific regions rank at least 19 percent above the national average in MDs per 100,000 persons, while the East South Central region is 27 percent below the average. (See app. I.) Among the States, the ratios range from South Dakota's 78 MDs per 100,000 persons, or about 43 percent less than the national average, to New York's 198, or 45 percent more than the national average. The District of Columbia, which serves a metropolitan area that includes portions of Maryland and Virginia, ranks the highest with a ratio of 359 per 100,000, or 162 percent more than the national average. (See app. II.)

Because of variations in the way MDs are distributed within the States and between urban and rural areas, these statistics do not illustrate true availability. As of December 1976, there were 70 MDs per 100,000 persons in non-urban areas as compared with 158 in the Nation's 299 2/ urban areas--126 percent more. The following graph illustrates the different MD concentrations in urban and nonurban areas by county size.

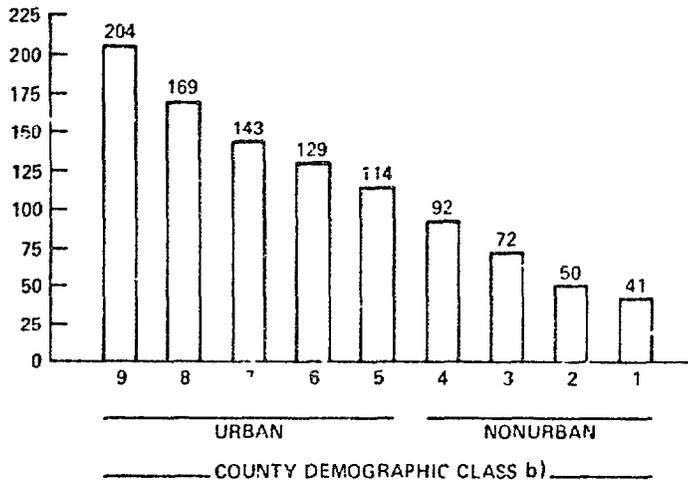
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1/Includes physicians in graduate training.

2/Areas used by AMA in its analysis of the geographic distribution of physicians.

**NON-FEDERAL MDS IN DIRECT PATIENT CARE  
PER 100,000 PERSONS BY COUNTY SIZE  
DECEMBER 31, 1976 (note a)**

PHYSICIANS PER  
100,000 PERSONS



a) INCLUDES MDs IN GRADUATE MEDICAL TRAINING.  
b) SEE CHART BELOW FOR THE SIZE OF EACH DEMOGRAPHIC CLASSIFICATION

**COUNTY DEMOGRAPHIC CLASSIFICATION**

COUNTY SIZE	COUNTY CLASS	NUMBER OF COUNTIES
<b>NONURBAN:</b>		
LESS THAN 10,000 INHABITANTS	1	769
10,000 TO 24,999 INHABITANTS	2	907
25,000 TO 49,999 INHABITANTS	3	484
50,000 OR MORE INHABITANTS	4	229
<b>TOTAL NONURBAN</b>		<b>2,389</b>
<b>URBAN:</b>		
POTENTIAL METROPOLITAN	5	51
50,000 TO 499,999 INHABITANTS	6	330
500,000 TO 999,999 INHABITANTS	7	128
1,000,000 TO 4,999,999 INHABITANTS	8	170
5,000,000 OR MORE INHABITANTS	9	16
<b>TOTAL URBAN</b>		<b>695</b>

Note Urban counties in classes 6 through 9 are in standard metropolitan statistical areas

Source: AMA publication entitled "Physician Distribution and Medical Licensure in the U. S., 1976" According to this publication, county class 5 includes 41 areas which are considered future candidates for standard metropolitan statistical area status

The low concentration of MDs is not limited to rural areas. In many urban areas, there is a wide disparity between the number of MDs in inner-city and suburban areas. A study reported that between 1950 and 1970, the city of Chicago lost 2,000 private MDs--a 35-percent decrease. During the same period, the Chicago suburbs gained 1,900 MDs--a 130-percent increase. The report's author, Dr. Donald Dewey, in testimony to a Senate committee, stated: "Suburban areas of high socioeconomic status gained a disproportionately high share of the shifting doctors, while the poor and black areas of the city lost more than their share of doctors' offices." To illustrate his point, Dr. Dewey reported that the MD to population ratio of the 10 most impoverished areas of Chicago had dropped from about 100 MDs per 100,000 persons to a little more than 25. Meanwhile, the 10 most affluent suburban areas increased their ratios from 178 to 210 per 100,000 persons.

The 1970 Carnegie Commission report, "Higher Education and the Nation's Health," further illustrated the plight of the inner city by stating:

"\* \* \* the fact that New York and Massachusetts have high ratios of physicians to population does not mean that a resident of a lower income neighborhood of New York City or Boston has adequate access to a physician. As one writer \* \* \* recently put it \* \* \* Private physicians are as hard to find in some neighborhoods of New York City as in backward rural counties of the South."

#### Distribution of DOs

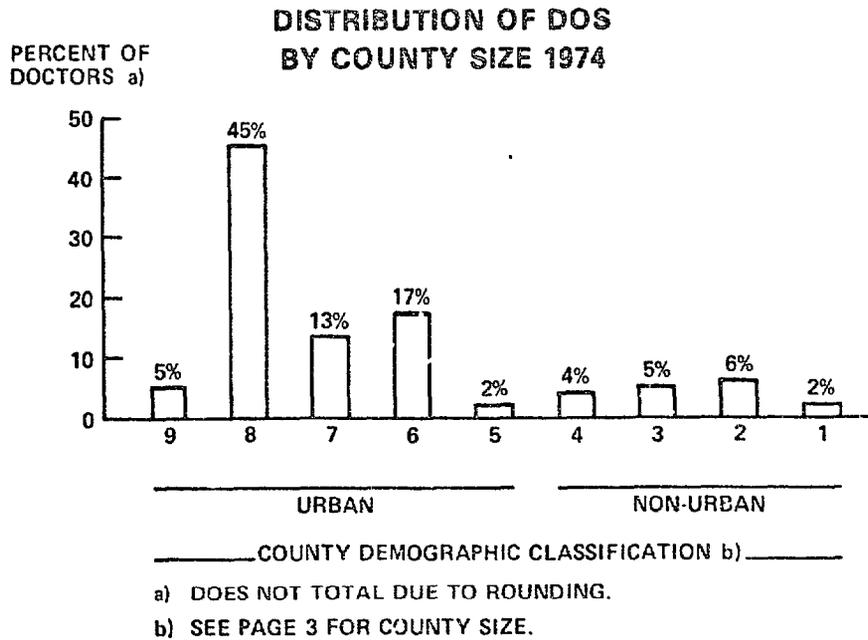
DOs are concentrated in the East North Central and mid-Atlantic regions. As of June 1976, these regions contained almost 53 percent of the approximately 15,100 DOs on which location data was available. (See app. III.)

DOs are very unevenly distributed among the States. In 1976 the supply ranged from 2,569 in Michigan to 3 in Alaska. Thirteen States had 25 or fewer DOs and 6 of these had 10 or fewer DOs. Five States had 52 percent of all DOs. (See app. IV.)

In commenting on the draft report, the American Osteopathic Association (AOA) advised us that of all factors affecting the geographic distribution of osteopathic physicians, the most significant, historically, were State licensing laws. According to AOA, when the first DOs graduated from the first osteopathic college in 1892, State laws governing

the practice of medicine (where they existed) either failed to include the new profession or specifically denied its members full status as physicians and surgeons. AOA stated that, as a result, DOs were forced to wage State-by-State battles for professional recognition and legal equality, battles which continued, sporadically until 1973. A second, almost equally significant factor affecting the geographic distribution of DOs, according to AOA, is the osteopathic profession's early and continuing emphasis on general practice and primary care.

AOA stated in 1974 that 54 percent of all DOs were located in towns of fewer than 50,000 persons. Our analysis showed, however, that like MDs, DOs are located predominantly in urban areas. In 1974 1/ 11,000 (83 percent) of the 13,400 DOs 2/ were located in urban areas. We used the same criterion for analyzing the distribution of DOs as we did for MDs--by county demographic classification. The following graph illustrates the difference in the supply of DOs in urban and nonurban areas by county size.



1/1974 was the latest period data was available on the geographic distribution of DOs by county demographic classification according to an AOA representative in November 1977.

2/Includes all DOs belonging to AOA as of February 1974.

In commenting on our draft report, AOA raised the question of whether the entire population can or should be arbitrarily broken down into just urban and nonurban categories and whether such a gross breakdown truly can reveal individual geographic areas which are generally "underserved," medically. In the final analysis, AOA contends, DOs, unlike MDs, continue to provide a disproportionate amount of primary health care to small towns, villages, rural areas, and particularly to both city and non-city areas which are medically "underserved." AOA advised us it was unable, however, to provide hard statistical data to support its contention but mentioned it is presently engaged in the early stages of developing the capability to provide such information.

All States currently recognize DOs as fully trained physicians and surgeons and grant them the same full licensure as graduated MDs. But according to AOA, the uneven national distribution of DOs which resulted from the discriminatory practices mentioned above remains. AOA recognizes this situation as an urgent problem, and stated that sweeping new programs to improve the distribution of practicing DOs throughout the States currently are underway.

Because of the relatively small number of DOs (less than 4 percent of all physicians) and their concentration in a very few States, we limited the remainder of our review to MDs.

PRIMARY CARE PHYSICIANS--HOW MANY  
ARE THERE AND WHERE ARE THEY?

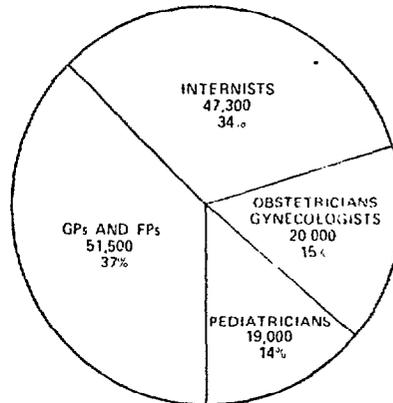
As of December 1976, 47 percent (137,700) of the 292,200 1/ non-Federal physicians providing patient care were classified as primary care physicians. As shown in the following graph, GPs and FPs represent the largest primary care group.

As a group, GPs and FPs constitute a much greater resource for providing health care in rural areas. Whereas physicians in other than general and family practice overwhelmingly locate their practices in urban areas, GPs and FPs locate much more proportionately to the population.

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1/Includes 58,482 physicians in graduate medical training.

### PRIMARY CARE PHYSICIANS 1/



1/ INCLUDES PHYSICIANS IN GRADUATE MEDICAL TRAINING

The GP and FP category in the illustration is composed primarily of GPs. Family practice became a medical specialty in 1969. Consequently, relatively few MDs have had an opportunity to complete FP training. According to the American Academy of Family Physicians, 2,204 MDs had completed family practice residency programs as of July 1976.

Regions and States with the largest concentrations of total physicians also generally have the largest concentrations of primary care physicians. For example, the New England, mid-Atlantic, and Pacific regions have a disproportionately large share of both primary and nonprimary care physicians, while the East South Central region has the lowest ratio of both. As shown in appendix II, there is relatively little difference in the ranking of the top and bottom 5 States in total and primary care physicians per 100,000 persons.

### FEDERAL LEGISLATION TO IMPROVE GEOGRAPHIC DISTRIBUTION OF PHYSICIANS

Federal efforts to affect the geographic distribution of physicians have included: (1) incentive programs aimed at both the medical student and the practicing physician, (2) modifications in medical education and training, and (3) changes to medical delivery systems.

Federal legislation concerned with changing the geographic distribution of physicians began with the Health Professions Educational Assistance Amendments of 1965 (Public Law 89-290). The amendments authorized the forgiveness of up to 50 percent of educational loans for physicians practicing

in designated health manpower shortage areas. The Allied Health Professions Personnel Training Act of 1966 (Public Law 89-751) expanded loan forgiveness to physicians agreeing to practice in any low income rural area and increased the forgiveness provisions to 100 percent.

The Emergency Health Personnel Act of 1970 (Public Law 91-623) authorized the assignment of Public Health Service (PHS) physicians to practice in areas with inadequate medical personnel and services. This act led to later establishment of the National Health Service Corps (NHSC).

The Comprehensive Health Manpower Training Act of 1971 (Public Law 92-157) provided authority for increasing physicians in rural or other designated shortage areas. This act amended the loan forgiveness program to allow the repayment of up to 85 percent of all health educational loans in exchange for 3 years' service in a physician shortage area. The act also provided scholarships for medical students agreeing to practice in a designated physician shortage area following medical training. Further, the act authorized funds for grants and contracts to

- establish or maintain programs to alleviate shortages of health personnel in designated areas;
- provide training programs on the more efficient use of health personnel;
- initiate or improve health education programs, including programs using practicing physicians as preceptors; 1/
- emphasize the team approach to delivering health services; and
- plan, develop, and operate family medicine programs.

The Emergency Health Personnel Act Amendments of 1972 (Public Law 92-585) authorized the establishment of NHSC to provide health care and services to residents living in designated shortage areas. Other provisions authorize recruitment and scholarship programs to obtain physicians for service in PHS, including NHSC.

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1/A practicing physician who trains students in a practice setting away from the medical school.

The Comprehensive Health Manpower Training Act of 1971 expired June 30, 1974. The Congress continued to fund the programs authorized by the act under continuing resolution until passing the Health Professions Educational Assistance Act of 1976 (HPEA) (Public Law 94-484), which was signed into law on October 12, 1976. The act extends the health manpower training authorities through fiscal year 1980 with significant changes to meet national needs. This act is designed to produce more primary care providers and improve health services in manpower shortage areas.

With certain restrictions, HPEA authorizes continuation of the health professions loans and scholarships and establishes a new insured loan program. For both programs, HPEA provides for repayment of loans in return for service in manpower shortage areas.

HPEA substantially increases authorized funding for NHSC and requires the Department of Health, Education, and Welfare (HEW) when assigning personnel, to give priority to areas, facilities, or population groups having the greatest manpower shortage. Also HPEA expands the criteria to be used in designating manpower shortage areas to include certain medical facilities and population groups. HPEA provides new authorities for area health education centers (AHECs) and defines specific objectives each project must address. Specific provisions of HPEA are discussed in more detail in chapters 3, 4, and 5.

#### Program obligations

Obligations for the programs authorized by the foregoing legislation exceeded \$430 million during fiscal years 1972-77 as follows:

Program	Obligations (FY)							Total
	1972	1973	1974	1975 (millions)	1976	Transition quarter	1977	
NHSC (note a)	\$ 8.6	\$10.1	\$ 9.5	\$11.9	\$19.7	b/\$ 9.0	\$25.1	\$ 93.9
Loan repayment	-	-	.4	b/2.3	4.8	1.4	b/3.5	12.4
PHS/NHSC scholarships	-	-	3.0	22.5	22.5	22.5	39.6	110.1
AHECs	-	11.0	38.3	12.0	11.9	-	14.0	77.2
Preceptorships	3.0	3.6	3.7	5.1	5.7	-	5.0	26.1
Family medicine training grants	5.0	5.0	b/23.1	b/15.0	15.0	-	38.6	101.7
<b>Total</b>	<b>\$16.6</b>	<b>\$29.7</b>	<b>\$76.0</b>	<b>\$66.8</b>	<b>\$79.6</b>	<b>\$32.9</b>	<b>\$125.8</b>	<b>\$431.1</b>

a/Figures for FYs 1972 and 1973 include program management and field support, which were combined for those 2 years. Figures for FYs 1974-77 are for field support only.

b/Includes reprogramed funds.

Source: Health Resources Administration, HEW.

## SCOPE OF REVIEW

The purposes of this review were to

- identify trends in the geographic distribution of physicians who recently established practices,
- identify the factors newly established physicians considered important in choosing practice locations, and
- evaluate the impact of selected programs on physician geographic distribution, including some projects which rely primarily on physician extenders (PEs) for increasing the availability of health services in shortage areas.

Using data obtained from AMA, we analyzed the geographic distribution of (1) 13,000 physicians who graduated from U.S. medical schools between 1967 and 1971 and (2) 10,000 foreign medical school graduates (FMGs) licensed to practice medicine in the United States during this period. We also sent questionnaires to:

- A statistical sample of 1,995 physicians licensed in 1971 to determine the factors they, as recently established physicians, had considered important in selecting specialties and practice locations. 1/
- All 393 physicians whose educational loans were being repaid by the Federal Government as of February 1976. We wanted to determine the extent to which loan repayment or other factors had influenced them to locate their practices in shortage areas.

We developed data on the impact the following Federal programs had on physician geographic distribution:

- NHSC.
- AHEC.
- Health profession student loan repayment program.

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1/We selected 1971 graduates because most graduate medical training programs require 3 years to complete. The majority of these individuals, therefore, should have entered medical practice in 1975 or 1976.

--Special project grants for preceptorship training.

--Family medicine training grants.

Our review was conducted at the headquarters of HEW's Health Resources and Health Services Administration and its regional offices in Atlanta, Chicago, Dallas, Denver, Philadelphia, and Seattle. We also performed work at 4 medical schools with AHEC project grants, 7 schools with special project grants for preceptorship training, 3 schools with family medicine training grants, and 15 NHSC project sites.

We developed data on six health care projects that use unusual or innovative techniques for increasing the availability of health care providers in shortage areas. We also obtained data from and interviewed officials of AMA, various physicians' organizations, State governments, medical schools, and practicing physicians.

## CHAPTER 2

### THE LOCATION OF NEW PHYSICIANS: WHERE AND WHY?

Generally following the pattern of their predecessors, physicians who recently <sup>1/</sup> entered patient care located predominantly in the Nation's urban areas. With some variations, this pattern held true for both primary care and nonprimary care physicians and for U.S. medical school graduates and FMGs. GPs and FPs are the most notable exceptions. As a group they located their practices more proportionately to the general population than physicians in the other groups and therefore constitute a much greater resource for providing health care to the rural areas.

Physicians locating in urban areas were more influenced by the availability of facilities and peer contact than their rural counterparts, who were more influenced by a preference for rural living.

According to AMA, there were 54,360 U.S. medical school graduates and FMGs licensed in the United States between January 1967 and December 1971. Of this number, 40,587 (75 percent) graduated from U.S. medical schools and 13,773 (25 percent) were FMGs. We identified and analyzed the geographic distribution of 22,925 non-Federal physicians practicing medicine in known U.S. locations (13,019 U.S. medical school graduates and 9,906 FMG licensees). The remainder were excluded from analysis because, among other reasons, (1) there was insufficient data on some of these physicians' professional activity, (2) some were not actively engaged in practice, (3) some were still in graduate medical training, and (4) the addresses of some were unknown. (See app. V.)

In commenting on the draft report HEW stated that the analysis of the location of 1967-71 U.S. medical school graduates presents a potentially serious problem because of the large number omitted. According to HEW, if the characteristics of the 10,315 U.S. graduates omitted from analysis due to incomplete data are different from the 13,019 U.S. graduates analyzed, the implications of the locational pattern analysis could be quite different. We believe HEW's point is well taken. However, there is no reason to believe that the geographic locations of the U.S. graduates omitted from analysis would have been sufficiently different to significantly affect the following analysis.

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<sup>1/</sup>U.S. medical school graduates and FMGs licensed between 1967 and 1971 who subsequently completed graduate medical education and began practice.

### TREND TOWARD URBAN PRACTICE CONTINUES

The trend among physicians to establish practices in urban areas continued with the 1967-71 U.S. graduates and FMGs on whom data was available. Although the Nation's urban areas contained about 75 percent of the population in 1973, a disproportionate 90 percent of the 22,925, 1967-71 U.S. medical school graduates and FMGs licensed during this period located in these areas. Based on December 1973 population statistics, urban areas received 12 U.S. graduates and FMGs per 100,000 persons compared with 4 for nonurban areas--200 percent more. (See app. VI.)

The continuation of the urban movement of physicians results from the fact that nonprimary care and primary care physicians other than GPs and FPs are locating in these areas. The distribution of GPs and FPs is more uniform between urban and rural areas. In fact, the more rural county demographic groups received a higher proportion of GPs and FPs than did the urban groups, as shown on page 14.

Two major factors apparently contribute to the tendency of physicians other than GPs and FPs to locate in more urbanized areas. First, they may require more support facilities and personnel (i.e., hospitals, equipment, and technical personnel) in order to practice. Second, they often receive many patients on a referral basis, thus requiring a larger population base to support a practice. In commenting on the report, HEW said that a discussion of these factors omits the consideration that secondary and tertiary level practitioners are not needed below a certain threshold level of morbidity in a population. Therefore, according to HEW, a larger population is needed to support any specific number of specialty practices than is needed for the same number of primary care practices.

Overall, the urban/rural distribution of FMGs licensed in 1967-71 is similar to the distribution of 1967-71 U.S. medical school graduates. Of the 9,906 FMGs licensed during this period, 9.4 percent located in rural areas. This compares to 10.9 percent of the 13,019 U.S. medical school graduates.

### PHYSICIANS' CHOICES OF LOCATIONS: MANY CONSIDERATIONS INVOLVED

Physicians' choices of locations in which to practice involve many considerations. The factors influencing these choices have wide policy implications. If reasons why physicians will not locate in some communities needing health manpower can be determined, programs might be developed which might influence them to locate in underserved areas.



### Physicians' reasons for selecting locations

Several studies, including one conducted by the Rand Corporation for HEW 1/ which surveyed graduates from U.S. medical schools in 1965, have been made to determine when and why physicians select locations and to identify the major factors they had considered important. Essentially, physicians select their specialties during medical school and places to practice during postgraduate residency training. As previously mentioned, because of the need for support facilities and personnel, the location choices of many specialists are generally limited to areas having such resources. On the other hand, since GPs and FPs are not as dependent on support resources, these limitations do not equally apply.

According to an earlier Rand study 2/ the important influences in a physician's choice of a practice location have been repeatedly investigated, and many factors have been identified. These factors can be separated into three groups: (1) individual background or personal influences, (2) professional considerations, and (3) community characteristics.

The best documented background factor is the physician's place of rearing before medical school. Several studies have shown that a large proportion of physicians practicing in small towns grew up in small communities. The influence of family, including spouse, and friends also has been cited as an influential factor in several studies.

Other influences include medical school location, place where graduate training was taken, and choice of specialty. Professional factors include the opportunity for contact with other physicians and the availability of clinical facilities, including hospitals, and support personnel. The quality of community life, including educational and cultural opportunities, recreation facilities, and climate, have been related by several researchers to location choices.

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1/"Physician Distribution and Rural Access to Medical Services," April 1976.

2/"An Analysis of Two Studies of Recent Medical School Graduates," November 1974.

Factors affecting practice location choices  
of the 1971 graduates and licensees

During the spring and summer of 1976, we sent questionnaires (see app. VII) to a random sample of 1,995 physicians that were licensed to practice medicine in 1971 to determine the factors they, as newly established physicians, had considered important in selecting specialties and practice locations. The 1971 group was selected to allow the physicians sufficient time to complete graduate medical training and make location choices.

We received replies from 1,470 physicians, 1,066 of whom had selected locations. Preference for rural or urban living and availability of clinical support facilities and personnel were equally important factors most affecting the respondents' location choices. As a group, however, professional considerations, including clinical support, contact with other physicians, and continuing education opportunities, played the largest role--comprising five of the top seven factors. Overall, the physicians stated they had not been greatly influenced by economic factors such as income potential and availability of loans. (See app. VIII.)

For the most part, the factors 1971 U.S. graduates and FMGs said were important in influencing their location choices changed little over the factors 1965 U.S. medical school graduates stated had influenced his/her location decisions, based upon the study conducted by the Rand Corporation. Unlike the Rand study, however, we did not compare the physicians' place of rearing with their practice location to identify possible correlations. It should be noted that some of the Federal programs discussed in the following chapters, which are designed to improve health services in manpower shortage areas, did not become fully operational until after these physicians had received their licenses to practice medicine.

Factors influencing the decisions of primary care and non-primary care physicians were essentially the same. However, the considerations of physicians choosing to practice in rural areas differ substantially from those of physicians in urban areas. Rural physicians generally were more influenced by personal and community factors, including preference to live in a rural or particular geographic area, the high medical need in an area, and community recruitment efforts. On the other hand, urban physicians were more influenced by factors related to the practice of medicine, such as the availability of support facilities and personnel and the opportunity for contact with other physicians and medical schools or medical centers. Rural physicians were less influenced by the opportunity for contacts with other physicians than urban physicians.

Some of the factors influencing the location decisions of U.S. graduates differed from those of the foreign medical school graduates. U.S. graduates were somewhat more influenced by a preference for a particular geographic area, opportunity to join in practice with other physicians, and availability of recreational and sports facilities. On the other hand, FMGs were somewhat more concerned with continuing educational opportunities, income potential, and high medical need in the area. (See app. VIII for a more complete list of the factors.)

### Timing of location decisions

Overall, 61 percent of the respondents indicated they had selected practice locations during postgraduate training--internship, residency, or other training. Only 2 percent selected practice locations during medical school. As shown below, a slightly larger percentage of nonprimary care physicians selected locations during graduate training.

Timing of Location Decision

<u>Time of decision</u>	<u>Primary care physicians</u>		<u>Nonprimary care physicians</u>		<u>Urban areas</u>		<u>Rural areas</u>		<u>Total</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Before medical school	15	3	9	2	16	2	8	2	24	2
During medical school	20	4	6	1	9	1	17	4	26	2
During internship, residency, or other house staff training	319	57	328	65	432	63	215	54	647	61
During military service	62	11	47	9	57	9	32	13	89	8
Other	137	25	116	23	146	22	107	27	253	24
No response	5	1	2	0	2	0	2	1	4	0
<b>Total</b>	<b>558</b>	<b>a/100</b>	<b>508</b>	<b>100</b>	<b>665</b>	<b>100</b>	<b>401</b>	<b>a/100</b>	<b>1,066</b>	<b>100</b>

a/Does not total due to rounding.

### Have the 1971 graduates and licensees chosen or considered shortage area practice?

Of the 1,066 physicians who responded to our questionnaire

--319 (30 percent) stated they were located or planned to locate in rural or inner-city areas experiencing shortages of physicians, 1/

1/It should be noted that the rural or inner-city areas considered by these physicians as experiencing a shortage of physicians may not necessarily be the same as the HEW-designated NHSC and loan repayment physician-shortage areas, which are discussed in chapters 3 and 4, respectively.

--716 (67 percent) stated they were not located or did not plan to locate in areas experiencing a shortage of physicians, and

--31 (3 percent) did not respond to this question.

Of the 716 physicians who indicated they were not located or did not plan to locate in a rural or inner city area experiencing shortages of physicians

--267 (37 percent) said they had considered but rejected practice in rural shortage areas and

--128 (18 percent) said they had considered but rejected practicing in inner-city shortage areas.

Physicians in both groups indicated they would have established their practices in areas they considered to have shortages of physicians if access to continuing education and consulting physicians had been available.

#### CONCLUSIONS

The trend of physicians to establish practices in urban areas continued with the 1967-71 graduates and licensees. Those urban areas with the largest supplies of physicians per capita continued to draw a disproportionately large share of new physicians. As in the past, the trend in the distribution of GPs and FPs is apparently running counter to the trend for physicians in nonprimary care and other primary care specialties. If the present trend continues, increasing the supply of GPs and FPs should result in more new physicians locating in some rural areas.

The factors physicians said had influenced their location choices have apparently changed very little in the past 6 years. Yet a surprisingly large number of physicians responding to our questionnaire indicated they would have established their practice in areas they believed to have shortages of physicians if access to continuing education and consulting physicians had been available. This suggests the need for programs to help reduce physician isolation, such as the AHEC program discussed in chapter 5.

CHAPTER 3

NHSC: SOME SUCCESS, MANY PROBLEMS TO BE OVERCOME

NHSC was established to improve the delivery of health services to residents of areas where health services are inadequate. To this end, NHSC recruits physicians and other health care providers for communities determined by HEW to have critical shortages of health manpower. Other physicians, who avail themselves of the PHS/NHSC scholarship program, are obligated to serve in shortage areas for prescribed periods and are assigned to NHSC.

At December 31, 1975, HEW had designated 869 areas as having critical physician shortages and thus eligible for NHSC assistance. At the same date, NHSC had approved applications from 497 communities for 834 physicians and had assigned 311 physicians (37 percent of the identified need) to 206 communities (41 percent of those approved). In addition, NHSC had recruited and assigned 70 dentists and 123 PEs.

NHSC has undoubtedly increased the availability of physicians' services in designated shortage area communities. In authorizing and assigning physicians to practice in these communities, however, NHSC has not determined the extent to which residents in the community are seeking health care but are unable to obtain it or the extent to which residents would be willing to obtain health care from NHSC providers. Instead, NHSC relies extensively on physician-to-population ratios within the shortage area community in determining the number of physicians needed. This, coupled with an NHSC decision to assign two physicians at most sites to the extent possible to improve physician retention, has resulted in many NHSC physicians being underused in terms of the number of patients they were treating.

The average NHSC physician who has been in practice for 1 year or more sees only 1.9 patients per hour, which is fewer than the average office based primary care physician in the Nation sees (2.95 per hour) and considerably fewer than the average GP or FP located in a nonmetropolitan area sees (3.85 per hour). This raises a serious question about the extent of the unmet demand for health care that actually exists in some areas where NHSC physicians have been assigned.

NHSC has approved many sites for assigning physicians but has been unable to recruit physicians to serve in a considerable number of them, particularly those located in the

more remote and rural areas of the country. At the time of our review, NHSC had approved 261 sites for which it has never been able to recruit a physician. NHSC had been attempting to fill 62 percent of these sites for more than 1 year. NHSC officials are hopeful that the PHS/NHSC scholarship program will provide a sufficient supply of physicians in the future. Because of deferments for graduate medical education, HEW officials do not expect a substantial number of physicians to be available until fiscal year 1979.

An NHSC official stated that as of July 1976, NHSC had recruited about 800 physicians to serve in designated shortage areas. At the same date, only 42 physicians assigned by NHSC had remained or planned to remain in shortage areas and establish private practices--a major goal of the program. NHSC officials have acknowledged that their initial efforts in this regard have not been overly successful because most of the physicians recruited before fiscal year 1974 had not completed their graduate medical education. As a result, the majority of physicians left NHSC at the end of their tours of duty.

#### DESIGNATION OF SHORTAGE AREAS AND APPROVAL OF SITE APPLICATIONS

The criteria established and used by HEW to designate the initial list of critical health manpower shortage areas centered almost entirely upon the ratio of population to primary care physicians in a given area. In compiling the initial list, issued in October 1974, HEW designated as critical health manpower shortage areas those counties having a population-to-primary-care-physician ratio of greater than 4,000 to 1. This ratio was not based on any particular study but rather on the professional judgment of HEW officials. This ratio was reportedly chosen since it was twice the national average of population to primary care physicians.

In September 1975 HEW revised the criteria in an attempt to reduce some of the confusion over what size areas were acceptable for designation and the extent to which resources of contiguous areas were to be considered. Nevertheless, the revised criteria still emphasized the ratio of population to primary care physicians, which remained at 4,000 to 1. As defined by HEW, it includes all primary care physicians and those nonmetropolitan general surgeons who spend 50 percent or more of their patient care time in primary care practice.

A shortage area must be one that is rational for delivering medical care. According to HEW criteria, such an area may be:

1. A county or several contiguous counties.
2. In nonmetropolitan areas, a portion of a county (or an area made up of portions of more than one county) which is separated from resources by natural barrier (mountains, waterways, etc.), by an absence of roads, or by excessive distances (20 miles).
3. In metropolitan areas, a group of census tracts separated by natural or manmade barriers or by excessive distance from health resources in the surrounding areas (5 to 10 miles or 30 minutes' commuting time, depending on the availability of public transportation).

Where these criteria are not fully met in an area for which designation is requested, mitigating circumstances may help qualify the area for consideration. These may include, a large number of indigent persons (as indicated by a high percent of the population below the poverty line), a large number of persons over 65, a high infant mortality rate, the advanced age of a significant number of the area's physicians, large migrant or tourist populations, or the presence of other sociocultural barriers which tend to limit access to health care.

Communities within designated shortage areas are eligible to apply to NHSC for the assignment of health personnel to practice within their communities.

NHSC personnel cooperate with communities in developing the application for NHSC assistance. At the time of the application, the community should be prepared to provide facilities and supporting staff.

Applications usually contain such information as the number of health care providers and their locations in the area, a list and description of the health care facilities, morbidity and mortality data, a discussion of health problems particular to the area, and a description of the applicant organization and how it will function. Applicants are not required to submit information on the extent to which residents are seeking care but are unable to obtain it or an estimate of the extent to which residents would be willing to

obtain their health care from NHSC providers. Consequently, in reviewing site applications, NHSC gives little or no consideration to the actual demand for health care existing within the community before assigning personnel.

#### MANY NHSC PHYSICIANS SEE FEW PATIENTS

Although located in "critical health manpower shortage areas," NHSC physicians on the average see about 35 percent fewer patients per hour than the average office based primary care physician and about 49 percent fewer patients per hour than the average GP and FP located in nonmetropolitan areas. We attribute this primarily to NHSC's failure to adequately consider the demand for medical services when authorizing and assigning physicians to practice in designated critical health manpower shortage areas. NHSC relies extensively on physician-to-population ratios in determining the number of physicians needed. This, coupled with an NHSC decision to assign two physicians at most sites to the extent possible to improve physician retention, has resulted in many NHSC physicians being underused in terms of the number of patients they were treating.

#### Criteria for number of patients to be seen

NHSC believes that at the end of the first operating year each physician should see patients at a rate of 3,000 per year or about 1.9 patients per hour based on a 36-hour week and 44 weeks of work per year. This is substantially below the number of patients seen by the typical non-Federal primary care physician. According to AMA's Profile of Medical Practice, office based primary care physicians in 1975 treated an average of 2.95 patients an hour. The average for GPs and FPs in nonmetropolitan areas was substantially higher-- 3.85 an hour--which is based on an average 54.7 hour work week and 47.8 weeks of work per year. Many physicians and program administrators agree that a primary care physician should be able to treat between three and four patients an hour.

#### Patient loads of NHSC physicians

Using quarterly reports prepared by each site, we determined that NHSC physicians in 110 sites that have been operating for 1 year or more averaged slightly less than 2 patients per hour. Although the average number of patients per hour varied among the HEW regions, in none of the regions was the average as high as the 2.95 national average for office based primary care physicians, as shown on page 23.

Average Number of Patient Encounters per Hour  
During the Third Quarter of 1976  
for NHSC Sites in Operation 1 Year or Longer  
by HEW Region

<u>HEW region</u>	<u>Number of sites</u>	<u>Average patients an hour</u>
I	5	1.54
II	8	2.11
III	17	2.62
IV	16	1.81
V	10	1.63
VI	10	1.82
VII	5	1.86
VIII	17	1.64
IX	15	1.89
X	<u>7</u>	<u>1.95</u>
Total	<u>110</u>	<u>1.91</u>

As shown in the table on page 24, physicians assigned to 52 of the 110 sites (48 percent) which have been in operation for 1 year or more averaged 2 or fewer patients an hour. Physicians assigned to an additional 40 sites were seeing between 2 and 3 patients an hour, which is considerably fewer than the number of patients seen by the average GP or FP in nonmetropolitan areas.

Average Number of Patient Encounters per Hour  
During the Third Quarter of 1976  
for NHSC Sites in Operation 1 Year or Longer

<u>Average number of patient encounters per physician per hour</u>	<u>Number of sites by age (years)</u>					<u>Percent</u>	<u>Cumulative percent</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>		
0 to 0.50	-	-	1	-	1	1	1
0.51 to 1.00	-	3	1	2	6	6	7
1.01 to 1.50	12	3	8	-	23	21	28
1.51 to 2.00	6	8	7	1	22	20	48
2.01 to 2.50	6	4	11	-	21	19	67
2.51 to 3.00	9	3	6	1	19	17	84
3.01 to 3.50	2	3	4	1	10	9	93
3.51 to 4.00	1	-	6	-	7	6	99
4.01 and up	-	-	1	-	1	1	100
Total	<u>36</u>	<u>24</u>	<u>45</u>	<u>5</u>	<u>110</u>	<u>100</u>	<u>—</u>

Of these 110 sites, 42 (38 percent) were staffed by a single physician and the remaining 68 by 2 or more physicians. As shown in appendix IX, solo practitioners at 20 of the 42 sites were treating an average of 2 or fewer patients per hour even though half of these sites were in operation for 2 or more years. Physicians at 35 of the 42 sites were treating an average of 3 or fewer patients per hour.

Equally significant is the fact that many of the 68 NHSC sites in operation for 1 year or more, but staffed with 2 or more physicians, were also being underused. Specifically, physicians assigned to 32 of the 68 sites (47 percent) treated an average of 2 or fewer patients per hour. Physicians at 57 of the 68 sites (84 percent) treated an average of 3 or fewer patients per hour even though 71 percent of these practices were in operation for 2 or more years as shown in appendix X. While a shortage of medical services may exist in these areas, physicians assigned to most of the 68 sites were seeing fewer

patients and in some cases significantly fewer than the number seen by the average office based primary care physician in the Nation.

In many instances, shortage area residents apparently already have established patterns for obtaining health care even though the provider may be located some distance from the patient's home. In some cases, residents apparently prefer to continue obtaining care in this manner because they know or believe NHSC physicians will remain in an area for only a short period. In this regard, several NHSC physicians advised us that residents come to them only for emergency care and seek assistance for other problems elsewhere. Thus, we believe it is very important to adequately assess demand before assigning NHSC health care providers. The following examples show what happened when this was not done.

#### NHSC site in Charlotte, Michigan

This site was approved primarily on the basis of population-to-physician ratio of 4,900:1, which exceeded the NHSC criteria of 4,000:1. The service area includes 9 townships and 5 towns with 27,300 persons and 5-1/2 full-time equivalent physicians. The site is about midway between Lansing (19 miles north) and Battle Creek (27 miles south). Lansing has 380,000 persons and Battle Creek, 39,000. Schools of medicine and osteopathy are located in East Lansing (22 miles) and another school of medicine is located in Ann Arbor (70 miles).

The Charlotte application cited the need for a physician and mentioned that persons were forced to travel 20 to 25 miles for primary care and even then had difficulty in getting appointments. NHSC authorized one physician for the site on November 5, 1974. The physician began at the site in July 1975.

Despite the stated need for a physician in Charlotte and its designation as a critical health manpower shortage area, relatively few people have sought medical services at the NHSC site. For example, during the third quarter of fiscal year 1976, the physician averaged 1.66 patient encounters an hour--well below the 2.95 patients an hour average for office based primary care physicians.

Part of the low patient encounters could have resulted from the fact that another private physician located

in Charlotte between the time the site was approved and the physician reported for duty. However, it is more likely that persons in the area are obtaining services from outside the service area. The NHSC application estimated that only 60 percent of the service area residents seek care from local primary care physicians; the remainder go outside the area for care. There was no indication in the record to show how much this factor had been considered in reviewing the application or that a survey had been conducted to estimate potential demand for services.

Beginning with the 1974 recruiting effort, we were advised NHSC adopted a policy of authorizing two physicians to most sites to overcome a major disadvantage to shortage area practice--professional isolation--and to ultimately increase the number of physicians remaining as private practitioners. As illustrated in the following example, this policy can result in more physicians being assigned to a project site than warranted by the number of patients seeking care.

#### NHSC site in St. Pauls, North Carolina

This site, approved in December 1972, is located on Interstate 95 about midway between Lumberton and Fayetteville which are about 30 miles apart. The application stated both Fayetteville and Lumberton have excellent hospitals but the physicians in these areas could not take on new patients.

The application defined a service area within a 15-mile radius around St. Pauls. The population was listed as 11,000 with a high proportion being low-income minorities. Only one FP was located in the area.

The clinic opened in January 1975 with one physician and in July 1975 a second physician joined the staff. With 1 physician, the site averaged 24 patient encounters a day. After the second physician arrived, total patient encounters rose to 27 patients per day and remained constant throughout the year.

Other reasons for low use were illustrated in a letter to NHSC from two physicians who had served 2 years at a site in North Bend, Nebraska. The letter identified several reasons so few patients used the NHSC facility. The letter stated that during the first 9 months, patient load had continued to grow. However, at the end of that time it leveled

off at about 800 patients a month. The two physicians stated:

"Reasons for the lack of sufficient patient load were several. In the first place, North Bend is only 15 miles from either Fremont or Schuyler, both of which have several physicians. Dodge [a clinic about 25 miles from North Bend staffed by the NHSC physicians for 1-1/2 days a week] is approximately the same distance from West Point which also has several physicians. Before the physicians arrived, most of the residents established means of obtaining their medical care from these several areas. In view of this, it seemed unrealistic in retrospect to have more than 700 to 800 patients per month available for the clinic. \* \* \* In retrospect the underutilization of two physicians could have been predicted. The very elements which made this area attractive to the two physicians (namely: access to a large city; local, easily-available consultation with other physicians, and adequate hospital and good transportation) were the very factors that made it easy for patients to seek alternative medical care."

The physicians indicated that many patients considered them as "stopgap" medical care providers. They stated:

"In many instances we were used as the emergency physicians to take care of problems on nights and weekends until the patient's usual physician was more readily available."

NHSC statistics indicate the above cases are not isolated examples.

NHSC HAS BEEN UNABLE TO RECRUIT  
PHYSICIANS WILLING TO PRACTICE  
IN THE MORE REMOTE COMMUNITIES

Despite its increased recruitment efforts since the end of the physician draft and the positive incentives authorized by the Congress to make shortage area practice more attractive, NHSC has experienced great difficulty in recruiting physicians willing to voluntarily practice in the more remote areas of the Nation. At the end of 1975, most of these sites were located in the rural Southeast and to a lesser degree in the Midwest, Plains, and Rocky Mountain areas. Many of these areas are devoid of both medical providers and health care institutions.

According to a program official, before fiscal year 1974, NHSC relied almost exclusively on the PHS recruiting office for its physicians. Physicians recruited were primarily those choosing NHSC as an alternative to the military draft. When the draft ended, NHSC expanded its independent recruiting effort.

Several incentives have been used by NHSC in an effort designed to make service in a critical health manpower shortage area more attractive, including

- variable incentive pay of up to \$12,500 a year,
- up to 30 days paid vacation and 1-week education leave a year, and
- repayment of up to 85 percent of all education loans in return for 3 years' service in an HEW-designated shortage area. (This program is discussed in ch. 4.)

Despite these incentives, we determined using NHSC records, that 523 more physicians were needed to staff all approved sites at their authorized strength as of December 31, 1975--463 for unstaffed sites and 60 for sites partially staffed. Although the number of NHSC physicians increased significantly between July 1972 and December 1975, the identified need increased even more, as shown below.

Approved and Actual Site Staffing

	Approved sites		Fully or partially staffed sites		Number of unstaffed sites	Number of physicians needed to bring all sites to authorized strength
	Number authorized	Physicians	Number of sites	Physicians		
07/01/72	139	243	95	144	44	99
07/01/73	148	316	106	212	42	164
07/01/74	276	470	149	216	129	254
07/01/75	34	147	164	267	261	463
12/31/75	497	874	206	311	291	523

As of December 31, 1975, NHSC had been unable to staff 291 approved sites. Of these 291 sites, 261 had never been staffed. As can be seen in the following table, 62 percent of these 261 sites had been vacant for more than 1 year following approval.

Sites Approved but Never Staffed  
at December 31, 1975

<u>Months since site approved</u>	<u>Sites</u>			<u>Physicians</u>	
	<u>Number</u>	<u>Percent</u>	<u>Cumulative percentage or sites vacant over 12 months</u>	<u>Number authorized</u>	<u>Percentage</u>
0 to 6	61	23	-	103	24
7 to 12	35	13	-	55	13
13 to 18	89	34	34	151	36
19 to 24	8	3	37	16	4
25 to 30	19	7	44	27	6
31 to 36	32	12	56	46	11
37 to 42	8	3	59	12	3
43 to 48	9	3	62	14	3
Total	<u>261</u>	<u>a/100</u>		<u>424</u>	<u>100</u>

a/Does not total due to rounding.

Thirty other NHSC sites which were unstaffed at December 31, 1975, had a physician assigned at one time or another, but NHSC couldn't recruit replacements.

According to NHSC officials, unstaffed sites are in the most remote rural areas and thus are less professionally, socially, and culturally desirable than those they are able to staff. One regional NHSC official stated that gross numbers of physicians are not the problem in that the number of physicians expressing an interest in NHSC is three to four times the number needed to fill the unstaffed sites but that few of these physicians would agree to voluntarily serve in the more remote unstaffed sites. This official also pointed out that while some sites had been unstaffed for up to 4 years, others had been staffed by several different physicians during the same period.

However, the number of physicians authorized by NHSC to fill its unstaffed sites may exceed the number needed as evidenced by the low use of NHSC physicians at many sites in operation 1 year or longer.

FEW NHSC PHYSICIANS HAVE ESTABLISHED PRIVATE PRACTICES IN SHORTAGE AREAS

A major objective of the NHSC program is to develop sites into viable health care delivery systems where personnel, particularly physicians, will elect to remain after completing Federal service. Although physicians are normally assigned to

a site for 2 years, NHSC officials attempt to persuade them to remain in the same areas and establish private practices after leaving NHSC.

NHSC has not been very successful in getting large numbers of physicians to convert to private practices--a major goal of the program. From a total of about 800 physicians recruited through July 1976, only 42 remained in shortage areas as private practitioners or were planning to do so. Some communities were, however, able to recruit private physicians after an NHSC physician left, according to program officials.

NHSC officials attribute recruiting policies followed before fiscal year 1974 as the primary reason few physicians converted to private practice in the shortage area at the completion of their tours of duty. The majority of physicians hired in those early years had draft obligations and most of them had not completed their residency training. An evaluation undertaken for NHSC found that only a small number of physicians completing their 2-year tours of duty in fiscal year 1975 said they intended to remain in the community as private practitioners. Specifically, of 90 NHSC physicians contacted

- 4 planned to remain in the community as private practitioners,

- 19 planned to remain as NHSC physicians,

- 1 intended to become an employee of a community organization, and

- 66 planned to leave at the end of their 2-year tours.

Of the 66 physicians who were leaving, 63, or 95 percent, indicated they had been influenced to leave by a desire for more education and training (59 were returning to residency or advanced training). Other reasons given for leaving included professional and social isolation and personal, family, and financial needs.

As a result of the low retention rates, beginning with the fiscal year 1974 recruiting effort, NHSC began concentrating on

- recruiting physicians that had completed residency training and

--assigning two physicians to most sites.

NHSC officials hoped these policy changes would increase the number of physicians remaining in shortage areas.

Information was not readily available to fully assess how successful NHSC has been since fiscal year 1974 in recruiting physicians who had completed graduate medical training. However, data provided by a PHS official on the educational background of 202 NHSC physicians on duty as of May 1976 indicates that only 39 percent had completed graduate medical education as shown below:

<u>Medical education</u>	<u>Number</u>	<u>Percent</u>
Completed internship	92	45
Attended but did not complete graduate medical (residency) education	32	16
Completed graduate medical education (internship and residency)	<u>78</u>	<u>39</u>
Total	<u>202</u>	<u>100</u>

NEW LEGISLATION IMPOSES STRICTER  
REQUIREMENTS ON NHSC

On October 12, 1976, the President signed into law the Health Professions Educational Assistance Act of 1976 (Public Law 94-484). HPEA, among other things, requires the Secretary of HEW to establish new criteria for shortage area designations and the assignment of personnel. This legislation:

--Requires the Secretary, HEW, to establish shortage area designation criteria no later than May 1, 1977. In establishing such criteria, the Secretary must consider (1) the ratio of available health manpower to the number of individuals in an area or a population group or served by a medical facility or other public facility under consideration for designation, (2) indicators of a need, notwithstanding the supply of health manpower, with special consideration to such factors as infant mortality, access to health services, and health status, and (3) the

percentage of physicians serving such entities who are employed by hospitals and who are graduates of foreign medical schools.

- Requires the Secretary to publish no later than November 1977, a descriptive list of shortage areas and at least annually review and revise, as necessary, such designations.
- Requires the Secretary to give priority to those areas with the greatest health manpower shortages when reviewing and approving applications for assigning NHSC personnel.
- Requires the Secretary before assigning NHSC personnel to an entity which was previously assigned personnel, to determine that (1) there is a continued need for health manpower for the area, (2) previously assigned NHSC personnel were appropriately and efficiently used, (3) there is general community support for the assignment of NHSC personnel to the entity, (4) the area has made continued efforts to secure health manpower, and (5) there has been sound fiscal management, including collection of fee-for-service, third-party, and other appropriate funds by the entity with respect to previously assigned NHSC personnel.
- Requires the Secretary to submit, in his annual report to the Congress on May 1 of each year, the number of patients seen and the number of patient visits recorded in each health manpower shortage area to which an NHSC member was assigned the previous year.
- Requires the Secretary to perform studies on (1) the characteristics, including use and reimbursement patterns, of areas which have been able to retain health manpower personnel and (2) the appropriate conditions for assigning and using nurse practitioners, physician assistants, and expanded functional dental auxiliaries in health manpower shortage areas.
- Authorizes the Secretary to make one grant to an individual who has completed his/her period of obligated service in NHSC and has agreed in writing to engage in the private full-time clinical practice of his/her profession in a health manpower shortage area. Grants are limited to \$12,500 for a 1-year agreement and \$25,000 for a 2-year agreement.

If properly implemented, these new requirements should alleviate some of the problems identified during our review.

Changes made by HPEA to the Public Health and National Health Service Corps scholarship training program are discussed below.

NHSC SCHOLARSHIP PROGRAM  
SHOULD INCREASE SUPPLY OF PHYSICIANS  
FOR SHORTAGE AREAS--BUT NOT UNTIL 1979

The Public Health and National Health Service Corps scholarship training program was established to obtain physicians, dentists, and other health manpower for NHSC and other components of PHS--the Indian Health Service (IHS) and the Bureau of Medical Services. Participants received a stipend of \$6,750 a year and all tuition and fees while in medical school. They then became obligated for 1 year of service for each year of scholarship support with a minimum obligation of 2 years. At the discretion of PHS, recipients could defer active duty with PHS to complete residency training.

Until passage of HPEA, recipients were liable for repayment of the scholarship payments, tuition, and fees plus interest if they failed to serve their obligation. 1/ Repayment had to be made within 3 years.

HPEA attempts to increase the supply of physicians in health manpower shortage areas by, among other things, expanding the scholarship program from \$40 million in fiscal year 1977 to an authorization of \$200 million in fiscal year 1980. Moreover, HPEA makes several major changes to the scholarship program beginning in fiscal year 1978, including:

--Stipends will be reduced to \$4,800 a year.

--Obligated service may be performed in NHSC or, at the discretion of the individual, in private practice in a shortage area that has priority for assignment of NHSC members and has sufficient financial base to sustain such practice and provide the individual with income of not less than the income of members of the Corps.

--Where the Secretary determines there is no need for a scholarship recipient in a health manpower shortage area, the individual's obligated service

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1/Interest is not charged, however, if the scholarship recipient fails to complete his/her academic training.

may be performed as a full-time employee practicing his/her profession in any unit of HEW.

--Students failing to perform obligated service will be assessed a penalty equal to three times the amount of scholarship assistance, plus interest at the maximum prevailing rate. The repayment period will be reduced to 1 year.

--The penalty for failure to perform obligated service under the new NHSC scholarship program provides that such penalty is reduced, by considering the amount of the service obligation which an individual has completed.

Because of deferments for internships and residency training, PHS officials do not expect a substantial number of physicians to be available until fiscal year 1979, as shown below. Obligated service, before HPEA, could be performed in NHSC or in other PHS components.

Estimates of Physician Scholarship Recipients  
to be Available for Service

<u>FY</u>	<u>Number of physicians (MDs and DOs)</u>
Transition quarter	46
1977	190
1978	448
1979	876
1980	1,092

The amounts appropriated for the scholarship program and the number of scholarship recipients and year of graduation are shown on the following page.

Scholarship Program  
Funding Level and Graduates

	-----FY-----				
	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>Transitional quarter (note a)</u>	<u>1977</u>
Appropriations (millions) (note b)	\$3.0	\$22.5	\$22.5	\$22.5	\$40.0
Total scholarship recipients (note c)	372	2,465	2,262	2,238	3,627
Graduates who received scholarships (note c)		185	768	1,106	1,548

a/According to HEW, appropriations received for the transitional quarter resulting from the change in the fiscal year were used to finance the scholarships for the 1976-77 school year. Fiscal year 1977 appropriations were used to finance the scholarships for the 1977-78 school year.

b/Authorizations for fiscal years 1978 and 1979 are \$75 million and \$140 million, respectively.

c/The vast majority of these are physicians.

CONCLUSIONS

NHSC has had some success in recruiting physicians and other types of providers to serve in areas determined by HEW as having a critical shortage of health manpower. Yet, relatively few of these physicians elected to remain in a shortage area in private practice after completing Federal service, which is a major objective of the NHSC program.

In authorizing and assigning physicians to practice in these communities, NHSC relies extensively on physician-to-population ratios within the areas instead of determining the extent to which residents seek but cannot obtain health care or the extent to which residents would be willing to obtain health care from NHSC providers. This, coupled with the NHSC policy to assign two physicians at most sites to the extent possible to improve physician retention, have resulted in many NHSC physicians being underused in terms of the number of patients they were treating at sites in

operation 1 year or longer. In our opinion, if the need for health manpower in these areas was truly critical, then one would expect NHSC physicians to be extremely busy or at least as busy as the average primary care physician practicing in a nonshortage area.

NHSC has experienced difficulty in recruiting physicians willing to voluntarily practice in the more remote and isolated communities in the Nation. Consequently, many of these NHSC sites have remained unstaffed for periods ranging up to 4 years. NHSC recruiting efforts have not attracted physicians willing to voluntarily practice in the more remote and isolated areas and the scholarship program has not begun to produce sufficient numbers of physicians with service obligations to make up the deficit.

As pointed out in this report, however, many NHSC physicians practicing in HEW designated health manpower shortage areas are not seeing very many patients. This raises serious questions to us concerning the extent of unmet demand for health care that exists in some of these areas and, therefore, the number of additional physicians with scholarship commitments that will be needed to serve in HEW shortage areas.

HPEA imposes stricter requirements on NHSC which, if properly implemented, should alleviate some of the problems identified during our review. At the same time HPEA attempts to increase the supply of physicians in health manpower shortage areas by, among other things, expanding the NHSC scholarship program from \$40 million in fiscal year 1977 to an authorization of \$200 million in fiscal year 1980. Beginning in fiscal year 1979 and thereafter, several hundred physicians who are recipients of Federal scholarships will become available annually to fulfill their shortage area service obligation. In order to avoid a similar situation from occurring, where these physicians also see few patients, NHSC needs to more accurately identify the staffing requirements at each site.

#### RECOMMENDATIONS

We recommend that the Secretary of HEW, in implementing the provisions of the Health Professions Educational Assistance Act of 1976 discussed on pages 31 and 32:

- Develop guidelines for assessing under what circumstances it would be appropriate to assign health care providers to entities requesting NHSC assistance and the number and type of provider(s) that would be most appropriate.

- Reconsider the policy of assigning at least two physicians to each site and explore other alternatives to overcome the problem of professional isolation.
- Require that communities and other entities requesting NHSC health care providers conduct studies which identify, to the extent possible, the number and types of residents located therein who are likely to seek care from an NHSC sponsored practice.
- Verify the above information, to the extent possible, before assigning health care providers to the applicant.
- Develop multiyear projections on (1) the total number of physicians required for service in HEW-designated shortage areas, (2) the number of physicians with present scholarship commitments who are likely to become available for shortage area service, (3) the number of physicians with scholarship commitments likely to remain in the shortage areas, (4) the number of physicians who will voluntarily choose to establish a practice in HEW-designated shortage areas, and (5) based on the above data, the total number of additional physicians needed taking into consideration, to the extent possible, use of physician extenders for providing health care in these areas.

#### AGENCY COMMENTS AND OUR EVALUATION

HEW advised us it is also concerned about the possible underuse of Corps physicians and stated it must consider alternative health care delivery modes or staffing requirements for designated shortage areas eligible for NHSC assistance but which cannot sustain full-time medical practices or retain physicians. HEW expects some progress toward improved use to occur as major barriers to the effective use of physician extenders (i.e., eligibility for reimbursement and limitations of licensure) are reduced. In addition, HEW said that existing sites will not be continued if sufficient support for the Corps project has not been demonstrated over the period of Corps involvement.

HEW concurred with the recommendation that it develop guidelines for assessing under what circumstances it would be appropriate to assign health care providers to entities requesting NHSC assistance and the number and type of provider(s)

that would be most appropriate. HEW advised us that action to accomplish its purposes is being taken in accordance with requirements of HPEA. Specifically, HEW mentioned that (1) a major reevaluation of the criteria used for designation of shortage areas has been undertaken and a public notice of related regulations has been proposed and (2) new regulations relating to assignment of personnel also are being prepared.

HEW added, it is important to note, as discussed on page 31, that HPEA requires that practitioner-to-population ratios, infant mortality, and other indicators of health status be specifically included as factors to be considered in establishing criteria for designation of shortage areas. The implication, according to HEW, is that the Congress wished "need" for health services to be the primary determinant for designation rather than unmet demand. HEW stated, however, that the criteria it has developed do reflect shortage levels rather than adequacy levels, based upon its realization that the use of "ideal" standards in determining staffing levels could easily result in underuse of Corps physicians.

As discussed on page 31, HPEA requires the Secretary of HEW to establish new shortage area designation criteria no later than May 1, 1977, and to publish no later than November 1977, a descriptive list of designated shortage areas. On January 10, 1978, HEW published its revised criteria for designation of health manpower shortage areas required under HPEA as interim-final regulations in the Federal Register. Interested parties were given until February 24, 1978, to comment on the new criteria. HEW also prepared a preliminary list of possible shortage areas and disseminated them for review and comment on January 17, 1978.

HEW, after consideration of these comments, will then designate and publish the resulting first list of health manpower shortages under HPEA. Entities designated as health manpower shortage areas pursuant to these criteria then become eligible to apply for the assignment of NHSC health practitioners to provide health services in these areas.

While the new designation criteria developed by HEW is a step in the right direction, it will not in itself solve the problem of underuse of Corps physicians. We learned, as discussed in this chapter and by HEW in its comments, that in many instances shortage area residents are apparently reluctant to change their pattern of obtaining health care even though the provider they use may be in another service area located some distance from their homes. Therefore,

before assigning Corps physicians and other health care providers to areas requesting NHSC assistance, HEW will still need to determine how many of the shortage area residents are likely to use the NHSC sponsored practice to avoid underuse of Corps physicians and other health care providers.

HEW did not agree with the recommendation that it reconsider the policy of assigning at least two physicians to each Corps site and that it explore other alternatives to overcome the problem of professional isolation, because HEW said there is now no policy requiring assignment of at least two physicians to each site. HEW stated, however, it does attempt to avoid solo physician placements and has attempted to supplement physicians with physician extenders (i.e., physician assistants or nurse practitioners) in those sites where it was felt unlikely that patient loads would require the services of two physicians. HEW said that one of the reasons for "pairwise" staffing of Corps sites has been that such staffing might improve retention of personnel.

HEW further stated that the primary emphasis of NHSC is on development of health care systems that incorporate the concept of a critical mass of providers for a given shortage area. HEW views assignment of physicians into such systems as a more significant means of overcoming professional isolation than other Corps strategies such as access to film libraries, linkages with teaching hospitals, and the use of tape cassettes, although the Corps also employs most of these other means of overcoming professional isolation.

Although HEW said it now has no policy requiring assignment of at least two physicians to each site, we were told by Corps headquarters and regional office officials during our review that NHSC adopted a policy of assigning two physicians to most sites to the extent possible to avoid professional isolation and to provide for backup support. Moreover, an NHSC regional office official informed us that physician extenders are not normally assigned to Corps sites unless the community specifically requests their assignment and that a waiver from NHSC headquarters was required in order to assign only one physician to a site. Furthermore, in testimony concerning the NHSC program before a Subcommittee of the House Committee on Appropriations in February 1978, the Administrator of the Health Services Administration stated that HEW started with solo practices but found this approach did not work nearly as well as having two or more physicians in a practice setting and that HEW is emphasizing this type of program to the exclusion of the solo practice in the future.

At the time of our review, over 60 percent (68) of the 110 NHSC sites in operation for 1 year or longer were staffed by two or more physicians. Many Corps physicians practicing at these sites, however, were being underused. Therefore, our overall concern was that NHSC revise its staffing philosophy to provide for assigning two or more physicians at a site only when anticipated patient load at the NHSC sponsored practice indicates additional staffing is clearly warranted and that HEW explore other alternatives to overcome professional isolation and improve retention.

In HEW's view, the productivity of Corps sites and their retention records should be evaluated together in judging overall effectiveness of the Corps program. On this basis, it appears to us that the Corps program has not been very effective overall since we determined during our review that (1) only relatively few NHSC physicians converted to private practice or planned to do so which is a major goal of the program and (2) NHSC physicians were not treating very many patients relative to private practitioners.

Specifically, at the time of our review, only 42 of about 800 physicians recruited through July 1976 remained in shortage areas as private practitioners or were planning to do so. Moreover, the average NHSC physician who has been in practice for 1 year or more sees only 1.9 patients per hour, which is fewer than the average office based primary care physician in the Nation sees (2.95 per hour) and considerably fewer than the average GP or FP located in the nonmetropolitan area sees (3.85 per hour).

In HEW's opinion, the above comparisons of NHSC physicians' workloads with private practitioners' is not equitable as NHSC physicians are relatively new to the practice of medicine, whereas the other group includes a disproportionate number of physicians with established practices. We agree it would be more equitable to compare NHSC practices to those of other new physicians opening their own practices. However, HEW was unable to identify any studies that would permit such comparisons.

HEW said that its review of our analysis of the average number of patients seen by NHSC physicians shows that those assigned to 47 percent (28 of 60) of the sites saw more than two patients per hour in the first 2 years of operation, while physicians assigned to 60 percent (30 of 50) of the sites attained this level in the second 2 years of operation (see p. 24). According to HEW, overall, this indicates a substantial increase in productivity as NHSC sites mature. Even if significant productivity increases occurred at NHSC sites

in their second 2 years of operation, NHSC physicians assigned to 62 percent (31 of 50) of the sites in their second 2 years of operation were seeing on the average only 2.5 or fewer patients per hour. This represented fewer patients, and in some cases significantly fewer patients, per hour than the number seen by either the average office based primary care physician in the Nation or the average GP or FP located in a nonmetropolitan area.

HEW, in effect, took exception with our view that if the need was truly critical for medical care in HEW-designated critical health manpower shortage areas, then one would expect NHSC physicians to be extremely busy or at least as busy as the average primary care physician practicing in a nonshortage area. According to HEW, underserved areas may not generate the level of demand for medical services which might be expected on the basis of their population size. Specifically, HEW said that:

"Persons residing in areas of long-term shortage tend to modify their behavior by cutting back on their consumption of health services and by finding providers in other service areas. In fact, studies suggest that persons who have not had a regular source of care take some time learning to seek health care in nonurgent situations. Also, people consider whether to change from using services available on a relatively permanent basis in another area, to using services in their own areas that may be there only temporarily."

If health services are in fact available to residents in another service area and these residents are reluctant to change their pattern of obtaining care, then we believe HEW should reconsider the need for authorizing and assigning NHSC health care providers to practice in such communities even though the entities have otherwise met HEW's health manpower shortage area designation criteria. Moreover, HEW said that

"There are other factors affecting NHSC physicians' workload. Because most NHSC sites are located in areas with a small population base, the actual number of people requiring medical care would be lower than in more populous areas. The backlog of unmet medical needs of individuals in health manpower shortage areas may be so great as to require more extensive physician-patient contact at the outset, with special attention on a continuing basis to

preventive services that can reduce need for hospitalization and other more costly care. Even under optimal circumstances initial visits by a patient require considerably more time to gather a history and to assess health level than do subsequent visits."

We recognize that it takes a period of time to establish a new practice and for that reason we excluded NHSC sites in operation less than 1 year from our analysis. Therefore, Corps physicians who were not being fully used at the time of our review were those practicing at NHSC sites in operation 1 year or longer with some sites in operation up to 4 years.

According to HEW, a more appropriate measure of staff utilization is the number of "health service units" delivered at the time of a patient visit. HEW mentioned, in this regard, that a recent study, conducted by the Bureau of Community Health Services, shows that productivity when measured by encounters, patient visits, or "health services units" delivered, increased significantly between NHSC sites in operation for 4 years when compared to those in operation for 2 years.

This was a special HEW study completed at the end of March 1977 involving NHSC site costs and charges relative to site age, staffing, and prevailing area charges. It consisted of a sample of 62 sites which were stratified into age groups based on the date they were first staffed. Several analyses were performed including calculations on (1) the mean number of total encounters per site and (2) the number of mean encounters per provider per site by site age for the third quarter of fiscal year 1976.

Although the HEW study showed a greater number of total mean encounters reported for sites in operation for 4 years as opposed to those in operation for 2 years (2,310 vs. 1,850 encounters), total mean encounters dropped off substantially for sites in operation beyond 4 years (1,676 encounters). Moreover, this study showed relatively little difference in patient encounters per provider assigned to those sites.

A possible solution stated in the HEW study for reducing the average cost per encounter at Corps sites was that NHSC revise its staffing philosophy of placing several physicians at a site until a substantial rise in patient encounters clearly shows such additional staffing to be clearly warranted. It was also suggested that more thorough studies should be performed of individual site needs before placing NHSC supplemental providers.

HEW also referred to a recent study 1/ which it contends contains encouraging statistics on the number of patients treated. While recognizing that this study found that a substantial portion of the 90 Corps physicians surveyed (1 in 3) expressed the view that they were seeing too few patients daily, HEW pointed out that 79 percent of these physicians believed their practices were generating an excellent or adequate amount of income. These NHSC physicians were then asked if their practices had the potential to generate an income level commensurate with their salary expectations as a private practitioner. Of the 87 physicians responding to this question, only 21 percent (18) responded clearly yes, while 51 percent (44) responded yes, but not at that time, and 29 percent (25) responded no.

We believe these two studies referred to by HEW further illustrate the point that a need exists for HEW to adequately assess potential patient demand for health care before assigning NHSC health care providers.

HEW concurred with the intent of the recommendation to require communities seeking NHSC assistance to conduct studies which, to the extent possible, identify the number and type of residents located therein who are likely to seek care from an NHSC sponsored practice. However, HEW questioned its practicality and although it agreed that it would be better to do so stated it was not clear how to make such a determination.

HEW further stated that if a method of determining demand were chosen from among those currently available, an enormous data collection effort would be required. According to HEW, it does not seem feasible to place such a burden on local communities which usually do not have the resources to undertake such a study.

HEW mentioned that health systems agencies and other health planning agencies, under the National Health Planning and Resources Development Act of 1974, have as one of their responsibilities undertaking studies of unmet demand for services. HEW further stated that under the new NHSC authorizing legislation, the designation and site approval processes both depend strongly on these planning agencies' evaluations of need. In the designation process, health planning agencies will be asked to evaluate the

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1/Family Health Care, Inc., study "Retention of National Health Service Corps Physicians in Health Manpower Shortage Areas," February 1977.

size of a potential site's service population and consider accessibility to nearby resources. In the site approval process, comments of the planning agencies are required to be solicited and taken into account.

We recognize that requiring communities to conduct studies in an attempt to estimate potential demand from an NHSC sponsored practice may place a burden on the local community and possibly require additional data collection. We also recognize the role outlined for the health planning agencies in both the designation and site approval process.

Nevertheless, we believe that in addition to obtaining comments of the planning agencies in the site approval process, it is both practical and necessary for HEW to require designated shortage area communities to justify the need for NHSC health practitioners by conducting studies designed to estimate expected potential demand for medical care from an NHSC sponsored practice. This is important since many areas in the Nation may have insufficient people seeking care to justify a full-time medical practice staffed by a single physician and it is likely some areas could not even sustain or justify a physician extender. We further believe that HEW should be in a position by now to provide the necessary technical assistance to the designated shortage area communities to conduct such studies. In the absence of such information, HEW will remain unable to assess whether the designated shortage area community can sustain or fully use NHSC health care providers or the number and type of provider(s) that would be most appropriate for each particular shortage area.

In this regard, we noted that the North Carolina Rural Health Center program conducts market studies to determine the community's health care needs and potential demand for medical services. As discussed beginning on page 89, potential patient visits are estimated based on the service area population and national statistics for the average number of primary care visits by residents of rural areas. Recognizing that not all the service area's population will demand care from the proposed North Carolina Rural Health Center program, the original patient visit estimate is adjusted for such factors as (1) alternative sources of primary care, (2) traffic flow patterns, (3) the age of nearby physicians, and (4) the amount of time people must wait to see a physician.

We are also recommending that HEW verify information to be developed by communities on the number and type of persons likely to seek care from NHSC sites before assigning physicians or other health practitioners. HEW responded

that NHSC always verified data on expected demand for services. Initial verification, according to HEW, is done by the State Planning Agency or the Health Systems Agency at the time designation of the shortage area is made. Following receipt of an application for assignment of NHSC staff, HEW stated, its regional office staff visits the applicant community to verify information presented in the application.

Nevertheless, during our review we noted that in authorizing and assigning physicians to practice in these communities, NHSC relied extensively on physician-to-population ratios within the areas instead of determining the extent to which residents would be willing to obtain health care from NHSC providers. Likewise, we noted that applicants seeking health manpower through NHSC are not required to develop or submit such information. Also, HEW officials in two regional offices informed us that they do not have the resources to conduct studies of health care needs and the expected patient demand at potential NHSC sites.

Furthermore, in response to the preceding recommendation that communities requesting NHSC assistance be required to conduct studies to determine the number and type of residents likely to seek care from Corps providers, HEW stated it was not clear how to make such determinations. HEW also questioned the practicality of such studies, stating that it does not seem feasible to place such a burden on local communities that may not have the necessary resources. This response by HEW further indicates that detailed studies of health care needs and expected patient demand are not normally developed before assigning NHSC health care providers and, therefore, could not be verified by NHSC.

HEW concurred with the recommendation that it develop multiyear projections on (1) the total number of physicians required for service in HEW-designated shortage areas, (2) the number of physicians with present scholarship commitments who are likely to become available for shortage area service, (3) the number of physicians with scholarship commitments likely to remain in the shortage area, (4) the number of physicians who will voluntarily choose to establish a practice in HEW designated areas, and (5) based on the above data, the total number of additional physicians needed taking into consideration, to the extent possible, use of physician extenders for providing health care in these areas. HEW advised us it already has compiled much of this information and that additional studies are now being conducted. According to HEW, as increasing numbers of these scholarships go to students in their first or second year of training, the average number of years of obligated service per recipient will rise.

## CHAPTER 4

### HEALTH PROFESSIONS EDUCATION LOAN REPAYMENT PROGRAM

#### HAS HAD LITTLE IMPACT IN ATTRACTING

#### PHYSICIANS TO SHORTAGE AREAS

One Federal program designed to help alleviate the geographic maldistribution of physicians and other health professionals is the health professions education loan cancellation/repayment program, first authorized in 1965. The legislation provided initially for canceling health profession loans and subsequently for repaying educational loans in return for an individual's agreement to practice in a designated health manpower shortage area.

The program is completely voluntary, and very few eligible medical and osteopathic school graduates have participated in the program since it began. Moreover, the majority of those who have participated through February 1976 would probably have established practices in those shortage areas anyway. Thus, it seems that many received windfall cancellation or repayment of their education loans by the Federal Government.

#### LOAN CANCELLATION PROGRAM

The Health Professions Education Assistance Amendments of 1965 (Public Law 89-290) initially authorized the cancellation of loans for shortage area practice. The amendments provided that borrowers who practiced in areas certified by the State health authority as having a shortage of the borrowers' professional skills could have up to 50 percent of their health professions loans canceled at a rate of 10 percent for each year of practice in such an area. The Allied Health Professions Personnel Training Act of 1966 (Public Law 89-751) liberalized this program and authorized the cancellation of loans at a rate of 15 percent a year, up to a maximum of 100 percent for service in poor rural areas.

Under both provisions, the appropriate State health authority determined the student's eligibility for cancellation. Upon completion of each 12 consecutive months of eligible practice, the State health authority certified to the medical school making the loan that the borrower had met all requirements for entitlement to cancellation. The school determined the amount of principal and interest to be canceled and credited it to the borrower's account.

Results of prior GAO review

In a prior GAO review, <sup>1</sup>/ we evaluated the loan cancellation program and concluded that it had not been effective in attracting physicians and dentists to shortage areas. Of an estimated 30,000 medical and dental school graduates receiving health professions loans between 1965 and 1972, only 219 (86 physicians and 133 dentists) had obtained loan cancellation by practicing in a designated shortage area as of October 1973. Most of those receiving loan cancellations, apparently were not motivated to locate in shortage areas by the loan cancellation provisions.

During our past review, we sent questionnaires to 133 physicians and dentists who had had loans canceled as of May 1973 and asked whether they would have chosen the same locations for practice, even if loan cancellation provisions had not been available. A total of 137--82 percent of the 167 who responded--said they would have.

Officials at several schools visited said the loan cancellation provisions did not provide enough financial incentive to attract physicians and dentists to practice in shortage areas. Some believed that loan cancellation could be an incentive if the debt of the students was considerably higher. An HEW Health Program Memorandum, printed in the Congressional Record July 24, 1973, pointed out that graduating physicians and dentists were about \$7,000 in debt, on the average. According to the memorandum, if that level of debt were increased to around \$20,000 to \$30,000, the possibility of having it forgiven could be a genuine incentive to consider shortage area practice.

MORE LIBERAL LOAN REPAYMENT  
PROGRAM AUTHORIZED IN 1971

More liberal financial incentives were authorized to encourage health professionals to locate their practices in shortage areas under the 1971 Comprehensive Health Manpower Training Act (Public Law 92-157). Under the act, the Secretary of HEW is authorized to repay 60 percent of all qualifying educational loans obtained by a student in exchange for an agreement to practice for at least 2 years in a designated shortage area. If the individual agrees to practice

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<sup>1</sup>/"Congressional Objectives of Federal Loans and Scholarships to Health Professions Students Not Being Met" (B-164031(2), May 24, 1974).

in the area for a third year, the Secretary is authorized to repay an additional 25 percent for each educational loan.

Health manpower shortage areas for the purpose of the loan repayment program are designated by the Secretary of HEW after consultation with the appropriate State health authority based upon consideration of the following factors:

- The latest reliable statistics on numbers of health professionals, practitioners, and the population to be served by such practitioners.
- Inaccessibility of medical services to residents of the area.
- Particular local health problems.
- Other pertinent factors.

HEW chose a population to physician ratio of 1,500:1 as representing the dividing line between those counties in the Nation with an apparent inadequate number of practitioners and those counties with an apparently adequate number of practitioners. HEW considers all MDs or DOs active in patient care. <sup>1/</sup> It should be noted that the 1,500:1 ratio was not based upon any study but rather was based upon the professional opinion of HEW officials and represented about twice the national ratio.

HEW designated about 2,400 counties or portions of counties as loan repayment shortage areas as of September 30, 1977. This includes about 78 percent of the 3,084 counties in the United States. Included were 1,106 areas which were also designated as critical health manpower shortage areas for purposes of NHSC under section 329(b) of the PHS Act as amended. According to HEW, 18,261 physicians were needed as of September 30, 1977, to bring these areas out of the shortage category.

#### Impact of loan repayment program

The more liberal loan repayment provisions have not been an effective inducement to shortage area practice. Since the

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<sup>1/</sup>This should not be confused with the ratio established by HEW for NHSC, which considers only primary care physicians and general surgeons who spend 50 percent or more of their time in primary care.

more liberalized program became operational in 1977 through 1977, we estimate that about 45,000 physicians graduated with outstanding educational loans and were eligible for loan repayment. Yet, as of October 31, 1977, only 762 physicians (about 1.7 percent of those eligible) have participated in the program, as shown below.

Physicians Participating in  
Liberalized Loan Repayment Program

<u>FY</u>	<u>Number of participants (note a)</u>
1974	83
1975	216
1976	267
Transitional quarter	65
1977	130
<u>b/1978</u>	<u>1</u>
Total	<u>762</u>

a/Includes MDs and DOs.

b/As of October 31, 1977.

We sent questionnaires to 393 physicians who had participated in the loan repayment program through February 1976 and asked whether they would have chosen the same practice locations if loan repayment had not been available. As can be seen in the following table, loan repayment did not appear to be a significant factor in influencing physicians in private practice or in either NHSC or IHS to enter shortage areas. Of the 326 who responded to our questionnaire, 251 (77 percent) said they would have chosen the same locations even if loan repayment had not been available, 52 (16 percent) stated loan repayment had been a major factor in their choices of shortage area practice locations, and the remaining 23 did not respond to the question.

Extent to Which Loan Repayment was a Factor in  
Selection of Shortage Area Practice Location

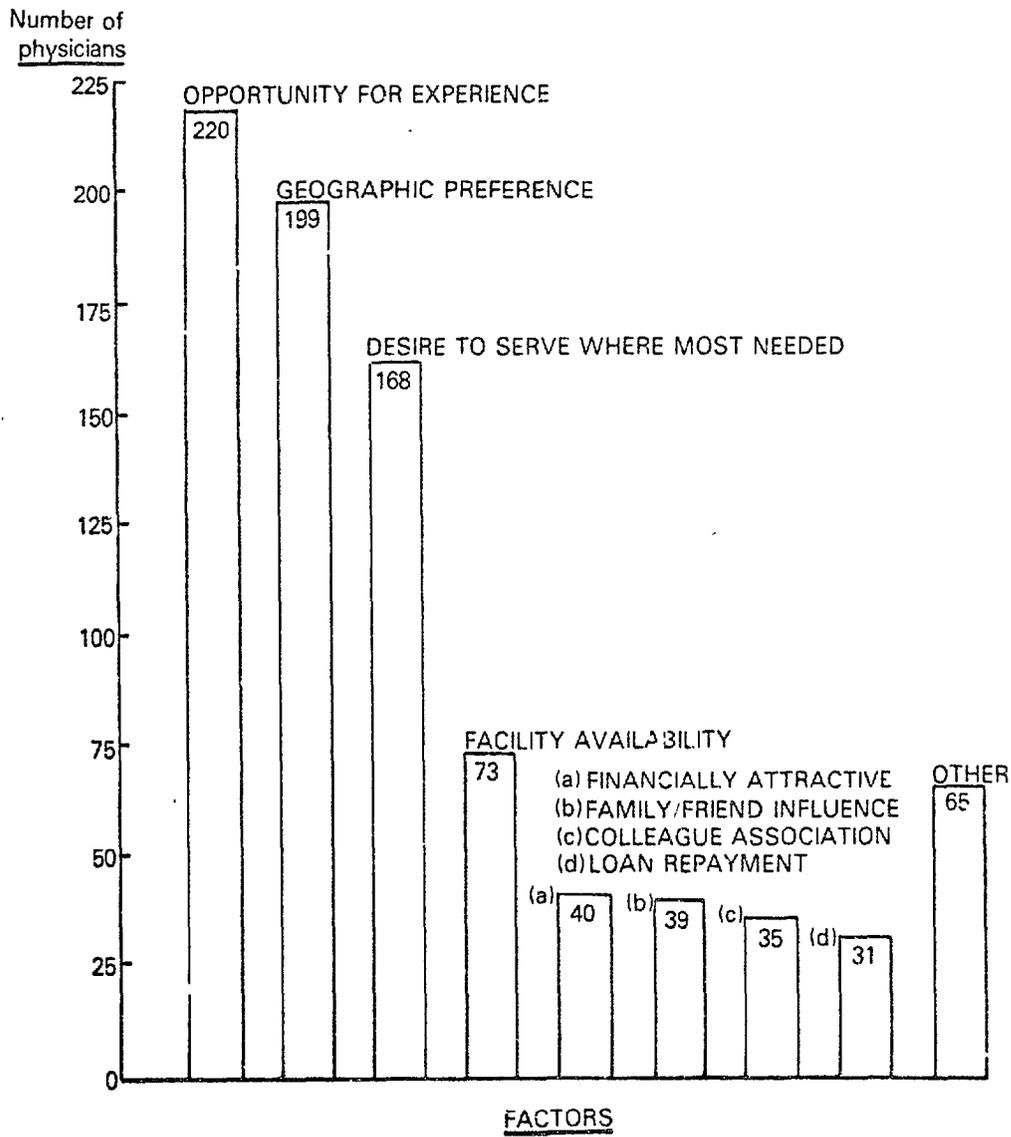
	Number in NHSC or IHS	Number in private practice	Total	Percent of total
Number responding that loan repayment was a major factor	43	9	52	16
Number responding they would have chosen same locations if loan repayment had not been available	187	64	251	77
Number not responding to question	<u>20</u>	<u>3</u>	<u>23</u>	<u>7</u>
Number of physicians responding to GAO questionnaire	<u>250</u>	<u>76</u>	<u>326</u>	<u>100</u>

In listing the factors that had influenced their location choices, the respondents ranked loan repayment eighth out of eight factors. They indicated that (1) the opportunity for a wide range of experiences, (2) the preference for particular geographic locations, and (3) a desire to serve where most needed were the factors which had most influenced them in choosing their practice locations. The graph on page 51 shows the relative importance of each factor which influenced physicians' choices of location. The number of physicians who ranked each factor first, second, or third in importance was considered in developing the graph.

Physicians are still unaware of loan  
repayment provisions when they graduate

In our May 24, 1974 report, we attributed the negligible impact of the loan cancellation program, in part, to the lack of graduates awareness about the program. We recommended that HEW establish procedures to insure that participating schools make students fully aware of loan cancellation provisions before they graduate. In responding to this recommendation in April 1974, HEW stated, in part, that

PHYSICIANS RANKING OF FACTORS WHICH INFLUENCED  
THEM TO PRACTICE IN SHORTAGE AREAS



"Each school will be required to conduct an exit interview \* \* \* with each student participating \* \* \* and document in the student's folder that the student is aware of the loan repayment provision as well as loan cancellation provisions."

To determine the extent to which this problem had been corrected, we asked 393 physicians participating in the loan repayment program when they had become aware of the repayment provisions. Two hundred and twenty of the 326 who responded to this question stated they had learned of the repayment provisions after they had graduated from medical school. Equally significant is the fact that 94 physicians, or 29 percent of those taking advantage of the loan repayment program, learned of the program after they were already in practice, as shown below.

When Physicians Responding to GAO Questionnaire

Learned of Loan Repayment Program

	Physicians in NHSC and IHS	Physicians in private practice	Total	Percent of total (note a)
While in medical school	66	30	96	29
During exit interviews with their financial aid advisors	5	-	5	2
While they were interns or residents	105	21	126	39
After they were in practice	69	25	94	29
No response	<u>5</u>	<u>-</u>	<u>5</u>	<u>2</u>
Total	<u>250</u>	<u>76</u>	<u>326</u>	<u>100</u>

a/Does not total due to rounding.

Based on the above, HEW's efforts to make medical students aware of this program have apparently not been very effective.

What level of indebtedness is necessary for loan repayment to constitute an incentive for shortage area practice?

At the time of our review, HEW officials still believed that an average outstanding debt for graduating physicians would have to be increased to about \$20,000 to \$30,000 for loan repayment to be a genuine incentive to consider shortage area practice. They point out that the increased cost of attending medical school has resulted in increased student indebtedness, which has contributed to greater physician participation.

Although the average outstanding loan indebtedness of physicians participating in the loan repayment programs has increased over the last several years, it has not increased to the level considered by HEW to constitute a genuine incentive for shortage area practice. The average amount of outstanding loan indebtedness of the 393 physicians participating in the loan repayment program through February 1976 amounted to \$5,600. Only 2 of these 393 physicians had debts over \$20,000. In responding to our questionnaire, one of these two physicians stated that loan repayment had greatly influenced his practice location choice but also said he had learned of the program after he was already in practice. Therefore, it is doubtful that loan repayment influenced his choice. The other physician responded that loan repayment was a weak factor in his practice location choice.

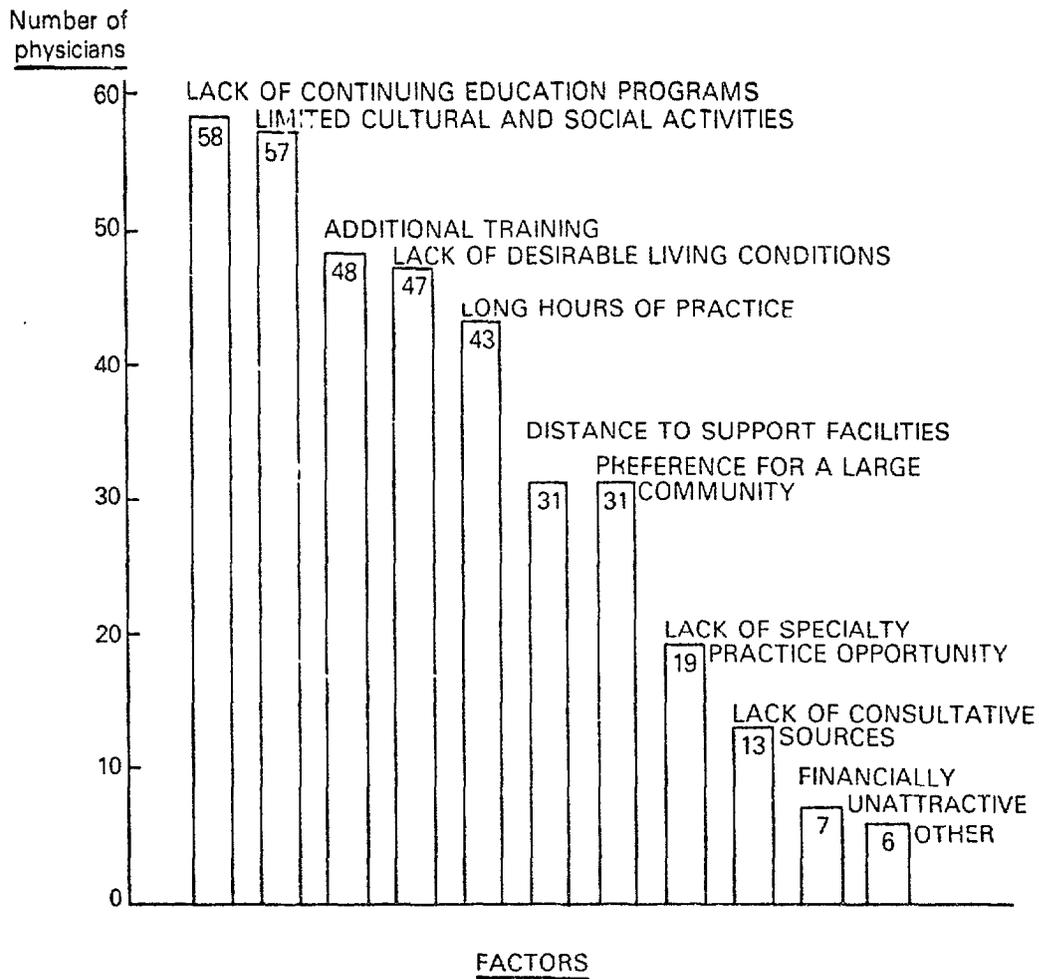
In December 1977, HEW estimated the average amount of loan indebtedness to be \$8,100 for physicians who had participated in the program from March 1976 through October 1977 and that about eight physicians had debts over \$20,000.

Why physicians leave shortage areas

The reasons physicians give for leaving rural areas relate primarily to lifestyle preferences and professional considerations. (The number of survey respondents in low-income, inner-city areas was not large enough to rank their responses.) To show the relative importance of each of the reasons for leaving, we compared the number of physicians who ranked each factor first, second, or third in importance. As shown on page 54, limited cultural and social activities and the lack of continuing professional education were the most frequent reasons given by survey respondents.

The reasons given for leaving shortage area practice seems to reflect a general feeling of isolation, both professional and cultural, that often accompanies practice in

## PHYSICIANS RANKING OF REASONS FOR LEAVING RURAL AREA PRACTICES



rural areas. These responses point out problems not addressed by the loan repayment program, which provides only an economic incentive for practice in a shortage area.

#### IMPACT OF 1976 ACT ON LOAN REPAYMENT PROGRAM

The Health Professions Educational Assistance Act of 1976 made several major revisions to the loan repayment program. Under HPEA, loan repayment was limited only to loans under the "Health Professions Student Loan Program." Loans to medical and osteopathic students were restricted only to students in exceptional financial need. Amendments made to HPEA by Public Law 95-83, enacted August 1, 1977, revised the provision that loan repayment be limited only to loans under the "Health Professions Student Loan Program" to allow such repayment of "other educational loans" that were received under a written loan agreement entered into before October 12, 1976. The amendments also provided a maximum on the amount repayable of \$10,000 per year or \$50,000 in all.

#### Federally Insured Health Professions Loan Program

HPEA also authorized a new program of federally insured loans beginning in fiscal year 1978, which may be repaid in return for service in a shortage area. Under this program, medical and osteopathic students and other health professionals may borrow up to \$10,000 a year to a maximum of \$50,000. Loans may be used for tuition and other reasonable educational expenses. No more than 50 percent of the students in each medical, osteopathic and dental school are eligible to receive federally insured loans. Interest is payable by the student throughout the life of the loan at a rate not to exceed 10 percent. <sup>1/</sup> The loan principal is repayable over a 10- to 15-year period starting 9 to 12 months after completion of training except that payments of principal would not be required during periods of up to 3 years of internship or residency training or service in the Armed Forces, Peace Corps, NHSC, or Vista Volunteer program. To help finance a student insurance loan fund to cover those costs, students would be charged, in addition to interest charges, a premium not to exceed 2 percent of the unpaid principal of their loans.

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<sup>1/</sup>The Health Professions Education Amendments of 1977, enacted December 19, 1977 (Public Law 95-215), revised the interest rate payable by the student not to exceed 12 percent.

At the Secretary of HEW's discretion, borrowers may enter into an agreement with HEW for repayment of these federally insured loans, plus interest, of not more than \$10,000 a year for each year of service in an HEW-designated health manpower shortage area. The minimum service is 2 years.

There is no way to estimate at this time the number of students who will borrow funds under either the Health Professions Student Loan Program or the Federally Insured Student Loan Program. Moreover, there is no way to estimate how many physicians, if any, the Secretary will permit to practice in shortage areas in exchange for repayment of their federally insured student loans.

### CONCLUSIONS

While more physicians have participated in the loan repayment program since it was liberalized in 1971, few indicated that the program had influenced their choices of practice locations. Moreover, most indicated they would have chosen the same shortage area practice locations had the program not been available. Consequently, the more liberal loan repayment program does not seem to have been a significant factor in encouraging physicians to voluntarily serve in health manpower shortage areas--either in private practice or in NHSC or IHS. Moreover, many physicians participating in the loan repayment program did not learn of the program until after they had already located their practice in shortage areas. Thus it seems that these physicians received a windfall through cancellation or repayment of their education loans by the Federal Government.

HEW believes that the average outstanding debt for graduating physicians would have to be increased to between \$20,000 and \$30,000 for loan repayment to be a genuine incentive for shortage area practice. Yet, only an estimated 10 of the 762 physicians participating in the loan repayment program from inception through October 31, 1977, had debts in this range. With costs of medical education continually increasing, students' outstanding indebtedness will also likely increase. The extent to which this will influence physicians to take advantage of this program and locate in health manpower shortage areas is unknown.

In our view, it is doubtful that a separate loan repayment program is still needed to attract physicians to shortage areas in view of the (1) expanded NHSC scholarship program and number of physicians expected to be available for shortage area service discussed in the previous chapter and

(2) discretion available to the Secretary of HEW under HPEA to repay the newly authorized federally insured health professions student loans.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress reconsider whether the loan repayment program for physicians should be continued, since

- it has not induced substantial numbers of physicians to enter shortage areas and
- it seems that many physicians participating in the program received windfall repayment of their education loans by the Federal Government since they would have established their practice in those shortage areas anyway.

## CHAPTER 5

### AREA HEALTH EDUCATION CENTERS: LONG-TERM POTENTIAL

#### FOR IMPROVING GEOGRAPHIC MANPOWER DISTRIBUTION

The AHEC Program provides selected university health science centers financial assistance to change their educational programs to more effectively meet locally defined health manpower needs, including increasing the availability of health care providers. The program began in late 1972 when HEW signed contracts with 11 medical schools for developing AHECs in various parts of the country.

The long-term nature of the program, lack of clearly defined national strategies, different developmental stages, varying organizational structures, and diversity of program strategies among the 11 AHECs, make identifying and assessing the program's impact difficult. Nevertheless, we believe the program conceptually has considerable long-term potential to improve health manpower distribution. AHECs remote from the medical school, which train medical residents and other health care providers, and provide contact with an academic health center as well as continuing education to practicing physicians, appear to overcome some of the important professional objections to shortage area practice discussed in chapter 2.

The term "area health education center" was used by the Carnegie Commission on Higher Education in its 1970 report, "Higher Education and the Nation's Health: Policies for Medical and Dental Education." The commission reported that the United States faced a serious health manpower shortage that was compounded by the maldistribution of existing manpower. Areas cited as experiencing the greatest problems were rural and inner-city communities. The commission viewed health science centers as instruments for overcoming the problem, provided they shifted some emphasis away from scientific excellence and toward meeting local health manpower requirements. The report called for reform and innovation within the medical education process to more effectively address health manpower, and therefore, health care delivery problems in the surrounding areas.

The commission recommended the creation of 126 AHECs at strategic locations across the country, to allow medical education institutions to assist surrounding communities. The commission stated that:

"Each of these [AHECs] would be at a local hospital. The centers' educational programs would be administered by university health science centers. They would train medical residents and M.D. and D.D.S. candidates on a rotational basis; they would carry on continuing education for local doctors, dentists, and local health care personnel; they would advise with local health authorities and hospitals; they would assist community colleges and comprehensive colleges in training allied health personnel; and, in other ways, they would help improve health care in their areas."

AUTHORIZING LEGISLATION  
AND PROGRAM DEVELOPMENT

In late 1971 the Congress passed the Comprehensive Health Manpower Training Act of 1971 (Public Law 92-157), which established the Health Manpower Education Incentive Awards Program. The broad purpose of this authority is to improve the distribution, supply, quality, use, and efficiency of health personnel and subsequently enhance the health services delivery system. The AHEC program has been funded under this broad authority.

The responsibility for developing the AHEC program was assigned to what is now the Bureau of Health Manpower, Health Resources Administration, of HEW. The Bureau received proposals from over 90 medical schools and selected 11 for initial AHEC projects. Federal funds totaling \$66 million were committed for an initial 5 years (fiscal years 1973-77) to the 11 projects, as shown in the table on page 60.

In awarding the project contracts, the Bureau recognized that, because of local conditions, each project would differ from the others in the extent and kind of needs, available resources, and the way they relate to one another. Thus, since the beginning, the Bureau's approach has been to concentrate on separate AHEC projects--each with its own strategy--within broad national program objectives, which include:

- Increasing health manpower in shortage areas through a system of decentralized medical education and training at remote sites.
- Funding health manpower training programs needed by communities deficient in health manpower, including continuing education and clinical training for nurses and allied and other health professionals.

--Emphasizing primary care training.

--Serving as a catalyst to increase the sharing of facilities, faculty, and equipment to decrease the need for new medical schools.

--Emphasizing selected graduate education programs, including medical internship and residency.

<u>University</u>	<u>Federally funded Areas</u>	<u>Amount</u> <u>(Thousands)</u>
University of California at San Francisco	Central San Joaquin Valley	\$6,800
University of Illinois	Chicago Metropolitan area, Rockford, Peoria, Urbana	9,700
University of Minnesota	Central Minnesota	3,400
University of Missouri at Kansas City	Western Missouri, including Kansas City, Springfield, and St. Joseph	5,300
University of New Mexico	Four Corner area of Colorado, Utah, Arizona, New Mexico	5,100
University of North Carolina	Statewide	8,800
University of North Dakota	North Dakota, Northwest Minnesota	2,700
Medical University of South Carolina	Columbia, Greenville, Spartanburg, Florence	9,800
University of Texas at Austin	South Texas--in counties in Corpus Christi, the Rio Grande Valley, and Laredo	2,800
Maine University	State of Maine	4,900
West Virginia University	Kanawha, Boone, Clay, Lincoln, Putnam, and Boone Counties; Charleston	3,600
<u>TOTAL</u>		<u>\$65,900</u>

AHEC'S IMPACT ON IMPROVING THE GEOGRAPHIC  
DISTRIBUTION OF PRIMARY HEALTH CARE PROVIDERS

The AHEC program is not designed to directly place physicians in health manpower shortage areas. However, through a system of decentralized medical education and training at remote sites as well as continuing education, the program offers a mechanism for overcoming some of the professional objections to shortage area practice. As such, the program represents a long-range effort to indirectly improve the distribution of health manpower.

Since the program is less than 6 years old, it is too early to determine whether the objective of improving health manpower distribution will be fully realized. There are signs, however, that at least some AHEC projects are addressing a number of factors which have traditionally discouraged physicians from (1) choosing careers in primary care and (2) establishing practices in manpower shortage areas.

For example, the North Carolina AHEC program has established professional and educational linkages between the university health science centers and the health delivery systems of communities across the State. These linkages have been established through various activities, including (1) training health profession students in community/regional hospitals and in physicians' and agencies' offices, (2) increasing the number of primary care residencies in most regions of the State, (3) conducting regular continuing education courses for most health disciplines in areas remote from the university and large hospitals, and (4) improving referral procedures among primary care providers in smaller communities and specialists at regional hospitals or at the university. Because of AHEC, rural communities across North Carolina are becoming less professionally isolated and at least theoretically more attractive to primary care physicians.

The other three AHECs reviewed have made less progress toward establishing community-university linkages advocated by the Carnegie Commission. For example, during its first few years, the South Carolina AHEC emphasized developing relationships between the Medical University of South Carolina and three of the four regional hospitals, primarily through student rotations in undergraduate medical education and increased numbers of primary care residency positions. As a result, few AHEC activities were directed toward medically underserved areas remote from the four AHEC hospitals.

The project director acknowledged that the South Carolina AHEC initially directed its major effort toward the expansion and decentralization of the medical education program at the Medical University of South Carolina. However, the director pointed out that, unlike its neighbors, South Carolina lacked a strong State-funded program for undergraduate and graduate medical education, and when the AHEC program started, South Carolina was facing a critical shortage of physicians. Therefore, AHEC began its activities in South Carolina by immediately responding to the State's most critical need: the improved supply and distribution of primary care physicians.

According to the director, with progress in graduate and undergraduate medical education, it became apparent that there were additional needs in South Carolina, many of them also of a critical nature in the other health professions and in the more remote areas of the State. Therefore, we were advised that, in its fifth year, the South Carolina AHEC began establishing statewide linkages to promote the flow of education and other resources from the health science centers to communities throughout the State.

The goal of the New Mexico AHEC is to improve health services on the Navajo Reservation. Departing somewhat from the Carnegie model, the New Mexico AHEC's principal linkage between the University of New Mexico (UNM) and regional/community hospitals and health care providers has been through the Navajo Health Authority. The Navajo Health Authority has, in turn, established formal and informal linkages with IHS and educational institutions within the target area for implementation of health manpower training programs. The project director acknowledged that the role of the Health Services Center at UNM has, perhaps, been more one of facilitation than seen at other AHECs, where development of the University programs into the target area has been desirable.

Compared to some other AHECs, a greater amount of time has been required to establish many of the New Mexico AHEC programs. According to the project director, whereas the structure and some operations of the North Carolina AHEC were in place and ongoing before Federal funding, nothing had been established for the New Mexico AHEC. In fact, the Navajo Health Authority came into existence only months before the New Mexico AHEC contract with HEW. The AHEC director stated that approximately 3 years were required for the Navajo Health Authority to acquire the administrative capability for operating the numbers and types of educational programs sponsored by AHEC.

According to the AHEC director, given the Indian aspirations for self determination, the specific relationship between UNM and the Navajo Health Authority was probably the only feasible model whereby AHEC could help meet the health needs in the target area. The director stated that the New Mexico model required a greater degree of autonomy than other AHECs, and rapid expansion of the University onto the Navajo Reservation was not desirable and would have been rejected by the Navajo people.

The following case studies of the North Carolina and Minnesota programs are presented to illustrate the similarities and differences between AHEC projects in terms of program objectives, strategies, activities, and potential for improving manpower distribution.

#### NORTH CAROLINA AHEC

This program is a statewide effort to decentralize medical, dental, pharmacy, and public health education, and to regionalize nursing and allied health education. Essentially, AHEC links the University of North Carolina (UNC) health science centers at Chapel Hill to regional community hospitals, which in turn form a regional network with other educational and health service institutions in several adjacent counties.

An increase in the numbers and better distribution of health manpower in rural and underserved portions of the cities is the major purpose of this program. The program emphasizes primary care providers, especially family practitioners. Program goals include:

- Improving the professional environment in each of North Carolina's 100 counties in order to improve the distribution of its health manpower.
- Exposing health students and residents to opportunities for community practice.
- Broadening the clinical experience of university students in medicine, dentistry, pharmacy, public health, and nursing through training in community hospitals, health agencies, and physicians' offices in an attempt to increase the number of persons choosing primary care.
- Improving regional training for nurses and allied health professions.

At the time of our review, nine centers were in varying stages of development at regional hospitals across North Carolina. There were about 40 full-time medical school faculty and 23 faculty members in other health disciplines living and working in the 9 centers. In addition, at least 500 private physicians devoted a minimum of 50 hours of voluntary time annually to the centers. The centers (regional hospitals) and the service areas are shown in appendix XI.

Several program accomplishments which have at least partially removed professional isolation deterrents from North Carolina rural communities and have theoretically made these areas more attractive to primary care providers are discussed below.

#### Medical student rotations

All UNC third- and fourth-year medical students must complete a total of 3 months' training in family medicine, internal medicine, and pediatrics at AHEC hospitals and/or physician practices within the AHEC target areas. During academic year 1975-76, about 21 percent of all clinical training for third- and fourth-year medical students was conducted at AHECs. This compares to around 4 percent off-campus clinical training in 1971-72. During 1975-76, about 55 UNC medical students were at AHECs at any given time and this is expected to increase to 106 in 1979-80.

#### Increased numbers of primary care residencies

In 1974, the North Carolina General Assembly committed AHEC to develop 300 new primary care residencies--150 to 180 in family practice--by 1980. At the time of our review, about 180 of these positions had been established and program administrators were optimistic of meeting the 1980 goal. Because of AHEC, family practice residencies are now or will be available in every region of North Carolina.

#### Continuing education programs

AHEC-sponsored continuing education programs are now available to health care providers in all 100 North Carolina counties. During the 6 months ended December 31, 1975, nearly 14,000 health professionals attended over 800 medical and nursing continuing education programs.

In addition to formal continuing education programs, the rotation of medical and other health discipline students through community hospitals serves as a vital component of

AHEC's continuing education efforts. In many cases, local practitioners have the opportunity to help AHEC faculty provide instruction to rotating students. Under family practice rotations, local family physicians usually spend about 4 weeks with medical students.

#### Family nurse practitioner training

AHEC has regionalized the family nurse practitioner (FNP) training program previously conducted only at the UNC campus at Chapel Hill. Before AHEC's involvement, FNP candidates had to relocate to Chapel Hill for 6 months' training before returning to their hometowns for 6 months' clinical experience with the monitoring physician. Training programs at the Eastern and Mountain AHECs now enable 30 nurses per year to train as FNPs without moving from their hometowns or traveling excessive distances.

Since 1970, 118 persons have completed FNP training at UNC Chapel Hill or at 1 of the 2 AHEC hospitals (28 FNPs have graduated from the 2 AHEC programs). As of April 1976, 115 of these graduates were practicing in 41 North Carolina counties, 24 of which have at least 4,000 persons for every primary care physician under age 60. The FNPs are located throughout the State, and some are at sites that do not have full-time physicians.

#### Medical consultation clinics

In an effort to overcome some of the professional isolation associated with a rural medical practice, AHEC sponsors a program of medical consultation clinics. Using a fleet of UNC-owned airplanes, specialists from the UNC Medical School sometimes accompanied by AHEC faculty, residents, and/or medical students, regularly visit primary care physicians in small communities to discuss more complicated patient care problems. Consultation clinics are held regularly in about 15 communities and include consultations in radiotherapy, orthopedics, dermatology, pediatrics, cardiology, and psychiatry. About 600 health professionals attended nearly 200 consultation clinics between July and December 1975.

#### Meeting the educational needs of other programs

North Carolina's AHEC program is helping the North Carolina Office of Rural Health Services (ORHS) and NHSC recruit and retain primary care providers for underserved areas.

ORHS operates a program to recruit physicians for North Carolina, especially for communities with between 10,000 and 30,000 persons. As a part of its recruiting effort, ORHS arranges for physicians interested in practicing in North Carolina to meet with AHEC officials and arranges for continuing education for the physicians before deciding whether to locate in the State.

AHEC officials believe the program has helped increase the number of out-of-State physicians establishing practices in North Carolina. During 1975, 90 out-of-State physicians located in North Carolina, compared to a high of around 30 physicians during any single previous year.

An example of what can result when meaningful relationships are established between a community, a regional hospital (AHEC), and a university science center follows.

AHEC's impact on Union County,  
North Carolina

Union County, a rural area of about 50,000 people in the Charlotte AHEC region, has been designated by HEW as a physician-shortage area. The initial relationship between Union County and the Charlotte AHEC developed when the 130-bed Union County Hospital requested AHEC assistance in developing a volunteer hospital staff. AHEC officials responded and a volunteer program was soon operational.

This effort established a working relationship between the County and AHEC. Subsequent benefits for Union County include:

- Regular continuing education programs in most health disciplines.
- Full-time emergency care services.
- Local routine coronary care services and improved referral procedures between Union County Hospital and Charlotte Memorial Hospital (AHEC).
- Improved relationships between Union County Hospital and the public health department including weekly clinics in prenatal care, family planning, cancer diagnosis and treatment, and venereal disease detection and treatment.

- Recruitment of two pediatricians, one of which completed residency at Charlotte Memorial Hospital.
- Recruitment of a pathologist (also from the Charlotte residency program) and establishment of direct laboratory link with the Charlotte Hospital.

#### MINNESOTA AHEC

This program serves as the link between the Health Sciences Center at the University of Minnesota and the Central Minnesota Area Health Education Consortium (the Consortium), which consists of hospitals, colleges, vocational-technical institutes, school districts, and private medical and dental practices. Initially, the Minnesota AHEC concentrated on a 14-county target area in central Minnesota. However, because of the need for additional clinical sites for medical education and a desire by the university to increase project scope, the target area was expanded during fiscal year 1975 to include the entire State.

Specific programs designed to meet the AHEC program's objectives and their accomplishments are discussed below.

#### Undergraduate medical education

Undergraduate medical education programs include (1) student experiences at the university hospital and at county and community hospitals and neighborhood clinics in the Minneapolis-St. Paul metropolitan area and (2) short-term preceptorships with rural physicians throughout the State. In addition, according to the director, the Minnesota AHEC is providing financial support, \$70,000 per year at the time of our visit, to the Minnesota Rural Physician Associate Program for 9- to 12-month preceptorships in rural areas. (The Rural Physician Associate Program is discussed in more detail in chapter 7.)

Under the short-term preceptorship program, medical students enrolled in primary care and psychiatry curricula are allowed to spend 6 to 12 weeks with internists, pediatricians, obstetricians/gynecologists, or psychiatrists practicing in Minnesota. At the time of our review, only 14 students had participated in the program.

The Minnesota AHEC has not made extensive uses of affiliations with regional or community hospitals outside

the Minneapolis-St. Paul area. According to the AHEC director, the medical school faculty is not interested in community hospital relocations in rural areas since opportunities for hospital-based experiences are adequate in the Minneapolis-St. Paul area. The faculty is supportive, however, of ambulatory clinical placements both within rural and underserved areas, for those students and residents who have acquired sufficient academic and clinical backgrounds so as not to require close supervision.

The director does not anticipate that outlying community hospital rotations will ever become an important component of the AHEC medical education program.

According to the AHEC director, in-house evaluations have shown that AHEC-supported medical experiences have resulted in positive changes in student attitudes toward rural practice. All six medical students that had completed AHEC preceptorship at the time of our visit, however, said that while they thought preceptorships were good educational experiences, none considered the experiences to have significantly affected their specialties or geographic location choices.

#### Graduate medical education

The AHEC graduate medical education program, which started in July 1974, consists of residency rotations in internal medicine, family practice, psychiatry, and pediatrics. The residencies are located at health care facilities in St. Cloud, medically underserved sections of the Minneapolis-St. Paul area, and in Duluth and surrounding communities. Through December 1976, 28 residents had participated in the program.

#### Nurse practitioner training

Through the School of Public Health, the Minnesota AHEC is now training more nurse practitioners at three locations. The program for local registered nurses (RNs) lasts 21 weeks and includes 110 lecture hours and approximately 300 hours of clinical experience supervised by university medical and nursing faculty and private physicians located near the training sites.

As of January 1976, 29 nurses had completed the training program. We were told that the majority of graduates are employed by nursing homes, although some are employed in private practice, clinics, and IHS.

### Medical teaching consultations

Since its beginning, the Minnesota AHEC has provided specialty teaching consultations to primary care physicians in rural areas of the State. The purpose of the program is to improve the professional quality of life for primary care physicians who do not have regular access to medical consultants. Specialists from the University make regular visits to rural areas where, along with the primary care physicians, they see patients either in hospitals or in outpatient settings. The specialists also conduct seminars, teaching conferences, and operative clinics for surgical subspecialties. During the fourth and fifth years of the AHEC program, teaching consultations were conducted monthly throughout the entire State. According to the AHEC director, some 280 physicians and other health personnel have participated in the program.

### PROVISIONS OF HEALTH PROFESSIONS EDUCATIONAL ASSISTANCE ACT RELATING TO AHEC PROGRAM

HPEA provides HEW new authority to enter into contracts with schools of medicine and osteopathy to plan, develop, and implement AHEC projects. HPEA provides that each participating school:

- Provide for the active participation of individuals in the specialties of internal medicine, pediatrics, obstetrics/gynecology, surgery, psychiatry, and family medicine.
- Provide that no less than 10 percent of all undergraduate medical or osteopathic clinical education of the school be conducted in an AHEC and at locations under AHEC sponsorship.
- Be responsible for, or conduct, a program for training physician assistants or nurse practitioners, which gives special consideration to enrolling individuals from, or intending to practice in, the area served by AHEC.
- Provide for the active participation of at least two schools or programs of other health professions, including dentistry if there is one affiliated with the university, in the educational program conducted in the area served by AHEC.

Moreover, each AHEC shall specifically designate a geographic area or medically underserved population it will

serve, which is in a location remote from the main site of the teaching facilities of the participating school(s). Further, each AHEC shall, among other things:

- Assess the health manpower needs of the area served by the center and help plan and develop training programs to meet such needs.
- Provide for, or conduct, a medical residency training program in family medicine or general internal medicine in which no fewer than six individuals are enrolled in first year positions.
- Provide opportunities for continuing medical education to all physicians and other health professionals practicing in the area served by AHEC, including NHSC members.
- Encourage the use of nurse practitioners and physician assistants within the area served by AHEC.
- Have an advisory board, of which at least 75 percent of the members shall be individuals, including both providers and consumers, from the area served by AHEC.

By September 30, 1979, the Secretary, HEW, is required to report to the Congress on the effects of projects funded under HPEA on the distribution of health manpower, and on access to and quality of health care in areas in which projects are located.

#### CONCLUSIONS

While the AHEC program has had little measurable impact on increasing the number of primary care providers in medical-ly underserved areas thus far, conceptually the program appears to offer considerable potential for long-term improvements in health manpower distribution.

The greatest potential appears to be realized when AHEC projects are designed as components of larger systematic efforts at improving health manpower distribution. For example, the North Carolina AHEC is only one part of the State's comprehensive-systematic approach to making primary care services available to all its citizens. Other system components include a nationwide program to recruit physicians for the State and statewide program of rural health centers staffed predominantly with physician extenders.

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HEW had no comments on the material included in this chapter on the AHEC program.

## CHAPTER 6

### REMOTE SITE TRAINING PROGRAMS-- IMPACT ON PHYSICIAN

#### GEOGRAPHIC DISTRIBUTION NOT FULLY KNOWN

HEW administers two programs--preceptorship training and family medicine training--designed to attract more physicians into the primary care specialties and/or influence physicians to set up practices in rural or underserved areas.

Both programs at the time of our review were too new to permit a conclusive evaluation of their impact on increasing the supply of physicians in shortage areas. However, preliminary indications are that

- the experience provided by the preceptorship program may have little direct impact on the location choices of participants,
- the family medicine residency program offers potential for indirectly increasing the supply of physicians in underserved areas, because family practitioners are more likely than other specialists to locate in rural areas or small towns, and
- two remote site training programs show signs of influencing the decisions of some participants to locate their practice in rural areas.

#### PRECEPTORSHIP TRAINING

The preceptoral method of teaching medicine was borrowed from apprenticeship systems in England and was, for many years, the principal method of training physicians in this country. In the early 1900s, however, most training was shifted from the preceptor to the medical school. In recent years, the preceptoral method has again surfaced, not only as a training method, but also as a means for influencing the specialty and location choices of physicians. This method allows medical students firsthand experience in the day-to-day functions of practicing physicians, thus providing a practical educational experience, and hopefully, encouraging students to seek a similar specialty or location.

### Federal program

The preceptorship training program was originally funded under section 772(a) of the Public Law 92-157 and, according to HEW, is now funded under the family medicine training authority of section 786 of the PHS Act, as amended by HPEA. This program enables medical students to receive part of their undergraduate education under a physician who is practicing primary care medicine, particularly in rural or other areas having a shortage of physicians. Awards are currently limited to departments or administrative units that are responsible for family medicine education. Grants and contracts are available to medical and osteopathic schools to establish new or expand existing preceptorship programs. Funds may be used to pay for personnel, equipment, supplies, travel, and student stipends. According to HEW officials, the choice of students that participate in the program is generally left to the school.

### Selected projects reflect major operational differences

The five preceptorship projects reviewed varied considerably as to (1) objective, (2) length and timing of the preceptorship experience, (3) program size, and (4) the extent to which preceptorship experience is mandatory or voluntary. The table on the following page summarizes the above data on the preceptorship projects.

Selected Preceptorship Programs

Supporting Institution	Project Size--1974	Project Description	Project Objectives	Length	Location	Voluntary
University of Virginia	62	\$ 2,000	1 Allocate attention of primary care physicians to increase physician in shortage areas.	1 to 3 weeks	12/1/74	Voluntary
University of Michigan (Institute of Medicine, University of Michigan and Wayne State University)	272	\$11,134	1 Motivate students to enter primary care careers. 2 Demonstrate applicability of preceptorship model as a training device.	4 to 12 weeks	12/1/74	Voluntary Michigan State-Voluntary
Wake Forest University	76	29,075	1 Expose students to primary care of office in a community setting. 2 Increase awareness of community hospitals and health agencies.	10 weeks		Voluntary
University of New Mexico	14	15,559	1 Help the state's primary care physician pool for expatriate medical students to provide primary care in variety of settings. 2 Provide educational experience outside medical school in a community type setting.	6 weeks	1/1	Voluntary
University of Florida	54	33,779	1 Assist students to understand the medical profession's responsibility to provide primary care especially in underserved areas.	2 1/2 weeks	2/7	Voluntary

Joint Program

Community Preceptorship is a part of a 6-week required clerkship which is the best of which which the medical student first has working contact with patients.

Program impact on location  
decisions--too early to tell

Since the preceptorship program began in fiscal year 1972 through fiscal year 1976, HEW has awarded grants and contracts amounting to \$21.8 million. In fiscal year 1976, 69 medical and osteopathic schools received \$5.1 million in preceptorship funds. HEW reported that 5,427 medical students had participated in the program in fiscal year 1975. Through January 1976, only 49 participants had completed their education and were in practice. Of the 48 participants for which practice locations could be identified, 7 (15 percent) had located in critical medical manpower shortage areas as designated by HEW.

Participants tend to enter primary care

There are some indications that program participants tend to enter primary care specialties. For example, at the University of Michigan, 67 percent of the participants entered primary care specialties, compared to 47 percent of the nonparticipating students. The rate entering primary care at Wake Forest University was 63 percent (234 of 372) and at the University of Virginia, 100 percent (28 of 28). However, the extent to which this interest in primary care careers resulted from the project participation or from other influences has not been determined.

Some project officials believe that the preceptorship program should be considered primarily as a mechanism for influencing physician specialty choices and secondarily as a tool for improving physician distribution.

Program results were not routinely monitored

HEW did not routinely monitor the results of the preceptorship program at the time of our review to identify the number of students (1) participating, (2) selecting primary care specialties, or (3) establishing practices in rural or other physician-shortage areas. Much of the program data was obtained for us by HEW headquarters through a special request to the regional offices. In turn, the regional offices obtained much of the data directly from participating schools.

According to the program director, trying to evaluate program results prior to our review would have been premature because of the delay between the preceptorship experience and the specialty or location decisions. Therefore, HEW had not assessed the program's impact on these choices. HEW let a

contract, however, in June 1976 for a comprehensive study of the preceptorship program. We were advised that one study objective would be to correlate the timing and length of the preceptorship experience with the physician's specialty and location choices. An executive summary of the study was completed on March 31, 1978, and an HEW official advised us that the final report would be completed in October 1978.

In April 1976, the Rand Corporation completed a study of one program segment--the program's impact on physician location choices. It concluded that participation in rural preceptorships has a negligible influence on whether participants practice in rural areas. Program influence is apparently diminished by the relatively long delay between the preceptorship experiences and the practice location decisions--as much as 6 to 7 years.

In commenting on the draft report, HEW stated that the Rand study was based on gross data relating the geographic location of 1965 medical graduates with whether or not the graduates had undertaken a preceptorship in medical school. HEW said the Rand data did not differentiate between what some believe to be major variables associated with preceptorships, such as the year in which they were taken, duration, and whether they were required or elective.

HEW advised us it is now attempting to fill in some of these information gaps and although there is no clear evidence to show a causal relationship between preceptorships and geographic distribution, the data does show that former preceptorship students are more likely to enter rural practice than other physicians.

#### FAMILY MEDICINE TRAINING GRANTS

Section 767 of the PHS Act, as amended by Public Law 92-157, authorizes the award of grants to nonprofit hospitals for developing, expanding, improving, or participating in approved residency training programs in family medicine. The purpose of the grants is to create more family medicine residency positions, thus effectively increasing the supply of FPs. Funds may be used for personnel; supplies, equipment; travel; and, under certain conditions, student stipends. To qualify for a grant, applicant hospitals must be accredited by the Joint Commission on Accreditation of Hospitals or the American Osteopathic Association (AOA). According to HEW,

"Residency programs in the field of family medicine approved by the Board of Trustees of the American Osteopathic Association or Liaison Committee

on Graduate Medical Education based upon the recommendation of the Residency Review Committee for Family Practice, and new residency programs in family medicine for which provisional approval has been obtained, are eligible for support under this grant program."

Program activity

Since the family medicine residency program began in fiscal year 1972 through fiscal year 1977, HEW obligated over \$92.2 million to support graduate family practice training. HEW is providing support to 210 family practice training programs in fiscal year 1978. HEW estimates that during fiscal year 1978 these programs will include 72 percent of all family practice residents in training.

Geographic distribution--  
not a program objective  
but a potential result

HEW does not have data on the location of physicians that participated in the family practice residency program. Therefore, a full evaluation of the program's impact on geographic distribution is not possible. Indications are, however, the program could be an important tool for increasing the supply of physicians in the traditionally underserved rural areas and small towns. In the past few years, the number of family practice residency positions has increased dramatically. For example, between academic years 1973-74 and 1975-76, the number of filled first-year residency positions in family practice nearly doubled from about 800 to over 1,600.

Data obtained from the American Academy of Family Physicians indicates that a large portion of family practice graduates are locating in smaller communities. As can be seen in the following table, about 57 percent of the 1975 graduates located in communities of 30,000 or fewer persons.

Location of 1975 Family Practice Graduates  
by Community Size Based  
Upon Data Provided by the  
American Academy of Family Physicians

<u>Community size</u>	<u>Number</u>	<u>Percent</u>	<u>Cumulative percent</u>
Less than 5,000	73	17.3	17.3
5,000 to 15,000	106	25.1	42.4
15,000 to 30,000	61	14.5	56.9
30,000 to 100,000	59	14.0	70.9
100,000 and above	123	29.1	100.0

Preliminary data on 1976 graduates indicates the tendency of FPs to locate in smaller communities is continuing. For example, 55 percent of the 1976 graduates located in towns of under 30,000.

The Academy cites the above data to support its position that increasing the supply of FPs will help achieve a more adequate physician distribution pattern. In response to our request for comments on the physician geographic distribution issue, the Academy executive director stated:

" \* \* \* it has been documented by surveys of recent family practice residency graduates--as well as past and present tabulations of physicians by community size--that traditionally family physicians and general practitioners provide a high percentage of the medical care in nonmetropolitan or medically underserved areas."

Available data on three family medicine residency programs reviewed seem to support the Academy's position. The Medical College of Virginia has graduated 36 family practice residents since the program began in 1970. One-half (18) of the graduates were located in communities of fewer than 10,000 persons; 31 percent (11) were in towns of fewer than 5,000 persons. The University of Utah has graduated 17 residents. Almost one-half (8) are in towns categorized by program officials as "rural" (i.e., having fewer than 20,000 persons).

It should be noted that sufficient data was not available to HEW during our review to determine the extent to which 1975 and 1976 family practice graduates were locating their practices in HEW-designated health manpower shortage areas. However, reports of practice locations chosen by the 28 Medical University of South Carolina graduates

show that 14 were located in HEW-designated health manpower shortage areas. Six of the remaining 14 were in military service.

In commenting on the draft report, the Academy's executive director stated that the Academy will continue to add to data collection which, hopefully, will make it possible to determine exactly where family residency program graduates choose to locate their practices.

The Health Professions Educational Assistance Act of 1976 provides similar Federal support for developing general internal medicine or general pediatric residency training programs beginning in fiscal year 1977.

#### EXAMPLES OF REMOTE SITE TRAINING PROGRAMS

Although there are many remote site training programs around the country, we selected the Washington, Alaska, Montana, and Idaho (WAMI) decentralized medical education program and the Minnesota Rural Physician Associate program (MRPAP) to determine the extent to which remote site programs can successfully affect physician location patterns.

#### WAMI

In 1969, the University of Washington School of Medicine (UWSM) staff developed a plan for a decentralized medical education program which would use facilities and faculties of other universities to teach basic sciences to first-year medical students and thereby allow more students from the WAMI States to enter medical schools. UWSM is the only medical school in the four WAMI States.

In 1971, the Commonwealth Fund of New York awarded UWSM a \$1 million 3-year grant to test the regional medical education concept in the WAMI States. HEW awarded the University of Washington a \$1.5 million contract for the WAMI program for the period June 1, 1972, to June 30, 1973. Subsequent modifications increased the contract amount to \$6.1 million. HEW funding of WAMI ended June 30, 1976, and the program has been authorized continuation funds from the participating States.

#### Program objectives and goals

The WAMI program was initiated in 1971 to address these goals:

1. Increase the number of students admitted from the WAMI States.

2. Increase the number of primary care physicians being trained.
3. Bring the resources of the medical center to communities in the WAMI territory.
4. Accomplish the above goals without capital construction programs.
5. Place physicians in areas of need--redress the geographic maldistribution that exists in the WAMI States.

The WAMI program consists of two phases--a university phase and a community phase.

During the university phase, WAMI medical students from the participating States receive their first-year instruction in basic sciences at the participating university in their State (University of Alaska, Washington State University, Montana State University, and University of Idaho). Their courses are essentially the same as those taught to first-year medical students at UWSM in Seattle. Students then complete their training at UWSM. Since WAMI began in 1971, 196 students have participated or are participating in the university phase at the 4 schools.

The community phase consists of Community Clinical Units (CCUs) generally located in outlying rural areas of the participating States. Medical students and residents obtain clinical training and experience during 6-week clerkships at CCUs. CCUs were established to encourage more students and resident physicians to practice in rural areas after completion of their medical education and training. Each CCU is basically a teaching site where a group of physicians teach advanced medical students and medical residents. As of December 31, 1975, 13 CCUs were participating in the WAMI program, as follows:

<u>Type of practice</u>	<u>Location</u>	<u>Population (1970 census)</u>	<u>Number of participating physicians</u>
Family medicine	Anacortes, Washington	7,701	6
	Grandview, Washington	3,605	7
	Kalispell, Montana	10,526	6
	Kodiak, Alaska (note a)	3,798	4
	Omak, Washington	4,154	6
	Oak Harbor, Washington	9,167	10
Internal medicine	Billings, Montana	61,581	20
	Missoula, Montana	29,497	17
	Wenatchee, Washington	16,912	13
Pediatrics	Great Falls, Montana	60,091	5
	Pocatello, Idaho	40,036	5
	Spokane, Washington	170,516	10
Obstetrics/ gynecology	Boise, Idaho	74,990	20
Psychiatry	Anchorage, Alaska	48,029	9

a/Not in operation as of December 31, 1975.

As of September 30, 1975, 308 student clerkships and 60 resident rotations had been completed in 14 CCUs throughout the 4-State area. Fifty-eight percent of these were in family medicine.

A program summary prepared for accreditation of the WAMI program by AMA indicated that some impact was being made on the geographic distribution of physicians. Of 35 residents who participated in the WAMI program CCUs and were no longer in residency, program data showed that 16 were in rural practices, as shown on the following page.

<u>Type of practice</u>	Department				<u>Total</u>	<u>Percent</u>
	<u>Family medicine</u>	<u>Internal medicine</u>	<u>Pedi- atrics</u>	<u>Psychi- atry</u>		
Rural	12	2	1	1	16	46
Semirural	-	-	6	-	6	17
Urban	2	-	1	-	3	9
Military commitment	3	-	-	-	3	9
Student/con- tinuing education	-	1	2	-	3	9
Other	<u>1</u>	<u>2</u>	<u>1</u>	<u>-</u>	<u>4</u>	<u>11</u>
Total	<u>18</u>	<u>5</u>	<u>11</u>	<u>1</u>	<u>35</u>	<u>a/100</u>

a/Does not total due to rounding.

However, we did not determine the extent to which these physicians actually located their practices in HEW-designated health manpower shortage areas.

Features of the WAMI program which may encourage participants to practice in underserved areas after completion of residency training are:

- Recruitment and selection of medical students from areas having a physician shortage or maldistribution problem.
- Establishment of training sites in small communities to expose medical students and residents to small-community practice.

Program officials said that it is too early to evaluate the impact of selecting students from the WAMI States because none of the WAMI students who entered the university phase have completed residency training. However, a program evaluation showed increasing percentages of students interested in practicing in small towns or medium-sized communities. Many of these were interested in group practices and primary care. Preliminary data indicates that the community phase of the program may be an effective means of encouraging students who have completed residency to practice in nonurban areas.

An October 1975 WAMI program summary report stated that (1) four of the five program goals were being achieved and (2) some impact was being made on the fifth goal--improving geographic distribution--in that a large percentage of residents who participated in the WAMI community phase and completed residency have set up practices in rural locations. Moreover, the WAMI program has trained an increased number of primary care physicians, as evidenced by the number of students selecting family medicine. About 54 percent of the WAMI students chose family medicine, compared to 38 percent of the UWSM non-WAMI students.

Minnesota Rural Physician Associate Program

MRPAP was initiated in 1971 by the University of Minnesota Medical School to:

- Help relieve the shortage of physicians in the small towns in Minnesota.
- Provide an opportunity for medical students to observe and participate in providing continuous comprehensive patient care in a community setting.

The program allows third-year medical students to spend 9 to 12 months with a practicing physician in a rural area of Minnesota. This consists of two phases--a 6-month education phase and a 3- to 6-month service phase. Students receive a \$5,000 stipend from the medical school during the initial 6 months. The preceptor-physician pays the student \$2,500 for the remaining 3 months or \$5,000 for 6 months.

Program funds totaling \$1.9 million for academic years 1971-72 through 1975-76 have been provided by the State and HEW through the Special Projects Grants and Contracts authority, as follows:

<u>MRPAP Funding--1972-76</u>			
<u>Academic year</u>	<u>Federal funds</u>	<u>State funds</u>	<u>Total</u>
1971-72	\$ -	\$ 205,185	\$ 205,185
1972-73	83,455	235,000	318,455
1973-74	85,280	334,650	419,930
1974-75	81,630	337,566	425,196
1975-76	167,074	371,400	538,474
<b>Total</b>	<b>\$423,439</b>	<b>\$1,483,801</b>	<b>\$1,907,240</b>
<b>Percent</b>	<b>22</b>	<b>78</b>	<b>100</b>

Program operations and activities

Until academic year 1975-76, students were accepted in the program on a first-come-first-served basis. However, because of increasing student interest, a screening program has been initiated. Preceptors are selected for their interest in medical education and ability to relate to and teach students. Since the program's objective is to increase the supply of physicians in small towns, most preceptors are located in towns of fewer than 5,000, none are in towns of more than 10,000. Only preceptors in primary care of patients are used. For example, 32 of the 1975-76 preceptors were family physicians while the remaining 8 were internists. As shown in the map on page 85, the 1975-76 preceptorships were well distributed around the State.

During the preceptorship period, students are expected to increase their knowledge of and skills in providing ongoing patient care in a rural practice setting. By using the noon luncheon presentations of the Rural Physician Associate Program specialty faculty advisors, the University Medical School makes continuing medical education available to preceptors, students, and medical helping professionals in the rural areas.

During the first 6 years of program operation, 202 students had participated in the preceptorship program, as shown below:

Program Participants

<u>Academic year</u>	<u>Number of students participating</u>
1971-72	22
1972-73	37
1973-74	26
1974-75	37
1975-76	40
1976-77	<u>40</u>
Total	<u>202</u>

MRPAP is apparently meeting its objective of increasing physician supply in small rural towns. Of the 48 program participants that had established practices as of July 1977, 37 were in rural areas and 31 of these were in Minnesota.



Program officials could not conclusively say that the geographic location of the participants is the sole result of the preceptorship experience. They believe that the results indicate the experience was a major influencing factor, however. The officials believe that the relatively long preceptorship experience of the Minnesota program is more likely to affect eventual specialty and location decisions than shorter programs. In an attempt to determine the program's impact, program officials are conducting studies to compare the backgrounds, educational achievements, and career patterns of participants with those of students in the regular medical school curriculum. The studies were not completed at the time of our fieldwork.

#### CONCLUSIONS

The effectiveness of the preceptorship training program in increasing the supply of physicians in shortage areas is not known at this time. Since the program began in 1972, very few participants had completed their medical education and established practices. Although HEW had contracted for a comprehensive assessment of the preceptorship program, at the time of our review the most appropriate length and timing for the preceptorship experience had not been determined. Consequently, the length and timing varied considerably among the HEW-funded preceptor projects we reviewed.

Data provided by the American Academy of Family Physicians shows that a large portion of recent family practice graduates are locating their practices in smaller communities. According to this organization, increasing the supply of FPs will help achieve a more adequate physician distribution pattern since traditionally general and family practitioners provide a high percentage of the medical care in nonmetropolitan or medically underserved areas.

While the trend of physicians to locate in urban areas is continuing, the new FPs are tending to locate their practices more uniformly in relation to the overall population and more frequently in rural areas than other types of specialists. The extent to which recent FPs are locating in HEW-designated shortage areas, however, is unknown. If a significant percent of these graduates did locate in such medically underserved areas, then it would be worthwhile for the Federal Government to significantly increase its financial support for family practice training programs.

Both WAMI and MRPAP programs have shown preliminary indications of influencing the decisions of some participants to locate their practice in rural areas.

#### RECOMMENDATIONS

We recommend that the Secretary of HEW:

- Use the results of the preceptorship study to determine when in the medical education process preceptorship training should be given and how long the experience should last to have the greatest impact on influencing the specialty and practice location choice of physicians.
- Analyze the extent to which recent FPs and other specialists are locating in HEW-designated shortage areas, and based upon this analysis, submit recommendations to the Congress for financially supporting those types of graduate medical training programs which constitute the greatest resource for providing health care to medically underserved areas.

#### AGENCY COMMENTS AND OUR EVALUATION

In responding to the recommendation to use the results of its study to determine the most appropriate length and timing for the preceptorship experience, HEW stated it fully concurs that more detailed information on medical preceptorships is needed, and as this information becomes available, it will promulgate and make use of it.

HEW commented that the value of preceptorships is not necessarily limited to their effect on locational or even specialty choices. HEW said that preceptorships are primarily intended to give students an educational experience in primary care in rural areas, averaging a few weeks in duration. The benefits of short educational exposures are difficult to measure separately, according to HEW, because the program represents only a very small segment of undergraduate medical education. HEW pointed out that such benefits would accrue to all participants and not merely those who enter primary care specialties or rural practice.

HEW also pointed out that there is no mandatory link of any kind between the preceptorship program and the designation by HEW of critical health manpower shortage areas, which represent only a portion of rural areas. Thus, HEW said that even if promotion of entry into rural practice

were a primary goal of these programs rather than a possible result, it would not be appropriate to use the percent entering designated shortage areas as a criterion for measuring success.

We recognize that the value of the preceptorship experience is not necessarily limited to the effect on locational or specialty choices, and that the program is primarily intended to give students an educational experience in primary care in rural areas. We also recognize that the benefits of short educational experiences are difficult to measure separately because the program represents only a very small segment of undergraduate medical education.

However, we disagree with HEW's position that it is not appropriate to use the percent of preceptorship program participants entering shortage area practice as a criterion for measuring program success. While it may not be the sole indicator of program success, we believe that it is a valid indication of the program's impact on increasing the availability of physicians in shortage areas, and thus is a valid measure of one facet of the program. Therefore, as indicated by our recommendation, we believe HEW should use the results of its preceptorship study to identify the most appropriate length and timing of the preceptorship experience in order for it to have the greatest impact on influencing the specialty and practice location choices of physicians.

HEW concurred with the recommendation that it analyze the extent to which FPs and other specialists are locating in HEW-designated shortage areas, and based upon this analysis, submitted recommendations to the Congress for financially supporting those types of graduate medical training programs which constitute the greatest resource for providing health care to medically underserved areas. HEW stated that family practice is central to the strategy for providing quality health care to all Americans, with particular emphasis on primary care and geographic distribution.

HEW stated it will (1) continue to place high priority on the support of family practice programs and (2) analyze the locational decisions of these and other specialists.

## CHAPTER 7

### ALTERNATIVES TO INCREASING THE NUMBER OF PRIMARY CARE PHYSICIANS IN RURAL AREAS

Many States and private organizations have attempted to increase access to primary care medical services in the rural areas through programs largely using nonphysician providers, including nurses and physician extenders. These providers generally serve as the point of entry into the medical care delivery system, and when necessary, refer patients for more specialized care. There is no doubt that in some areas these "alternative type" programs have increased the number of primary care providers and improved access to the medical delivery system for substantial numbers of people.

The following case studies are presented to demonstrate the different methods employed by various types of alternative programs and to address their potential applicability to other geographic areas experiencing problems with access to primary health care delivery.

#### NORTH CAROLINA RURAL HEALTH CENTERS

The North Carolina Rural Health Centers program, administered by the Office of Rural Health Services (ORHS), was created in 1973 to provide assistance to medically underserved rural communities desiring access to the medical care system through a local primary care program. The rural health centers established under the program are organized to provide the majority of local primary health care needs through extensive use of PEs, primarily nurse practitioners, supervised by physicians in nearby communities. When not at the center, the supervising physician provides direction and control through standing orders, medical chart reviews, and direct telephone contact. Patients requiring physician services or hospitalization are immediately referred by PE. Thus, the rural health center becomes the point of entry into the medical delivery system and also provides for referrals from primary to more specialized care.

As of October 1976, nine centers were operating in small communities across North Carolina with more scheduled to open later. Medical services were provided by 13 PEs.

#### Selecting a location

Upon receiving a request from a community for a rural health center, ORHS performs a market survey to determine

the community's health care needs, potential demand for medical services, and ability to financially support a center. Generally, service areas are limited to a 5- to 7-mile radius and a minimum of 5,000 to 6,000 people. Potential patient visits are estimated based on the service area population and national statistics for the average number of primary care visits by residents of rural areas. Recognizing that not all the service area population will demand care from the proposed health center, the original patient visit estimate is adjusted for factors such as (1) alternate sources of primary care, (2) traffic flow patterns, (3) the age of nearby physicians, and (4) the amount of time people must wait to see a physician. Finally, using estimates of expected patient service demand, anticipated charges for services, and the patients' ability to pay for care, ORHS determines whether the proposed center could be financially self-sufficient after an initial 3 years.

Once a proposed site has been determined to be capable of supporting a rural health center, ORHS helps the community

- organize a nonprofit local corporation to assume the leadership role in center development,
- recruit PE candidates and backup physicians,
- provide financial support for startup costs and for operation during the initial 3 years, and
- develop a detailed management plan for center operations.

#### Construction costs

To insure local support, ORHS requires at least 500 local families to make a financial contribution toward startup costs. Each dollar raised by the community is matched by \$5.00 from the State government. When a community has raised about \$12,000, ORHS authorizes construction. To retain community interest and support, ORHS attempts to construct and staff each rural health center within 18 months after the community's initial inquiry.

#### Operating costs

To the extent necessary, ORHS subsidizes operating costs for each rural health center during the 3-year startup.

After 3 years, centers are expected to be financially self-supporting. The average annual operating cost for a typical center ranges from \$60,000 to \$80,000. The first \$15,000 collected by the center goes into a savings account belonging to the local nonprofit corporation. This money is a contingency fund available for use when ORHS subsidies expire.

#### Selecting and training the nurse practitioner

To enhance community acceptance and increase the likelihood of providers remaining at the center, to the extent possible, nurse practitioners are selected from the local community. If a qualified local nurse cannot be found, one from the same county or a nearby county is selected. Candidates must be registered nurses with at least 2 years' experience. After being selected, candidates were required to complete a 1-year nurse practitioner training program sponsored by the University of North Carolina at the time of our review. We were subsequently advised that this is no longer the case. Instead, nurses trained in other programs submit transcripts and descriptive material regarding their training curricula and are certified, where their credentials and sponsorship are considered adequate.

#### Backup physician services

Before a center opens, a physician must agree to accept responsibility for all services provided. Since physicians usually are not located within the centers' service areas, communities with assistance from ORHS must solicit physician support from neighboring communities.

Backup physicians normally spend about one-half day a week at the centers, primarily reviewing medical records and treating more complicated cases referred from PEs. When not at the centers, the physicians control the treatment of patients through formalized standing orders and direct telephone communication. Standing medical orders have been developed by the UNC School of Medicine, and with limitations, may be modified by each backup physician to better suit his/her personal preferences. The orders list most common diseases and illnesses; identify likely symptoms; and describe treatments, tests, and medications that the physician extender may administer.

About 80 percent of all patients are diagnosed and treated by PEs without direct physician assistance, according to the ORHS director. In more serious cases, backup physicians

arrange to see patients immediately or refer them to a specialist or hospital.

PEs are allowed to prescribe drugs within the scope of standing orders. If a rural health center is in an area where securing medications is a problem, the nurse may apply for authority to dispense drugs under the supervision of a licensed pharmacist. Some centers have commercial pharmacies in the building.

Patient visit goals and results

In conjunction with the goal of having rural health centers financially independent after 3 years of operation, ORHS has established broad patient encounter criteria. Essentially, the criteria state that after 3 years, centers staffed with 1 PE should be seeing an average of 25 patients per day; and centers with 2 PEs ideally should average 40 patients a day.

During the 12 months ended June 30, 1976, ORHS centers reported almost 35,000 patient visits. Visits ranged from 6,265 to 1,042, as shown below.

<u>Center</u>	<u>Total patient visits 12 months ended 6/30/76</u>	<u>Average daily patient visits per PE</u>	<u>Months operating</u>
Atkinson	2,268	15.3	7
Harrells	2,674	15.2	9
Newton Grove	5,418	21.9	20
Whitakers	5,763	11.5	16
Bladenboro	4,605	20.3	21
Westfield	6,265	25.2	23
East Bend	5,115	18.9	29
Clingman	1,744	14.7	6
Saluda	<u>1,042</u>	8.0	7
Total	<u>34,894</u>		

Problems encountered

According to ORHS officials, the major problem affecting rural health center operations is the inability to collect from Medicare for PE services. To qualify for reimbursement, Medicare regulations generally provide that a physician must

be present when the patient is diagnosed and treated. <sup>1/</sup> As previously discussed, physicians only periodically visit the rural health centers, primarily to review medical records and to treat more complicated cases.

Through June 30, 1976, more than \$42,000 in unreimbursed services had been provided Medicare eligible patients. ORHS officials believe that without this additional revenue, most rural health centers will not be financially self-sufficient within the planned 3 years.

To a lesser extent, ORHS has experienced problems in using Federal funds to help in constructing rural health facilities. ORHS officials refused Federal funds for one center because contractor and wage requirements would have increased construction costs by about \$40,000. In a second case, legislation had to be passed to allow ORHS to purchase a building from a profitmaking organization. Meanwhile, a temporary facility had to be rented for 8 months.

#### Future plans

ORHS plans to have 17 fully operational rural health centers by the end of fiscal year 1977. Little expansion beyond that is expected because of

- anticipated increases in the supply of primary care physicians and
- expected improvements in distribution of primary care physicians, at least in fringe areas surrounding manpower shortage areas.

ORHS officials stated that, should some centers not be self-supporting after 3 years, alternative plans would be developed. Under no circumstances would ORHS officials favor abruptly terminating needed primary care services for North Carolina's rural population.

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<sup>1/</sup>On December 13, 1977, the President signed into law Public Law 95-210, the "Rural Health Clinic Services Act," authorizing reimbursement under Medicare (part B) and Medicaid for services provided by PEs in certain rural health clinics, as discussed on p. 106.

### Applying the concept elsewhere

ORHS officials believed the rural health center concept, as employed by North Carolina, offers considerable potential for increasing access to primary health services in physician-shortage areas in other regions of the country. There is nothing unique about North Carolina which makes the concept work there that would preclude its effectiveness in other States. ORHS officials did cite some factors that, in their opinion, should receive considerable attention before attempting to apply North Carolina's rural health concept to other areas. These include:

- A process to secure a broad base of support and enabling legislation for the use of PEs as primary medical care providers, the base including such key elements as the State's medical board, medical schools, and legislature.
- The understanding that the extender primary care system develops much more successfully when financial and technical assistance are offered in response to community demand for primary care as opposed to Government initiation of the system from without as a result of the identification of a need.

### KENTUCKY FRONTIER NURSING SERVICE

The Kentucky Frontier Nursing Service (FNS) is a comprehensive primary care service and training program in the Appalachian region of southeastern Kentucky. The service area includes Leslie and parts of Clay and Perry counties. (See app. XII.) The major goal of FNS is to make primary health care accessible to all target area residents. Family nurses and midwives are the nucleus of the FNS health care delivery system; backup is provided by a limited number of physicians and other health care personnel. The major organizational components of FNS include:

- A 40-bed community hospital and ambulatory care clinic in Hyden.
- 8 satellite nursing clinics that provide clinic and home health services in surrounding communities.
- A family nurse and midwifery school for training graduate nurses in primary care with an enrollment of 24 students.

### Community hospital

The Mary Breckenridge Hospital, occupied by FNS in February 1975, serves as the hub for the FNS program. The 40-bed general hospital, located in Leslie County, also serves several adjacent counties. The hospital and Primary Care Center are staffed by about 50 registered nurses, family and pediatric nurses, nurse-midwives, and the registered nurse students in the Frontier School of Midwifery and Family Nursing. Six physicians provide backup support for staff nurses and treat the more complex cases. The hospital employs a dentist and a part-time radiologist and pathologist.

As a primary care center, the hospital includes outpatient clinics. Most cases are treated locally by the nursing/medical staff; complex cases are referred to medical centers in Lexington, Louisville, and Cincinnati. Clinics for midwifery, family planning, OBGYN, pediatrics, well-child care, orthopedics, ophthalmology, and ear-nose-throat disorders are conducted regularly in the hospital, and some specialty clinics are provided at each of the outpost clinics.

### Outpost clinics

Surrounding the hospital at distances of 8 to 30 miles away are 6 outpost clinics owned and operated by FNS which are designed to provide primary care services to a designated target area. In addition to the clinic, four outpost clinics contain living quarters for one or two staff nurses. Normally outpost clinics are staffed by two nurses, one of whom is a graduate of a recognized midwifery/family nursing school. Each nurse is responsible for the complete health care needs of about 200 families within the district. Most families are less than an hour away from the outpost by automobile. Each of the six FNS outposts are within an hour's drive of the Mary Breckenridge Hospital.

The majority of patient encounters are for common ailments, such as respiratory and urinary infections, cuts, and bruises that can be diagnosed and treated by the nurses using medical directives--a comprehensive set of protocols prepared by FNS physicians with collaboration of the FNS nursing staff. More complicated cases are tentatively diagnosed and referred to the physician staff.

In addition to their work in the center clinic, the outpost nursing staff make home visits to assure that

patients are responding to treatment and properly progressing. Bedside care of the sick in the home is provided by the Home Health Agency staff. FNS personnel emphasize health education, preventive care, and health maintenance in all service and training activities.

#### Family nurse/midwifery training program

FNS started training midwives as early as 1939. In 1970, a family nursing program was added. Family nurse training is now combined with midwifery in a trimester sequence, allowing students to pursue specialty training. During a trimester (16 weeks), students spend 12 hours per week in didactic training and 24 hours per week in clinical situations.

#### Characteristics of the service population

The FNS program serves a population of poor mountain people in the southeastern corner of Kentucky. The area's principal industry is coal mining. Unemployment is high; many families depend on public support. About 55 percent of all families have incomes below the national poverty level. The area has no public transportation, only 60 percent of the people own cars, and 40 percent have telephones.

Health care problems generally reflect the area's economic status. Nutrition, sanitation, housing, and working conditions are all inadequate. Major health problems include:

- High accident rates, primarily related to the coal mining industry and to the automobile.
- High incidence of respiratory and other infectious diseases related to climate and substandard housing and unsanitary living conditions.
- Violent crimes.
- High incidence of alcoholism.

#### Services provided

The FNS program, with its community hospital and clinic in Hyden, its outpost clinics and Home Health Agency, provides most of the health care services received by the approximately 18,000 service area residents. During the fiscal year which ended April 30, 1977, FNS had 61,865 ambulatory patient

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encounters--35,517 at the Mary Breckenridge Hospital Primary Care Center, 15,956 in the outpost clinics, and 10,392 in patients' homes, according to the program director. In addition, FNS hospitalized 1,686 patients and there were also 324 newborn admissions.

Less than 5 percent of hospitalized patients and 4 percent of ambulatory care patients are referred to other institutions for specialty care. About 12 percent of hospitalized patients received specialty consultative services as a part of their treatment. The FNS family nurses and nurse-midwives manage about 80 percent of all ambulatory patients and the nurse-midwives deliver about 90 percent of all babies.

#### Problems encountered

According to the FNS director, the greatest problem facing FNS is financial instability. The director said that the policies of third-party carriers, such as Medicare and Kentucky Medicaid, make it extremely difficult for health delivery systems like FNS to become financially self-supporting. First, these carriers offer little reimbursement for preventive and maintenance activities, which are strongly emphasized by FNS. Secondly, and perhaps more importantly, Medicare and Medicaid will not provide reimbursement for primary care services provided by PEs unless a physician is present. As previously discussed, FNS uses PEs extensively in delivering primary care, especially in the outpost clinics.

The FNS director said that changes in Kentucky's Medicaid reimbursement procedures are expected soon. Essentially, the changes will allow designated primary care centers including FNS, to receive Medicaid reimbursements.

In recent years, Federal funding through (1) the Appalachian Regional Commission, (2) the National Center for Health Services Research and Development, and (3) the Bureau of Health Manpower's Division of Nursing have contributed substantially to FNS financial operations. Also private contributions, which now account for about 30 percent of FNS' \$2.5 million operating expenses, have played a major role. According to the FNS director, continued funding from these sources is essential for FNS to continue providing comprehensive primary care services.

Applying the concept elsewhere

In the director's opinion, the FNS concept can be applied to other rural areas experiencing similar problems in health care delivery. He stated, however, that the FNS staff is the key element in the program and that, in his opinion, the staff consists of extraordinarily dedicated individuals.

CHECKERBOARD AREA HEALTH SYSTEM  
OF THE PRESBYTERIAN MEDICAL SERVICE

The Presbyterian Medical Services established the Checkerboard Area Health System (CAHS) in 1971 to provide primary care and preventive services to about 10,000 people living within a 4,000-square mile area in northwest New Mexico. The central unit of CAHS is a large, complete outpatient clinic with an attached 10-bed short-term inpatient facility at Cuba, a town of fewer than 2,000 people located about 85 miles northwest of Albuquerque. The center is staffed by 4 physicians, 6 registered nurses, 2 PEs, and 54 technicians, nurses aides, and administrative personnel. CAHS services are provided to the outlying area through six satellite centers. In addition to having ancillary personnel, each satellite clinic is staffed with an FPN or a physician assistant responsible for clinic operations, health team activities, and community outreach efforts.

With backup from CAHS physicians at Cuba, the PEs health team provides all primary and emergency care in their target area. The three full-time and one part-time CAHS physicians are available by radio for diagnosis or treatment of satellite clinic patients. More complicated cases are referred to the physicians for treatment. The physicians also review medical charts for patients treated by FPNs or physician assistants at either Cuba or the satellite clinics.

In conjunction with local school nurses, PEs have conducted comprehensive screening and treatment programs in the school districts. PEs at outreach clinics have coordinated such social service programs as Medicare and Medicaid registration, crippled children's services, disability evaluations, communicable disease reporting, and many other phases of public health and community medicine.

Ancillary personnel provide a number of services for the CAHS outreach program. These range from community-family involvement to routine medical and emergency treatments and

clinic administration. They also conduct health education programs and assist in the general management of patients recovering or confined at home.

#### Characteristics of the service population

The service area population is generally characterized by low income, large family size, and inadequate housing. Access to health care is complicated by the lack of roads or by existing primitive roads that are impassable during the winter. In addition to having crowded housing and poor sanitary conditions, the CAHS area has extremely poor telephone service.

#### Services provided

The six CAHS satellite centers provide a wide range of primary medical care services, including:

- Medical checkup and screening.
- Treatment of minor ailments, trauma, and chronic conditions.
- Prescription for minor ailments.
- Laboratory services--blood, urine, bacteriology, and pregnancy tests.
- Maternal and child health care followup.
- Home health care.
- School health services.
- Public health/sanitation.
- Patient health education-clinic.
- Dental services--two outreach clinics.
- Screening diagnosis and treatment of child learning disabilities.

The Cuba health center offers the same primary care services as the satellite centers, as well as additional or expanded services in (1) obstetrics, (2) alcohol detoxification, (3) emergency care, (4) laboratory analysis, (5) patient education, (6) pharmacy, and (7) specialty care.

Specialty clinics in family planning and well baby-care are provided in cooperation with the State health department.

During 1976, the Checkerboard Area Health System had 37,898 outpatient health care visits. The Cuba clinic treated the largest number, as follows:

Outpatient Health Care Visits  
Calendar Year 1976

<u>Location</u>	<u>Number of outpatient encounter visits</u>
Cuba	16,248
Nageezi	5,588
Torreon	5,804
Ojo Encino	2,964
Counselors	3,873
Jamez Valley	2,024
Huerfano	<u>1,397</u>
Total	<u>37,898</u>

Applying the concept elsewhere

The basic concept employed by the CAHS health care system--a centralized diagnostic and treatment center staffed with physicians providing backup to outreach clinics staffed with PEs--appears to offer considerable potential for use by other rural areas having problems obtaining primary care services. A number of conditions, however, appear crucial for widespread applicability. These include:

- Acceptance of extensive use of PEs as primary health care providers by state government, boards of medical examiners, and the medical profession in general.
- Financial support, including provisions for collecting from third-party carriers.
- Acceptance of this concept of health care delivery by communities within the target service area.

EAST KENTUCKY HEALTH  
SERVICES CENTER

The East Kentucky Health Services Center (EKHSC) was established as a nonprofit corporation in November 1971.

Its primary objective was to develop a model for rural health care delivery. The center employs a number of innovative delivery techniques, including extensive use of PEs and midlevel practitioners, mobile health care delivery units, and computerized medical and management information systems. The major objective of EKHSC, however, is to provide the community health care using numerous types of health care providers and a variety of techniques.

The nucleus of EKHSC is an 8,000-square-foot clinical facility 4 miles from Hindman in Knott County, Kentucky (the estimated 1973 population was 16,200). The clinic is located in the East Kentucky Appalachian Mountains about 150 miles east of Lexington, Kentucky, and 150 miles northwest of Bristol, Tennessee.

When EKHSC began operations in 1972, Knott County's health care delivery system consisted of two GPs, two public health nurses employed by the public health department, two local drug stores, and an ambulance service provided by a local funeral home. By January 1973, EKHSC was treating patients in a new clinic, complete with an emergency room, a medical laboratory, and X-ray facilities. EKHSC's initial staff consisted of one physician, two RNs, and one administrative person.

In April 1976, the staff included:

- Four physicians.
- Two pharmacists.
- Five RNs/PEs.
- One laboratory and one X-ray technician.
- Five administrative personnel.

The clinic has a house staff, and student health teams constantly rotate through the clinic.

#### Medical practice

A top priority of EKHSC was to establish a medical practice with regular clinic hours and also to provide emergency coverage at the clinic. From the beginning, EKHSC operated under the concept that routine medical care delivery does not necessarily require highly trained and thus highly paid personnel. The approach was to develop a system that made extensive use of RNs and PEs working within written guidelines and under close physician supervision.

Each PE working at the center has had some formal health care training before joining the staff. This initial training has been augmented by EKHSC's in-house training program, which consists of about 6 months of strictly supervised work experience and 2 hours of formal lectures each week.

PE activities are regulated by protocols developed by EKHSC physicians. The protocols precisely state actions to be taken in response to specific routine situations. Deviations from the protocols must be approved in advance by one of the physicians. A medical chart auditor checks each patient's chart daily to assure protocols have been followed.

EKHSC officials cite steady growth in patient encounters as evidence of community acceptance of health care services provided by PEs under the close supervision of physicians. For example, the number of clinic patient visits increased from 11,400 in 1973 to 25,300 in 1975.

EKHSC physicians treated an additional 2,300 emergency room patients in 1975. The dental clinic, which was operating in 1975, treated 4,200 patients.

#### Other health care programs

In addition to operating the clinic and emergency facility, EKHSC conducts other programs directed toward specific health care problems. Examples include home health care services, student rotations, mobile clinic operations, regular education sessions, and programs in cooperation with other agencies concerned with health care within the target area.

#### Home health care

This program is operated by PEs although all center staff members, including physicians, occasionally participate in home visits. Home visits are made primarily to educate the family concerning the patient's condition as well as to monitor recovery progress. Obstetric patients are visited by a center physician 1 week after delivery.

#### Mobile clinic

Many communities within the EKHSC target area are isolated from existing health care services by the rugged topography of the region. These communities, generally with populations of 100 or fewer people sometimes have

greater health care needs than the more populous, more easily accessible neighboring communities. EKHSC officials decided that a self-contained mobile clinic was the best approach for connecting these isolated communities with the existing health care system. In June 1975, EKHSC purchased a mobile unit containing an examining room, an X-ray machine, an electrocardiogram machine, a urine analysis station, and a dental screening room.

During the initial months of operation, the mobile unit was used by center physicians and health science students on summer vacation to conduct a community screening program. Subsequently, the unit has been used to deliver health care to residents of two remote sections of Knott County. Patients from these areas visiting the Hindman clinic are given follow-up appointments with the physician or PE assigned to the mobile unit for that particular week.

The mobile unit operated each Tuesday between October 1 and December 31, 1975. An average of 15.9 patients were seen each day.

#### Student rotations

The student rotation program involves 8- to 10-week rotations at EKHSC for students from various health science disciplines. The objective is to expose students to all aspects of EKHSC operations, especially the team approach to health care delivery, and to allow participants to spend time in a rural practice setting while still completing their academic training.

During the initial 3 years, 1973-75, a total of 115 students from 41 professional schools in 16 States participated in the rotation program. At the time of our review, 13 of the 115 students had completed their formal education programs, and 3 had accepted employment with EKHSC.

#### Student summer program

Each summer EKHSC sponsors student projects in various communities within the program service area. The types of projects range from mass multiphasic screening programs to specific educational programs conducted in patients' homes. Students from various health science schools combine with local students to form teams which work with residents of the outlying communities. EKHSC programs are often designed to alleviate health care problems identified through student projects.

### Family care units

The family care unit concept was initiated by EKHSC to insure maximum participation of the patient and his/her family in managing the patient's medical problem. The concept includes formal training sessions at the clinic, in the patient's home, or at the hospital. The objective is to identify specific medical problems which can be treated by the patient and/or the patient's family, giving the patient a better understanding of his/her problem and reducing the length of hospitalization.

### Applying the concept elsewhere

The program's executive director believes that EKHSC's health care delivery concept could be applied effectively in other rural areas of the country experiencing physician shortages. He told us that EKHSC's program is not so unusual or unique as to preclude its use elsewhere. In his opinion, certain key elements must be present for EKHSC's delivery concept to operate successfully. These include

- individuals willing to take the initiative in establishing such a program,
- a well-defined organizational structure and a responsive management information system, and
- sound financial reimbursement provisions.

### REIMBURSEMENT FOR PE SERVICES

In 1965 when the Medicare legislation was enacted, there were few, if any PEs working, and no allowance was made for their reimbursement. Although the number of PEs had increased substantially since then, services provided by PEs (physician assistants and nurse practitioners) could not be reimbursed under part B of Medicare unless they were given under the personal supervision of a physician and were services normally delegated by a physician.

Responding to this problem, the Congress in the Social Security Amendments of 1972 provided that a study be made to determine (1) under what circumstances payments to physician extenders would be appropriate, (2) what payment methods would be the most appropriate, equitable, and non-inflationary, and (3) how large the reimbursements should be that are paid under health programs authorized by the Social Security Act. A contract covering the first phase of this study

by SSA 1/--designing a data collection, evaluation, and analysis initiative--was let in February 1974.

In a previous review, 2/ we recommended that the Secretary of HEW insure that (1) the study required by the Social Security Amendments of 1972 be conducted expeditiously and (2) the results be used as they become available to resolve the problems concerning the reimbursement for services provided by PEs under the Social Security Act. In responding to this recommendation in February 1975, HEW stated that the study was well underway.

In a June 1977 report on PEs, 3/ HEW reported there have been significant delays in the study, and it will be at least until 1979 before definitive findings are available. The SSA study consists of three major phases (1) PE practice identification phase, (2) baseline survey phase, and (3) evaluation phase. According to this report, the first phase--practice identification--has been completed, with an estimated universe of approximately 6,000 PEs identified. Of this number, 5,883 practices were identified that employed PEs.

According to the HEW report, SSA mailed questionnaires to each of these 5,883 practices to determine their interest in participating in the reimbursement study. There were 3,333 responses to this questionnaire, and of these, 650 practices employing some 1,000 PEs were determined to be potentially eligible in accordance with SSA criteria (PEs practicing in institutional settings were ineligible).

Although a concerted effort was made to get the 650 practices to participate in the SSA study, the HEW report stated at that time only about 50 practices had agreed to participate in the reimbursement phase of the study.

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1/Effective May 8, 1977, most of SSA's responsibilities for administering Medicare were transferred to the newly formed Health Care Financing Administration.

2/ "Progress and Problems in Training and Use of Assistants to Primary Care Physicians" (B-164031(5), Apr. 8, 1975).

3/Physician Extender Work Group Report to the HEW Health Resources Administration Policy Board.

Moreover, the HEW report stated there are serious questions about the potential validity of the results because of the way in which the sample practices have been selected for inclusion in the study.

#### Legislation authorizing PE reimbursement

On December 13, 1977, the President signed into law Public Law 95-210, the "Rural Health Clinic Services Act," authorizing reimbursement under Medicare (part B) and Medicaid for services provided in certain rural health clinics. Among the services covered are those of physician assistants and nurse practitioners, whether or not a physician is physically present at the time the service is provided. The law will apply to services provided to Medicare beneficiaries on or after March 1, 1978, and apply to services provided to Medicaid beneficiaries on or after July 1, 1978, with additional time permitted where enabling State legislation is necessary to allow implementation.

In order to evaluate changes which might be made in the Medicare program to provide more efficient and cost effective reimbursement, the act also requires the Secretary of HEW to conduct demonstration projects in urban medically underserved areas with respect to reimbursement on a cost basis for services provided by physician-directed clinics. Such services may include services provided by a physician assistant or nurse practitioner employed by such clinics if the services would otherwise be reimbursable if provided by a physician. These projects must be of sufficient scope and carried out on a broad enough scale to allow the Secretary, among other things, to fully evaluate the relative advantages and disadvantages of reimbursement on the basis of costs and fee-for-service for physician-directed clinics employing a physician assistant or nurse practitioner. The Secretary must submit to the Congress by January 1, 1981, a detailed report on the results of the projects, including recommendations for legislative changes.

A summary of some of the major provisions of Public Law 95-210 prepared by HEW's Health Care Financing Administration is shown in appendix XIV.

#### CONCLUSIONS

Some of the Nation's isolated rural areas will continually experience problems in attracting and retaining primary care physicians. Many of these areas do not have enough people to fully use or financially support a physician,

and it is likely some areas could not even justify a PE. As demonstrated by the projects previously discussed, one means of increasing the availability of primary care services in many of these areas is by using PEs at satellite clinics or in mobile units, with backup from physicians in larger neighboring communities. While such projects are not without their problems, the concept seems to offer potential for replication in other parts of the country.

Now that reimbursement for PE services rendered in rural clinics in underserved areas has been authorized, projects like those previously discussed which rely extensively on PEs could constitute an approach for providing health care to communities in the Nation otherwise unable to attract or retain primary care physicians. And by emphasizing preventive care and early identification of problems through screening programs, the use of PEs in outlying areas could reduce the need for and cost of higher level medical services.

To devise a single health care system that would equally meet the health care needs throughout the country would be extremely difficult. Some health manpower shortage areas are economically prosperous while others are depressed. Nevertheless, we believe the development of an organized approach to address the health manpower distribution problem requires HEW and the States to jointly insure that each of their current separate program efforts are adequately matched against community needs. In this manner, each community's needs could be matched with the program(s) best suited to meet these needs. We believe the four projects discussed in this chapter illustrate that alternative methods can be developed to meet the individual health care needs of an area or a population group.

#### RECOMMENDATIONS TO THE SECRETARY OF HEW

We recommend that the Secretary:

- Work with the States to identify those areas where health manpower distribution problems exist, and develop a strategy for marshaling resources-- Federal, State, and private--to establish an integrated program designed to provide health services in the manner most appropriate to each area.
- Examine those programs which rely on PEs to help deliver health services to those areas otherwise

unable to attract physicians and consider seeking legislation which would provide Federal funds to help develop those programs found most useful.

#### RECOMMENDATION TO THE CONGRESS

We recommend that the Congress reconsider the necessity for HEW to complete its study to determine appropriate reimbursement methods and rates for physician extenders as required by the Social Security Amendments of 1972 in view of the

--recent legislation enacted that provides for (1) Medicare (part B) and Medicaid reimbursement for PE services rendered in rural medically underserved areas and (2) demonstration projects to be conducted with respect to reimbursement for services provided by physician-directed clinics in urban medically underserved areas which employ physician assistants and nurse practitioners and

--questions raised in an HEW report about the potential validity of the results because of the way in which the sample practices have been selected for inclusion in the study and the limited number of practices that agreed to participate in the study.

#### AGENCY COMMENTS AND OUR EVALUATION

HEW concurred with the recommendation that it work with the States to identify those areas where health manpower distribution problems exist and develop a strategy for marshaling resources--Federal, State, and private--to establish an integrated program to provide health services in the manner most appropriate to each area. HEW stated that it supports the development of integrated programs linking local need determinations (with statewide considerations) to Federal policies for manpower production and incentive reimbursement for services. HEW also mentioned it favors establishment of mechanisms to bring resources requirements, production, and distribution of health manpower into a single decisionmaking process.

HEW stated that, while there may be a need for better coordination of programs, it is now supporting a wide variety of activities involving work with States, local governments, and others to meet health care needs. For example, HEW mentioned that (1) NHSC is helping States identify health manpower

distribution problems, (2) the Corps has also funded four States to develop State-level replicas of the Corps using State resources, and (3) its rural and urban health initiatives are funding integrated State, local, and Federal programs (including the National Health Service Corps, the Community Health Center, Migrant Health, the Appalachian Regional Commission, and the health underserved rural area programs) to improve the delivery of health services in underserved areas.

HEW also concurred with our recommendation that it examine those programs which rely on the use of PEs to assist in the delivery of health services to those areas otherwise unable to attract physicians and give consideration to seeking legislation which would provide Federal funds to assist in the development of those programs found to be most useful. HEW mentioned that it is supporting a broad range of studies to determine the best methods for training and using PEs and that it believes this support has been a major reason that the PE concept has gained greater acceptance.

HEW mentioned that it was directed in 1974 by the Senate Appropriations Committee to conduct research and demonstration projects for attracting physician assistants and nurse practitioners to rural scarcity areas to supplement and attract additional physicians. HEW stated that, in response, 53 Health Underserved Rural Area projects <sup>1/</sup> were funded in fiscal year 1976, and an additional 37 Rural Area projects were funded in fiscal year 1977.

HEW further stated that, while our draft report provided excellent examples of projects that rely on PEs to provide health care in underserved areas, the report did not discuss problems that arise from the use of these personnel, such as difficulties with State licensing laws in some States. HEW also stated that our draft report seemed to assume that PEs will practice in areas where physicians will not practice; whereas, the same conditions that discourage physicians from going to shortage areas also apply to PEs.

We recognize that there may be problems with State licensing laws in some States that must be dealt with when using PEs. However, it was stated in the Health Resources

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<sup>1/</sup>The Rural Area program, according to HEW, is authorized under section 110 of the Social Security Act which is a research authority for the Health Care Financing Administration.

Administration's Forward Plan for Fiscal Year 1979-83 that although no empirical studies or data address or resolve the issue of whether physician assistants have encountered legal restraints on their employment or utilization, inferential evidence indicates this is not a problem. It was stated that (1) they are being employed in a large number of settings in nearly all geographic areas of the country and (2) training programs have not reported that their graduates have encountered any legal problems in seeking employment. Moreover, PEs are being used, as illustrated by the examples discussed in this chapter, to provide health care services in rural areas unable to attract and retain physicians.

Therefore, we cannot fully agree with HEW's position that some of the same conditions that discourage physicians from going to shortage areas also preclude PEs from serving there. We believe it is important that HEW identify and evaluate various types of programs using physician extenders such as those discussed in this chapter and to the extent feasible promote the use of successful programs in other physician-shortage areas recognizing that because of varying conditions existing in health manpower shortage areas, no single effort or program will meet the health care needs of all communities.

HEW said that discussion of alternatives to increasing the numbers of primary care physicians in shortage areas is focused almost entirely on the use of physician assistants and nurse practitioners and that the report might give greater attention to other options. HEW mentioned, for example, that it is currently supporting research activities in the National Center for Health Services Research and elsewhere to improve the professional milieu of rural physicians through technical advances.

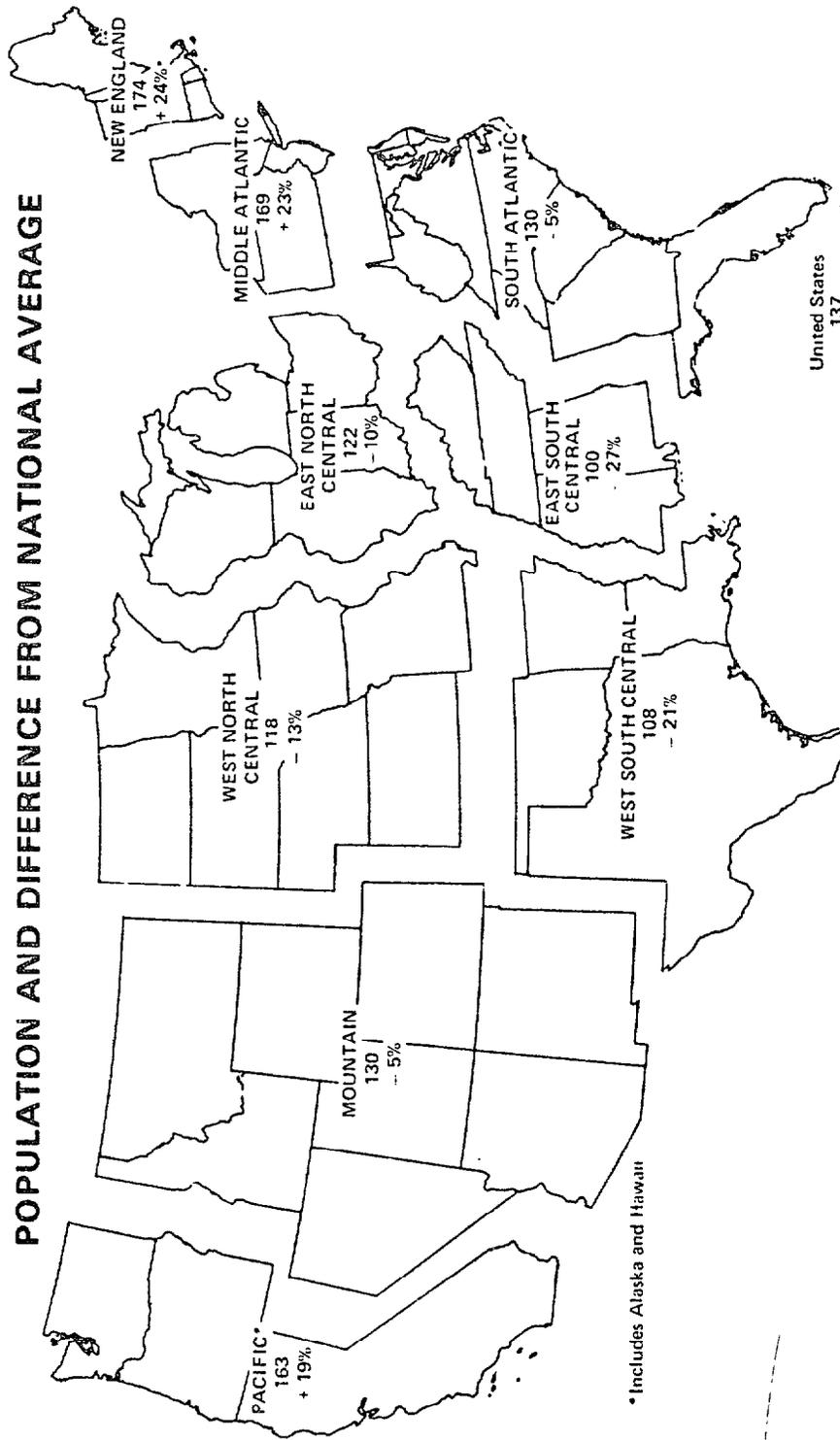
Recognizing that technology cannot be used as a substitute for adequate numbers of human providers, HEW mentioned the potential contribution of telecommunications technology and automated record systems to changing the professional aspects of delivering care in rural areas so as to make them more attractive to physicians. HEW also said that development of improved transportation systems linking patients in outlying areas with physicians in central locations is another alternative to be considered.

HEW said it testified in favor of legislation to amend the Social Security Act to permit Medicare and Medicaid reimbursement for services of physician assistants and nurse practitioners rendered in clinics located in rural underserved areas. Although such legislation was enacted in

December 1977, HEW advised us that it does not favor termination of the SSA study to determine appropriate methods and rates for PEs under the Social Security Act as requested by the Congress in 1972. HEW's view is that, although there are some administrative and substantive problems with the study, it is the only major study being conducted to obtain data on costs of services of PEs and the impact of reimbursement on the utilization of these practitioners. HEW also stated that some useful data will be forthcoming from the study.

Nevertheless, for the reasons previously discussed we still see limited value in HEW completing its physician extender reimbursement study and believe that the Congress should consider terminating it.

**1976 NON-FEDERAL PATIENT CARE MDs PER 100,000  
POPULATION AND DIFFERENCE FROM NATIONAL AVERAGE**



APPENDIX II

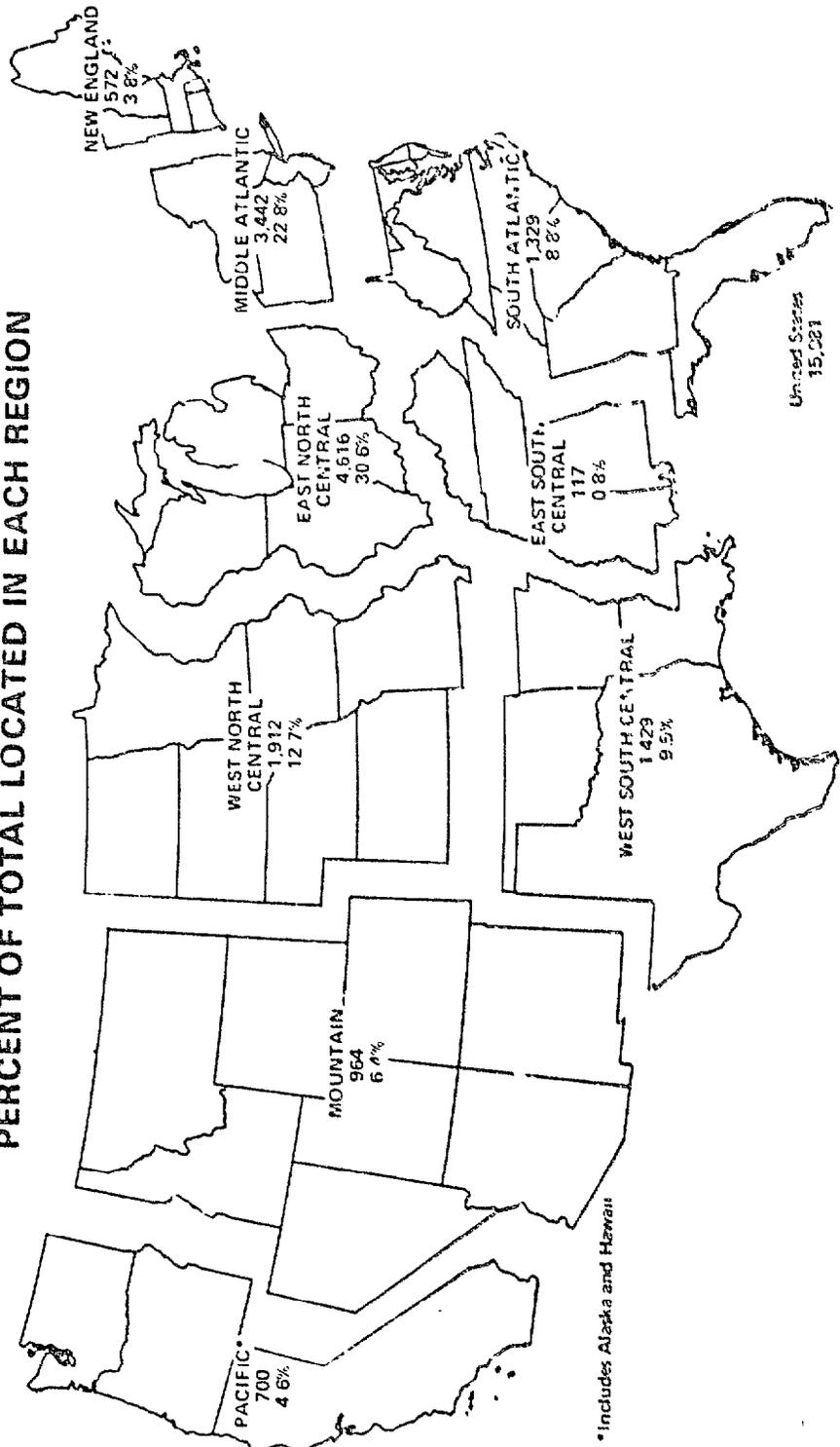
APPENDIX II

NON-FEDERAL MEDICAL TRAINING  
 PER 100,000 PEOPLE  
 BY STATE AS OF DECEMBER 1976 (DATE)

State	Physicians	Non-Federal patient care MDC per 100,000 people	State rank	Physicians	Non-Federal patient care MDC per 100,000 people	State rank
District of Columbia	2,491	359	1	1,173	109	1
New York	35,786	198	2	16,493	32	2
Massachusetts	10,786	186	3	4,694	71	3
Connecticut	5,543	178	4	2,489	80	4
California	36,628	172	5	16,651	35	5
Maryland	6,946	169	6	3,343	82	6
Rhode Island	1,494	162	7	726	79	7
Vermont	769	162	8	373	75	8
Colorado	3,876	153	9	1,802	71	9
Hawaii	1,221	147	10	593	72	10
Minnesota	5,670	143	11	2,477	77	11
New Jersey	10,402	142	12	4,914	67	12
Oregon	3,276	141	13	1,506	65	13
Arizona	3,155	141	14	1,498	67	14
Pennsylvania	16,640	140	15	7,790	68	15
Florida	11,600	139	16	5,164	61	16
Washington	4,890	138	17	2,224	61	17
New Hampshire	1,104	135	18	508	62	18
Illinois	15,148	135	19	7,480	67	19
Utah	1,614	134	20	722	62	20
Delaware	752	131	21	358	62	21
Ohio	13,326	125	22	6,444	60	22
Virginia	5,980	122	23	2,845	58	23
Missouri	5,787	122	24	2,717	57	24
Michigan	11,031	121	25	5,239	58	25
Wisconsin	5,401	117	26	2,572	56	26
Tennessee	4,923	117	27	2,246	54	27
Texas	13,968	113	28	6,395	53	28
Nebraska	1,734	113	29	952	62	29
Maine	1,194	113	30	549	59	30
North Carolina	6,013	112	31	3,011	56	27
Kansas	2,552	112	32	1,242	54	29
Nevada	631	109	33	273	46	43
Georgia	5,318	108	34	2,483	51	36
New Mexico	1,224	106	35	583	51	35
Louisiana	4,060	106	36	1,846	48	42
Montana	788	105	37	392	53	33
Kentucky	3,546	105	38	1,816	54	30
West Virginia	1,885	104	39	861	47	41
Indiana	5,320	100	40	2,669	50	37
Oklahoma	2,703	99	41	1,288	47	44
Iowa	2,773	97	42	1,438	50	35
North Dakota	608	96	43	309	49	40
South Carolina	2,643	95	44	1,388	50	39
Wyoming	348	90	45	184	48	42
Idaho	743	90	46	382	46	41
Alabama	3,257	89	47	1,663	46	40
Arkansas	1,853	88	48	948	45	40
Mississippi	1,916	82	49	994	43	49
Alaska	283	79	50	143	40	50
South Dakota	529	76	51	246	36	51
Total	292,152	137		137,668	63	

a/Includes physicians in graduate medical training.

1976 DISTRIBUTION OF DOs AND  
PERCENT OF TOTAL LOCATED IN EACH REGION



## APPENDIX IV

## APPENDIX IV

DOs BY STATE AS OF JUNE 1, 1976 (note a)

	<u>Number of</u> <u>DOs</u>	<u>Rank</u>	<u>Percent of</u> <u>total DOs</u>
Michigan	2,569	1	17.0
Pennsylvania	1,911	2	12.7
Ohio	1,289	3	8.5
Missouri	1,136	4	7.5
Florida	949	5	6.3
New Jersey	934	6	6.2
Texas	918	7	6.1
New York	597	8	4.0
Oklahoma	477	9	3.2
Iowa	436	10	2.9
Arizona	431	11	2.9
Illinois	381	12	2.5
Colorado	287	13	1.9
California	280	14	1.9
Maine	208	15	1.4
Kansas	205	16	1.4
Washington	201	17	1.3
Wisconsin	197	18	1.3
Oregon	192	19	1.3
Indiana	180	20	1.2
Massachusetts	176	21	1.2
New Mexico	136	22	.9
Georgia	120	23	.8
West Virginia	89	24	.6
Rhode Island	87	25	.6
Minnesota	70	26	.5
Tennessee	65	27	.4
Delaware	51	28	.3
Connecticut	42	29	.3
Virginia	42	30	.3
Vermont	40	31	.3
Kentucky	39	32	.3
Maryland	33	33	.2
Idaho	31	34	.2
North Carolina	30	35	.2
South Dakota	29	36	.2
Nebraska	28	37	.2
Nevada	26	38	.2
Montana	25	39	.2
Hawaii	24	40	.2
New Hampshire	19	41	.1
Louisiana	18	42	.1
Arkansas	16	43	.1
Utah	15	44	.1
Wyoming	13	45	.1
North Dakota	8	46	.1
South Carolina	8	47	.1
Mississippi	7	48	.04
District of Columbia	7	49	.04
Alabama	6	50	.03
Alaska	3	51	.01
Total	<u>15,081</u>		

a/Excludes 355 DOs in military service.

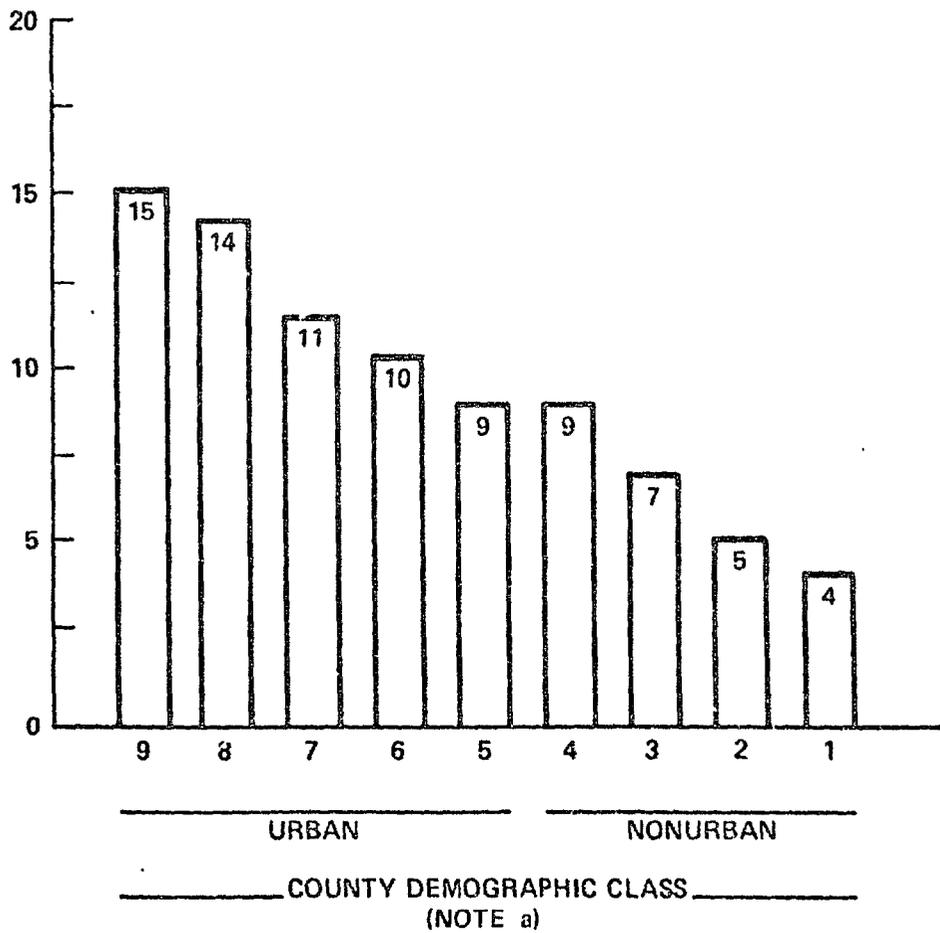
Source: American Osteopathic Association.

NUMBER OF U.S. MEDICAL SCHOOL GRADUATES  
AND FMG LICENSEES BETWEEN 1967-71  
ANALYZED FOR LOCATION PATTERN

	<u>U.S. medical school graduates</u>	<u>FMG licensees</u>	<u>Total</u>
Number of physician records supplied by AMA	40,587	13,773	54,360
Less:			
Physicians in Federal service	7,157	993	8,150
Physicians in U.S. possessions	129	331	460
Inactive	206	117	323
Physicians in other professional activities	<u>2,681</u>	<u>1,003</u>	<u>3,684</u>
Total	<u>10,173</u>	<u>2,444</u>	<u>12,617</u>
Total physicians in non-Federal patient care in the United States	30,414	11,329	41,743
Less:			
Physicians in residency training programs	7,080	115	7,195
Physicians' records with incomplete data	<u>10,315</u>	<u>1,308</u>	<u>11,623</u>
Total	<u>17,395</u>	<u>1,423</u>	<u>18,818</u>
Total non-Federal patient care physicians at known U.S. location	<u>13,019</u>	<u>9,906</u>	<u>22,925</u>

**U.S. MEDICAL SCHOOL GRADUATES AND FMGS  
LICENSED BETWEEN 1967-71  
PER 100,000 PERSONS BY COUNTY SIZE**

PHYSICIANS PER  
100,000 PERSONS



a) SEE PAGE 3 FOR COUNTY SIZE.

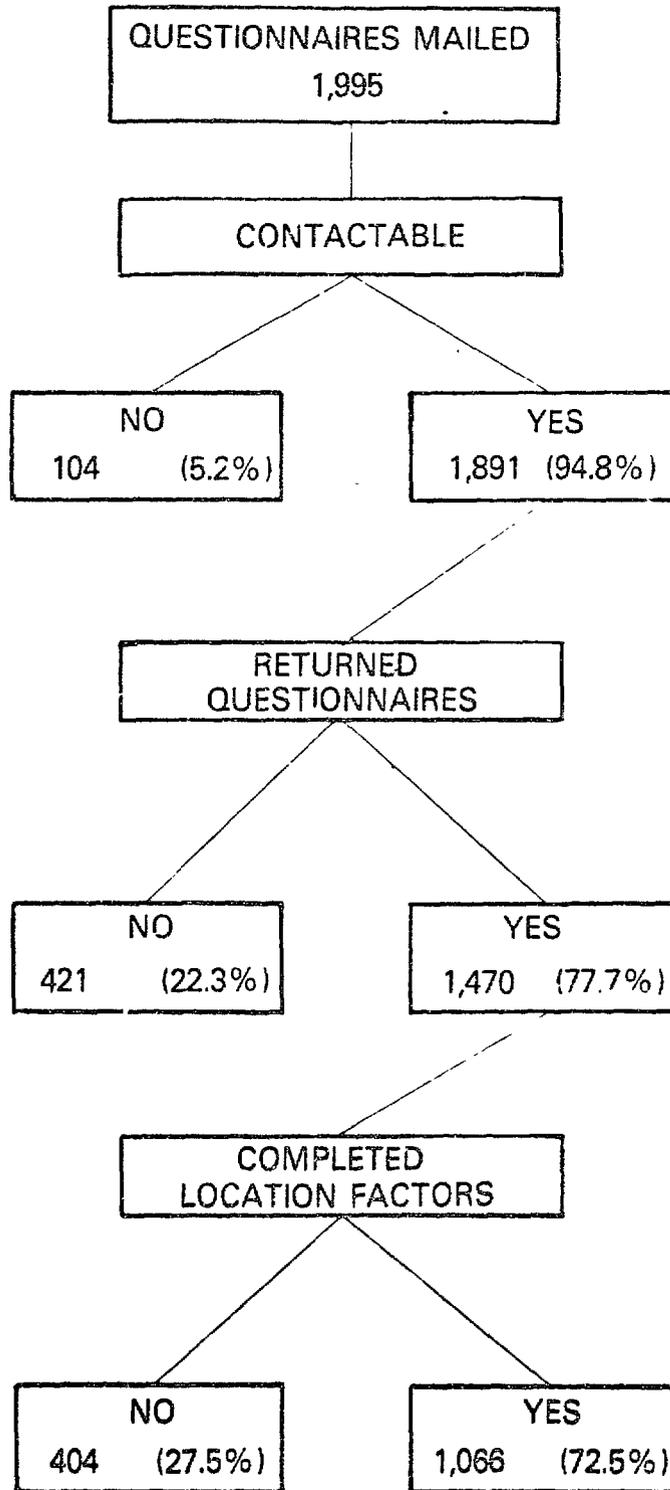
INFORMATION ON GAO PHYSICIAN QUESTIONNAIRE

Our questionnaire was designed primarily to identify those physicians that had already made location decisions and to obtain information on the factors they had considered important in making those decisions. The locational factors were essentially those used by the Rand Corporation in a study of 1965 medical school graduates. The factors fall into three broad groups: personal, sociocultural, and professional.

Questionnaires were sent to 1,995 physicians listed on an AMA data tape as licensed in 1971. This was a random sample of 17.4 percent of the 11,494 1971 licensees with known U.S. addresses and identifiable specialties. The sample was stratified by the following categories:

- Primary care and nonprimary care specialties.
- Urban and rural locations.
- Graduates of U.S. and foreign medical schools.

Questionnaires were mailed on May 6 and 7, 1976. Two followup questionnaires were mailed to nonresponding physicians. As shown in the following chart, 77.7 percent of the physicians who received questionnaires responded.



Questionnaire Subgroups

	n=11,494 1971 licensees		n=1,995 Sample		n=1,470 Questionnaire respondents		n=1,066 (note a) Selected practice locations	
	Number (note b)	Percent (note b)	Number (note b)	Percent (note b)	Number (note b)	Percent (note b)	Number (note b)	Percent (note b)
FMGs	3,869	33.66	916	45.91	712	48.44	558	52.35
U.S. medical graduates	7,625	66.34	1,079	54.09	758	51.56	508	47.65
Primary care physicians	4,827	42.00	974	48.82	<u>c</u> /764	52.01	559	52.35
Nonprimary care physicians	6,667	58.00	1,021	51.18	705	47.99	508	47.65
Urban physicians	10,223	88.94	1,316	65.96	<u>d</u> /665	62.38	665	62.38
Rural physicians	1,271	11.06	679	34.04	401	37.62	401	37.62

a/Four hundred and four physicians responded to the questionnaire but did not indicate that they would be in non-Federal patient care practices at known locations by September 1977.

b/"n" represents the total number of physicians in each group.

c/Does not add to 1,470 because 1 respondent did not answer specialty question.

d/The location choices of 404 physicians could not be classified as urban or rural since they did not respond to the practice location question.

**U.S. GENERAL ACCOUNTING OFFICE  
SURVEY OF PHYSICIANS**

1. What is the location of the medical school from which you graduated? *(Check one.)*

1  The United States or its possessions

2  Canada

3  Another country *(Please specify)*

---

2. Please indicate the specialty in which you completed (or will complete) your residency training. *(Check one.)*

1  No residency training

2  Family practice

3  Internal medicine

4  Pediatrics

5  Obstetrics — gynecology

6  Other medical specialty

7  Other surgical specialty

8  Other residency training *(Please specify)*

---

3. Are you board certified or board eligible in a SUBSPECIALTY? *(Check one.)*

1  Yes *If so, please specify*

2  No

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4. Is your practice (or will your practice be) primarily limited to a subspecialty? *(Check one.)*

1  Yes

2  No

---

5. Listed below is a group of factors which are said to influence the specialty choices of physicians. Indicate the extent to which each of the factors was important to you. *(Check one box per line.)*

	Very Large Extent	Large Extent	Moderate Extent	Some Extent	Little or No Extent
(1) Influence of faculty member	1	2	3	4	5
(2) Need for more practicing physicians in the specialty	1	2	3	4	5
(3) Availability of training positions in the specialty	1	2	3	4	5
(4) Greater opportunity for research contribution	1	2	3	4	5
(5) Influence of family member or friend	1	2	3	4	5
(6) Life style (e.g., regular hours)	1	2	3	4	5
(7) An interest in the area of specialization	1	2	3	4	5
(8) Other <i>(please specify)</i> _____	1	2	3	4	5

---

6. When did you make your decision regarding choice of specialty? *(Check one.)*

1  Before medical school

2  During medical school

3  During internship, residency or other house staff training

4  During military service

5  Other *(Please specify)*

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<p>7. Please describe your <u>present</u> medical activity. <i>(Check the most suitable.)</i></p> <p>1 <input type="checkbox"/> In residency or fellowship training</p> <p>2 <input type="checkbox"/> In Federal Service -- (including military, Public Health Service, Veterans Administration)</p> <p>3 <input type="checkbox"/> In active patient care practice (non-Federal)</p> <p>4 <input type="checkbox"/> In other professional activity <i>(Please describe)</i>                  _____                  _____</p> <p>8. What are your plans for the immediate future? <i>(Check one.)</i></p> <p>1 <input type="checkbox"/> Plan to remain in active patient care practice (non-Federal)</p> <p>2 <input type="checkbox"/> Plan to be in active patient care practice (non-Federal) by September 1977 and certain or fairly certain where the practice will be located</p> <p>3 <input type="checkbox"/> Plan to be in active patient care practice (non-Federal) by September 1977 but do not know where the practice will be located</p> <p>4 <input type="checkbox"/> Plan to enter or continue in Federal Service</p> <p>5 <input type="checkbox"/> Plan to continue in other professional care described in Question 7, part 4</p> <p>6 <input type="checkbox"/> Other <i>(Please specify)</i> _____                  _____                  _____</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>If you checked "1" in Question 8 please answer the remainder of the questionnaire</i></p> <p><i>If you checked "2" in Question 8 please answer the remainder of the questionnaire as if you were already in practice at that location.</i></p> <p><i>If you checked "3", "4", "5" or "6" in Question 8 STOP HERE. Please place the questionnaire in the return envelope and return it as soon as possible. THANK YOU</i></p> </div>	<p>9. In what State, county and city (or town) do you (or do you plan to) practice?</p> <p>State: _____</p> <p>County: _____</p> <p>City (or town): _____</p> <p>Zip Code: _____</p> <p>10. When did you (or do you plan to) establish your practice?</p> <p>Month: _____</p> <p>Year: _____</p> <p>11. Have State medical licensure restrictions prevented you from locating in a State where you would prefer to practice? <i>(Check one.)</i></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p> <p><i>If yes, please identify the State and nature of the restrictions.</i></p> <p>State: _____</p> <p>Nature of restriction: _____                  _____                  _____</p> <p>12. What is (or will be) the type of your practice organization? <i>(Check one.)</i></p> <p>1 <input type="checkbox"/> Solo practice</p> <p>2 <input type="checkbox"/> A two person partnership</p> <p>3 <input type="checkbox"/> Single-specialty group -- medical group providing services in only one specialty -- except groups composed exclusively of general practitioners and/or family practitioners</p> <p>4 <input type="checkbox"/> General practice group -- a group composed exclusively of general practitioners and/or family practitioners</p> <p>5 <input type="checkbox"/> Multispecialty group -- a group providing services in at least two specialties</p> <p>6 <input type="checkbox"/> Other <i>(Please specify)</i> _____                  _____</p>
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13. When did you make your decision of where to locate your practice? (Check one.)

- 1  Before medical school
- 2  During medical school
- 3  During internship, residency or other house staff training
- 4  During military service
- 5  Other (Please specify) \_\_\_\_\_

14. Listed below is a group of factors which are said to influence the location choices of physicians. Indicate the extent to which each of the factors was important to you. (Check one box per line.)

	Very Large Extent	Large Extent	Moderate Extent	Some Extent	Little or No Extent
(1) Income potential	1	2	3	4	5
(2) Climate or geographic features of area	1	2	3	4	5
(3) Having been brought up in the community or a similar community	1	2	3	4	5
(4) Payment or forgiveness of a loan	1	2	3	4	5
(5) Influence of wife or husband (her/his desires, career, etc.)	1	2	3	4	5
(6) Influence of family or friends	1	2	3	4	5
(7) High medical need in area	1	2	3	4	5
(8) Influence of preceptorship program	1	2	3	4	5
(9) Having gone through medical school, internship, residency, or military service near practice location	1	2	3	4	5
(10) Advice of older physician	1	2	3	4	5

14. (Continued)

Listed below is another group of factors. Indicate the extent to which each of these was important to you in selecting a location. (Check one box per line.)

	Very Large Extent	Large Extent	Moderate Extent	Some Extent	Little or No Extent
(11) Organized efforts of community to recruit physicians	1	2	3	4	5
(12) Opportunities for social life	1	2	3	4	5
(13) Recreational and sports facilities	1	2	3	4	5
(14) Quality of educational system for children	1	2	3	4	5
(15) Prospect of being more influential in community affairs	1	2	3	4	5
(16) Cultural advantage	1	2	3	4	5
(17) Prosperity of community	1	2	3	4	5
(18) Preference for urban or rural living	1	2	3	4	5

14. (Continued)

Listed below is another group of factors. Indicate the extent to which each of these was important to you in selecting a location. (Check one box per line.)

	Very Large Extent	Large Extent	Moderate Extent	Some Extent	Little or No Extent
(19) Availability of clinical support facilities and personnel	1	2	3	4	5
(20) Availability of good social service, welfare, or home care services	1	2	3	4	5
(21) Opportunity for regular contact with a medical school or medical center	1	2	3	4	5
(22) Opportunity for regular contact with other physicians	1	2	3	4	5
(23) Opportunity to join desirable partnership or group practice	1	2	3	4	5
(24) Availability of loans for beginning practice	1	2	3	4	5
(25) Opportunity to work with specific institution	1	2	3	4	5
(26) Access to continuing education	1	2	3	4	5

15. Are you now or do you plan to locate in a rural or inner city area experiencing a shortage of physicians? (Check one.)

- 1  Yes (GO TO QUESTION 18)
- 2  No (GO TO QUESTION 16)

16. Various incentives have been proposed to attract physicians to shortage areas. If you are not located in or do not plan to locate in a rural or inner city physician shortage area, please answer the following.

Did you ever seriously consider establishing your practice in a rural or inner city physician shortage area? (Check one for each area)

(1) Rural:

- 1  Yes
- 2  No

(2) Inner City:

- 1  Yes
- 2  No

17. Would you have established your practice in a rural or inner city physician shortage area if the following incentives had been available? (Check one box for each incentive for each area)

	(1)		(2)	
	Rural (check one)		Inner City (check one)	
	Yes	No	Yes	No
(1) Access to continuing education	1	2	1	2
(2) Guaranteed annual income (amount to be negotiated)	1	2	1	2
(3) Opportunity to join a partnership or group practice	1	2	1	2
(4) Income tax credit	1	2	1	2
(5) Availability of consulting physicians	1	2	1	2
(6) Combination of all of the above	1	2	1	2

18. If you have any suggestions about how the needs of health manpower shortage areas can best be met, please indicate so on the other side of this sheet

*Any information you provide will be held in strict confidence and released only as part of a general study*

**THANK YOU FOR YOUR PARTICIPATION. WE APPRECIATE YOUR COOPERATION**

APPENDIX VIII

FREQUENCY OF FACTORS INFLUENCING LOCATION CHOICES (note a)

	Total (n=1,066) No. Rank § (note b)		Primary care (n=528) No. Rank § (note b)		Nonprimary care (n=508) No. Rank § (note b)		U.S. medical graduates (n=508) No. Rank § (note b)		FMSs (n=558) No. Rank § (note b)		Urban (n=665) No. Rank § (note b)		Rural (n=401) No. Rank § (note b)								
	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank	No.	Rank							
Availability of clinical support and personnel	611	1.5	57	33E	1	61	273	2	54	309	2	61	302	1	54	417	1	63	194	3	48
Preference for urban or rural living	611	1.5	57	318	2	57	493	1	59	328	1	65	283	2	51	362	4	54	249	1	62
Opportunity for regular contact with other physicians	572	3	54	312	3	56	266	3	51	308	3	61	264	3	47	404	2	61	168	5	42
Climate or geographic features of area	523	4	49	276	4	50	274	4	49	305	4	60	218	8	39	296	7.5	45	227	2	57
Opportunity to join desirable partnership or free practice	477	5	45	267	5	48	210	5	41	271	5	53	206	9	37	317	6	48	160	6	40
Opportunity for regular contact with medical school or medical center	442	6	42	244	6	44	198	7	39	201	7	40	241	5.5	43	369	3	56	73	14	18
Access to continuing education	432	7	41	235	7	42	197	8	39	183	9	36	249	4	45	347	5	52	85	13	21
Quality of educational system for children	421	8	40	221	8	40	209	6	39	190	10	35	241	5.5	43	296	7.5	45	125	8	31
High medical need in area	375	9	33	195	9	35	180	9	35	154	12	30	221	7	40	157	16	29	185	4	46
Recreational and sports facilities	338	10	32	178	10	32	160	10	32	218	6	43	120	19	22	204	12	31	134	7	33
Having been brought up in the community or a similar community	122	11	30	167	12	30	153	11	31	187	8	37	135	15.5	24	200	13	30	122	9	30
Influence of wife or husband	115	12	30	175	11	31	143	14	28	167	11	33	148	12	27	224	11	34	91	11	23
Cultural advantages	295	13	24	122	11	27	143	12	28	151	13	30	144	13	26	248	9	37	47	18	12

APPENDIX VIII

	Total (n=1,066) (note a)			Primary care (n=558) (note b)			Nonprimary care (n=508) (note b)			U.S. medical graduates (n=509) (note c)			FMGs (n=558) (note d)			Urban (n=602) (note e)			Rural (n=464) (note e)		
	No.	Rank	%	No.	Rank	%	No.	Rank	%	No.	Rank	%	No.	Rank	%	No.	Rank	%	No.	Rank	%
Having gone through medical school, internship, residency, or military service near practice location	282	14	27	140	14	25	142	13	28	133	14	26	149	11	27	245	10	37	37	23	9
Prosperity of community	254	15	24	134	16	24	120	16.5	24	115	15	22	141	14	25	191	15	29	63	16	16
Income potential	246	16	23	122	19	22	124	15	24	92	20	18	154	16	26	160	19.5	24	86	12	21
Opportunity to work with scientific institution	244	17	23	124	18	22	120	16.5	24	109	16	22	135	15.5	24	192	14	25	52	17	13
Influence of family or friends	228	18	21	133	17	24	95	19	19	103	17	20	125	18	22	160	19.5	24	68	15	17
Availability of good social service, welfare, or home care services	227	19	21	139	15	25	88	20	17	101	18	20	126	17	23	182	17	27	45	19	11
Opportunities for social life	209	20	20	105	20	19	104	18	21	100	19	20	109	20	20	166	18	25	41	21.5	10
Organized efforts of community to recruit physicians	159	21	15	80	21	14	79	21	16	54	21	11	105	21	19	64	23	10	95	10	24
Advice of older physician	148	22	14	72	22	11	76	22	15	46	23	9	102	22	18	107	21	16	41	21.5	10
Prospect of being more influential in community affairs	115	23	11	65	23	12	50	23	10	47	22	9	64	23	12	72	22	11	43	20	11
Availability of loans for beginning practice	82	24	8	49	24	9	33	24.5	7	32	25	6	50	24	9	48	25	7	34	24	9
Influence of preceptorship program	76	25	7	43	25	8	33	24.5	7	37	24	7	39	25	7	57	24	9	19	21	
Payment or forgiveness of loan	24	26	2	17	26	3	7	26	1	13	26	3	11	26	2	1	26	2	12	26	3

a. Respondents that indicated factor was a very large or large influence on their location choices.

b. "n" represents the total number of respondents in each category.

AVERAGE NUMBER OF PATIENT ENCOUNTERS PER HOUR FOR NHSCSITES STAFFED BY ONE PHYSICIAN (note a)

Average number of patient encounters per physician per hour	Number of sites by age (years)					Percent	Cumulative percent
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>		
0 to 0.50	-	-	1	-	1	2	2
0.51 to 1.00	-	3	1	1	5	12	14
1.01 to 1.50	3	-	1	-	4	10	24
1.51 to 2.00	4	3	2	1	10	24	48
2.01 to 2.50	3	-	4	-	7	17	65
2.51 to 3.00	4	3	-	1	8	19	84
3.01 to 3.50	2	-	2	1	5	12	96
3.51 to 4.00	-	-	1	-	1	2	98
4.01 and up	-	-	1	-	1	2	100
Total	<u>16</u>	<u>9</u>	<u>13</u>	<u>4</u>	<u>42</u>	<u>100</u>	<u>---</u>

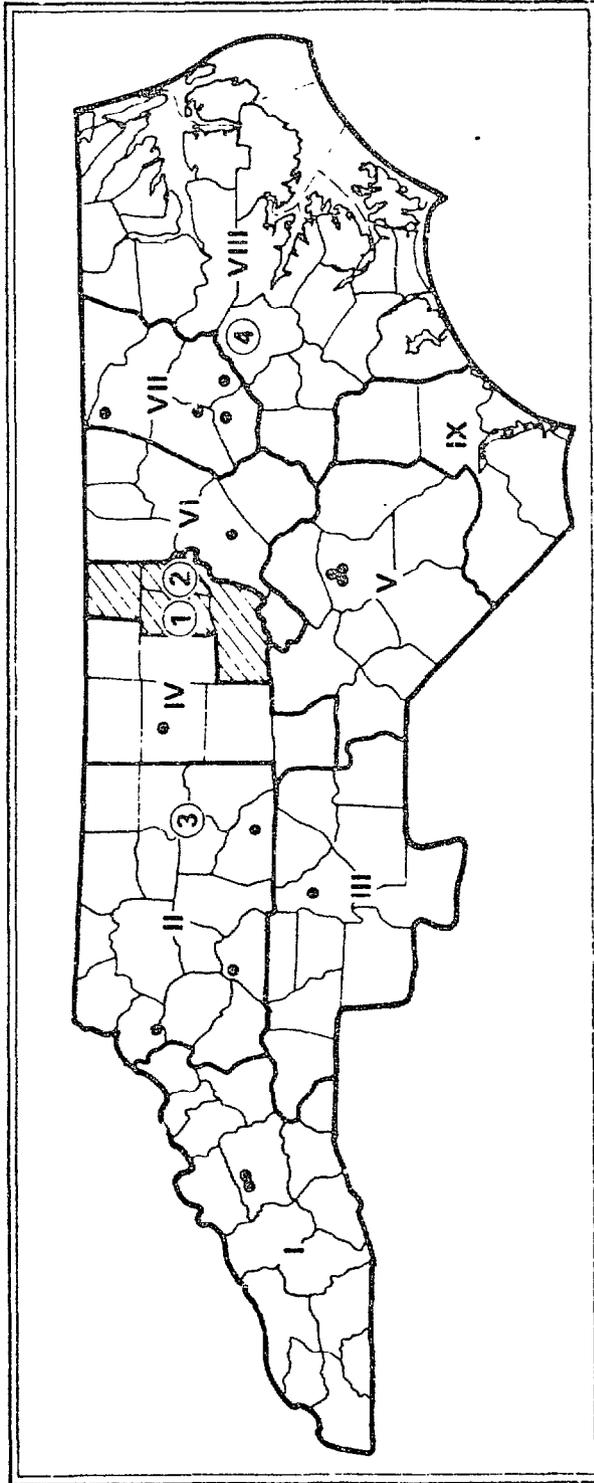
a/For sites in operation 1 year or longer; encounters were for the third quarter of fiscal year 1976.

AVERAGE NUMBER OF PATIENT ENCOUNTERS PER HOUR FOR NHSC SITESSTAFFED BY TWO OR MORE PHYSICIANS (note a)

Average number of patient encounters per physician per hour	Number of sites by age (years)					Percent	Cumu- lative percent
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>		
0 to 0.50	-	-	-	-	-	-	-
0.51 to 1.00	-	-	-	1	1	1	1
1.01 to 1.50	9	3	7	-	19	28	29
1.51 to 2.00	2	5	5	-	12	18	47
2.01 to 2.50	3	4	7	-	14	21	68
2.51 to 3.00	5	-	6	-	11	16	84
3.01 to 3.50	-	3	2	-	5	7	91
3.51 to 4.00	1	-	5	-	6	9	<u>100</u>
4.01 and up	-	-	-	-	-	-	-
Total	<u>20</u>	<u>15</u>	<u>32</u>	<u>1</u>	<u>68</u>	<u>100</u>	

a/For sites in operation 1 year or longer; encounters were for the third quarter of fiscal year 1976.

MAP OF THE NORTH CAROLINA AHFC



- |                     |                      |                     |
|---------------------|----------------------|---------------------|
| I. MOUNTAIN AHFC    | IV. GREENSBORO AHFC  | VII. AREA L AHFC    |
| II. NORTHWEST AHFC  | V. FAYETTEVILLE AHFC | VIII. EASTERN AHFC  |
| III. CHARLOTTE AHFC | VI. WAKE AHFC        | IX. WILMINGTON AHFC |

LOCATIONS OF UNIVERSITY MEDICAL CENTERS: (1) UNIV. OF N.C. AT CHAPEL HILL, (2) DUKE, (3) BOWMAN GRAY, AND (4) EAST CAROLINA UNIVERSITY

CROSSHATCHED COUNTIES ARE INCLUDED IN SERVICE AREA OF THE UNC AND DUKE UNIVERSITY





DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
OFFICE OF THE SECRETARY  
WASHINGTON, D. C. 20201

MAR 30 1978

Mr. Gregory J. Ahart  
Director, Human Resources  
Division  
United States General  
Accounting Office  
Washington, D. C. 20548

Dear Mr. Ahart:

The Secretary asked that I respond to your request for our comments on your draft report entitled "Progress and Problems in Improving the Availability of Primary Care Providers in Underserved Areas." The enclosed comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

We appreciate the opportunity to comment on this draft report before its publication.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Thomas D. Morris".

Thomas D. Morris  
Inspector General

Enclosure

DEPARTMENT COMMENTS TO GAO DRAFT REPORT ENTITLED,  
"PROGRESS AND PROBLEMS IN IMPROVING THE AVAILABILITY  
OF PRIMARY CARE PROVIDERS IN UNDERSERVED AREAS"

GENERAL COMMENTS

In Chapter Three, the report concludes that the National Health Service Corps (NHSC) has devoted too little attention to the determination of potential community demand for services in placing NHSC assignees because many NHSC physicians practicing in HEW designated health manpower shortage areas are not seeing very many patients. The Department is also concerned about possible underutilization of NHSC physicians. For areas which are identified as shortage areas eligible for NHSC assistance, but which cannot sustain full-time medical practices or retain physicians, we must consider alternative health care delivery modes or staffing arrangements. We expect some progress toward improved utilization to occur as major barriers to the effective utilization of physician extenders (i.e., eligibility for reimbursement and limitations of licensure) are reduced.

The draft report places great weight on the fact that the average number of patients seen per hour in NHSC sites (1.9) is below the national average for all general or family practitioners in non-metropolitan areas (4.2, according to the American Medical Association figures). In our opinion, such a comparison is not equitable as the NHSC physicians are relatively new to the practice of medicine, whereas the other group includes a disproportionate number of physicians with established practices. Further, an analysis of the table on page 37 of the draft report reveals that 47 percent (28 of 60) of the sites saw more than 2 patients per hour in the first 2 years, while 60 percent (30 of 50) attained this level in the second 2 years. Overall, this indicates a substantial increase in productivity as the sites mature.

Further, underserved areas may not generate the level of demand for medical services which might be expected on the basis of their population size. Persons residing in areas of long-term shortages tend to modify their behavior by cutting back on their consumption of health services and by finding providers in other service areas. In fact, studies suggest that persons who have not had a regular source of care take some time "learning" to seek health care in nonurgent situations. Also, people consider whether to change from using services available on a relatively permanent basis in another area, to using services in their own area that may be there only temporarily. Therefore, it does not necessarily follow that "if the need for health manpower in these areas was truly critical, then one would expect NHSC physicians to be extremely busy or at least as busy as the average primary care physician practicing in a nonshortage area" (p. 49).

There are other factors affecting NHSC physicians' workload. Because most NHSC sites are located in areas with a small population base, the actual number of people requiring medical care would be lower than in more populous areas. The backlog of unmet medical needs of individuals in health manpower shortage areas may be so great as to require more extensive physician-patient contact at the outset, with special attention on a continuing basis to preventive services that can reduce need for hospitalization and other more costly care. Even under optimal circumstances, initial visits by a patient require considerably more time to gather a history and to assess health level than do subsequent visits.

A more appropriate measure of staff utilization is the number of "health service units" delivered at the time of a patient visit. A recent study, conducted by the Bureau of Community Health Services, shows that productivity, when measured by encounters, patient visits, or "health service units" delivered, increased significantly between NHSC sites in operation for 2 years and those in operation for 4 years.

A recent survey of retention of NHSC physicians (conducted under Bureau of Health Manpower contract No. 282-76-0439) contains encouraging statistics. A substantial proportion of the NHSC physicians surveyed (one in three) did feel that they were seeing too few patients daily. However, 79 percent of the total felt that their practices were generating an "adequate" or "excellent" amount of income and 72 percent felt that their practices had the potential for generating income commensurate with salary expectations as private practitioners.

Discussion of alternatives to increasing the numbers of primary care physicians in shortage areas now is focused almost entirely on the use of physician assistants and nurse practitioners. The report might give greater attention to other options. This Department, for example, is currently supporting research activities in the National Center for Health Services Research and elsewhere to improve the professional milieu of rural physicians through technological advances. While technology cannot be used as a substitute for adequate numbers of human providers, the report should include a discussion of the potential contribution of telecommunications technology and automated record systems to changing the professional aspects of delivering care in rural areas so as to make them more attractive to physicians. Development of improved transportation systems linking patients in outlying areas with physicians in central locations is another alternative to be considered.

Since the draft report at various points notes the lack of data on which to base sound conclusions about problems in improving the availability of primary care providers in underserved areas, we would have expected that the recommendations might be more explicit in citing the need for

the conduct of sound research. In the absence of needed information, reports such as this draft may be considered subjective, relying heavily on very small samples, interviews with a few physicians, visits to a few projects or sites, etc. It might be noted in this connection that the National Center for Health Services Research is in the process of contracting for a synthesis (including a workshop) of evaluation and research in rural health care. The issues to be addressed include the problems of obtaining and keeping trained manpower, financing rural health care, and the effects of rural health programs on access, utilization, and coordination of medical services.

The following comments are addressed specifically to the recommendations in the draft report.

#### GAO RECOMMENDATION

"We recommend that the Secretary of HEW develop guidelines for assessment under what circumstances it would be appropriate to assign health care providers to entities requesting NHSC assistance and the number and type of provider(s) that would be most appropriate."

#### DEPARTMENT COMMENT

We concur with this recommendation. Action to accomplish its purposes is being taken in accordance with the requirements of sections 332 and 333 of the Public Health Service (PHS) Act, as amended by P.L. 94-484. A major reevaluation of the criteria used for designation of shortage areas under section 332 has been undertaken and a public notice of related regulations has been proposed. New regulations relating to assignment of personnel also are being prepared.

It is important to note that P.L. 94-484 required that practitioner-to-population ratios, infant mortality, and other indicators of health status be specifically included as factors to be considered in establishing criteria for designation of shortage areas. The implication is that the Congress wished "need" for health services to be the primary determinant for designation rather than unmet demand. However, the criteria we have developed do reflect shortage levels rather than adequacy levels, based on our realization that the use of "ideal" standards in determining staffing levels could easily result in underutilization of NHSC personnel.

GAO RECOMMENDATION

"We recommend that the Secretary of HEW reconsider the policy of assigning at least two physicians to each site and explore other alternatives to overcome the problem of professional isolation."

DEPARTMENT COMMENT

We do not concur with this recommendation, as there is now no policy requiring assignment of at least two physicians to each site. The Department has, however, attempted to avoid solo assignment where a single physician is placed in a community and to place physician extenders, i.e., physician assistants or nurse practitioners, in those sites where it was felt unlikely that the patient load would require the services of two physicians.

The primary emphasis of the NHSC is on development of health care systems. Such systems incorporate the concept of a critical mass of providers for a given shortage area. Assignment to such a system is a more significant element of strategy than access to film libraries, linkages with teaching hospitals, and provision of tape cassettes, although the NHSC also employs most of these other means of overcoming professional isolation.

One of the reasons for "pairwise" staffing of NHSC sites has been that such staffing might improve retention of personnel. The productivity of NHSC sites and their retention records should be evaluated together in judging the overall effectiveness of the NHSC program.

GAO RECOMMENDATION

"We recommend that the Secretary of HEW require that communities and other entities requesting NHSC health care providers conduct studies which identify to the extent possible the number and type of residents located therein who are likely to seek care from an NHSC sponsored practice."

DEPARTMENT COMMENT

We concur with the intent of this recommendation but question its practicality. While we may all agree that it would be better to place NHSC providers by "determining the extent to which residents seek, but are unable to obtain, health care" (page 48), it is not clear how to make such a determination. For example, the measurement of unmet need or demand for health care, even in a research context, is still the subject of considerable debate.

If a method of determining demand were chosen from among those currently available, an enormous data collection effort would be required. It does not seem feasible to place such a burden on local communities which usually do not have the resources to undertake such a study.

Health Systems Agencies and other health planning agencies, developed under the National Health Planning and Resources Development Act of 1974, have as one of their responsibilities undertaking studies of unmet need and potential demand for services. Under the new NHSC authorizing legislation, the designation and site approval processes both depend strongly on these planning agencies' evaluations of need. In the designation process, the agencies will be asked to evaluate the size of a potential site's service population and consider accessibility to nearby resources. In the site approval process, the comments of the agencies are required to be solicited and taken into account. Existing sites will not be continued if sufficient support for the NHSC project has not been demonstrated over the period of NHSC involvement.

#### GAO RECOMMENDATION

"We recommend that the Secretary of HEW verify the above information to the extent possible, before assigning health care providers to the applicant."

#### DEPARTMENT COMMENT

The NHSC has always verified data on expected demand for services. Initial verification is done by the State Planning Agency or the Health Systems Agency at the time the designation of the shortage area is made. Following receipt of an application for assignment of staff, regional office staff visit the applicant community to verify information presented in the application.

#### GAO RECOMMENDATION

"We recommend that the Secretary of HEW develop multi-year projections on (1) the total number of physicians required for service in HEW designated shortage areas, (2) the number of physicians with present scholarship commitments who are likely to become available for shortage area service, (3) the number of physicians with scholarship commitments likely to remain in the shortage areas, (4) the number of physicians who will voluntarily choose to establish a practice in HEW designated areas, and (5) based on the above data, the total number of additional physicians needed taking into consideration, to the extent possible, use of physician extenders for providing health care in these areas."

DEPARTMENT COMMENT

We concur with this recommendation and already have compiled much of the information that has been requested. Additional studies are now being conducted. However, the number of scholarship recipients likely to become available for shortage area service, the number of such physicians likely to remain in shortage areas, and the number who will voluntarily choose to practice can be only roughly estimated. Such variables as defaults for academic failure, policies relating to deferral for residency training, and failure to perform service following completion of training will have a bearing on the availability of scholarship recipients. Also, the number of years to be served by a scholarship recipient is determined by the number of years of scholarship assistance received by that individual. As increasing numbers of scholarships go to students in their first or second year of training, the average number of years of obligated service per recipient will rise.

GAO RECOMMENDATION

"We recommend that the Secretary of HEW use the results of the preceptorship study to determine when in the medical education process preceptorship training should be given and how long the experience should last to have the greatest impact on influencing the specialty and practice location choice of physicians."

DEPARTMENT COMMENT

We fully concur that more detailed information on medical preceptorships is needed. As this information becomes available, we will promulgate and make use of it. As the draft report notes, we are now conducting a study which will enable a more precise analysis than has been possible in the past and, in addition, are planning to address these concerns in new guidelines for programs authorized under P.L. 94-484.

The value of preceptorships is not necessarily limited to their effect on locational or even specialty choices. Preceptorships are primarily intended to give students an educational experience in primary care in rural areas, averaging a few weeks in duration. The benefits of such short educational exposures are difficult to measure separately because the program represents only a very small segment of undergraduate medical education. However, it is important to note that these benefits accrue to all participants and not merely those who enter primary care specialties or rural practice.

The RAND Study, referred to on page 93 of the draft report, was based on gross data relating the geographic location of 1965 medical graduates with whether or not the graduate had undertaken a "preceptorship" in medical school. The data did not differentiate between what some believe to be major variables associated with preceptorships, such as the year in which they were taken, duration, and whether they were required or elective. We are now attempting to fill in some of these information gaps. Although there is no clear evidence to show a causal relationship between preceptorships and geographic distribution, the data do show that former preceptorship students are more likely to enter rural practice than other physicians.

It is important to note that there is no mandatory link of any kind between the preceptorship program and critical medical manpower shortage areas, as designated under Section 329(b) of the PHS Act, which represent only a portion of rural areas. Thus, even if promotion of entry into rural practice were a primary goal of these programs rather than a possible result, it would not be appropriate to use the percent entering designated critical shortage areas as a criterion for measuring success.

#### GAO RECOMMENDATION

"We recommend that the Secretary of HEW analyze the extent to which recent family practice graduates and other physician specialists are locating in HEW designated shortage areas, and based upon this analysis, submit recommendations to the Congress for financially supporting those types of graduate medical training programs which constitute the greatest resource for providing health care to medically underserved areas."

#### DEPARTMENT COMMENT

We concur with this recommendation. Family practice is central to the strategy for providing quality health care to all Americans, with particular emphasis on primary care and geographic distribution. Accordingly, we will continue to place high priority on the support of these programs. The reasons for this priority clearly extend much beyond producing large proportions of physicians who locate in rural areas. Moreover, we do intend to analyze the locational decisions of these and other specialists.

GAO RECOMMENDATION

"We recommend that the Secretary of HEW work with the States to identify those areas where health manpower distribution problems exist, and develop a strategy for marshalling resources, Federal, State and private, to establish an integrated program designed to provide health services in the manner most appropriate to each area."

DEPARTMENT COMMENT

We concur with this recommendation and support the development of integrated programs linking local need determination (with State-wide considerations) to Federal policies respecting assistance for manpower production and incentive reimbursement for service. We favor the establishment of mechanisms that would bring resource requirements, production, and distribution of health manpower into a single decision-making process.

Already this Department is making vigorous efforts to help marshal resources to provide health services in underserved areas. While there may be a need for better coordination of programs, we now are supporting a wide variety of activities involving work with States, local governments, and others to meet health care needs. For example, the NHSC is helping States identify health manpower distribution problems; 4 State coordinators and 4 field coordinators have been assigned for this purpose to date, and there are over 20 applications for additional assignees. The NHSC has funded 4 States to develop State-level replicas of the NHSC, using State resources.

In addition, the Department's rural and urban health initiatives are funding integrated State, local, and Federal programs (including the NHSC together with the Community Health Centers, Migrant Health, Appalachian Regional Commission, and health underserved rural area programs) to improve the delivery of health services in underserved areas.

GAO RECOMMENDATION

"We recommend that the Secretary of HEW examine those programs which rely on the use of physician extenders to assist in the delivery of health services to those areas otherwise unable to attract physicians, and give consideration to seeking legislation which would provide Federal funds to assist in the development of those programs found to be most useful."

DEPARTMENT COMMENT

We concur with this recommendation. The Department is supporting a broad range of studies to determine the best methods for training and utilizing physician extenders (physician assistants and nurse practitioners). We believe PHS support has been a major reason that the physician extender concept has gained greater acceptance and that physician assistants and nurse practitioners are successful, participating in training programs and in delivering care in a variety of settings.

As a result of the Senate Appropriations Committee Report No. 93-1146, dated September 11, 1974, which directed the Department "to conduct research and demonstration projects for attracting physician assistants and nurse practitioners to rural scarcity areas to supplement and attract additional physician manpower," 53 Health Underserved Rural Areas (HURAs) projects were funded in Fiscal Year 1976. Thirty-seven more HURA projects were funded by the close of Fiscal Year 1977. The HURA program is authorized under Section 1110 of the Social Security Act which is a research authority for the Health Care Financing Administration. A report on the first 2 years of activities under this program has been forwarded to the Congress.

The draft report provides excellent examples of projects that rely primarily on physician assistants or nurse practitioners to increase the availability of health care services in medically underserved areas. However, it does not discuss problems that arise in the use of such personnel, such as difficulties with State licensing laws in some States. Further, the report seems to assume that physician assistants and nurse practitioners will practice in areas where physicians will not practice. Some of the same conditions that discourage physicians from going to shortage areas apply also to physician assistants and nurse practitioners.

GAO RECOMMENDATION

"In order to increase the availability of primary care services particularly in underserved areas, the Congress should enact legislation which would provide reimbursement for physician extender services under health programs authorized by the Social Security Act. One alternative would be to authorize reimbursement of physician extenders, who have graduated from accredited primary care training programs and are providing primary care, based on the customary rate charged for such services. The Congress should also reconsider the necessity for HHA to complete its study on physician extender reimbursement through Medicare in view of the long time being taken to review this question."

DEPARTMENT COMMENT

The Department testified in favor of legislation to amend the Social Security Act to permit Medicare and Medicaid reimbursement for services of physician assistants and nurse practitioners rendered in clinics located in rural underserved areas. This legislation was signed into law as P.L. 95-210 on December 13, 1977. Under the provisions of the Rural Health Clinic Services Act of 1977, reimbursement is authorized for clinic services furnished by a nurse practitioner or physician assistant under general (rather than direct "over-the-shoulder") supervision, although a clinic must still have one or more physicians available to provide medical direction and carry out other specified responsibilities.

The new law defines a physician assistant or nurse practitioner as an individual who is legally authorized by State law to perform the services and who meets the training, educational, and experience requirements established by regulation. The first set of regulations was published February 8, 1978, and sets forth alternative, minimum credentials in the definition of those terms. In recognition of the fact that there are graduates of special education programs who have been providing medical services in settings comparable to rural health clinics, the regulation includes in the definition people who have graduated from such programs and have been providing primary medical care services for at least 12 months during the 18 months immediately preceding the effective date of the regulation (42 CFR 481.2). This regulation also specifies the requirements which a clinic must meet in order to be certified for participation in Medicare or Medicaid.

P.L. 95-210 provides for reimbursement to certified clinics on a cost-related basis—that is, based on the reasonable costs incurred in providing the services.

We do not favor termination of the Department's study to determine appropriate reimbursement methods and rates for physician extenders under the Social Security Act, as requested by the Congress in 1972. Although there are some administrative and substantive problems with the study, it is the only major study being conducted to obtain data on the cost of services of physician assistants and nurse practitioners and the impact of reimbursement on the utilization of these practitioners. Some useful data will be forthcoming from the study.

TECHNICAL COMMENTS

The draft report uses the term "physician extender" to cover both physician assistants and nurse practitioners. We encourage the deletion of this title and suggest the terms "physician assistant" or "nurse practitioner" (or both) be substituted as appropriate. Nurse practitioners generally are not considered to be physician extenders in the same sense as physician assistants. Furthermore, the term is tending to fall out of use. In the present reimbursement legislation for rural health clinics, the term "primary care health practitioners" is being used to connote both nurse practitioners and physician assistants.

An important factor affecting the distribution of osteopathic physicians, in addition to school location (page 7), is the variation in licensure laws.

The last sentence in the first paragraph on page 9 may be updated to read "According to the American Academy of Family Physicians, 2,204 MDs had completed residency programs as of July 1976."

The analysis in Chapter Two on the location of new physicians presents a potentially serious problem because of the large number of omissions from the analysis of 1967-71 U.S. graduates. Appendix V (page 143) indicated that for 10,315 of the 40,587 United States graduates (25 percent) on whom the American Medical Association supplied records, the data were incomplete; these individuals were omitted from the analysis. If the characteristics of these physicians are different from the remainder, the implications of the locational pattern analysis could be quite different. A comparison of selected characteristics (especially location of medical school) between the 10,315 with incomplete data and the remainder might be useful in assessing the seriousness of this problem.

In its discussion of factors contributing to the tendency of non-primary care physicians to locate in more urbanized areas, the report emphasizes the need for support facilities and support personnel. However, the discussion omits the consideration that secondary and tertiary level practitioners are not needed below a certain threshold of morbidity in a population. Therefore, a larger population is needed to support any specific number of specialty practices than is needed for the same number of primary care practices.

Contrary to the implication on page 30 of the draft report that only nonprofit corporations are eligible to apply for the assignment of NHSC personnel, section 329 of the PHS Act, as in effect prior to the amendments made by P.L. 94-484 and section 333 of the PHS Act as amended by P.L. 94-484, provide that both public or nonprofit private entities may apply for the assignment of NHSC personnel.

On page 39 of the draft report, the listing of positive incentives used by the NHSC to make service in critical health manpower shortage areas more attractive includes a statement that "free malpractice insurance" is provided. That is not the case. Instead, members of the NHSC providing services rely on section 224 of the PHS Act which provides that the remedy against the United States for damages for personal injury, including death, resulting from the performance of medical, surgical, dental, or related functions by any commissioned officer or employee of the PHS, while acting within the scope of his employment, is exclusive of any civil action or proceedings on the same claim against the officer or employee whose acts or omission gave rise to the claim.

On page 46 of the draft report, it is stated that until passage of P.L. 94-484 recipients were liable for repayment of scholarship payments, tuition, and fees plus interest upon failure to serve their obligation or complete their training. Under the statute, section 225(f)(2), interest is not charged if someone fails to complete their academic training. While the second sentence of the middle paragraph on page 46 would seem to imply that the writers of the report understood this, the first sentence should be clarified.

Although the outline of the changes made in the PHS/NHSC scholarship program, starting on page 46, are admittedly summary in nature, we would suggest that the 2 items on the top of page 47 be revised to indicate that:

- (1) where the Secretary determines there is no need for a scholarship recipient in a health manpower shortage area, the individual's obligated service may be performed as a full-time employee practicing his profession in any unit of the Department; and
- (2) the penalty for failure to perform obligated service under the new NHSC Scholarship Program provides that such penalty is reduced by the amount of the service obligation which an individual has completed.

The report should reflect, on page 65, the amendment made to section 741(f)(1)(B) by P.L. 95-83, which revises the provision

that loan repayment be limited only to loans under the Health Professions Student Loan Program, to allow such repayment of "other educational loans" that were received under a written loan agreement entered into before October 12, 1976.

Based on recent modification of the approval process, the last sentence of the second paragraph on page 94 should be changed to read: "Residency programs in the field of family medicine approved by the Board of Trustees of the American Osteopathic Association or the Liaison Committee on Graduate Medical Education based upon the recommendation of the Residency Review Committee for Family Practice, and new residency programs in family medicine for which provisional approval has been obtained, are eligible for support under this grant program."

We suggest that the table on page 96, showing distribution of family practice graduates, be supplemented with information concerning distribution by demographic county classification. This would enable better correlation with data in other parts of the report.

APPROVED FOR PUBLICATION BY THE BOARD OF TRUSTEES OF THE AMERICAN OSTEOPATHIC ASSOCIATION

SUMMARY OF SOME OF THE MAJOR PROVISIONS OF  
MEDICARE AND MEDICAID REIMBURSEMENT FOR  
RURAL HEALTH CLINICS UNDER PUBLIC LAW 95-210

Coverage of clinics in rural areas

Medicare and Medicaid coverage will be provided for services furnished to clinics which are located in areas designated by the Bureau of the Census as rural, and by the Secretary as medically underserved, where the supply of physicians is not sufficient to meet the needs of the local residents. Such clinics may be either physician-directed or those which do not have a full-time physician. Once a clinic establishes its eligibility with respect to being located in a rural, medically underserved area, the clinic may retain its special status under the law even if the area changes.

Covered services

Services provided by a physician assistant or nurse practitioner working in a rural clinic will be covered under Medicare and Medicaid if (1) they are otherwise covered when provided by a physician and (2) the physician assistant or nurse practitioner is legally authorized under State law to perform the services. Services and supplies which are presently covered when provided as incident to a physician's service will also be covered. In addition, if there is a shortage of some health agencies in the area, covered services will include part-time nursing care furnished by a nurse to a homebound patient.

Cost-related reimbursement  
for rural health clinic services

Medicare payment to the clinic will be equal to 80 percent of the costs which are reasonable for the efficient delivery of services to Medicare beneficiaries. Clinics will be required to accept the amount determined by the Secretary as the full charge for the services and may bill the beneficiary only for the amount of the Medicare deductible and coinsurance. Medicaid plans are required to reimburse the clinics for covered services at a rate equal to 100 percent of the reasonable cost as determined for Medicare purposes.

Requirements for rural health clinics

Clinics will be required to make arrangements with a physician for periodic review of all services covered under Medicare and Medicaid which are provided by the physician

assistant, nurse practitioner, or nurse. The physician must be available to prepare necessary medical orders, for referral of patients when necessary, and for assistance in medical emergencies, but not be required to be physically present when the services are provided.

Paraprofessional personnel covered by the law

A physician assistant, nurse practitioner, or nurse midwife may perform such services as he/she is legally authorized to perform under State law and must meet such training and education and experience requirements (or any combination thereof) as the Secretary prescribes in regulations.<sup>1/</sup>

Demonstration projects

The law contains authority for several demonstration projects. In order to evaluate changes which might be made in the Medicare program to provide more efficient and cost-effective reimbursement, the law requires the Secretary to conduct demonstration projects with respect to reimbursement on a cost basis for services provided by physician-directed clinics in urban medically underserved areas. Such services may include services provided by a physician assistant or nurse practitioner employed by such clinics if the services would otherwise be reimbursable if provided by a physician. The projects must be of sufficient scope and carried out on a broad enough scale to allow the Secretary, among other things, to fully evaluate the relative advantages and disadvantages of reimbursement on the basis of costs and fee-for-service for physician-directed clinics employing a physician assistant or nurse practitioner. The Secretary is required to report his findings and recommendations for legislative changes to the Congress with respect to this project by January 1, 1981.

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<sup>1/</sup>HEW advised us that the first set of regulations was published February 8, 1978, and sets forth alternative, minimum credentials in the definition of these terms. In recognition of the fact that there are graduates of special education programs who have been providing medical services in settings comparable to rural health clinics, HEW said the regulation includes in the definition people who have graduated from such programs and have been providing primary medical care services for at least 12 months during the 18 months immediately preceding the effective date of the regulation (42 CFR 481.2). This regulation also specifies the requirements which a clinic must meet in order to be certified for participation in Medicare or Medicaid.

The Secretary is also required to conduct a study and report within 1 year to the Congress concerning the feasibility and desirability of substituting a copayment for each clinic visit for the deductible and coinsurance required in present Medicare law. The Secretary is further required to study the advantages and disadvantages of extending Medicare coverage to mental health, alcoholism and drug abuse centers and to report his findings to the Congress within 6 months.

PRINCIPAL OFFICIALS RESPONSIBLE FOR ADMINISTERING  
ACTIVITIES DISCUSSED IN THIS REPORT

Tenure of office  
From                      To

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

SECRETARY OF HEALTH, EDUCATION,  
AND WELFARE:

J. A. Califano, Jr.	Jan. 1977	Present
D. Mathews	Aug. 1975	Jan. 1977
C. W. Weinberger	Feb. 1973	Aug. 1975

ASSISTANT SECRETARY FOR HEALTH:

J. Richmond, M.D.	July 1977	Present
J. F. Dickson, III (acting)	Jan. 1977	July 1977
T. Cooper, M.D.	May 1975	Jan. 1977
T. Cooper, M.D. (acting)	Jan. 1975	May 1975
C. C. Edwards	Mar. 1973	Jan. 1975

ADMINISTRATOR, HEALTH RESOURCES  
ADMINISTRATION:

H. A. Foley, Ph.D.	Jan. 1978	Present
K. M. Endicott, M.D.	Aug. 1973	Jan. 1977

ADMINISTRATOR, HEALTH SERVICES  
ADMINISTRATION:

G. I. Lythcott	Sept. 1977	Present
J. H. Kelso (acting)	Jan. 1977	Sept. 1977
L. M. Hellman	May 1976	Jan. 1977
R. Van Hoek (acting)	Feb. 1975	May 1976
H. O. Buzzell	July 1973	Jan. 1975

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