1969

Report of the Committee on the Physician Shortage in Rural North Carolina to the Legislative Research Commission of the North Carolina General Assembly

RECEIVED
JUL 22 1969
INSTITUTE OF GOVERNMENT
UNIVERSITY OF NORTH CAROLINA

THE LIBRARY OF THE
UNIVERSITY OF
NORTH CAROLINA

ENDOWED BY THE
DIALECTIC AND PHILANTHROPIC
SOCIETIES

INSTITUTE OF GOVERNMENT

1969

Report of the Committee on the

Physician Shortage in Rural North Carolina

to the

Legislative Research Commission

of the

North Carolina General Assembly

State Legislative Building

Raleigh, North Carolina 27602


Digitized by the Internet Archive
in 2013

http://archive.org/details/reportofcommittecomm

Members of the

Committee on the Physician Shortage in

Rural North Carolina

Representative Hugh S. Johnson, Jr., Chairman

Representative H. Horton Rountree

Senator Albert J. Ellis

Senator Robert Morgan

Senator Thomas J. White

Senator John T. Henley

TABLE OF CONTENTS

A JOINT RESOLUTION AUTHORIZING AND DIRECTING THE LEGISLATIVE RESEARCH COMMISSION TO STUDY WAYS AND MEANS OF PROVIDING MORE MEDICAL DOCTORS FOR SMALL TOWNS AND COMMUNITIES.

WHEREAS, the State of North Carolina acknowledges its concern for its citizens and strives to maintain vigilance over matters pertaining to their health through constant research, through the establishment of medical facilities, and by retaining personnel to carry out its programs; and

WHEREAS, North Carolina is fortunate to have within its bounds three accredited four-year medical schools; and

WHEREAS, said schools each year are graduating medical doctors and other skilled personnel well-qualified to render ample medical services to our people; and

WHEREAS, the number of physicians establishing practice in smaller towns and communities or North Carolina diminishes progressively so that many towns and communities do not now enjoy adequate medical personnel and anticipate no better prospects for the future; and

WHEREAS, the General Assembly recognizes its responsibility to all of the citizens of North Carolina and sees its duty to assist them in rectifying this situation as soon as possible;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The Legislative Research Commission is hereby authorized and directed to conduct an in-depth study

regarding ways and means of obtaining and/or providing greater numbers of medical doctors for smaller towns and communities of North Carolina.

Sec. 2. The Legislative Research Commission shall report its findings and recommendations, and shall propose legislation to answer the needs herein stated to the 1969 General Assembly.

Sec. 3. This Resolution shall become effective upon ratification.

INTRODUCED BY: Representatives Johnson of Duplin, Bowles, Britt of Johnston, Quinn, Ragsdale, Exum, Love, Speed, Fagles, Mills of Anson, McMichael, McMillan of Robeson, Collier, Ramsey of Madison, Barbee, Mohn, Ramsey of Person, Godwin of Gates, Hamrick, Horton, Culpepper, Fenner, Burrus, Everett, Elliott, Rountree, Ervin, Williamson, Collins.

Resolution No. 60, Adopted June 13, 1967.

Report to the Legislative Research Commission

from the Committee directed to study

The Ways and Means of Providing More Medical Doctors

For Small Towns and Communities

SUMMARY OF FINDINGS

and

RECOMMENDATIONS

January 4, 1969

MAJOR FINDINGS

1. Considering all physicians in private practice giving personal health care, it has been estimated that in 1966 there was an unmet need across the nation for some 20,000 practicing physicians, and all the factors point toward an even larger deficit by 1975.

2. North Carolina is near the bottom of the list in regard to physician:population ratios. It has only about 69 physicians per 100,000 population in private practice, compared with the national average of about 97. More distressing to many, particularly those in the rural part of the State, is the declining number of general practitioners, now only 1,225 or about 1 per 4,000 citizens.

3. The urban areas of North Carolina have about 96 physicians per 100,000 persons, while the rural areas have only 30, indicating the urban concentration of physicians. Included in these numbers are many who are not engaged in providing personal medical care.

4. Strikingly, some counties in North Carolina do not have any active practicing physicians and several others have no specialists of any type. In addition, 22% of all the physicians now in practice in the rural areas of the State are over 70 years of age. This indicates that the discrepancy between the larger towns and rural areas is likely to increase.

5. In 1967, specialists in solo, partnership, group, or other practice outnumbered general practitioners by almost two to one in North Carolina.

6. All new physicians are oriented by their medical school curriculum toward specialty practice. The schools are not doing the job of training family practice physicians; they consider the general practitioner a relic of the past, despite the needs of a significant number of our citizens.

7. Combining the overwhelming shift to specialization with the unattractiveness of rural practice and the lack of medical education orientation toward family practice, the small communities are left with little hope in attracting and keeping a physician.

8. While medical schools are turning out more and more specialists, it is interesting to note that schools of osteopathy graduate 65% general practitioners and an additional 12% who practice family medicine with some specialty. But osteopaths are restricted in North Carolina (only one of eight states so doing) to practice without the use of drugs and surgery, and few therefore practice in this State.

9. There needs to be a means whereby advances in medicine could be more rapidly coordinated and translated into systems of

improved medical education and care, both at the medical school and in communities across the State.

10. Affiliation programs whereby medical students in their clinical years, interns, residents and medical staff can participate in medical education training in the community hospital setting are just now getting off the ground and must be expanded.

11. Medical education needs to be revised and reformed and some schools are experimenting with such changes as fusing the 4 years of college and 4 years of medical school into a 6-year program that would omit some of the premedical science courses and strengthen clinical curriculum; integrating the internship and residency training; shortening unnecessarily long residencies; expanding continuing education programs for practicing physicians; and rapidly increasing the number of students by shifting existing resources.

12. The number of admissions to medical schools across the country has increased in recent years, but the proportion of young people who enter medical school has declined. In North Carolina, only 130 residents entered medical schools in 1966, ranking us 48th in this respect. In addition, only four colleges supply the bulk of the students entering medical school. Both of these disturbing facts indicate that the science and other premedical preparation in North Carolina public high schools and most of the colleges needs great strengthening.

13. There are a few encouraging developments which should be watched and fostered:

    a. Progress toward approval of the Family Practice Specialty certification, which would put family medicine (basically pediatrics and internal medicine) on a par with other specialties.

    b. Most (67%) of the graduates of UNC Medical School who are not still in training or in the military are still in North Carolina practicing or making other active use of their medical education.

    c. A physician's assistant program has been started at Duke Medical School.

    d. Proposals for a family physician program at UNC Medical School.

    e. Some progress can be seen in the better use and management of medical facilities, resources and personnel through functionally structured hospital services, ambulatory care, laboratory services, home care, nursing homes, paramedical personnel, and group practice that should increase the productivity of the individual physician; but in the absence of a rise in productivity, supply growth will not meet the increased demand resulting from rising incomes, the

impact of new medical discoveries, rising expectations, shifts to hospital-centered care, and distributional problems (of both population and physicians).

RECOMMENDATIONS

1. Medical schools must increase their output of physicians, by increasing the number of entering students, accelerating the educational process, and orienting medical education toward practice. The appropriations requested by the University Medical School for its planned expansion should be approved. (RESOLUTION ATTACHED.)

2. The "b" Budget requests of the University Medical School for (a) State support of the Medical School's Division of Education and Research in Community Medical Care, in order to continue the overdue development of the Medical School affiliation with community hospitals and extension into community medical care; (b) the Special Teaching Program for North Carolina Medical Students in order to continue to give preference to applicants from North Carolina as the size of classes increases; and (c) Education of Personal and Family Physicians, in order to expand the out-patient or ambulatory teaching facility of the school for attracting and training family physicians, all should be fully reviewed by the General Assembly and acted upon favorably. (RESOLUTION ATTACHED.)

3. A professor of Family Medicine should be established at the University Medical School for the recruitment and training of family physicians and for the development of affiliated model practice units in North Carolina communities. The recommended appropriations to implement this proposal should be approved. (BILL ATTACHED.)

4. Legislation should be enacted authorizing osteopathic physicians to apply for and obtain licenses to practice medicine and surgery in North Carolina, by adding a D.O. to the Board of Medical Examiners and requiring D.O.'s to write the same examination as M.D.'s. (BILL ATTACHED.)

5. The Board of Education and the Board of Higher Education should actively pursue the strengthening of science and other facets of premedical education in both public high schools and higher education facilities across the state. Favorable treatment of related appropriation requests should be given by the General Assembly. (RESOLUTION ATTACHED.)

6. Medical vocation guidance and counseling efforts in high schools, medical education loans of the Medical Care Commission, and recruitment efforts by the N. C. Medical Society and the Old North State Medical Society should be fostered and encouraged. (RESOLUTION ATTACHED.)

7. Planning should begin for the development of two 400-bed referral hospitals in the eastern and western parts of the state for the teaching of groups of 50 students each during their clinical years to enable the University Medical School to expand to 200 students. (INCLUDED IN RESOLUTION FOR A

HEALTH MANPOWER STUDY BY THE LEGISLATIVE RESEARCH COMMISSION.)

8. A continuing study of the health manpower needs of the state should be undertaken by the Legislative Research Commission, with special attention given to delivery of primary medical care, medical transportation problems, and other distribution and supply problems involved with the availability of medical care for our citizens. (RESOLUTION FOR A HEALTH MANPOWER STUDY BY THE LEGISLATIVE RESEARCH COMMISSION.)

BILLS AND RESOLUTIONS

AS RECOMMENDED BY THE STUDY

A JOINT RESOLUTION URGING THE THREE MEDICAL SCHOOLS IN THE STATE TO INCREASE THEIR OUTPUT OF PHYSICIANS.

WHEREAS, a committee of the Legislative Research Commission of 1967-69 found that there is a dire shortage of practicing physicians both in the Nation and in the State, but particularly in the rural areas of North Carolina, and one solution is the production of more physicians by the medical schools;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The three medical schools in the State must increase their output of physicians by increasing the number of entering students, accelerating the educational process, and orienting medical education toward practice.

Sec. 2. The appropriations requested by the Medical School of the University of North Carolina for its planned expansion should be approved.

Sec. 3. This Resolution shall become effective upon its adoption.

A JOINT RESOLUTION URGING THE APPROPRIATIONS COMMITTEES TO FULLY REVIEW AND ACT FAVORABLY UPON THE "B" BUDGET REQUESTS OF THE UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE FOR THE MEANS TO DEVELOP AND EXPAND PROGRAMS RELATING TO COMMUNITY MEDICAL CARE, SPECIAL EDUCATION FOR NORTH CAROLINA STUDENTS, AND FAMILY PHYSICIAN EDUCATION.

WHEREAS, a committee of the Legislative Research Commission of 1967-69 found that North Carolina is near the bottom of the list in regard to physician:population ratios, with most of the practicing physicians concentrated in the urban areas of the State, and some counties do not have any active practicing physicians, and the discrepancy between larger towns and rural areas is likely to increase; and

WHEREAS, new physicians are oriented by their medical school curriculum and instructors toward specialty practice and the schools have not been doing the job of training family practice physicians;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The "B" Budget requests of the University Medical School for (a) State support of the Medical School's Division of Education and Research in Community Medical Care, in order to continue the overdue development of the Medical School affiliation with community hospitals and extension into community medical care; (b) the Special Teaching Program for North Carolina Medical Students in order to continue to give preference to

applicants from North Carolina as the size of classes increases; and (c) Education of Personal and Family Physicians, in order to expand the outpatient or ambulatory teaching facility of the school for attracting and training family physicians, all should be fully reviewed by the General Assembly and acted upon favorably.

Sec. 2. This Resolution shall become effective upon its ratification.

A BILL TO BE ENTITLED

AN ACT TO APPROPRIATE $127,554.00 TO THE UNIVERSITY OF NORTH CAROLINA TO ESTABLISH A PROFESSOR OF FAMILY MEDICINE AT THE SCHOOL OF MEDICINE.

WHEREAS, a committee of the Legislative Research Commission of 1967-69 found that a Professor of Family Medicine should be established at the School of Medicine at the University of North Carolina for the recruitment and training of family physicians and for the development of affiliated model practice units in North Carolina communities, as proposed by representatives of the School, and such proposal is not included in the University "E" Budget requests; Now, therefore,

The General Assembly of North Carolina do enact:

Section 1. There is hereby appropriated to the University of North Carolina for tne establishment of a Professor of Family Medicine at the School of Medicine the amount of one hundred twenty seven thousand five hundred fifty four dollars ($127,554.00) for the biennium 1969-71.

Sec. 2. All laws and clauses of laws in conflict with this Act are hereby repealed.

Sec. 3. This Act shall become effective on July 1, 1969.

A BILL TO BE ENTITLED AN ACT TO PROVIDE FOR THE LICENSING OF OSTEOPATHIC PHYSICIANS TO PRACTICE MEDICINE AND SURGERY AND TO ABOLISH THE BOARD OF OSTEOPATHIC EXAMINATION AND REGISTRATION.

The General Assembly of North Carolina do enact:

Section 1. G.S. 90-2 is hereby amended by striking the period at the end thereof and adding the following: "holding the degree of doctor of medicine (M.D.) and one holding the degree of doctor of osteopathy (D.O.)."

Sec. 2. G.S. 90-3 is hereby amended by inserting the word "to" between the words "appoint" and "the Board" and by striking the period at the end thereof and adding the following: "the members holding the doctor of medicine degree, and the Governor on recommendation of the North Carolina Osteopathic Society, Inc., shall appoint the member holding the doctor of osteopathy degree."

Sec. 3. G.S. 90-9 is hereby rewritten to read as follows: "§90-9. Examination for license; scope; conditions and prerequisites. It shall be the duty of the Board of Medical Examiners to examine for license to practice medicine or surgery, or any of the branches thereof, every applicant who complies with the following provisions: He shall, before he is admitted to examination, satisfy the Board that he has an academic education equal to the entrance requirements of the University of North Carolina, or furnish certificate from the superintendent

of public instruction of the county that he has passed an examination upon his literary attainments to meet the requirements of entrance in the regular course of the State University. He shall exhibit a diploma or furnish satisfactory proof of graduation from a medical college approved by the American Medical Association at the time of his graduation or an osteopathic college approved by the American Osteopathic Association at the time of his graduation, which medical and osteopathic schools shall require an attendance of not less than four years and supply such facilities for clinical and scientific instruction as shall meet the approval of the Board; but the requirement of four years' attendance at a school shall not apply to those graduating prior to January the first, nineteen hundred.

"The examination shall cover the following branches of medical science: anatomy, embryology, histology, physiology, pathology, bacteriology, surgery, pediatrics, medical hygiene, chemistry, pharmacy, materia medica, therapeutics, obstetrics, gynecology, and the practice of medicine. In addition, applicants holding the degree of doctor of osteopathy shall be tested in principles and practice of osteopathic medicine by the member of the Board holding the degree of doctor of osteopathy.

"If on such examination the applicant is found competent, the Board shall grant him a license authorizing him to practice medicine or surgery or any of the branches thereof.

"Five members of the Board shall constitute a quorum, and four of those present shall be agreed as to the qualifi-

cation of the applicant.

"Applicants shall be examined by number only; names and other identifying information shall not appear on examination papers."

Sec. 4. G.S. 90-10 is hereby rewritten to read as follows: "§90-10. Two examinations, preliminary and final, allowed. It shall be the duty of the State Board of Medical Examiners to examine any applicant for license to practice medicine on the subjects of anatomy, histology, physiology, bacteriology, embryology, pathology, medical hygiene, and chemistry, upon his furnishing satisfactory evidence from a medical school approved by the American Medical Association or an osteopathic school approved by the American Osteopathic Association, and supplying such facilities for anatomical and laboratory instruction as shall meet with the approval of the Board, that he has completed the course of study in the school upon the subjects mentioned. The Board shall set to the credit of such applicant upon its record books the grade made by him upon the examination, which shall stand to the credit of such applicant; and when he has subsequently completed the full course in medicine or osteopathic medicine and presents a diploma of graduation from a medical or osteopathic college approved as provided above, requiring a four years' course of study of medicine for graduation, and when he has completed the examination upon the further branches of medicine, to wit, pharmacy, materia medica, therapeutics, gynecology, pediatrics, practice of medicine and surgery, he shall have accounted to his credit the grade made upon the former examination, and if then upon such completed examination he be

found competent, said Board shall grant him a license to practice medicine and surgery, and any of the branches thereof."

Sec. 5. G.S. 90-13 is hereby rewritten to read as follows: "§90-13. When license without examination allowed. The Board of Medical Examiners shall in their discretion issue a license to any applicant to practice medicine and surgery in this State without examination if said applicant exhibits a diploma or satisfactory proof of graduation from a medical or osteopathic college, approved as provided in §90-9 and requiring an attendance of not less than four years, and a license issued to him to practice medicine and surgery or osteopathic medicine and surgery by the Board of Medical Examiners or the Board of Osteopathic Examiners of another state."

Sec. 6. G.S. 90-14, as it appears in 1965 Replacement Volume 2C of the General Statutes, is hereby amended by striking the words "a license" which appear in line 13 thereof, and substituting therefor the words "an earned diploma".

Sec. 7. G.S. 90-18 is hereby amended by striking the paragraph numbered (9) and by renumbering the subsequent paragraphs accordingly.

Sec. 8. Article 1 of Chapter 90 is hereby amended by adding two new sections as follows: "§90-21.1 Board of Osteopathic Examination and Registration. Within two months after the effective date of this act, the secretary of the Board of Osteopathic Examination and Registration shall transmit to the secretary of the Board of Medical Examiners all books, records, and funds of the Board of Osteopathic Examination and Registration, and a list showing every person holding a valid

and unrevoked license to practice osteopathy in this State as provided by article 7 of this chapter before its revision by this act. On performance of these duties said Board of Osteopathic Examination and Registration shall cease to exist."

"§ 90-21.2 Osteopathic physicians not qualifying for license. Any osteopathic physician on the list prescribed in §90-21.1 who is not issued a license to practice medicine and surgery as provided in this article shall nonetheless be subject to the jurisdiction of the Board of Medical Examiners; provided, however, that he shall practice in accordance with the provisions of article 7 of this chapter, as revised by this act."

Sec. 9. G.S. 90-132, as it appears in 1965 Replacement Volume 2C of the General Statutes, is hereby amended as follows: (1) by striking the words "or hereafter" in the first line of the third paragraph; (2) by striking the word "said" before the word "Board" in the third line of the third paragraph; (3) by adding the words "of Medical Examiners" immediately following the word "Board" where it appears in lines 3, 4, 5, 10, 12, and 13 of the third paragraph; and (4) by striking the first and second paragraphs.

Sec. 10. G.S. 90-136 is hereby amended by rewriting the first five lines thereof to read as follows: "The Board of Medical Examiners may suspend or revoke any license to practice osteopathy issued by the State Board of Osteopathic Examination and Registration to any osteopathic physician who is not of good moral character or for any of the following causes:"

Sec. 11. G.S. 90-137 is hereby amended by striking the words "North Carolina State Board of Osteopathic Examination and Registration" and substituting therefor the words "Board of Medical Examiners."

Sec. 12. G.S. 90-130, -131, -133, and -135 are hereby repealed.

Sec. 13. All laws and clauses of laws in conflict with this act are hereby repealed.

Sec. 14. This act shall become effective on July 1, 1967, except that sections 9, 10, 11, and 12 of this act shall become effective upon the date that the State Board of Osteopathic Examination and Registration shall cease to exist pursuant to G.S. 90-21.1.

A JOINT RESOLUTION URGING THE STRENGTHENING OF SCIENCE AND OTHER FACETS OF PREMEDICAL EDUCATION.

WHEREAS, a committee of the Legislative Research Commission of 1967-69 found that 130 North Carolina residents entered medical schools in 1966, ranking us very low, and in addition, only four North Carolina colleges supply the bulk of the students entering medical schools, and both of these disturbing facts indicate that the science and other premedical preparation in North Carolina public high schools and most of the colleges and universities in the State need great strengthening; Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The Board of Education and the Board of Higher Education should actively pursue the strengthening of science and other facets of premedical education in both public high schools and higher education facilities across the State and favorable treatment of related appropriation requests should be given by the General Assembly.

Sec. 2. This Resolution shall become effective upon its adoption.

A JOINT RESOLUTION URGING THE VOCATION GUIDANCE, RECRUITMENT AND ENCOURAGEMENT OF STUDENTS TO ENTER PREMEDICAL AND MEDICAL EDUCATION.

WHEREAS, a committee of the Legislative Research Commission of 1967-69 found that there is a great shortage of physicians being produced by medical schools and tnat the need for personal medical care delivered by practicing physicians will increase dramatically during the next decade, and medical schools will need to expand;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. Medical vocation guidance and counseling efforts in high schools, medical education loans of the Medical Care Commission, and recruitment efforts by the N. C. Medical Society and tne Old North State Medical Society should be fostered and encouraged.

Sec. 2. This Resolution shall become effective upon its adoption.

A JOINT RESOLUTION AUTHORIZING AND DIRECTING THE LEGISLATIVE RESEARCH COMMISSION TO STUDY NORTH CAROLINA'S HEALTH MANPOWER NEEDS, MEASURES TO INCREASE THE SUPPLY, AND MEANS TO ACCOMPLISH INDICATED CHANGES IN THE HEALTH CARE SYSTEM.

WHEREAS, while medicine today offers great promise for the improvement of the human condition and alleviation of human suffering and our society is committed to the removal of the barriers which have kept many people from the fulfillment of this promise, yet today and in the next decade the critical need is for health manpower---the right numbers and kinds of people in the right places; and

WHEREAS, the Legislative Research Commission of 1967-69 was directed to study ways and means of providing more medical doctors for small towns and communities; and

WHEREAS; the study by the Legislative Research Commission revealed that the problem is national as well as local, that many diverse factors are at play in its identification and interpretation, that many persons and institutions have a continuing effect on its manifestation and solution, and that the shortage of physicians in rural areas in North Carolina is undeniably entwined in the very much larger and more comprehensive problem of sufficient health manpower and adequate means of health services delivery in <u>all</u> parts of the state and nation; and

WHEREAS, North Carolina is near the bottom of the list in regard to physician-population ratios and the shortage and

distribution problems were found by the Commission to be related to economic factors, population concentration, specialization, medical school orientation, and many other factors affecting supply and demand, and this and a wealth of other information is contained in material presented to and garnered by the Commission and retained in the Commission files for further study; and

WHEREAS, the Legislative Research Commission of 1965-67 studied the shortages in technical and professional personnel in the field of medical services and found that additional State concern and assistance were necessary to cope with the problem of providing more nurses and other paramedical personnel; and

WHEREAS, the Report of the National Advisory Commission on Health Manpower in 1967 concluded that while the growth of some health services will outpace the growth of population in the coming decade, paradoxically, the physician shortage will continue to worsen, that inadequate health care will continue to exist for the disadvantaged (disadvantaged for any reason, including proverty, geographic isolation or rural residency, age, etc.), that difficulty of entry into the medical care system and of obtaining personal contact with a physician will not be eased, unless measures to increase the supply of health manpower are found and changes in the health care system are accomplished; and

WHEREAS, The General Assembly recognizes its responsibility to all of the citizens of North Carolina to maintain vigilance over matters pertaining to their health and to assume the burden of identifying and seeking answers to the health care problems confronting the citizenry now and in the future, particularly the problem of health manpower;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The Legislative Research Commission is hereby authorized and directed to study the health manpower needs of North Carolina.

Sec. 2. The Commission shall make a broad and in-depth study of the health manpower needs of North Carolina and of the measures necessary to produce or provide the right kinds and numbers of personnel. It shall also analyze the distribution problems and possible solutions to providing more equitable health care to all who need it. It shall seek to suggest changes in the health care system that are needed to meet the demands for care and for additional manpower. It shall begin planning for the development of two 400-bed referral hospitals in the eastern and western parts of the State for clinical training of University medical students.

Sec. 3. The Legislative Research Commission shall report its findings and recommendations to the 1971 General Assembly.

Sec. 4. This Resolution shall become effective upon ratification.

CREDITS

The Committee wishes to thank all of those who made so many valuable contributions to its work. There were many who prepared and made informative presentations at the public hearings; there were many who submitted useful reports, letters, memoranda, documents, and other data; there were many who devoted much time in a consultative and advisory capacity. Particularly helpful were the Deans of the three medical schools in the state (Dr. Isaac M. Taylor, Jr., UNC; Dr. William Anlyan, Duke: Dr. Manson Meads, Bowman Gray); Dr. Amos Johnson, a General Practitioner in Garland; and Dr. Howard R. Boozer and Dr. Cameron West of the State Board of Higher Education.

Those who made appearances and/or presentations at public hearings of the Committee include:

Dr. George Wolff, Greensboro, Past President, N.C. Academy of General Practitioners
Dr. E. Harvey Estes, Jr., Chairman, N. C. Medical Regional Planning Program
Dr. Amos Johnson, Garland
Dr. Leroy R. Swift, Chairman, Talent Recruitment Council, Old North State Medical Society
Mr. Wm. Henderson, Executive Secretary, N.C. Medical Care Commission
Dr. William Anlyan, Dean, Duke University Medical Center
Dr. Manson Meads, Dean, Bowman Gray Medical School
Dr. Isaac M. Taylor, Jr., Dean, School of Medicine, University of North Carolina
Dr. Howard R. Boozer, Director, State Board of Higher Education
Dr. Joseph J. Combs, Secretary, N.C. Board of Medical Examiners
Dr. Richard C. Baker, Rockingham
Dr. Joseph Huff, Burlington
Dr. Jacob Koomen, Director, State Board of Health
Dr. Eugene Hargrove, Commissioner, State Dept. of Mental Health
Dr. Edgar T. Beddingfield, Chairman, Legislative Committee, Medical Society of N.C.
Dr. W. J. Cromartie, UNC School of Medicine
Dr. Charles Cameron, Executive Director, Office of Comprehensive Health Planning

Dr. Stuart Sessoms, Director, Duke Hospital
Dr. Larry Cutchin, UNC Medical School
Dr. Charles Carroll, Superintendent of Public Instruction
Dr. Eddie West, Department of Public Instruction
Mr. Paul Taylor, Department of Public Instruction
Mr. Joe Cashwell, Department of Public Instruction
Dr. W. Reece Berryhill, UNC Medical School
Dr. N. P. Zarzar, State Department of Mental Health
Mrs. Janet Proctor, N.C. Medical Care Commission
Mr. Marion Foster, Executive Director, N.C. Hospital Association
Dr. Cameron West, now Director, State Board of Higher Education
Dr. E. W. Ferguson, Plymouth
Dr. Edwin L. Boyette, Duplin County
Dr. Guy T. Funk, Greensboro
Dr. Carl Lyle, UNC Medical School
Dr. Robert Shaw, UNC Medical School
Dr. Robert Smith, UNC Medical School
Mr. James Barnes, Executive Secretary, N.C. State Medical Society
Dr. C. Arden Miller, Vice Chancellor, UNC at Chapel Hill
Dr. John Dees, Burgaw
Dr. Frank Edmondson, Board of Medical Examiners
Dr. Thomas P. Moore, Onslow County Medical Society
Dr. Howard P. Steiger, Charlotte
Dr. V. W. Taylor, Jr., Elkin
Dr. H. Lee Large, Jr., Charlotte
Dr. Samuel C. Falvo, Hendersonville
Dr. Wayne J. Benton, Greensboro

In addition, recognition should be given to all those county and district medical societies who responded so well to the survey of the Committee for ideas and suggestions, as well as representatives of the Medical Society of the State of North Carolina and the Old North State Medical Society.

FINDINGS AND DISCUSSION OF THE PROBLEM

I. PRESENT PHYSICIAN SHORTAGE, DISTRIBUTION AND SPECIALIZATION PROBLEM

Introduction

Medicine today offers great promise for improvement of the human condition and alleviation of human suffering. Our society is committed to the removal of the barriers which have kept many people from the fulfillment of this promise. Hospitals, clinics, and other health facilities have been constructed at an impressive rate. Many financial barriers to the receipt of care are being removed or progress is being made toward that end. Today, the critical need is for health manpower--the right numbers and kinds of people in the right places.

Our needs for physicians, as well as for dentists, nurses, and allied professional and technical workers, exceed supply and present educational capacity. Long waiting periods for medical and dental care are common and delays in diagnosis and treatment are at the least frustrating and often dangerous. There are hospital beds closed for lack of staff, and desperately overcrowded hospital emergency rooms. There are inadequate services for many children, for many of the aged, for the mentally ill, for the poor, and often even for the middle class. People in rural areas must travel (or be transported) alarming distances in order to seek adequate medical care. These problems are all related and revolve primarily around the principal provider of medical care: the physician.

The shortage of physicians, particularly in the rural areas of North Carolina, is the problem to which this study has been directed.

Shortage of Physicians Generally

Many studies have been made which clearly indicate that while the number of physicians is constantly increasing, there is a growing shortage all across the nation (see Appendices).

The ratio of physicians to population has remained steady for some years, but that fact, considered alone, is misleading. Actually, as the number of physicians giving their time to teaching, research, administration, and other activities has risen, the ratio of physicians who provide personal health services has declined. The National Advisory Commission on Health Manpower in 1967 emphasized that while services provided under the direction of a physician have rapidly increased, as have hospital services, nevertheless, direct consultation between patient and physician is markedly decreasing.

Furthermore the growth of specialty practice has sharply affected the administration of personal health services. It has caused distributional problems (shifts away from rural practice), decline of general practitioners, and probably contributed to higher medical costs and health expectations, while, of course, raising the quality of available medical care for many.

In 1965, the ratio of physicians in private practice who devoted themselves to family medicine (general practitioners, internists, and pediatricians) had fallen, nationally, to 50 per 100,000 population as against 76 per 100,000 in 1950. The unavailability of this front-line medical care to many is a direct function of this pattern.

Considering all physicians in private practice giving personal health care, it has been estimated that in 1966 there was an unmet need across the country for some 20,000 practicing physicians. In addition, the shortage of psychiatrists was estimated at about 10,000 in providing both private and institutional mental health care. Teaching, research, medical administration, military service, and public health also have significant unmet needs. When these and other needs are taken together, total requirements today are probably about 50,000 more than the supply. There were in 1966 about 286,000 doctors of medicine and 11,000 doctors of osteopathy in practice.

Assuming that health care will continue to be delivered on the personal physician-patient basis that we commonly expect today, then meeting these needs, plus those of the increased population, would require some 400,000 physicians by 1975, on this basis. The output of U. S. medical schools at presently planned levels, even with the continued immigration of foreign physicians, will provide not more than 360,000 physicians by 1975, a figure far short of satisfying estimated needs.

Unfortunately, conventional medical education is not ready to meet the challenge.

Shortage of Physicians in North Carolina

The disparities among the States and regions in the supply of physicians and other health manpower have long been of concern. The East South Central States, with the highest infant mortality rate, have only 89 physicians per 100,000 population, in contrast to a rate of 171 for the Middle Atlantic States.

North Carolina is near the bottom of the list in regard to physician: population ratios. It has only about 69 physicians per 100,000 civilian population in private practice.

More distressing to many, particularly those in the rural part of the state, is the declining number of general practitioners, now only 1,225 or about 1 per 4,000 persons in North Carolina.

By looking at graphs relating physician density to various factors, we can see that both the shortage and distribution problems in North Carolina are related to economic factors and to the urban-rural population ratio. But other factors (including the lack of North Carolina residents who are qualified and interested in premedical preparation; the orientation of medical schools toward specialization and research; the delay in increases in medical school capacity) are also contributory.

Urban Concentration of Physicians

The metropolitan areas of North Carolina have 96 physicians per 100,000 persons, while the rural areas have only 30 per 100,000 population. Included in these numbers, particularly in the urban areas, are many who are not engaged in providing personal medical care.

Strikingly, some counties in North Carolina do not have any active practicing physicians and several others have no specialists of any type.

In addition 22% of all the physicians now in practice in the rural areas of the State are over 70 years of age. This indicates that the discrepancy between the larger towns and the rural areas is likely to increase rather than get better within the next decade.

The chart in the Appendix indicates supply, distribution and type of physicians in each North Carolina county. These trends to urban concentration of physicians are similar to those which are seen in other fields. Trends are evident in farming in which there are more large farms with large acreage and fewer small farms with small acreage. The same trends are seen in the retail trade in which more sales are conducted in multi-unit chain stores and less and less in the family stores. The reasons for all of these shifts are complex, but a major factor seems to be that the physician and many others wish the advantages of larger towns. Educational, social and recreational activities, better

hospital and supporting facilities, etc., can be cited. The role of the wife and family of the physician in deciding where he will settle and where he will stay is major. It has often been pointed out that the community which wishes to attract a physician to the community must consider those factors which would attract his college-graduate wife as they point out hospital facilities, their clinic buildings, and other medical attractions.

There is a strong relationship between per capita income and the number of doctors within various areas. A community which cannot afford to support two physicians cannot expect to have even one. The less well-endowed areas have fewer physicians in relation to their population, and effectively, even fewer if the geographic area to be covered is taken into account--a factor still relevant for house calls, and in some cases, hospital calls. The physicians are also older. Unfortunately, these differentials are to be expected. The reason that rural areas have fewer and older physicians is that younger physicians are not settling there and that there is insufficient replacement of those who leave, retire, or die.

The Unattractiveness of Rural Practice

The young physician selecting a smaller community is required "to buck a trend," "to be different." Perhaps, too, he is forced to decide (both in terms of practice and location) in favor of things he knows little about. If he comes from a larger

community he may not know a smaller one, while it is far more likely that if he comes from a small one, he knows both large and small.

Also, all new physicians are oriented by their medical school curriculum toward specialty practice. They have been trained by specialists and have practiced in hospitals generally within a specialty service. Only a few are exposed to general practice through preceptorships or private contacts. Family practice does not possess the natural glamor that, say, neurosurgery or cardiology does. Thus, when a new physician bases his decisions at least in part on his existing experience and orientation, the small town and general practice face considerable difficulty in attracting personnel.

Educational loans, with strings attached for rural practice, have proved limited in success (see Appendices), but valuable in potential and should be widely encouraged.

No More Doctors for Small Towns?

There is no doubt that increasingly doctors in North Carolina are tending to enter practice in larger towns and cities, rather than in rural communities or small towns. This trend is by no means restricted to North Carolina but is nationwide. Many factors may be cited which probably contribute: (1) there is a general tendency of the population of the state and nation to move to cities; (2) there is a national shortage of

doctors which is disproportionately marked in North Carolina; (3) economic, cultural, and educational opportunities - the general conditions of living -often appear more attractive to physicians with young families in larger rather than small communities; (4) conditions of medical practice - the availability of consultants, of hospital facilities, of laboratory and x-ray facilities, of auxiliary personnel, and the possibilities of partnership or group practice, all of which enable the doctor to do a better and more efficient job - appear more favorable in larger towns.

In an address last year in Charlotte to the Annual American Medical Association Conference on Rural Health, Dr. William Hubbard, Dean of the University of Michigan School of Medicine and President of the Association of American Medical Colleges, reviewed carefully these national trends of doctors to urban centers and concluded that it was extremely unlikely that they could be reversed. Many other thoughtful medical practitioners and educators agree with him, including Dr. Amos Johnson, the eminent physician from Garland, North Carolina. If this view is correct, all of us who are interested in the health of the people of North Carolina must try to determine the best ways in which we can assure the greatest availability of physicians services for all.

It is clearly evident that supply alone is not the only critical factor for rural shortages. Distribution is perhaps the more critical problem. It is important that its causes be recognized and that it be realized that special measures may be

required tc cope with it. Not everyone sees a problem, since maldistribution also means that some areas are quite well served, but every citizen should have a ccncern for the problem when and where it is found tc exist.

Specialization of Physicians

The shift to specialization has been rapid. There are now 19 different certified specialties. In 1950, nationally, only 36 per cent of physicians in private practice limited their practice to a specialty. By 1965 this was true for 64 per cent of the physicians. While specialization has brought about marvelous medical advances (e.g., crgan transplants, brain surgery) and remarkably high standards of health care ror many, this shift has contributed to the difficulties that varicus parts of the country have had in attracting physicians and thus also to the wide disparities that are evident in the physician-population ratic, and level of medical care, between rural and metropolitan counties and the varicus states.

While medical schools are turning out more and more specialists, it is interesting tc note that schools of csteopathy graduate 65% general pratitioners and an additional 12% who practice family medicine with some specialty.

Specialization of Physicians in North Carolina

Of the approximately 3,600 physicians in North Carolina (both in practice and engaged in other professional activity) in

1966, about two-thirds were specialists. The number of practicing physicians listed under the medical specialty listings was 727, and of these 727, over half (454) were located in nine counties. In these 9 counties the total population was 1,463,280. In other words, less than a third of our population was obtaining over half of the medical specialists' care in North Carolina.

The surgical specialists (1,090) and other specialists (408) in practice also settle in the more urban counties because of hospital facilities and patient population, and patients are referred from other counties into these counties. There are 20 counties in North Carolina that have hospitals in which no specialist is listed. The surgical specialties in these 20 counties having hospital facilities apparently are carried by the general practitioner or the family physicians, or patients are referred to other counties.

Despite the large total of specialists, it has been reported that general practice physicians probably see more patients, at least initially, than do all the specialists.

What Has Happened to the Family Doctor?

With the growth of specialists has come a decline, and aging, of general practitioners. In 1966, specialists in solo, partnership, group, or other practice outnumbered general practitioners by almost two to one in North Carolina (2225 to 1225). In addition, a large number of specialists are engaged in

other professional activity, such as medical school faculties, administration, or research.

One of the principal factors for this increasing trend is the total lack of exposure or orientation to the family practice or general practice "specialties" during the course of the usual four years of medical school. Even during the years of internship and residency, there is very little contact with the general practice of medicine, and by then a student has already chosen his specialty.

Some medical students occasionally get a glimpse of general practice through a short (2 weeks to 2 months) preceptorship, during which time they literally follow a practicing physician in some local community around on his daily routines. This program is not widely utilized in the state's three medical schools. While some examples indicate that it can be a rich and expanding experience, preceptorships seem to be limited in success because of the inconsistent learning environment and teaching structure inherent in the concept of assigning students to busy local physicians.

General practice has become less and less attractive to students, despite the occasional exposure to it. What they may see is a busy, overworked hometown family doctor, usually white-haired, who does not have time to keep abreast of rapidly advancing medical knowledge nor modern techniques of medical administration. While his doctor's example of dedication and

responsbility may have been the original inspiration for him to enter medical school, the medical student soon finds that some of the specialties offer more glamor, more opportunity for grasping medical advances, a unique sense of pride and respect, a controlled work schedule, and, importantly, more monetary reward.

Moreover, during medical school, he is taught by specialists, is trained in specialty services in the teaching hospitals, sees mostly patients who do require specialty care, and learns that general practice is old-fashioned.

The Family Practice Specialty Certification

There has been a development recently which may have some effect on this pattern: progress toward approval of the Family Practice Specialty Certification by the National Advisory Board for Medical Specialties. This Board would recognize family practice physicians who qualify for the certification by serving a mixed internship and residency (2 years' internal medicine and 2 years' pediatrics) and pass the Board's examination. While this certification will make the field more attractive and put it on a par with other specialties, it does not necessarily promise to increase dramatically the supply of physicians going into family practice. The preparation is longer than for some other specialties and the other negative factors in family practice, especially in rural areas, are nonetheless present.

Primary Care Physicians: General Practice, Internal Medicine, Pediatrics

Actually, the medical school at Chapel Hill is about even with the national average in producing recent graduates (1964-1968 classes) for what is known as primary or front line care: 21% in general practice, 19% in internal medicine, and 11% in pediatrics.

Overall, 67% of all the UNC graduates since 1954 (who are not still in training or on temporary military duty) are practicing in North Carolina (see Appendices). Still, means need to be found to qualify and recruit more North Carolina residents (black, Indian and white) as medical school applicants, to furnish more intern and residency positions, to attract more new graduates from other medical schools into the state, to retain the new physicians who begin practice here, and to increase the number of primary care physicians.

Another development which can contribute to an increase in front-line medical care is the physician assistant training program recently established at Duke University Medical School. Working under the direction of a family physician, a graduate of this two-year program can add to the physician's productivity and efficiency both in diagnosing and treating a larger number of patients. Restrictions in the various medical practice acts may need to be removed to allow this new type of paramedical personnel to make an effective contribution.

Osteopathic Physicians

It was brought to the attention of the Commission that graduates of osteopathic schools generally go into general practice. Active osteopathic physicians in North Carolina number only 24, primarily because the State has, since 1913, not considered them qualified for a license to practice medicine and surgery but only for a license to practice manipulative therapy. However, forty-two other states and the District of Columbia permit either full osteopathic licensure (practice with drugs and surgery) or qualification for a medical license.

Trauma Centers with a Thirty Mile Radius

A lot of communities who think they need a doctor really do not. The concept that the medical profession maintains as having changed in recent years as regards community health is the dimension of time. They say that anyone who is within thirty minutes of adequate health care services is close enough. It was suggested that the smaller communities might, together with the county and State, make arrangements for ambulances and ultimately, helicopters, ready on short notice to pick up any emergency and within thirty minutes get to at least a community hospital, but better, a regional referral center for trauma cases.

Experimental Practices

In regard to making existing health services available more equitably, the North Carolina Medical Care Commission believes that we need to experiment more with non-brick and mortar programs with the idea of trying to stimulate hospitals and their medical staffs or separate group practice arrangements to provide a service beyond their walls or immediate practice or service boundary. It has been suggested that some satellite program sponsored by the hospital or its medical staff, or both, could be extended to medically deficient areas in arranging outpatient diagnostic referral services to established medical centers. Such centers, developed along the line recommended earlier would possibly enjoy a favorable priority for construction and equipment funds available under the Hill-Burton Act.

An obvious difficulty here is in obtaining joint financial participation of communities that lie across county boundaries from each other. It is seen that counties will cooperate in developing mental health centers together and the time is coming when this approach will be essential with respect to providing comprehensive health services.

II. PREDICTING FUTURE SUPPLY AND DEMAND

Supply of Physicians

Specialization and location problems are not easily solved. Their solution is made more possible, however, if the aggregate supply picture were to be made brighter. It must be admitted that the supply picture does contain some encouraging elements.

The implementation of the Health Professions Educational Assistance Act of 1963 should result in an expansion of medical school enrollment. Thus the number of graduates may grow from 7,800 in 1965 to 9,200 in 1975 (an 18 per cent increase). The number of physicians, therefore, is likely to expand to about 346,000 by the end of 1975, even if supply were not augmented by the addition of foreign-trained physicians. Under those conditions the physician-population ratio would stay fairly stable. If there were continued licensing of 1,600 graduates of Canadian and other foreign schools, the number of doctors of medicine and doctors of osteopathy would total about 362,000 in 1975. The physician-population ratio would rise. But, even so, the percentage increase in the number of physicians would be less than the percentage increase in demand.

Demand for Physicians

It is important to note that the discussion of physician-population ratios and medical school output runs the risk of

focusing on the number of physicians and neglecting potential increases in the productivity of the physician. It also focuses on the size of the population and neglects some of the other pressures causing increases in demand. A higher physician-population ratio would be needed if the increasing consumer demand were to be satisfied, and an even higher ratio if "access" were to be increased.

The rising level of education in the United States and the rapidly advancing technology have contributed significantly to higher standards for health services. It is less than 15 years since service workers began to outnumber farm workers and "white collar" workers to outnumber "blue collar" workers. The benefits that higher incomes bring in enabling persons to visit physicians more frequently are part of the new expectation of health services availability and utilization rate increase.

Utilization Rates

Account must be taken of the existing patterns of payment and of income distribution and their joint impact on utilization rates. Also, utilization behavior is not always the product of differences in income or in the availability of physicians, but rather of tradition, habit, custom, and education. Utilization data indicate substantial differences in the number of visits individuals make to physicians, even if age, sex, and family income are held constant.

Physician-populaticn ratios neither should (nor could) be equal in all areas of the ccuntry. The large medical center with its high concentration cf specialists should make for variation in the ratics. Ccnversely, the greater distances to be covered in sparsely settled areas could argue for higher physician-populaticn ratios in such areas if the desired objective is equal "availability." But equal availability would not mean equal utilization. The economic demand for physicians' services is not the same in all ares. Inccme differentials do exist. Even if they did not, different utilization rates would be expected for physicians' services based cn differences in age and sex distributions of the population, on differences in habits, customs, and attitudes, and on different levels of health.

Demographic and Socio-economic Factors

The greatest impact on demand arises out of growth in the size of population and income. Statistics summarized in The Doctor Shortage, by Rashi Fein, indicate that population growth can be expected to increase demand by 12 to 15 per cent by 1975. Income growth would add ancther 7 percent to demand. Changes in the proportion of persons with various other characteristics (age, sex, location, color, education) would contribute an additional 2.5 percent. If the impact of Medicare is added, the total demand for physician visits can be expected tc grow, because cf demographic and socio-economic changes, by perhaps 22 to 26 per cent by 1975 and by 35 to 40 per cent by 1980.

Other Factors Creating Rising Demand

The increase in communication, the increased emphasis on science in general and on scientific medicine, the advances and the publicity surrounding them, all have made people conscious of the possibility and rapidity of change and improvement in health services.

It is not possible to predict the nature of tomorrow's medical discoveries, but much will depend on the form of these discoveries. At one end of the spectrum may be advances that improve health or make possible the prevention of treatment of illness without any intervention by the physician. At the other extreme may be advances that permit prolongation of life but which require numerous physician visits on a continuing basis. The former would reduce the demands on physicians, the latter would increase them. Between these extremes lie those discoveries that increase the desire to visit a physician because cure, prevention, or treatment is possible, but which therefore, may, over a longer period of time, reduce the total number of visits. It is difficult to assess where the balance lies. The discovery of polio vaccine increased the number of visits by those to be vaccinated, but it reduced the number of visits that would have been made by those who in its absence would have contracted polio and by those who came to the physician's office to be diagnosed.

Nevertheless, the impact of new discoveries and types of treatment is not all positive. It is already recognized that hospitalization is not only costly but exposes the patient to infection and thus to the need for even more medical care and attention. In the case of drugs, it is suggested that the more specific the drug therapy, the greater the probability that the drug will be potent. This, in turn, results in an increase in the possibility of complications and reaction to treatment, and the more so if the drugs are misused. Illness may be created where it did not exist.

Informed judgment suggests, according to Mr. Fein, that advances in medicine, when coupled with the increased emphasis now placed on medical care for certain age groups and conditions, are more likely on balance to increase than to decrease desired utilization of medical care.

North Carolina Economic Factors

The Division of Education Research in Community Medical Care at the University of North Carolina has developed some interesting figures about the total spendable income of the population of North Carolina with relation to the number of doctors in practice. For the State of North Carolina as a whole, the total spendable income divided by the number of doctors in practice, gives a figure of 2.5 million dollars. This means that over-all in the state, personal spendable income of $2.5 million is required or associated with one doctor practicing medicine.

The interesting thing is that when the state is broken down into smaller units, this factor ($2.5 million) stays fairly constant. This probably means that the number of physicians in North Carolina is related to the economic growth of the state. (This should not imply that it is the personal income of the physician which is important in this.) Thus, it appears that if these formulas are reliable, there will have to be an increase in the general spendable income which the citizens of our state have in order to be able to hold more physicians within the state and to affect their distribution.

Specialization Trends

Specialization is more than a current trend; it is a historically developed phenomenon. In 1931, only 17 per cent of physicians across the country in private practice limited their practice to a specialty (that is, were full specialists). By 1940 this was true for 24 percent; by 1950 for 36 percent; and by 1960, the figure was up to 56 percent. This increase continued and in 1965, 64 percent of physicians considered themselves as in specialty practice. There seems to be no indication that this specialization trend will level itself and no efforts are being suggested to reverse the trend.

The rise in the number of specialists has been accompanied by a decline in the number of general practitioners. Fewer and fewer men entering medical practice choose to become general practitioners. For the physicians practicing in 1964, the

follcwing percentages were in general practice: 47 percent of those who had graduated in the period 1900-24, 35 percent of those graduated between 1925 and 1939, 24 percent of those graduated in 1940-54, and 19 percent of those graduated in the 1955-64 period.

Distributional problems are a necessary consequence of specialization. Specialists cannot practice just anywhere but the setting must be appropriate in terms of population, facilities and economic factors. The problem grows more severe, too, because as prestige is accorded the specialist and as specialty practice comes to be defined as the best and most challenging medical practice, usually with a higher monetary return, fewer physicians select general practice. Yet, some markets are not large enough to support a specialist and certainly not a range of specialists. The cost of specialty care is certainly a large factor in making medicine the highest paid of all occupations, according to U. S. Department of Labor figures (see Appendix).

Need for Increased Productivity or Effectiveness by Physicians

In 1965 there were an estimated 305,000 physicians (active and inactive, doctors of medicine and doctors of osteopathy) in the United States. It has been estimated that this number will grow to 362,000 by 1975, assuming continued substantial immigration of foreign-trained physicians. This represents a growth of 19 percent (13 percent in the absence of new foreign-

trained physicians). This growth is considerably in excess of population growth. It is something higher than the demand generated by population growth and other non-economic demographic changes. But in the absence of a rise in productivity, it is not sufficient to meet the increased demand (higher utilization rates) resulting from rising incomes, the impact of new medical discoveries, rising expectations on the part of the public, shifts to hospital-centered medical care, and increased availability of services.

Productivity changes have been necessary in the past in order to keep up with growth in demand. Most observers feel that considerable productivity increase has in fact occurred. Among the explanatory factors are the antibiotic drugs, use of auxiliary personnel, shift from house calls to office visits, and improvement in the organization of the physician's office.

Progress can be made in the better use and management of medical facilities, resources and personnel through functionally structured hospital services, ambulatory care, laboratory services, home health care, nursing homes, public infirmaries, paramedical personnel (including physician assistants), and group practice that would increase the productivity of the individual physician.

Group practice is a direct method of increasing productivity, since better use can be made of paramedical

personnel, new diagnostic and treatment techniques and equipment, and better office organization and scheduling practices.

The dimensions of future productivity gains are, of course, unpredictable. Productivity gains would permit the same services to be offered with fewer resources or permit the same resources to offer more services. This is not a trivial matter, Mr. Fein claims, since only a 4 percent increase in the productivity of physicians (in private practice, internship, and residency) would add more than the current graduating class to the effective physician supply.

The Meaning of Future Supply and Demand Predictions

Mr. Fein, in The Doctor Shortage, concludes that: first, assuming a nominal increase in physicians' productivity, and the expected increase in the production of new physicians, there could be an increase in the number of physicians' services per person. This increase, however, would not be sufficient to meet the expansion of demand resulting from higher incomes and other factors. Second, the normal supply-demand relationship will not of itself significantly ease the allocation and distribution problems that exist -- by specialty, region, or for particular population groups, such as rural communities. Third, productivity and production increases and allocation changes will not be brought about in the absence of government or other outside produced incentives or sharpened and more organized demand pressures from the population.

III. PROBLEMS IN MEDICAL EDUCATION

Conventional Medical School Curriculum; Suggestions for Change

There are 91 schools of medicine and five schools of osteopathy in the United States. Together they produce some 8,000 graduates a year. Most students enter medical school after four years of college. They then follow a four year medical school curriculum and usually take a year of internship and 2-5 years of residency training in a field of specialization. Thus, the young man or woman who enters the traditional medical school in 1968 will not be graduated until 1972, and will not begin practice until 1975 or later.

The length of this program has given rise to considerable concern and some medical schools are experimenting with such changes as fusing the 4 years of college and the 4 years of medical school into a 6-year program that would omit some of the premedical science courses and strengthen clinical curriculums; integrating internship and residency training; shortening unnecessarily long residencies; and expanding continuing education programs for practicing physicians.

A number of medical schools have identified as planning factors the recognition of individual aptitudes and of individual differences, time to pursue knowledge in an area of individual interest, development of curriculums responsive to the different interests and backgrounds of students, giving greater

responsibility to students, and recognition that medical schools today are educating men and women for a variety of careers.

The report of the Millis Commission indicates that younger physicians, much more than their elder colleagues, are practicing under group or partnership arrangements in which two or more physicians share common facilities and services, supplement each other's special knowledge and skills, and provide their patients with better medical care than they could if each were practicing independently. When a mode of practice is advantageous both to the patient and the physician, it it bound to grow in popularity. Future physicians should be educated on the assumption that they will practice in close affiliation with other physicians, not in isolation.

One concern is the rather general detachment of medical education from the community, even in the clinical setting of the teaching hospital. The teaching hospital is a referral center for less common cases and does not afford an appreciation of community medicine. Because of greater awareness of both educational and social needs, programs need to be developed to bring medical students into more meaningful contact with people outside of hospitals, in the context of expanding community health services.

Medical School Capacities

There were 9,300 admissions to medical and osteopathic schools in 1965. Although the number of entrants has increased in recent years, the proportion of population who enter medical school has declined. In 1960, of each 1,000 young people, 3.9 entered medical school. By 1970, the proportion will have dropped to 3.2 per 1,000. To maintain the 1960 ratio of admission would require 15,400 first-year places in 1975. The problem is one of school capacity, rather than the number of applicants, from a national viewpoint. There are now, as there have been for some years, two applicants for every available place in our country's medical schools. This situation seems likely to continue. But North Carolina is not producing its share of qualified applicants.

Twelve new medical schools and two new schools of osteopathy are in various stages of planning. The need for increased medical school capacity cannot be met by new schools alone. There is great expense in developing a new medical school and the lead time required for planning, construction of facilities, assembly of a faculty, and graduation of an initial class is at least 10 to 12 years. Thus, while the initiation of new schools may now be appropriate in some sections of the country and long range planning for schools in North Carolina is indicated, the immediate goal should be that the output of existing schools must be sharply increased.

In view of the great need on the one hand, and the difficulties of rapid expansion of capacity on the other, a reascnable goal for admissions to medical schools in 1975 has been stated to be in the range of 14,500 to 15,000. This would bring the relative opportunity fcr young people to enter medicine near to the 1960 level. It would provide approximately 13,000 to 13,500 graduates in 1979.

Considerations for Increasing Enrollment

In looking to the expansion of medical school capacity, it is important to remember that there are sharp variations in the financial as well as the physical capacity of individual schools (it costs $15,000-$20,000 to graduate a medical student). For a fair number of schocls, including those in North Carolina, the most urgent problem is the development of a firmer base to support even the present level of students.

The capability of existing schools with well-established standards of quality to handle substantial increases in enrollment, and the methcds and costs of such expansion are under discussion in a number of medical schools in the nation. Such explorations were strongly urged in a recent report on medical education, the Coggeshall Report. According to this study across the ccuntry, "there has tended to be great reliance on tradition in adhering to prevailing enrollments and limited consideration given tc ways of serving larger enrollments."

Fortunately, all three medical schools in North Carolina have had expansion plans under development. While the two private schools plan nominal increases, the State school has planned a staged increase from 75 to 100 to 120 to 160 to 200 by sometime around 1977, with some clinical teaching at other facilities (see Appendices). Implementation, however, awaits crucial financial support and probably some shifting of critical resources by all three institutions.

The interest of the state in assuring not only expansion but continuing operation of the Duke and Bowman Gray Medical Schools may require some form of direct State financial support of these two schools. Matters brought to the attention of the Commission indicate that early and serious consideration of this possibility should be given by the General Assembly. Some states are presently providing support on various formula bases. (See Appendices)

North Carolina Admissions

North Carolina's three medical schools admitted 209 medical students in 1966. Of these, 102 were residents of the state (UNC, 59; Bowman-Gray, 26; Duke, 17), while 107 were drawn from other states. Another 28 North Carolina residents entered medical schools in other states; thus the state attracted many more students into its schools than it sent elsewhere.

Thus, a total of 130 North Carolina residents entered in-state and out-of-state medical schools in 1966. This represents about 2.7 entering medical school per 100,000 population, well below the national average of 4.5 students. North Carolina ranks 48th among all the states in this respect. It is of interest that this figure (the number of residents entering medical school) does not have a direct correlation with the income or the economic resources of the state. Some of the states fairly well down on the per capita income list have some of the highest percentages of students entering medical school. Arkansas, which ranks very low economically, is 7th, proportionately, in the supply of premedical students to medical schools.

In 1966, 279 North Carolina residents filed 892 applications for medical school and 130 (44.8%) were accepted, also below the national average. It is apparent that basic science preparation in North Carolina high schools, as well as colleges, is not nearly as strong as it needs to be. Science instructors and facilities are sorely lacking in many schools. For example, there are fewer than a dozen teachers in North Carolina public schools who are certified in physics teaching. There is competition with industry for persons who are trained in the life sciences as well as for those in the physical sciences.

About half of those who apply for entrance to medical school are accepted and enter medical school. In 1965-66, 18,703 applicants in the nation filed 87,111 applications, or almost

five applications per person. The number accepted was 9,012. For that year, the figures for graduates (not necessarily residents) of North Carolina colleges and universities were as follows: 443 applied and 206 were accepted; of these, 103 enrolled in North Carolina medical schools. North Carolina graduates had a slightly lower rate of acceptance (46.5%) than the national average (48.2%). This does not tell the real story, however, because only five colleges actually supply most of these premedical students - UNC at Chapel Hill, N. C. State University, Wake Forest, Davidson, and Duke. It is apparent that efforts need to be made to strengthen the science programs in the other colleges in the state if more medical students are to be produced.

Increased University Service to Community Medical Care

It has been recognized by some medical educators (notably Dr. Reece Berryhill, Dean-emeritus of the UNC Medical School) that there needs to be a means whereby advances in medicine could be more rapidly coordinated and translated into systems of improved medical education and care, both at the medical school and in communities across the state.

The Division of Education and Research in Community Medical Care was formally established (without State funds) in 1966 at the University Medical School to seek to link the school and communities through a cooperative effort in medical education.

Through this program, the teaching of medical students in their clinical years can take place in the community hospitals of the State. If the program of the Division is funded by the State, the medical school will be in a better position to increase its enrollment, its teaching hospital will be better used, its students will receive a better, more community-oriented medical education, and they will be more likely to stay in North Carolina.

The "B" Budget request of the University to finance the principal part of this program (some other funds are also available), as well as the proposed Special Teaching Program for North Carolina Medical Students and the proposed Program for Education of Personal and Family Physicians, should be fully reviewed by the General Assembly and acted upon favorably. Failure to fund this program, already proved extremely worthwhile in its pioneering efforts, would set back the University's overdue but expected efforts to meet some of the most pressing needs of the people for better medical care both now and in the future.

The Role of Community and Regional Hospitals in Training

This new effort by the University Medical School to provide more services to North Carolina communities already has resulted in the development of affiliations with three community hospitals. Under this cooperative program (now established with hospitals in Charlotte, Greensboro and Wilmington), local

physicians obtain training at the teaching hospital in Chapel Hill and University instructors participate in the community hospital medical education programs. In addition, some medical students do their clinical, internship and residency work at the community hospitals. For such a program to be feasible, the community hospital must have a sufficient number of beds and medical staff, thus limiting the number of affiliations.

In addition to the expansion of the affiliation program, serious consideration should be given to the establishment of two large 400 bed referral hospitals in the eastern and western regions of the state for the teaching of groups of 50 students each during the clinical years. This would enable the University to accept more medical students.

Professor of Family Medicine and Model Practice Units

The single most promising proposal to produce more family practice oriented graduates from the University Medical School is the establishment of a Professor of Family Medicine and development model practice units, tied to the School but based in North Carolina communities, for the recruitment and suitable training of family physicians. The development of a model practice falls within the stated objectives of the Division of Education and Research in Community Medical Care.

The efforts of Dr. Reece Berryhill, Dean Isaac Taylor and others must be encouraged in order that a family practice

education program and other community medical care projects will have any chance to bear fruit in North Carolina. The pattern of just a few graduates going into general or family practice, and then often by accident, will not be reversed without special measures such as this.

This outstanding plan, only recently developed, offers promise for relief of the combined problem of rural doctor shortages and the lack of family physicians. It provides for the establishment in the University Medical School of a Professor of Family Medicine (and later an assistant professor) to play a full part in the medical school curriculum.

He would be responsible for teaching family medicine, the development of model practice units in North Carolina communities, and research into the problem of the delivery of effective medical care. The model practice units would provide the clinical extension of the medical school into a community, beyond the hospital care level into personal family medicine. This would be to the great advantage of both the medical school and the community and a special appropriation for this program is considered essential to overcoming many of the critical factors cited in this study as causing the problem. The full proposal for the Professor of Family Medicine is in the Appendices and should be funded and implemented as part of the original, and continuing, mission of the State medical school to further the health and well-being of the people of North Carolina.

North Carolina's Medical Education Needs

A study of North Carolina's medical education needs was made in 1946 by a national consultant group headed by Dr. William T. Sanger, of Richmond, Virginia. This study assessed the critical need for more physicians and better health care in the state and led directly to the establishment of the four-year school of medicine at Chapel Hill.

Some of the observations made in that study are pertinent to the still critical shortage of medical care in North Carolina:

> "The projected school may be expected to have a certain effect toward providing more doctors for North Carolina. This effect is likely to be disappointingly small, however, if the entire plan proposed by the Governor's Commission is not implemented fully. The four-year medical school alone, even under State control is only a part, even though an important one, of the complex mosaic required to make adequate medical care available to the people in all parts of the State." p. 3

> "Table 3 lists the states in order of increasing numbers of physicians per unit of population. North Carolina rates very low here, with one physician (before World War II) per 1,303 inhabitants, with only three states having fewer physicians. However, this does not seem to be related to the absence of a fouryear state medical school in North Carolina. The half of the states with fewest physicians

include 14 with nc such school. The half with most physicians include 13 without a state four-year school. On the other hand, there is a clear relationship between number of physicians in a state and the per capita income [From "Statistical Abstract of the United States, 1944-45; Income payments to individuals by States, 1929-1943."], also shown in Table 3. The increase in physician population definitely follows increases in per capita income." p. 9

"LOANS AND SCHOLARSHIPS FOR NEEDY MEDICAL STUDENTS.

"Although there is considerable experience upon which to draw with reference to loans and scholarships for medical students, their effectiveness in securing practitioners for designated rural areas has not been demonstrated with any conclusiveness. The factors involved are far more complicated than a casual view of the situation may reveal. No doubt this leads to the conclusion that further experience with various plans is indicated, always in the spirit of experimentation.

"Whatever system of loans and scholarships may be adopted by North Carolina, these points may be pertinent: Prior to the study of medicine students are not sufficiently informed or experienced enough to be able to choose with finality the type of medicine and the ultimate location for practice. They will at times change their minds regardless of any previous agrements to the contrary. Some methods of being

relieved of obligations imposed by the loan or scholarship by repayment with interest should be provided; here the dean of students will be of inestimable assistance, as at all other points in the operation of the program.

"One school of thought holds that loans made to students on a promise to practice in a rural community should be cancelled on a regular schedule; thus for every year's practice a note of given amount would be cancelled, the other notes to be paid in cash with interest if the contract is not fully carried out." pp. 13-14

"TRAINING INTERNS AND RESIDENTS IN AN INTEGRATED SYSTEM

"Throughout the country in recent months there has been developed a tendency for hospitals to become affiliated in groups in educational programs offered to house officers including interns and residents. In such programs a strong central hospital assists affiliated hospitals in improving their educational programs and rotates interns of the main hospital through the affiliated institutions capitalizing maximally on the educational resources of the affiliated hospitals. This program has resulted chiefly from attempts by hospitals to increase the educational opportunities for the large number of returned medical officers seeking advanced hospital training. However, it has resulted in an improvement in house officer training since there is an effort to employ every opportunity to increase the quality

of the intern program. In an integrated system of hospitals, such as is contemplated in North Carolina, it would be highly beneficial to incorporate such a cooperative training program in the plan for better hospital care of the population. It is axiomatic that the organization of training programs in a hospital tends to improve the quality of care rendered the patients in the hospital. In many instances of integrated training programs of this kind, the central organizing hospital is a medical school institution. The teaching hospital of the University of North Carolina School of Medicine would be expected to assume such a role." p. 14

"CORRECTION OF THE MALDISTRIBUTION OF PHYSICIANS.

"One of the most stubborn of all the problems of medical care is the maldistribution of physicians. This problem has been with us since colonial times and apparently is no nearer solution now than it was in those days.

"There is a great tendency to believe that because there is a scarcity of physicians in certain rural areas, more physicians should be graduated from medical schools to take care of this scarcity. If we know nothing else about maldistribution, we at least know that the problem will not be solved simply by training more doctors. Despite this well known fact, there are several states now proposing new medical schools, principally because they believe that by

creating such new schools within their borders they will be solving the problem of the shortage of doctors in their less populous areas. A comparison of the situation in Vermont and Maine is an example of the fallacy of this type of reasoning. Vermont has had a four-year medical school during the past twenty years. Maine has not. Despite this fact, the medical situation insofar as total numbers, as well as distribution of physicians, are concerned in the two states, has remained remarkably parallel in these past twenty years.

"It is evident that there is no single solution. There must be a multiple approach. The problem must be comprehensively attacked and from many points of view: (1) social and economic conditions should be improved; (2) the medical isolation of physicians should be overcome; and much can be done in this regard through an integrated hospital program; (3) students might be carefully selected from rural communities and partially or wholly subsidized, if necessary; many such students might return to the small communities from which they come; (4) there should be an attempt on the part of both the medical school and the communities concerned to keep in constant touch with prospective practitioners during and after their school years for the purpose of attracting physicians to communities where they are needed. Such a persistent follow-up and "courtship" has been found effective in

Tennessee; (5) local community income guarantees may be necessary in certain areas.

"There are probably other factors of importance, but if efforts could be directed along all of the above channels, a sufficiently comprehensive approach to the problem of maldistribution of physicians might be achieved. No one of the above approaches would in itself suffice. All together would give real promise of success." p. 15

Revision and Reform Is Called For in Medical Education

A group of medical educators recently met and discussed the shortcomings and challenges in medical education. The report of some of their recommendations and reasons is highly appropriate to the Commission's study and portions are herewith included:

"The participants in the AAMC Workshop on Medical School Curriculum of September 18 through 22, 1968, urge the adoption of the following recommendations by the Executive Council and the Membership of the Association of American Medical Colleges.

"The over-riding recommendation of the Workshop is that medical schools must now actively revise the content and methods used in the total span of the education of the physician so that his professional competence will be most

relevant to meeting the changing health needs of the people. This recommendation reflects the unique social purpose of a medical school which is the primary education of the physician. An academic medical center is a university medical faculty engaged heavily in a variety of health-related educational programs, basic and clinical research, and a wide range of patient services that are all essential contributions to health; but these efforts are appropriately collateral to the fundamental obligation for the education of the physician.

"Medical schools must increase their output of physicians. All schools should immediately increase the number of entering students, accelerating expansion by redistributing temporarily the use of existing resources.

"Only by increasing the number of students entering the study of medicine will there be a major and continuing increase in the number of physicians in practice. It is too late to depend on presently planned expansion and the development of new medical schools for an acceptable increase in number of physicians entering the community during the next ten years. Only an increase in the presently planned output of existing and developing medical schools can increase the supply of physicians in the next decade.

"Medical schools must admit increased numbers of students from geographic areas, economic backgrounds and ethnic groups that are now inadequately represented.

"Medical schools must individualize the education of the physician to fit the students' varying rates of achievement, various educational backgrounds and differing career goals.

"The concept of a standard medical school curriculum and a standardized graduate from medical school is archaic and wasteful. Students with widely varying rates of learning may all have a high capacity for professional responsibility in medicine. Our present methods of measuring learning achievement of medical students place an unduly heavy value on a rapid rate of achievement in a rigidly fixed time rather than assessing capacity for high achievement over a variable time. It is urged that these rate-dependent methods be modified so that time becomes a less significant variable in evaluating achievement.

"For those students who have limitations in their educational backgrounds but possess the intellectual and personal qualifications necessary for medicine, tutorial support should be provided and the time during which the medical school curriculum is to be completed extended. Unless this is done, the de facto discrimination against educational opportunity for members of deprived groups will continue - an intolerable conclusion.

"It is the obligation of every medical school to provide cpportunities for medical students to become familiar with the broad range of career goals available in medicine. Medical faculties have long experience in providing these special cpportunities for those interested in academic careers. This same kind of opportunity should be avilable for those locking fcrward tc practicing as a primary physician or as a more limited specialist

"Medical schcol curricula should be developed by interdepartmental grcups that include participation of students. Curricula should be ratified by the faculty as a body rather than by individual departments.

"The medical schools must ncw assume a responsibility for education and research in the organization and delivery of health services.

"Simply increasing the number of physicians will not relieve the impediments to optimum support of the health of the people. The organizaticn of the manpower required to deliver health services is presently inefficient and many of the activities of the physician could be carried out by suitably trained assistants if they were avilable. The health care team is pccrly defined and the opportunity for upward mobility within it is inadequate. The advantages and limitations of group practice have been only superficially studied.

"Medical schools shculd explore the contribution they can make through continuing education to improving the distribution of physicians in areas that are not prcfessionally isolated and relatively unattractive to recent graduates.

"The development of teaching and research programs associated with clinical services to people who are geographically isolated and to people who make up out urban and rural poor should be undertaken by medical school faculties. Comprehensive continuing care clinics for designated segments cf the population appropriate in size for teaching and research programs should be developed by each medical school faculty as a clinical base for research in the organization and delivery of health care.

"The costs of medical care must be controlled if the present system is to retain its credibility. Research must be undertaken by medical schools to develop alternatives to hospitalization. The cost-benefit relationship of the physicians decisions must become a part of the evaluation of the appropriateness of those decisions in the educational programs of our medical schccls.

"The problem of maintaining quality and effectiveness of health services while developing more efficient organization, more general availability and more reasonable costs is one that will not be solved without the

participation of the medical schools. Neither knowledge nor numbers will suffice if these problems in delivery of health service are not resolved.

IV. SOME POLICY CONSIDERATIONS

There are two basic sides of the problem of "unmet health needs": supply (of medical services) and demand (in the form of purchase power). The "needs" must be translated into effective demand by some appropriate medical care financing mechanism or by direct provision of services. Otherwise, it is likely that the health goals will not be achieved even if the resources are available. And perhaps more important, if the resources to meet this new demand are unavailable, they must be created or allocated in such a way as to meet the demand when and where it exists. The rigidities of medical organization and the lags involved in training suggest that the process might take longer than society would desire. Intervention in the normal supply-demand relationship may be called for to prevent the increasing shortage in physician production.

The quest should be for policies that promote efficiency where efficiency is lacking; that conserve scarce resources where they are being wasted; that permit us to deliver more medical care to the population even at today's costs and that will enable us to meet tomorrow's demands more fully.

The problem faced by persons in various sections of North Carolina and by particular population groups and those in rural areas is also likely to remain serious. Many of these problems are attributable to a shortage of effective demand. However,

even with income growth and special efforts on the demand side, it is nct likely that a sufficient number of physicians will find private practice attractive in these "problem" areas. Other devices may therefore be required if more of the health needs of these pcpulation groups are to be met. One solution is tc flood the market by producing more physicians. Other solutions would help raise the productivity or effectiveness of all physicians. The benefits of such increases in rural and other areas would be dramatic to those who dc not have the "luxury" of a physician.

The discussion of the problem in the foregoing pages has necessarily shifted from general tc specific and back again, from national to regional to local to national, from concern with medical education tc prcblems of distribution, and from data source to data source. It is obvious that the problem is national as well as local, that many diverse factors are at play in its identification and interpretation, that many persons and institutions have a continuing effect on its manifestation and solution, and that the shortage of physicians in rural areas in North Carolina is undeniably entwined in the very much larger and more comprehensive prcblem of sufficient health manpower and adequate means of health services delivery in all parts of the state and nation.

Note: Material and data for this study were extracted from testimony and written statements at hearings of the Committee and from other sources made available to the Committee. Of particular usefulness were The Doctor Shortage (Fein, The Brookings Institution, Washington, D. C., 1967), Health Manpower Perspective: 1967 (U. S. Public Health Service Publication Number 1667), and Report of the National Advisory Commission on Health Manpower (G.P.O., Washington, D. C., 1967).

RECOMMENDATIONS

The recommendations made in this study are not intended to be comprehensive; the problem is too manifold and complex to be approached with a single plan for solution. The recommendations tend to be directed toward particular facets of the problem as advanced in the hearings and material presented to the Commission. Many diverse and sometimes conflicting suggestions were made to the Commission; some of the recommendations are directly taken from advice offered the Commission.

APPENDIX

The varying use of statistics and data sources in this report was caused by the nature of the inquiry. Such a plethora of information and data and narrative was presented to the Commission that only a sampling of the material could be presented in the report and this Appendix. Much of value remains in the files created by this study. Some of the most pertinent pieces of material are included in this Appendix both as substantiation for the report and recommendations and as supplementation to the report.

APPENDICES

APPENDICES

A. PHYSICIANS IN NORTH CAROLINA BY MAJOR PROFESSIONAL ACTIVITY

B. NUMBER OF PHYSICIANS IN SPECIALTY GROUPS IN NORTH CAROLINA

C. CHART: NORTH CAROLINA COUNTIES, PHYSICIANS AND HOSPITAL BEDS

D. PRIMARY CARE PHYSICIANS IN NORTH CAROLINA: AGE AND RESIDENCE

E. REPORT FROM THE UNC SCHOOL OF MEDICINE REGARDING EDUCATION, RESEARCH AND SERVICE

F. # STUDENTS IN ENTERING CLASS, # N.C. STUDENTS IN EACH CLASS AND % OF N.C. STUDENTS IN EACH CLASS AT MEDICAL SCHOOLS IN NORTH CAROLINA, 1956-1967

G. CURRENT STATUS OF ALL UNC MEDICAL SCHOOL GRADUATES

H. SUMMARY OF UNC MEDICAL SCHOOL'S B BUDGET REQUEST FOR THE DIVISION OF EDUCATION AND RESEARCH IN COMMUNITY MEDICAL CARE

I. PROPOSAL FOR A PROFESSOR OF FAMILY MEDICINE AT UNC AND A MODEL COMMUNITY PRACTICE UNIT

J. MEMORANDUM FROM STATE BOARD OF HIGHER EDUCATION, REGARDING APPLICANTS AND ADMISSIONS TO MEDICAL SCHOOLS

K. LETTERS FROM THE DEANS OF THE THREE MEDICAL SCHOOLS, REGARDING STUDENT ENROLLMENT AND GRADUATION DATA

L. THE EXPERIENCE OF THE NORTH CAROLINA MEDICAL CARE COMMISSION WITH MEDICAL LOAN PROGRAM

M. REPORT FROM NORTH CAROLINA REGIONAL MEDICAL PROGRAM, REGARDING SHORTAGES

N. SUMMARY STATEMENT ON THE SHORTAGE OF MEDICAL DOCTORS AS IT APPLIES TO PUBLIC HEALTH

O. PRESENTATION BY THE NORTH CAROLINA DEPARTMENT OF MENTAL HEALTH, JANUARY 1968

P. MEMORANDUM ON THE LEGAL STATUS OF THE PHYSICIAN'S ASSISTANT

Q. AMERICAN OSTEOPATHIC ASSOCIATION FACT SHEET

R. A STATEMENT BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA REGARDING OSTEOPATHS

S. PROPOSAL SUBMITTED TO THE REGIONAL OFFICE OF EDUCATION AND THE OFFICE OF COMPREHENSIVE HEALTH PLANNING FOR SUPPORT THROUGH CONTRACTS TO ENCOURAGE FULL UTILIZATION OF EDUCATIONAL TALENT AND FURTHER RECRUITMENT FOR MAN POWER NEEDS IN THE MEDICAL AND PARAMEDICAL FIELDS

T. INFORMATION FROM STATE BOARD OF HIGHER EDUCATION, REGARDING STATE SUPPORT OF PRIVATE MEDICAL SCHOOLS

U. MEMORANDUM REGARDING STATE FINANCIAL AID TO PRIVATE MEDICAL SCHOOLS

V. EXTRACT ENTITLED "SUPPLY OF PHYSICIANS" FROM THE REPORT OF THE HEALTH MANPOWER ADVISORY COMMISSION, WASHINGTON, D.C., 1967

W. TABLES FROM THE DOCTOR SHORTAGE BY RASHI FEIN, THE BROOKINGS INSTITUTION, WASHINGTON, D.C., 1967

X. TABLES FROM HEALTH MANPOWER PERSPECTIVE: 1967, PUBLIC HEALTH SERVICE, WASHINGTON, D.C., 1967

Y. TOP PAYING OCCUPATIONS, COMPILED BY U.S. DEPARTMENT OF LABOR, 1965

Z. OTHER CHARTS FROM VARIOUS SOURCES

AA. LIST OF DOCUMENTS IN COMMISSION FILES

PHYSICIANS IN NORTH CAROLINA BY MAJOR PROFESSIONAL ACTIVITY

Source: Distribution of Physicians, Hospitals and Hospital Beds, 1966. Volume I - Regional, State, County. American Medical Association, 1967.

NORTH CAROLINA

SPECIALTY	TOTAL PHYSICIANS	MAJOR PROFESSIONAL ACTIVITY							
		PATIENT CARE					OTHER PROFESSIONAL ACTIVITY		
		TOTAL	SOLO, PARTNERSHIP, GROUP, OR OTHER PRACTICE	HOSPITAL BASED PRACTICE			Med. Sch. Faculty	Administration	Research
				Interns	Residents & Fellows	Full-Time Physician Staff			
TOTAL PHYSICIANS	5,023	4,404	3,450	149	616	189	337	49	39
GENERAL PRACTICE *	1,248	1,241	1,225		2	14	7		
MEDICAL SPECIALTIES	1,133	1,003	727	56	176	44	106	12	12
A	11	11	11						
CD	34	25	16		8	1	5	1	3
D	59	57	44		13		2		
GE	10	8	4		4		1		1
IM	668	584	421	42	104	17	74	6	4
PD	320	292	223	14	40	15	21	4	3
PDA	3	2	1		1		1		
PDC	5	4	1		3		1		
PUD	23	20	6		3	11	1	1	1
SURGICAL SPECIALTIES	1,447	1,373	1,090	26	238	19	69	3	2
GS	524	503	382	26	88	7	19	2	
NS	44	41	20		19	2	3		
OBG	329	311	262		46	3	17	1	
OPH	154	148	127		21		6		
ORS	132	121	90		30	1	11		
OTO	103	99	87		10	2	4		
PS	16	15	8		6	1	1		
CRS	6	6	6						
TS	27	23	15		5	3	3		1
U	112	106	93		13		5		1
OTHER SPECIALTIES	1,001	787	408	67	200	112	155	34	25
AM									
ANES	59	50	34		9	7	9		
CHP	22	16	11		3	2	5	1	
OR									
FOP									
N	32	20	7		10	3	11		1
OM	23	21	21				1	1	
P	282	229	86		88	55	35	10	8
PATH	177	135	55	11	44	25	39		3
PMR	3	2	2				1		
SPM	25	16	14			2	4	4	1
PH	62	51	49		1	1	9	1	1
R	180	163	120		34	9	16		1
TR									
NOT RECOGNIZED	58	21	8		11	2	11	17	9
UNSPECIFIED	78	63	1	56		6	14		1
INACTIVE	194								

B

NUMBER OF PHYSICIANS IN SPECIALTY GROUPS
IN NORTH CAROLINA

General Practice	1,091
Internal Medicine (A-Bact-C-D-GE-T-End)	549
Ophthalomology (ALR-OALR-Oph-Otol)	221
Surgery (Pl-PMR-Pr-U)	537
Pediatrics	219
Obstetrics-GYN (G-Ob-ObG)	268
Public Health-ED (Ed-Hosp Ad-Ins-PH)	91
Neurology Psychiatry (N-NS-P-PN)	198
Radiology	144
Pathology	88
Anesthesiology	50
Orthopedics	97
Industrial Medicine	28
Total	3,581

Medical Society of North Carolina
June, 1967

C

CHART: NORTH CAROLINA COUNTIES, PHYSICIANS AND HOSPITAL BEDS

COUNTY	POPULATION	NUMBER OF PHYSICIANS	POPULATION PER PHYSICIAN	NUMBER OF HOSPITAL BEDS	POPULATION PER BED
ALAMANCE	85,674	74	1,157	245	349
CASWELL	19,912	1	19,912	---	---
ALEXANDER	15,625	4	3,906	31	504
ANSON	24,962	7	3,566	50	499
ASHE	19,768	7	2,824	50	395
ALLEGHANY	7,734	5	1,546	46	168
AVERY	12,009	12	1,000	135	88
BEAUFORT	36,143	21	1,721	149	242
HYDE	5,456	1	5,456	---	---
MARTIN	25,611	7	3,658	49	522
WASHINGTON	13,937	7	1,991	36	387
TYRRELL	4,520	1	4,520	---	---
BERTIE	24,350	8	3,043	50	487
BLADEN	26,605	9	2,956	60	443
BRUNSWICK	20,278	5	4,055	---	---
NEW HANOVER	71,742	71	1,010	514	139
PENDER	17,372	4	4,343	33	526
BUNCOMBE	130,074	184	706	1,541	84
BURKE	52,701	42	1,254	277	190
CABARRUS	68,137	60	1,135	309	220
CALDWELL	49,552	30	1,651	638	77
CARTERET	30,940	21	1,473	159	194
CATAWBA	73,191	63	1,161	283	258
CHATHAM	26,785	10	2,678	25	1,071
CHEROKEE	16,335	11	1,485	55	297
CLEVELAND	69,372	50	1,387	303	228
CHOWAN	11,729	7	1,675	50	234
PERQUIMANS	8,675	4	2,168	---	---
COLUMBUS	48,973	20	2,448	100	489
CRAVEN	58,773	35	1,679	319	184
CUMBERLAND	148,818	63	2,362	1,076	330
DAVIDSON	79,493	36	2,208	175	454
DUPLIN	37,959	16	2,372	75	536
DURHAM	111,995	233	480	1,577	71
ORANGE	42,970	155	277	421	102
EDGECOMBE	54,226	22	2,464	68	797
NASH	61,002	48	1,270	195	312
FORSYTH	189,428	250	757	1,081	175
FRANKLIN	28,755	11	2,614	51	563
GASTON	135,775	83	1,635	313	433
GATES	9,254	1	9,254	---	---
GRAHAM	6,432	1	6,432	---	---
GRANVILLE	33,110	30	1,103	106	312
GUILFORD	269,513	258	1,044	1,048	257
HALIFAX	58,956	26	2,267	124	475
HARNETT	49,189	22	2,235	134	367
HAYWOOD	39,711	32	1,240	143	277
HENDERSON	36,163	32	1,130	257	140
HERTFORD	22,718	14	1,622	109	208
HOKE	16,356	12	1,363	---	---
IREDELL	62,526	49	1,276	385	162
JACKSON	17,780	13	1,367	50	355
JOHNSTON	60,939	34	1,792	162	376
LEE	29,197	23	1,269	134	217
LENOIR	55,276	48	1,151	183	302
GREENE	16,741	2	8,370	---	---
JONES	10,221	1	10,221	---	---
LINCOLN	28,814	14	2,058	100	288
MACON	14,935	7	2,133	94	158
CLAY	5,526	0	5,526	---	---
MADISON	17,217	6	2,869	---	---
MCDOWELL	26,742	11	2,431	59	453
MECKLENBURG	272,111	345	788	1,514	1,105
MITCHELL	13,906	7	1,986	50	278
YANCEY	14,008	4	3,502	33	424
MONTGOMERY	18,408	7	2,629	50	368
MOORE	36,733	36	1,020	287	127
NORTHAMPTON	26,811	5	5,362	---	---

COUNTY	POPULATION	NUMBER OF PHYSICIANS	POPULATION PER PHYSICIAN	NUMBER OF HOSPITAL BEDS	POPULATION PER BED
ONSLOW	82,706	13	6,362	878	94
PAMLICO	9,850	1	9,850	---	---
PASQUOTANK	25,630	22	1,165	150	170
CAMDEN	5,407	1	5,407	---	---
CURRITUCK	6,601	2	3,300	---	---
DARE	5,935	2	2,967	---	---
PERSON	26,394	10	2,639	71	371
PITT	69,942	50	1,398	200	349
POLK	11,395	17	670	50	227
RANDOLPH	61,497	32	1,921	126	488
RICHMOND	39,299	21	1,871	220	178
ROBESON	89,102	49	1,818	238	374
ROCKINGHAM	71,404	38	1,879	226	315
ROWAN	82,817	56	1,478	225	368
DAVIE	16,728	6	2,788	59	283
RUTHERFORD	45,091	24	1,878	108	417
SAMPSON	48,013	18	2,667	144	333
SCOTLAND	25,183	20	1,259	138	182
STANLY	40,873	21	1,946	134	305
STOKES	22,314	4	5,578	30	743
SURRY	48,205	30	1,606	170	283
YADKIN	22,804	7	3,257	70	325
SWAIN	8,387	4	2,096	32	262
TRANSYLVANIA	16,372	11	1,488	39	419
UNION	48,389	17	2,846	193	250
VANCE	32,002	14	2,285	---	---
WAKE	197,617	198	998	808	244
WARREN	17,591	5	3,518	35	502
WATAUGA	17,529	11	1,593	32	547
WAYNE	82,059	55	1,491	274	299
WILKES	45,269	19	2,382	100	452
WILSON	57,716	51	1,131	254	227

POPULATION OF NORTH CAROLINA-----4,616,770
No. Physicians in N. C.---------- 3,567
Average population per Doctor---- 1,294

TOTAL HOSPITAL BEDS IN N. C.----- 20,565
POPULATION OF NORTH CAROLINA-----4,616,770
Average population per Bed------- 224

Survey was developed over the period March to June 1967

Source: Placement Service Survey Medical Society of the State of North Carolina

PRIMARY CARE PHYSICIANS IN NORTH CAROLINA: AGE AND RESIDENCE

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942*	'42-'64*	Total	Prior 1942*	'42-'64*	Total	Prior 1942*	'42-'64*	Total		
Alamance, Caswell	1	7	8	1	3	4	8	18	26	72	105,586
Alexander	-	-	-	-	-	-	-	3	3	4	15,625
Anson	1	-	1	-	-	-	-	4	4	7	24,962
Ashe, Alleghany	-	-	-	-	-	-	2	5	7	12	27,502
Avery	-	1	1	-	-	-	2	6	8	12	12,009
Beaufort, Hyde, Martin, Tyrell, Washington	-	3	3	-	3	3	10	9	19	37	85,667
Bertie	-	-	-	-	-	-	5	2	7	8	24,350

Source: Placement Service Survey - Medical Society of the State of North Carolina

* Year of medical school graduation

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Bladen	-	-	-	-	-	-	4	4	8	9	26,605
Buncombe	13	19	32	4	5	9	18	16	34	182	130,074
Burke	1	2	3	1	1	2	5	12	17	42	52,701
Cabarrus	3	5	8	-	4	4	15	5	20	62	68,137
Caldwell	-	3	3	1	1	2	5	9	14	30	49,552
Carteret	1	1	2	-	1	1	7	5	12	21	30,940
Catawba	1	4	5	1	2	3	14	18	32	64	73,191
Chatham	-	-	-	-	-	-	1	5	6	10	26,785
Cherokee	-	-	-	-	-	-	2	5	7	11	16,335

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Chowan, Perquimans	-	1	1	-	-	-	4	4	8	11	20,404
Cleveland	1	3	4	1	2	3	5	17	22	49	69,372
Columbus	1	-	1	-	-	-	6	8	14	20	48,973
Craven,Pamlico	1	4	5	-	4	4	3	6	9	36	68,623
Cumberland	6	8	14	3	5	8	1	5	6	63	148,818
Davidson	1	3	4	1	-	1	2	14	16	36	79,493
Duplin	-	-	-	-	-	-	7	7	14	17	37,959
Durham, Orange	40	68	108	8	19	27	7	8	15	392	154,965
Edgecombe, Nash	3	7	10	2	2	4	13	11	24	70	115,228

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Forsyth	17	30	47	3	15	18	14	24	38	251	189,428
Franklin	-	1	1	-	-	-	2	6	8	11	28,755
Gaston	2	8	10	-	5	5	15	19	34	81	135,775
Gates	-	-	-	-	-	-	1	-	1	1	9,254
Granville	1	1	2	-	2	2	7	6	13	32	33,110
Guilford	24	31	55	9	11	20	20	16	36	259	269,513
Halifax	1	2	3	-	1	1	6	8	14	27	58,956
Harnett	-	-	-	-	-	-	7	8	15	22	49,189
Haywood	-	1	1	-	2	2	7	15	22	32	39,711
Henderson	-	5	5	1	-	1	6	9	15	32	36,163

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Popula-tion
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Hertford	1	-	1	-	-	-	-	6	6	14	22,718
Hoke	-	-	-	-	-	-	5	7	12	12	16,356
Iredell	2	7	9	-	4	4	6	9	15	50	62,526
Jackson	1	1	2	-	2	2	3	2	5	13	17,780
Johnston	-	2	2	-	1	1	10	6	16	33	60.939
Lee	1	1	2	1	-	1	4	7	11	23	29,197
Lenoir, Green, Jones	7	6	13	1	2	3	4	9	13	51	82,238
Lincoln	1	1	2	-	1	1	2	7	9	14	28,814
Macon, Clay	-	-	-	-	-	-	1	3	4	7	20,461
Madison	-	-	-	-	-	-	2	4	6	6	17,217

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
McDowell	-	-	-	-	-	-	4	5	9	10	26,742
Mecklenburg	27	42	69	7	20	27	20	34	54	352	272,111
Mitchell, Yancey	-	-	-	-	-	-	1	8	9	11	27,914
Montgomery	-	-	-	-	-	-	1	5	6	7	18,408
Moore	5	1	6	-	-	-	4	6	10	37	36,733
New Hanover	5	5	10	4	7	11	6	7	13	82	71,742
Northampton	-	-	-	-	-	-	3	1	4	5	26,811
Onslow	-	2	2	-	1	1	3	5	8	14	82,706
Pasquotank, Dare Camden, Currituck	1	2	3	-	2	2	3	7	10	27	43,573

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Person	-	1	1	-	-	-	2	4	6	10	26,394
Pitt	1	3	4	2	2	4	9	11	20	50	69,942
Polk	-	2	2	-	-	-	4	5	9	18	11,395
Randolph	1	1	2	1	1	2	6	13	19	32	61,497
Richmond	-	-	-	-	-	-	6	7	13	21	39,299
Robeson	-	5	5	1	3	4	8	10	18	49	89,102
Rockingham	-	3	3	-	1	1	5	13	19	37	71,404
Rowan-Davie	4	5	9	-	3	3	10	15	25	62	99,545
Rutherford	1	2	3	-	-	-	7	5	12	24	45,091
Sampson	1	1	2	-	-	-	9	2	11	18	48,013
Scotland	-	1	1	-	1	1	3	7	10	20	25,183

County	Internal Medicine			Pediatrics			General Practice			Total No. Drs.	Population
	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total	Prior 1942	'42-'64	Total		
Stanly	1	2	3	-	-	-	5	7	12	22	40,873
Surry,Yadkin	1	1	2	-	-	-	7	19	26	38	71,009
Swain	-	-	-	-	-	-	2	2	4	4	8,387
Transylvania	-	-	-	-	-	-	3	3	6	11	16,372
Union	-	-	-	-	-	-	5	6	11	18	48,389
Vance	1	-	1	-	1	1	2	7	9	14	32,002
Wake	14	26	40	1	17	18	15	22	37	199	197,617
Warren	-	-	-	-	-	-	2	1	3	5	17,591
Watauga	-	-	-	-	-	-	1	6	7	11	17,529
Wayne	2	3	5	-	3	3	7	12	19	55	82,059
Wilkes	1	-	1	-	-	-	2	8	10	19	45,269
Wilson	2	5	7	-	5	5	9	8	17	51	57,716

REPORT FROM THE UNC SCHOOL OF MEDICINE, REGARDING EDUCATION, RESEARCH AND SERVICE

July 15, 1968

I. INTRODUCTION

1. The School of Medicine appreciates the important work that the Committee on Shortage of Medical Doctors is doing. We believe that at the public hearing in Raleigh on January 5, 1968 and at the meeting of the Committee in Chapel Hill on April 12, 1968, several important concepts regarding the problem of the shortage of medical doctors in North Carolina were developed. The position of our School on the topics discussed is summarized.

   a. The shortage of medical services which exists in the State will not be corrected by attempting to provide a general physician in each small town and rural community. Programs should be developed which will provide medical services in all areas of the State. One approach to this problem is to make physician's services available to all areas by encouraging the development of a variety of practice groups based in clinics or hospitals. In these groups all types of medical care personnel would be utilized in an effort to accomplish maximum efficiency.

   b. There is an urgent need to develop more efficient ways of delivering medical care to all people of this State. Careful study of this problem should be undertaken, including the development of models of practice and the education of various types of personnel to assist the physician in his work.

   c. Each community and region of the State should develop well organized plans regarding the most efficient way of providing adequate medical services to their citizens.

   d. The education of an increased number of physicians and other medical care personnel will be required to support any conceivable medical care system that might be developed for the State. It is essential that the capabilities of students and the quality of educational programs be maintained at the highest possible level.

   e. The shortage of medical doctors and other medical care personnel is a problem of critical importance to the people of this State. Improvement of this situation justifies a major increase in the investment that the State makes in medical education.

   f. This investment should be made through the University at Chapel Hill because of the sound base which has been established at Chapel Hill for education in the health professions and the great potential for high quality growth in these programs.

   g. Before considering a major investment in a second state supported medical school the State should support the expansion of the School of Medicine of the University of North Carolina to an extent that will assure maximum efficiency in keeping with high educational standards.

The School of Medicine welcomes the opportunity of presenting a plan for expanding its educational activities in keeping with the concepts and needs that have been clearly defined as a result of the work of your Committee. This proposal should not be viewed as a fixed blueprint for expanding medical education in the State. Detailed long range planning has been initiated and will continue. The projections presented in this report will be modified as new facts are developed. Each step of the expansion program must be carefully evaluated to determine the influence it has had on the quality of the total program and the decision to move on with the next step should be made in light of these findings.

PROPOSAL FOR EXPANDING THE SCHOOL OF MEDICINE OF THE UNIVERSITY OF NORTH CAROLINA

I. INTRODUCTION

Basic to the following proposal is the fact that the School of Medicine of the University of North Carolina is a State-supported institution. It has special responsibilities to the people of the State that are not shared by private institutions. To meet these obligations, it must comply with the standards of excellence that apply to all medical schools, both private and state-supported. In addition, it must carry out programs of education, research, and service, which are specifically designed to improve medical care in all areas of North Carolina. The School recognizes that some areas of the State, especially small towns and rural communities, are faced with special problems in making available adequate medical care to their people. These problems combined with the statewide problem of providing adequate medical care to a growing population present a major challenge to all groups concerned. The School of Medicine desires to take leadership in the efforts to assure that the people of North Carolina receive the full benefits that present day medicine has to offer. Contributions that the School of Medicine can make to an all out effort towards better health for the people of North Carolina include:

1. EDUCATION

Education of an increased number of physicians and other types of medical care personnel required to deliver medical care effectively and efficiently in all areas of the State is the primary responsibility of the School. If the School is to meet this responsibility to the State, it must assure that its graduates receive excellent education and that they understand the opportunities and challenges that practice in all areas of the State offers. As a State-supported School, it has a special responsibility to provide education to individuals who are likely to remain in North Carolina and help solve the special medical care problems where they exist in the State. the School's approach to this complex problem is outlined in Appendix A of this report.

2. RESEARCH

In addition to supporting basic biomedical and clinical research, the School has a major responsibility to develop more effective methods of delivering medical care to all the people of the State. There is a special need to develop systems of medical care that will be effective in small towns and rural communities. This problem justifies a major research effort by this School. The School of Medicine and other units of the University have recently received a federal grant to establish a major research center to investigate methods for improving the delivery of medical care.

3. SERVICE

Extensive involvement of the School in medical care is an essential part of its educational programs. The effective

education of medical students, interns, residents and physicians in practice requires a variety of settings in which medical care is provided in an exemplary manner by the faculty of the School. These settings should include models of practice in rural and urban communities, teaching services in community hospitals and university medical centers. These activities which are designed for educational purposes provide a significant amount of medical care to many people. In university medical centers, highly specialized care is provided which is not widely available in the State. The School has another type of combined teaching and service function which has to do with providing leadership for and participation in service programs such as the Regional Medical Programs, the Federal, State and local health planning activities, the development of local health care centers, and the implementation of legislative programs for the care of the indigent and elderly sick.

II. REQUIREMENTS FOR EXPANSION

Factors that will influence the ability of this School to develop to its full potential for service to the people of this State include:

1) Number of qualified premedical students and other health professional students that apply to the School.

2) Number of qualified faculty that the School can attract and hold.

3) Size and quality of the teaching, research, and service facilities the School can develop.

4) The operating budget the School is able to obtain.

The problem of attracting an adequate number of qualified students to all the health professions is discussed in Appendix A of this report. In spite of limited resources, the School has demonstrated its ability to attract and hold highly qualified faculty. If the School is able to obtain the required high quality teaching, research, and service facilities and the necessary operating budget, there is every reason to believe that the faculty needed to teach additional medical and other health professional students can be attracted to this School. The total number of medical and other health professional students it will be able to teach and should teach when its maximum potential is reached cannot be determined at this time.

Patterns of medical practice are changing and will continue to change as will patterns of medical education. The need for a variety of new types of health personnel is becoming clear as new methods for delivering medical care are developed. The number and type of physicians the State will require to provide all its people adequate medical care will change. The School has great potential to develop in keeping with the medical care needs of the State. It is willing to work closely with

the Committee on Shortage of Medical Doctors of the Legislative Research Commission in the formulation of prudent plans for expanding this potential in a manner that will be of maximum service to the people of the State. A major need at this time is the development of a long range plan for financing the orderly growth of the School in keeping with the needs and resources of the State.

As a basis for discussion the School would like to present the following schedule for expansion. Projections beyond Phase I of this program should be considered as tentative. It is the judgement of our faculty that each step in this development program should be carefully evaluated before moving on to the next step. The effect of each expansion on the quality of the educational programs should be determined; the availability of resources to support the next step should be assured and the need for the next expansion should be revaluated before moving ahead. Quality of the educational programs must be assured at each step, otherwise, the great potential of this School for service to the people of this State will be lost.

Whenever possible, the educational programs of the School should be carefully meshed with the needs of the State for medical services. This requires careful planning that is now under way but not completed. This planning process should be continued and the program for expanding the School should be modified as new facts are developed. The process of relating the educational programs to the medical service needs of the State will become more important as the School increases its use of clinical facilities outside of Chapel Hill for teaching purposes. It is believed that the use of such facilities will play an important role in the expanded educational programs of the School. The nature of the facilities that will be required cannot be precisely defined at this time. Studies to define the nature of these off-campus clinical teaching facilities will be continued and plans for their development will be related to the plans for expanding the facilities on the Chapel Hill campus.

III. SCHEDULE FOR EXPANSION

As indicated in the following outline, Phase I of this expansion program is considered to have started in 1966 when there were 270 medical students (70 per class) along with 944 other health professional students in the School for a total of 1164 students. When Phase I is completed there will be 400 medical students (100 per class) along with 1471 other health professional students for a total of 1871 students in the School. The School is currently making an all out effort to develop its faculty, facilities, and operating budget to the extent required to make this expansion possible.

Phase II is currently projected as an expansion to 480 medical students (120 per class) along with 1572 other health professional students for a total of 2052 students in the School.

Phase III is currently projected as an expansion to 640 medical students (160 per class) along with 1672 other health professional students for a total of 2312 students in the School.

The faculty considers it unwise to project precisely the size of Phase IV of this expansion program. It is agreed that given adequate facilities, faculty, operating budget, and qualified students the School might be expanded to 200 or more medical students per class.

The following pages outline a possible schedule for expansion of the School. Funds are being sought to complete Phase I. Planning for Phases II, III, and IV is continuing.

CAPITAL IMPROVEMENT

SCHEDULE FOR EXPANDING THE UNC SCHOOL OF MEDICINE

SUMMARY

		NEW FACILITIES TO BE FUNDED	SPACE
PHASE I	70 to 100 Students (by 1970) (1966 - 1972)	$25,227,000	150,400 New Usable Sq. Ft. 158,000 Renovated Space 308,400 +173 Net Hospital Bed Increase
PHASE II	100 to 120 Students (by 1973) (1969 - 1975)	28,000,000	200,000 New Usable Sq. Ft. +204 New Hospital Beds
PHASE III	120 to 160 Students (by 1976) (1972 - 1977)	19,308,000	189,908 New Usable Sq. Ft.*
PHASE IV	Expansion to 200 or more students per class after 1977 is under study.		
	Total to be funded 1969 - 1977	$72,535,000*	539,908 New Usable Sq. Ft. 158,000 Renovated Sq. Ft. 320,208 +377 New Beds

*Additional hospital beds and space for additional clinical faculty will be required. The nature and location of these facilities is under study. (See page 14, number 17). It is agreed that a portion of the additional clinical teaching of students would be done in facilities off the Chapel Hill campus.

Appendix

Education of More Physicians and Other Medical Care Personnel for North Carolina

Report from the School of Medicine of the University of North Carolina

The problems confronting North Carolina producing greater numbers of physicians and other medical care personnel are primarily threefold:

1. To attract increased numbers of qualified students to the professions.

2. To continue to give these increased numbers the highest quality of education and professional training, and

3. To make the practice of medicine in the State attractive enough to keep trained personnel in North Carolina.

Efforts must be made to attract an increasing number of qualified students to all the health professions. Design of educational programs to produce more physicians and other medical care personnel for North Carolina should include efforts to improve the opportunities for students at all levels in our educational system. All colleges and universities of the State should be encouraged and supported in their efforts to provide effective basic science education to a larger number of students. Through a joint effort of the faculties of the School of Medicine and the colleges and universities providing premedical education in the State, it should be possible to design programs that would require less time and attract more and better students without reducing the quality of the programs. The time required to become a qualified physician today probably deters a number of good students from entering the profession. The total educational program for physicians is currently under review by this School. Efforts will be made to shorten the program by all means compatible with high standards of education.

Another factor that seems to deter qualified students from entering medicine is the cost. Many students feel that only wealthy families can afford to send their children to medical school. This view must be counteracted by reducing the cost when possible, by expanding the loan and scholarship program for undergraduate and medical students, and by letting all qualified students know that they can obtain financial aid if they wish to become physicians or other health professionals.

The faculty of the School of Medicine in an effort to attract more good North Carolina students is currently attempting to develop a more flexible curriculum. One objective of these efforts is to permit good students with less than optimal premedical education to be admitted to medical school, where they will be given special instruction in the basic sciences. Funds to support such a program have been requested in the School's "B" budget.

If the School of Medicine is to attract sufficient qualified North Carolina students to fill its expanded programs, it must maintain and improve its national reputation. "Good" students tend to select "good" schools. To accomplish this

goal, the School must have the facilities and other resources to attract and retain an excellent faculty in the face of increasing competition with other universities of the country. Only in this way can we continue to provide the highest quality education.

Educational programs must be designed that are in keeping with the special medical care problems of the State which include a shortage of physicians in general medicine and a shortage of physicians' services in rural areas of the State. A major objective of this School is to build special features into its curriculum which will help correct these problems. As outlined above, efforts will be made to encourage and permit more North Carolina students to study medicine. The place a physician chooses to practice and the type of practice he selects is also influenced by his experience in medical school and by his experience as an intern and resident. A major objective of the School is to attract and educate an appropriate number of individuals who will practice in the State as personal or family physicians. If your students and house staff are to be attracted to the practice of general medicine rather than one of the many specialties, they must see that general medicine is one of the most important and satisfying areas of practice. The School is expanding a number of its programs designed to accomplish this important goal. These include:

1) Expansion of the out-patient or ambulatory teaching facility of the School. The new faculty to be added will include general physicians. They will be individuals with a primary interest in the care of patients on an ambulatory basis and who have an interest in expanding our training program in family medicine. Support for this program has been requested in the School's "B" budget.

2) Expansion of our clinical teaching programs in community hospitals in various parts of the State. If students and house staff are permitted to have part of their clinical training in various areas of the State, it is believed that this will not only provide better training in family medicine, but may influence their choice of a location to practice. Support for this program also has been requested in the "B" budget of the School.

3) The development of models of practice in rural communities. The School is attempting to develop models of excellent practices in rural communities in which students can receive a part of their clinical training. In this type setting students would be able to learn the opportunities and challenges that practice in a rural community offers. It is believed that this should have a major influence in a student's selection of a location for practice.

When it selects its students, the School of Medicine of the University of North Carolina has always given preference to residents of North Carolina. The record of the School in providing medical education to residents of North Carolina since 1956-67 is summarized in Table 1. The faculty plans to continue this policy. With expanded facilities and new educational programs, it should be possible to provide medical education of a higher quality to a greatly increased number of North Carolina residents.

Attachment

STUDENTS IN ENTERING CLASS, # N. C. STUDENTS IN EACH CLASS AND % OF N. C. STUDENTS IN EACH CLASS AT MEDICAL SCHOOLS IN NORTH CAROLINA 1956 - 1967

	DUKE			BOWMAN GRAY			UNC			ALL N. C. SCHOOLS		
	Class Total	# N. C. Students	% N. C. Students	Class Total	# N. C. Students	% N. C. Students	Class Total	# N.C. Students	% N. C. Students	Class Total	# N. C. Students	% N. C. Students
56-7	78	23	29	54	30	55	68	63	93	200	116	58
57-8	79	31	39	54	32	59	67	66	98	200	129	64.5
58-9	79	23	29	55	32	58	70	69	98	204	124	61
59-60	76	27	35.5	55	28	51	69	63	92	200	118	59
60-1	75	23	31	55	20	36.5	69	60	87	199	103	51.7
61-2	77	22	29.5	55	26	47.5	72	66	92	204	114	56
62-3	81	17	21	53	29	55	75	69	92	209	115	55
63-4	84	16	19	56	30	54	72	68	95	212	114	54
64-5	82	24	29	58	32	54	72	63	88	212	119	56
65-6	83	17	21	57	26	46	72	59	82	212	102	47.5
66-7	82	15	18.2	56	24	43	71	56	79	209	95	47
TOTAL	876	238	27	608	309	51	777	702	91	2261	1249	55

Source: UNC Medical School, July 15, 1968

G

CURRENT STATUS OF ALL UNC MEDICAL SCHOOL GRADUATES

UNIVERSITY OF NORTH CAROLINA

SCHOOL OF MEDICINE

Current Status of All M.D. Graduates Since First Four-Year Class: 1954 - 1966.[1]

CLASS	NO. OF GRADUATES	IN NORTH CAROLINA MEDICAL PRACTICE OR OTHER ACTIVE USE OF MEDICAL EDUCATION	STILL IN TRAINING OR ON TEMPORARY MILITARY DUTY	OTHER
1954	48	30	2	16[2]
1955	59	39	3	17[3]
1956	59	41	7	11[3]
1957	58	35	4	19
1958	58	29	16	13[3]
1959	60	26	16	18[3]
1960	69	15	38	16[2]
1961	60	13	39	8
1962	62	9	51	2
1963	59	5	51	3[4]
1964	58		58	
1965	63		63	
1966	65		65	
	778	242	418	123

[1]Based upon a questionnaire submitted to all medical alumni in January, 1966, the response to which was better than 95%. Information on the few alumni not replying was obtained from the U.N.C. Medical Alumni Directory, published in February, 1966. All figures represent absolute numbers.

[2]One member of the class is in N.C. but not involved in medical work.

[3]One member of the class is deceased.

[4]No information available on one of these three.

January 17, 1967
sc

H

SUMMARY OF UNC MEDICAL SCHOOL'S B BUDGET REQUEST FOR THE DIVISION OF EDUCATION AND RESEARCH IN COMMUNITY MEDICAL CARE

" B " B U D G E T

THE DIVISION OF EDUCATION AND RESEARCH

IN COMMUNITY MEDICAL CARE

February 15, 1968

"B" BUDGET: SUMMARY OF PROPOSAL

1. Needs-Benefits-Results . . . . . Pages 1 - 7

Both the people of North Carolina and the School of Medicine have for some time felt the need for a means whereby advances in medicine could be more rapidly coordinated and translated into systems of improved medical education and care, both at the School of Medicine and in the communities of the State. The Division of Education and Research in Community Medical Care, formally established in 1966, is seeking to accomplish this goal by linking the School and communities through a cooperative effort in medical education. Through this program the teaching of medical students in their clinical years can take place in the community hospitals of the State. If the program for which the Division has laid the ground work is funded, the School of Medicine will be in a better position to increase its enrollment, its hospital will be better able to serve the public of North Carolina in the fashion that their investment deserves, its students will receive a better medical education, and they will be more likely to stay in North Carolina permanently.

2. Alternative . . . . . Pages 8 - 11

The program of the Division will require a total investment of $725,000 in 1969-70, and $796,000 in 1970-71. The Regional Program will be asked to fund $190,500 of this amount in 1969-70 and $190,100 in 1970-71. The State is being asked to appropriate $534,500 in 1969-70 and $606,200 in 1970-71. The cost of failure to fund the program may be heavy both upon the School's efforts and upon the people of the State's ability to have the advantage of the best available medical care both now and in the future.

3. Planning . . . . . Pages 12 - 26

Making a better system of medical education and care available to North Carolina's people has always been a major purpose of the School of Medicine. At no time has the School been in a position to more rapidly contribute to the delivery of better medical education and care than it is today. This ability is the result of time; but it is also due to the catalyzing efforts of this new Division. It has laid the ground work for a system of teaching affiliations from which the people will benefit directly. It is the feeling of the Division that the State should therefore be its principle supporter.

4. Long Range Aspects . . . . . Page 27

The results of the Division's efforts in specific projects thus far are discussed in Section 3 (Planning) on pages 12-26. The pages in this section contain charts which show the manner in which these affiliations will require additional funding by the State. These charts do not reflect the cost of the program which will be requested from the North Carolina Regional Medical Program. They should be referred to in conjunction with Chart A in Section 3 (Planning) which shows the rate and manner in which teaching services are to be instituted or expanded at the projected affiliations.

5. Priority . . . . . .

The Division's staff feels that their request should be given top priority as a "B" Budget item. Their program presents a means whereby the School can provide a better education for more of its students and increase the quality of medical care delivery in the State in the most economical fashion.

PROPOSAL FOR A PROFESSOR OF FAMILY MEDICINE AT UNC AND A MODEL COMMUNITY PRACTICE UNIT

The Role of a Professor of Family Medicine Based in the School of Medicine of the University of North Carolina at Chapel Hill

Introduction

Family medicine has its roots in general practice which for many generations has been the main source of routine medical care for the people of this state. The rapid development of modern medicine in recent years has resulted in many great advances in medical knowledge, to the great benefit of mankind. Many medical sub-specialties hav evolved to keep apace with this great expansion in the scope of medicine, but it has also resulted in fewer physicians entering general practice and in the depletion of medical manpower in many communities. This is a current world-wide problem and the medical profession in many countries is at present trying to find a solution. Nowhere is the problem felt more acutely than in the rural areas. The problem is further aggravated by the fact that it is no longer possible, even if he were now available in sufficient numbers to meet the needs of these under-doctored areas, for a single-handed physician to provide his patients with an efficient service in modern medical terms. This can only be provided by a team of medical and other health personnel trained for the task. Such a team should be capable of providing a community with its own comprehensive medical service for its acute and chronic sick, for its maternity and infant care, for the care of the aged, for rehabilitation and for health promotion. The central professional pivot of such a community-based health team is seen to be the family physician.

Model Practices

The development of health teams requires the establishment of model practices and the recruitment and suitable training of physicians and ancilliary staff. The initiative in this can best be taken by the Medical School of the University and the responsibility for the development of the first such practice vested in a professor of family medicine.

Professor of Family Medicine

Such a professor would be based in the Medical School with his primary appointment in the Department of Preventive Medicine for teaching, research and administrative purposes but would have close links with the model practice based in the community. The development of a model practice falls within the stated objectives of the Division of Education and Research in Community Medical Care. The Division would provide the link between the practice, the Department of Preventive Medicine, School of Public Health and Health Services Research Center of the University.

It would also provide the link between the practice and other possible developing model sites with-in the state. There would also be an important association between the practice and the Regional Medical Program through the Division.

The professor of family medicine would have an appointment in the Department of Medicine and/or Pediatrics. This would maintain his link with the mainstream of practice, teaching and research in these areas and to integrate closely his programs with those in the sub-specialty fields. This will be important if family medicine is to play its full part in the medicine school curriculum.

Teaching Role

The teaching role of such a practice would be to supplement the teaching in the University Medical School. The basic medical education gained in the wards, laboratories and lecture theatres would be enriched by the experience students gained by work in a teaching practice. There the commoner diseases would be seen, and the social impact of ill-health on the individual, his family and on the community can be experienced directly in the natural setting. Recruitment into family medicine is more likely if the student is exposed to a high standard of practice in this area early in his career. This should be continued during the early professional part of his career and the professor would bear the responsibility for expanding the existing residency training in family medicine at the University Medical School and other community hospitals.

Research Function

A major research function of a teaching practice is into the problem of the delivery of medical care. In such a practice as is envisaged, study of the structure and organization of the health team would be possible. It would provide opportunities in live situations to develop realistic health planning techniques relating to solving immediate medical care problems. In so doing, the practice would directly assist the university in increasing its body of expertise in this field to the advantage of the state and its people.

Relation to Other Medical School Developments

The creation of a professorship in family medicine is seen as one of the several related developments currently being planned in the university as part of its mission to further the health and well being of the people of this state. It would provide the clinical extension of the Medical School directly into a community, beyond the hospital care level into personal family medicine; this would be to the great advantage of both the Medical School and the community. By its association with the Division of Education and Research in Community Medical Care in the Office of the Dean of the Medical School, the fruits of this endeavor can be extended wherever possible throughout the state.

The successful development of a professorship in family medicine will depend on the back-up support the professor will have from the various University agencies already referred to. Without this support such an individual could only hope to function in a limited fashion with minimal impact on the practice of medicine throughout the state.

Funding

An estimate of the funds required to establish the professorship is as follows:

1st year

Professor	$35,000
Secretary	5,040
Supplies & Materials	200
Postage, telephone	500
Travel	1,000
Printing & Binding	250
General Expense	250
Equipment	1,000
Social Security & Retirement (13.75% x salaries)	5,505
	$48,745

2nd year (New) in addition to 1st year

Asst. Professor	$20,000
Secretary	4,584
Supplies & Materials	100
Postage, telephone	200
Travel	1,000
Printing & Binding	50
General Expense	250
Equipment	500
Social Sec. & Retirement	3,380
	30,064
Repeat 1st year--	48,745
	$78,809

1st year	$48,745
2nd year	78,809
Biennium	$127,554

Isaac M. Taylor, M.D., Dean
October 8, 1968

MEMORANDUM FROM STATE BOARD OF HIGHER EDUCATION, REGARDING APPLICANTS AND ADMISSIONS TO MEDICAL SCHOOLS

J

[illegible] JR.
CHAIRMAN
DURHAM (1971)
NDSAY C. WARREN, JR.
VICE CHAIRMAN
GOLDSBORO (1973)
RS. HARRY P. HORTON
SECRETARY
PITTSBORO (1973)
. DUNCAN
SALISBURY (1973)
ORDON H. GREENWOOD
BLACK MOUNTAIN (1969)
. C. HARRIS, JR.
RALEIGH (1969)
DDISON HEWLETT, JR.
WILMINGTON (1969)

NORTH CAROLINA

STATE BOARD OF HIGHER EDUCATION

1307 GLENWOOD AVENUE (ROOM 162)
P. O. BOX 10887
RALEIGH, 27605

HOWARD R. BOOZER . . . . . DIRECTOR
CAMERON P. WEST . . . . . ASSOCIATE DIRECTOR

[illegible] HOOPER
[illegible]
J. PAUL [illegible]
CHA[illegible] (1971)
ROBERT M. PITTMAN, JR., M.D.
SMITHFIELD (1969)
JOHN A. [illegible]
WINSTON-SALEM (1969)
WILLIAM B. RANKIN
LINCOLNTON (1969)
EMIL ROSENTHAL
GOLDSBORO (1969)
CLARENCE WATKINS
DURHAM (1969)
MRS. GLORIA D. WILSON
FAYETTEVILLE (1969)

June 14, 1968

MEMORANDUM

TO: Committee to Study the Shortage of Medical Doctors in Small Towns and Communities of the Legislative Research Commission

FROM: Howard R. Boozer, Director, North Carolina Board of Higher Education

I appreciate the invitation to appear before your Committee today. As I indicated to the Committee at your meeting on January 5, a Board of Higher Education study of the medical education needs of the State will be completed by late summer and recommendations concerning medical education will be incorporated in the long-range plan for higher education.

I was asked specifically to comment today with reference to the number of students applying for admission to medical school. The number of North Carolinians applying each year for admission to medical schools anywhere decreased from above 300 in 1956, 1957, and 1958, to 230 in 1960. Applications increased from 233 in 1963 to 286 in 1964, and have remained fairly stable since then. We do not have the figures for fall 1967. The number of North Carolinians who actually entered the three medical schools in North

Carolina each year has gradually decreased over the past decade. Overall, North Carolina students entering the University of North Carolina, Duke and Bowman Gray medical schools since 1956 have accounted for 55 percent of the total. North Carolina residents entering in 1966 were 47 percent of the total.

During the period 1957-1966, a total of 4,137 graduates of North Carolina colleges applied for admission to medical schools over the country. Of these, 2,198 students were later enrolled in a medical school. Of this total, 1,250 were enrolled in the three North Carolina medical schools.

Historically the great majority of medical students who graduated from North Carolina colleges and universities have come from the University of North Carolina at Chapel Hill, Duke, Wake Forest, Davidson, and recently North Carolina State University. In the period May 1962 through October 1965, the first four accounted for 84.5% (1461) of the students from North Carolina institutions taking the Medical College Admissions Test. During the same period less than 30 students from the State-supported five-year institutions took the MCAT.

During the year 1964-65 63 percent of the Duke applicants were accepted in medical schools, as were 70 percent of the applicants from Davidson and sixty-five percent of UNC-Chapel Hill's graduates who applied.

Of 252 applicants (graduates of in-state colleges) for the fall 1968 class of the Medical School of the University of North Carolina, 83% are from Duke, Wake Forest, Davidson, North Carolina State University and the Chapel Hill campus of the University of North Carolina. Graduates of North Carolina institutions who will be in the fall 1968 entering class at the UNC Medical School come from Davidson (10), Duke (11), Elon(1), Guilford (1), North Carolina State University (3), North Carolina College (1) and UNC-Chapel Hill (32.).

The Dean of the Duke Medical School (Dr. William G. Anlyan), stated in April 1967 that "the pool of qualified premedical students applying for admission to medical school must be enlarged." He added that "first and foremost, we must strengthen the quality and quantity of premedical education in our undergraduate colleges by strengthening their science programs."

One might well ask: (1) Are our State-supported colleges preparing their share of medical school applicants? (2) Why are graduates of so few North Carolina public institutions applying to or being accepted in medical school? (3) What can be done to make more students aware of the opportunities in medicine as a profession (vocational choice)?

From the record, it appears that those students who plan to go on to medical school receive their undergraduate training in the State primarily at UNC-Chapel Hill, Duke, Davidson, Wake Forest and North Carolina State University. There is widespread agreement among medical educators that the pool of potential applicants could be considerably expanded if basic science undergraduate programs in other colleges and universities in the State were significantly strengthened. In addition, more effective counseling of undergraduate students in the sciences concerning career opportunities in medicine would result in more qualified students applying for admission to medical schools. In fairness to most of the other institutions it must be rememberd that their primary responsibilities and their primary efforts through the years have been devoted to preparing people to teach and that they do not require nor have they offered sufficiently strong basic science programs to attract premedical students.

The recommendation by Dr. Anlyan that the quality and quantity of premedical education in our undergraduate colleges could be directly improved

by strengthening their science programs is compatible with the interim recommendations of the Board of Higher Education in March 1967 relating to 5-year institutions, to the effect that these institutions "should emphasize the expansion of their master's degree level instruction in preparing their long-range plans." The development of master's level programs in non-teaching areas as well as undergraduate pre-professional studies must be based upon sound undergraduate programs--in the case of pre-medical students, primarily in biology and chemistry.

While quality of instruction and curriculum are difficult to assess without statewide testing programs, it may be noted that the only institutions accredited by the American Chemical Society are Davidson, Duke, North Carolina State University, UNC-Chapel Hill, Wake Forest University, and just recently UNC-Greensboro.

Even though this Committee is primarily concerned with the question of how to provide more medical doctors for small towns and communities, I have brought along copies of a recent newsletter of the Board of Higher Education which lists all degree programs related to health occupations offered in all of the colleges and universities of the state, public and private. In addition, I have for members of the Committee a listing of projected new degree programs in health related fields which we have pulled together from recently completed long-range planning studies in the public institutions.

mcw

LETTERS FROM THE DEANS OF THE THREE MEDICAL SCHOOLS,

REGARDING STUDENT ENROLLMENT AND GRADUATION DATA

THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

THE SCHOOL OF MEDICINE
OFFICE OF THE DEAN

November 30, 1967

Mr. Hugh S. Johnson, Jr., Chairman
Subcommittee on Shortage of Medical Doctors
North Carolina Legislative Research Commission
State Legislative Building
Raleigh, North Carolina

Dear Mr. Johnson:

This letter is intended to serve as the brief you have requested in preparation for the January 5, 1968, Public Hearing of the Legislative Research Commission on the Joint Resolution Authorizing and Directing the Legislative Research Commission to Study Ways and Means of Providing More Medical Doctors for Small Towns and Communities. I should like the opportunity to speak at the Public Hearing on January 5 for about 15 minutes to amplify the matters touched upon in this letter and to answer questions which members of the Commission might have.

First let me say that the subject of the legislative resolution, providing more medical doctors for small towns and communities, is very important and has received the attention of the administration and faculty of the School of Medicine of the University of North Carolina for many years. There is no doubt that increasingly doctors in North Carolina are tending to enter practice in larger towns and cities, rather than in rural communities or small towns. This trend is by no means restricted to North Carolina but is nationwide. Many factors may be cited which probably contribute: (1) there is a general tendency of the population of the state and nation to move to cities; (2) there is a national shortage of doctors which is disproportionately marked in North Carolina; (3) economic, cultural, and educational opportunities - the general conditions of living - often appear more attractive to physicians with young families in larger rather than smaller communities; (4) conditions of medical practice - the availability of consultants, of hospital facilities, of laboratory and x-ray facilities, of auxiliary personnel, and the possibilities of partnership or group practice, all of which enable the doctor to do a better and more efficient job - appear more favorable in larger towns.

In an address last year in Charlotte to the Annual American Medical Association Conference on Rural Health, Dr. William Hubbard, Dean of the University of Michigan School of Medicine and President of the Association of American Medical Colleges, reviewed carefully these national trends of doctors to urban centers and concluded that it was extremely unlikely that they could be reversed. Many other thoughtful medical practitioners and educators agree with him, including Dr. Amos Johnson, the eminent physician from Garland, North Carolina. If this view is correct, all of us who are interested in the health of the people of North Carolina must try to determine the best ways in which we can assure the greatest availability of physicians services for all.

Let me now turn as specifically as possible to the questions you sent along to me with your letter of November 3rd.

1. Percentage of graduates from North Carolina medical schools that stay in North Carolina. Our figures indicate overall that approximately two-thirds of graduates of the University of North Carolina School of Medicine since 1954 (when we graduated our first four-year class) who have entered practice, are in practice in North Carolina. Available figures for the classes from 1954 to 1966 are presented on the attached table.

It should be pointed out that in addition to the regular medical students referred to above, there are at the Medical School and the North Carolina Memorial Hospital approximately 150 young doctors in training as interns, residents, and fellows. Many of these are graduates of schools other than ours who by their experiences in Chapel Hill become acquainted with opportunities for practice in our state. Data are not available on the number who actually remain here.

2. Percentage of medical students from North Carolina enrolled in North Carolina schools. Experience in recent years indicates that about 140 North Carolinians on the average enter the study of medicine each year. About 80% of these enter the schools in North Carolina and about 20% go elsewhere. More than half of those who enter North Carolina schools enter the School at Chapel Hill. Almost half of all North Carolinians who have entered medical school in recent years have enrolled at Chapel Hill.

3. What are schools doing to encourage rural practice and encouragement in the field of general practice; any specific reasons for not entering general practice. I have alluded to the second part of this question in the opening paragraphs of this letter. At Chapel Hill, we have not thought especially in terms of rural practice or general practice, but have for many years encouraged what we call family practice in a number of ways. Since the North Carolina Memorial Hospital opened in 1954, we have had an excellent mixed internal medicine-pediatrics internship which we think provides a sound basis for family practice. We have also had for many years a family practice residency offering experience in Internal Medicine, Pediatrics, Psychiatry, Emergency Medicine, Obstetrics and Gynecology for those who wish to prepare themselves for family practice. Two years ago we established in this School a Division of Education and Research in Community Medical Care to strengthen our efforts. The staff of this Division has been active in consultation with individuals and groups throughout North Carolina, assisting with problems of community medical care. Examples of the work our staff has done with the Regional Medical Program of Eastern Appalachia involving McDowell, Burke, Caldwell, and Alexander Counties and the "State of Franklin" regional program involving the western most counties of the state.

To give our students experience more closely related to actual medical practice, we have established affiliations for medical student teaching at Charlotte and at Greensboro. Other teaching affiliations are in the discussion phase.

Dr. Robert R. Huntley, a member of our faculty formerly in general practice, has developed at North Carolina Memorial Hospital a family practice unit which delivers comprehensive health services to a group of families in the Chapel Hill area. This unit gives students the opportunity to learn firsthand

what family medical care is all about. Dr. Huntley also presently is working with a group of citizens in Caswell County towards the establishment in Yanceyville of a model rural medical practice which will, if money for support can be found, provide experience for our students in this field.

Our Division of Education and Research in Community Medical Care is anxious to make studies in depth of the kinds of health problems which the General Assembly has directed the Legislative Research Commission to investigate. Progress in this direction has thus far been limited by lack of funds.

4. What plans, if any, toward improving supply of physicians. Over the years, we at Chapel Hill have gradually increased the size of our medical school classes from 48 in the class of 1954 to 74 in the class of 1967. In May 1966 we began a building program which will, if the funds are available for its completion, permit an increase of the class size to 100 starting in the fall of 1970.

It must be stated that the increase in the past decade of teaching load in the medical school at Chapel Hill has occurred with essentially no corresponding increase in buildings and facilities. The result is grave overcrowding. Lavatories, closets and storerooms have been converted to offices; hallways are filled with desks and equipment. We have 25 trailers on the grounds to house faculty members. The need is desperate for additional space to meet current programs and increase in space is essential if we are to meet our expanded educational goals.

5. What percentage fail entrance tests - what percentage in relation to first year enrollment graduate. We have no specific entrance test. Admissions are based on college records, letters of recommendations, results of interviews and scores on the medical college admission test (MCAT). About half the North Carolinians who apply each year for admission to medical school are admitted to some medical school. At our school almost one-third of North Carolinians who apply to us are accepted by us.

About 95% of our first year enrollment graduates, thus our failure rate is about 5%. Failure rate has decreased in the past couple of years.

6. What percentage fail medical examining board tests. A negligible number of our graduates fail to be licensed, although a few have to repeat the State Board Examinations.

7. What percentage intern in North Carolina. For the class of 1967 fourteen out of 74 interned in North Carolina. We are collecting figures on the classes between 1954 and 1967.

8. Annual total cost per student graduated; cost to student, Ratio of students to staff members. I am sorry that I cannot provide specific answers to these questions. Patient care, education and research are inextricably connected in the work of a medical school. In teaching, the faculty of our medical school has not only medical students but interns and residents at the North Carolina Memorial Hospital. In addition we have major teaching responsibilities for graduate students (Ph.D. candidates) dental students, nursing students, pharmacy students, physical therapy students, laboratory technology students, dental hygienists and University undergraduates. Our faculty has research and training grants approximately $7 million annually. The North Carolina Memorial Hospital has 420 beds,

the Gravely Sanitorium has 100 beds, and our faculty is responsible for the care of these hospitalized patients. In addition we have approximately 125,000 out-patient visits per year. We have approximately 275 full-time members of the medical faculty and 280 medical students. Figures show, however, that for the 1965-66 academic year we had about 2,700 separate registrations for educational programs in the School of Medicine. The ratio of medical students to faculty members is essentially meaningless in our case.

9. What tests taken for admission. The Medical College Admissions Test is taken by all candidates for admission to our school. This nationally administered test is only one of the guides we use in assessing qualifications for admission.

10. How many students can be accommodated. We presently admit 75 medical students to each first year class. Our facilities can accommodate therefore a total medical student enrollment of 300.

11. How many qualified applicants do you turn down each year because of lack of space. This figure is difficult to determine accurately because of the multiple applications which students submit. As noted above about half of all North Carolinians who apply to medical school each year are admitted to some medical school. Presently competition for admission to our medical school and to all medical schools is increasing sharply and our experience this year is that we have approximately twice as many applications as we had three years ago. The increase has occurred mainly from non-residents of the state. In the past few years there has been a marked increase in the number of college students and graduates and this unquestionably is increasing demand for admission to medical school. I am confident we can find 100 qualified applicants when we expand our class in 1970.

12. What minimum standards apply for admission. Please see Question No. 5.

There is one additional factor in the supply of physicians for North Carolina which I should like to call the attention of the Subcommittee. North Carolina ranks high among all states in the number of bachelor degrees awarded within it each year. We rank near the bottom, however, based on population in the number of North Carolina residents entering the study of medicine each year. This discrepancy seems to me likely to represent weakness in premedical programs in many colleges in our state. Many more North Carolinians should be studying medicine each year, but to achieve this there must be considerable upgrading of premedical programs, particularly in the natural and biological sciences in our colleges. I hope your Subcommittee will give attention to this aspect of the problem.

Thank you for the courtesy of your invitation of this letter. I shall be happy to provide additional information which the Subcommittee might request if the information is available to me. I look forward to the hearing on January 5.

With best regards,

Sincerely yours,

Isaac M. Taylor

Isaac M. Taylor, M.D.
Dean

Attachment
cc: Dr. William G. Anlyan, Dr. Manson Meads, Dr. C. Arden Miller

Duke University Medical Center
DURHAM, NORTH CAROLINA

OFFICE OF THE DEAN
SCHOOL OF MEDICINE

POSTAL CODE 27706
TELEPHONE 919-684-3438

November 28, 1967

Mr. Hugh S. Johnson, Jr., Chairman
Subcommittee
North Carolina
Legislative Research Commission
State Legislative Building
Raleigh, North Carolina

Dear Mr. Johnson:

In reply to your inquiries of October 20, we are happy to submit the following answers.

What percentage of graduates of the Duke University School of Medicine of the period 1950 to 1960 are practicing in North Carolina?

Grad. Year	50	51	52	53	54	55	56	57	58	59	60
No. in Class	67	75	71	83	80	76	81	78	78	81	74
No. in N.C.	18	13	18	26	26	26	27	22	23	28	20
% in N.C.	27	17	25	31	33	34	33	27	29	35	26

Avg. No. in Class - 77 Avg. No. in N.C. - 22.5 Avg. % - 28.8

The first class at Duke Medical School was graduated in June 1932. Between 1932 and 1966 we have awarded 2,293 M.D. degrees. In the same period we have had 2,033 individuals who received their M.D. degrees elsewhere who have come to Duke for their internship and residency training. In addition, there have been 362 individuals who have had faculty appointments at Duke. This brings the total medical student, house staff, and faculty number in the 34 year period to 4,688. Of this total number, 1,446 are in the practice of medicine in the State of North Carolina. Therefore the percentage of our "graduates" who stay in North Carolina is 1,446/4,688 or 31%. Since many of those who have graduated with the M.D. degree in the last five or six years will subsequently stay in North Carolina, this

percentage will undoubtedly be higher than it is at the present time. As you are aware, after graduation most of our graduates spend three or more years in postdoctoral training as well as two years in the military service. Therefore final figures cannot be obtained as to the ultimate residence of our graduates until several years after graduation. We make every effort to admit a student from North Carolina when he is equal in credentials to the students who are non-Carolinians. Therefore, in essence, pre-medical students from North Carolina get first preference if they have the necessary qualifications and criteria for admission used for any of the other students.

What percentage of the students enrolled in the first year class of the Duke University School of Medicine from 1950 through 1967 are residents of North Carolina? Between the years 1950 and 1967 there were 1,416 students admitted. Of this number 31% came from North Carolina. By entering class, this varied from a high of 53 to a low of 14.

As you know, during the past decade through the leadership of Dr. Wilburt C. Davison Duke Endowment Scholarships have been available to the medical students of all medical schools in North and South Carolina to spend the summer in community hospital externships or working in an apprenticeship with selected practitioners in the state, for the most part in rural areas. We have encouraged our students to participate in this program. In addition, a small number of others prefer to go into our International Medical Program to work in rural areas of such countries as Nicaragua. We have followed an absolute policy of not trying to lead our students into any particular kind of practice but to let them make their own selection after they have had the opportunity of sampling various types of careers in medicine.

With regard to improving the supply of physicians, since 1963 we have been ready to increase our Medical School classes from 80 to 128 students. Recently under the auspices of the Basic Improvement Grant of the Public Health Service we increased our classes from 80 to 86. However, the big jump to 128 cannot be effected until we are able to construct better teaching facilities and, in particular, classrooms and laboratories for our medical students. As you may know, our medical school was planned in the late '20's for 300 medical students. We now have over 1200 health students of all kinds using the same meager facilities. These teaching facilities have been stated to be archaic and outmoded by such

groups as the Liaison Committee of the AMA-Association of American Medical Colleges. It will take $20 million in capital improvements ($10 million federal and $10 million non-federal) to create the necessary teaching facilities for this 60 percent increase in planned enrollment. In addition, we estimate that it will take a minimum of $1 million per year in the operating budget of our medical school. It is our fond hope that, as in the State of Pennsylvania, it may be possible for the State of North Carolina to participate in both the capital improvements and the operational budgets of private medical schools such as Bowman-Gray and Duke. We have figures to substantiate the fact (as in the excellent article in Fortune Magazine for October 1967) that all private schools, expecially private medical schools, are in deep financial trouble because of shrinking endowments and increasing costs of operation. To salvage these private schools, it is going to be extremely important for each state to look at formulae for support such as is now being effected in the state of Pennsylvania and as is being planned in the State of New York. Our 60 percent increase in enrollment could be effected within three to four years if the necessary funding were available.

We have approximately 1300 applicants each year and until recently took in 80 students a year but are now at the absolute maximum of 86. We literally do not have anywhere for an additional student to sit or function. With regard to the question about the drop - out rate, we are proud to state that in the recent study of the Association of American Medical Colleges, Duke was No. 1 in having the lowest drop - out rate in medical school. This percentage was at the level of 1.5 percent. This attrition is due mainly to neurotic depressions and not due to scholastic deficiencies.

The number of students failing either in North Carolina Medical Board examinations or the National Board examinations is insignificant.

The percentage of our graduates who intern in North Carolina Hospitals is as follows:

Year	50	51	52	53	54	55	56	57	58	59	60
No. in Class	67	75	71	83	80	76	81	78	78	81	74
No. Interns	13	15	15	13	15	16	12	17	20	20	13
% Interns	19	20	21	16	19	21	15	22	26	25	18

Average number of graduates - 77

Average number of interns - 15

Average percentage interning in North Carolina - 20%

A program cost study of the fiscal year 1961-62 to separate undergraduate medical education from the other educational programs of the medical school resulted in a total cost of $3,445 per undergraduate medical student in that year. The 1967-68 budget reflects a gross cost of $9,373 per undergraduate medical student. This includes other education program costs and a study is underway to determine what percent of this is for undergraduate medical education.

What has been the estimate cost per student for selected years from 1957 to 1967 as cited by the Bulletin of the School of Medicine?

1957 - $2,240	1966 - $2,927
1960 - $2,420	1967 - $3,250
1964 - $2,667	

We have 277 full time faculty members and 332 medical students. However, it should be remembered that we also have 394 interns and residents and graduate students, etc.,for a total of 975 students in the health field being taught by the 277 full-time faculty members.

The criteria for admission are as follows: The selection of students is based upon the quality rather than the quantity of preparation, and upon demonstrated evidence of personal attributes of intelligence, character, and general fitness for the study and practice of medicine. In considering the applicant, many sources of information may be consulted: (1) his curricular and extracurricular college record; (2) his fitness as reflected by carefully prepared, confidential appraisals by teachers who know him well; (3) his scores on the Medical College Admission Test; and (4) his showing in the interview, which is held with the members of the

Admissions Committee or one of its regional representatives. Extracurricular activities are of particular concern in evaluating the official college transcript. There are no restrictions because of geographical origin. Obviously with 1300 applicants and only 86 being accepted we have a large number who are turned down because of the lack of adequate teaching facilities and a limited operational budget as described above. Not a single extra student can be accommodated in the outmoded teaching facilities that we now have. Of the 1300, 825 applicants were evaluated in the qualified range of credentials for admission. The criteria for admission to the school of medicine defined above are applied on a competitive basis to all applications received by the school of medicine. Those criteria cited as "minimum" included certain academic courses which are:

CHEMISTRY (which must include organic)	2 years
BIOLOGY and / or ZOOLOGY	1 "
PHYSICS	1 "
MATHEMATICS (including INTRODUCTORY CALCULUS)	1 "
ENGLISH	1 "

At your request, we are also including six copies of our Medical School catalogue.

I look forward to being with you on January 5th to discuss these matters of utmost importance in greater detail. If there is any further information we can furnish before that time, please let me know.

Sincerely yours,

William G. Anlyan, M.D.

WGA:dm

THE BOWMAN GRAY SCHOOL OF MEDICINE

OF WAKE FOREST UNIVERSITY

Winston-Salem, North Carolina 27103

(919) 725-7251

Office of the Dean

November 30, 1967

Mr. Hugh S. Johnson, Jr., Chairman
Subcommittee
North Carolina
Legislative Research Commission
State Legislative Building
Raleigh, North Carolina

Dear Mr. Johnson:

In reply to your letter of October 20, I am herein submitting answers to the questions you asked:

1. The location of practice of most medical school graduates does not become evident until they have completed internship and residency training and two years of service with the armed forces. Between 1950-1960 there were 564 graduates from Bowman Gray and 233 (41.4%) are now practicing in North Carolina. During this period the average number of students in an entering class was 54. During that period 389 graduates from a number of medical schools in this country had one or more years of intern or residency training in The North Carolina Baptist Hospital and 185 (47.6%) of these are now practicing in North Carolina; 12 1/2% of this group were Non-North Carolinians.

2. In the eighteen year period between 1950-1967, 980 students were enrolled in first year classes at Bowman Gray; 487 (49.8%) were residents of North Carolina. The following information on North Carolina students enrolled in medical schools during 1960-1965 was obtained from the Annual Applicant Study (Journal of Medical Education) and annual medical education issue (Journal of the American Medical Association):

Entering Class	No. N. C. Students Applying for Admission to a Medical School	No. of Applications Submitted	No. of N.C. Students Admitted	No. of N.C. Students Enrolled in a N. C. Medical School				No. of N.C. Students Enrolled in out of State Schools		
				BG	Duke	UNC	Total	Pub.	Priv.	Total
1960	230	638	130	20	23	60	103	6	21	27
1961	237	572	140	26	22	66	114	4	22	26
1962	239	637	139	29	17	69	115	5	19	24
1963	233	648	139	30	16	68	114	9	16	25
1964	286	974	155	32	24	63	119	10	26	36
1965	279	892	130	26	17	59	102	4	24	28
Total	1,504	4,361	833 (55.4%)	163	119	385	667 (44.4%)	38	128	166 (11%)

3. This question involves two separate decisions on the part of each medical student -- his choice of a specific career from more than 50 possible fields within medicine and a choice of where he will practice. We believe that in a democratic society each student should be free to make these choices. The purpose of our four year medical school curriculum is to teach the student the knowledge, skills, attitudes, and ethics necessary and basic to any of the fields within medicine. During this period he should be given as wide an opportunity as possible to see all types of practice to aid him in a career choice. As regards general practice and rural medicine, students at Bowman Gray are given the opportunity to participate electively in the preceptorship program that has been sponsored by the North Carolina Academy of General Practice and the summer program in community hospitals sponsored by the Duke Endowment. Each year general practicioners speak to the student body and many of our part-time faculty who instruct students during their outpatient clerkship are general internists who serve as primary physicians in their daily practice. On the completion of our present facilities expansion program we plan to introduce a mandatory experience for all students in continuing comprehensive care, i.e., the core of primary medicine.

Trends seem to indicate that primary medical care in the future will be carried out largely by general internists and pediatricians working together in groups and supported by specialist and allied health workers in areas that provide coordinated hospital, chronic care, and ambulatory care facilities, adequate supporting services, and an economic, educational, recreational, and cultural environment that will be attractive to a young physician and his family.

4. In 1964 plans were developed and fund-raising initiated for a major expansion and renovation of the Bowman Gray-Baptist Hospital medical center. This program, now under way, was designed to allow an increase in the entering class of medical students from 56 to 76 (35%) in September, 1969. It will allow also a significant increase in the size of our graduate and intern-resident student bodies and nine training programs for allied health personnel, i.e., nurses, technicians, etc. The nationwide increase in cost of construction which began in 1965 has severely strained the fund raising potential of this institution, however we are hopeful that the total program can be completed by 1971. In view of the urgent need to produce more physicians and despite crowding, Bowman Gray began last year to admit 61 students to the entering class.

5. Medical schools do not administer a specific entrance test. All applicants take a national Medical College Admissions test (MCAT). A number of factors are considered by each school in deciding whether a student is qualified for admission. Among those are scores on the MCAT, past academic

record, recommendations from college instructors, quality and breadth of the applicants education, impressions gained on personal interview, character, physical and emotional status, etc. Our overall attrition rate is approximately the national average (10%). A study of causes of attrition at this institution indicates that in recent years all have been due to emotional or motivational failures which were not identified at the time of admission and could not be salvaged through intensive counseling or therapy. We are presently conducting study in this area in an attempt to develop methods to help identify such students during the selection process.

6. Negligible. Date available only through the N. C. Board of Medical Examiners.

7. Between 1950-1960, 131 (23.2%) of 564 graduates of Bowman Gray interned in North Carolina.

8. Because of multiple activities of medical school faculty and the variety of programs of education, research, and patient care conducted by a school of medicine, the cost of a specific program can only be determined by a detailed program cost analysis. It is entirely misleading to divide total expenditures or total expenditures minus research expenditures by the number of enrolled medical students. Bowman Gray conducted a detailed program cost study in 1959-60 and we are presently repeating this study. At that time the cost to the institution for educating a medical student was approximately $2600/year or $10,400 for the four years. We have every reason to believe this cost has at least doubled since 1959.

The cost to the single medical student including tuition, books, and living expenses is conservatively estimated today as $11,725 for the four years of medical education.

The present number of full-time faculty at Bowman Gray is 153 giving a medical student to full-time faculty ratio of 1/1.37. This figure is misleading unless it is recognized that this same faculty is involved also in the teaching of 45 graduate students, 130 interns, residents, and fellows, participate in the care of approximately 18,000 inpatients and 90,000 outpatients visits annually, and conduct research programs with expenditures of approximately $4,000,000 per year.

9. (see question 5)

10. (see question 4)

11. It is not possible to answer this question with any accuracy. We estimate with our present applicant pool of slightly more than 1,000 and the projected expansion in college and university enrollments we will have no difficulty in obtaining 76 qualified students for our expanded class in 1969.

12. We do not define minimum standards per se. We attempt to choose from our applicant pool the best qualified students with preference given to North Carolinians when factors are essentially equal. It should be remembered that the selection process is not a one sided affair; medical schools select students and students select medical schools. All schools offer more acceptances than the number of actual places in order to fill each class.

Sincerely,

Manson Meads

Manson Meads, M.D., Dean

MM:em

THE EXPERIENCE OF THE NORTH CAROLINA MEDICAL CARE COMMISSION WITH MEDICAL LOAN PROGRAM

Late in 1964, or after nearly 20 years of administering the educational loan program, the North Carolina Medical Care Commission did a study to determine how North Carolina had benefited from the practice of medical loan recipients in the rural communities. The following is a resume of that study and includes only those physicians who completed the required number of years in accordance with their loan agreements.

	Number of Recipients	Percent of Total
1. Remained in same rural community or in an eligible rural community upon completion of loan obligation.	26	65
2. Remained in North Carolina but in an area not defined as a rural community by Rural Loan Statutes.	7	17.5
3. Remained in North Carolina.	33	82.5
4. Practicing outside North Carolina.	6	15
5. Deceased.	1	2.5
	40	100

Average size of community in which recipient practiced	1,857
Average size of community in which recipient practiced who left rural community.	1,848

Rural Communities in North Carolina Benefiting from the Practice of Medical Loan Recipients

1945 - November 1, 1967

Name	County	Name	County
Angier	Harnett	Lowell	Gaston
Archdale	Randolph	Madison	Rockingham
Apex	Wake	Maiden	Catawba
Ayden	Pitt	Millers Creek	Wilkes
Bakersville	Mitchell	Mocksville	Davie
Banner Elk	Avery	Mount Gilead	Montgomery
Bayboro	Pamlico	Murfreesboro	Hertford
Belhaven	Beaufort	Nashville	Nash
Bethel	Pitt	Newland	Avery
Bryson City	Swain	Oxford	Granville
Burnsville	Yancey	Rich Square	Northampton
Chadbourn	Columbia	Rowland	Robeson
Clarkton	Bladen	Scotland Neck	Halifax
Clayton	Johnston	Shallotte	Brunswick
Clyde	Haywood	Skyland	Buncombe
Drexel	Burke	Southport	Brunswick
East Bend	Yadkin	Sparta	Alleghany
Elizabeth City	Pasquotank	Stanley	Gaston
Elizabethtown	Bladen	Stony Point	Alexander
Faison	Duplin	Tabor City	Columbus
Franklinton	Franklin	Thomasville	Davidson
Fuquay Springs	Wake	Toast	Surry
Glen Alpine	Burke	Trenton	Jones
Guilford College	Guilford	Union Ridge	Alamance
Hatteras	Dare	Wadesboro	Anson
Havelock	Craven	Wagram	Scotland
Kernersville-Colfax	Forsyth-Guilford	Walkertown	Forsyth
Kittrell	Vance	Walnut Cove	Stokes
Knightdale	Wake	Warrenton	Warren
Lawndale	Cleveland	Welcome	Davidson
Lewisville	Forsyth	Washington	Beaufort
Liberty	Randolph	Whitakers	Edgecombe & Nash

Summary of Medical Loan Recipients by White and Nonwhite Designation

November 1, 1967

Category	White		Nonwhite		Total
	Number	Percent	Number	Percent	
Applications Approved	161	76.7	49	23.3 1/	210
In School	20	47.6	22	52.4	42
Academic Failures	3	75.0	1	25.0	4
Withdrawals from School and/or Program during School Years	7	87.5	1	12.5	8
PG Training or Military Service	24	80.0	6	20.0	30
In Practice	10	83.4	2	16.6	12
Completed Practice	59	89.4	7	10.6	66
Unable to Practice in Compliance with Loan Agreement	38	79.2	10	20.8	48

1/ Nonwhites represented 25.4% of the total population of North Carolina in the last decennial census of 1960.

REPORT FROM NORTH CAROLINA REGIONAL MEDICAL PROGRAM, REGARDING SHORTAGES

I. National Trends:

The total number of physicians per unit of population has remained constant over the past 15 years, but the number in private practice has steadily declined. Figure 1 illustrates these trends, and shows North Carolina's position relative to the national averages in 1963. The gap between these two lines is accounted for by physicians in governmental positions, administrative positions, insurance and industrial medicine, faculty positions and training programs.[1]

These physicians come from two sources, U.S. medical schools and foreign medical schools. Figure 2 illustrates the source of new additions to the professions over the past 15 years. It should be noted that 15 to 20 per cent of our new additions come from foreign schools.

At the same time, due to many factors, chief among which is the explosive increase in information to be learned by the physician, most new physicians are entering specialty practice rather than general practice. This is illustrated in figure 3.

Within the nation as a whole, the supply of physicians is not uniform. Physicians tend to move with the economy. Prosperous areas attract a large share of physicians, and

---

[1] It should be pointed out that physicians in training (interns and residents) and their faculties provide a large amount of patient care, primarily to the indigent patients served by teaching centers. Thus these physicians are contributing to the health care manpower pool though their numbers are not in the "private practice" category. The role of some governmental physicians (i.e. public health officers) in various health care clinics is also acknowledged.

since rural and agricultural occupations are among the least affluent, rural areas are less well supplied with physicians. Figures 4 and 5 illustrate these points. Those states with lowest incomes have fewer physicians, and those with the least percentage of urban population have fewer physicians. In each of these figures North Carolina is designated by a star instead of a dot.

Summary:

The nation as a whole has fewer physicians per capita caring for the health needs of individual patients than in the past. Most new physicians are trained as specialists, and most are moving into areas with a good economic climate.

II. North Carolina and Physician Manpower:

The previous charts have already presented North Carolina's position with respect to other states in the area of medical manpower. Our state is near the bottom of the list, with about 69 physicians per 100,000 civilian population in private practice. We have also seen that this may be related to economic factors, and to urban - rural population ratios. These relationships also seem to hold within North Carolina. The metropolitan areas of the state have 96 physicians (non-psychiatrists in private practice) per 100,000 persons, while the rural areas have only 30 patients per 100,000 population (figure 6). In addition 22 per cent of all the physicians now in practice in rural areas are over 70 years of age (figure 7), indicating that this discrepancy between

metropolitan and rural areas is likely to increase in the next decade, as these older men die or retire from practice.

III. North Carolina and Medical students:

North Carolina's three medical schools admitted 209 medical students in 1966[1]. Ninety five of these were residents of the state while 144 were imported from other states. Another 35 North Carolina residents entered medical schools in other states. Thus the state attracted many more students into its schools than it sent elsewhere.

One hundred thirty North Carolina students entered medical schools in 1966 (95 in the state, 35 outside). This represents 2.7 entering students per 100,000 population, as opposed to the national average of 4.5 students.[1] North Carolina ranks 48th among all the states in this respect.[2]

IV. Summary and Interpretation:

North Carolina shares, with other parts of the nation, a nonuniform distribution of physicians within the state. The physicians are becoming more concentrated in larger cities, and fewer and fewer are left in small towns. These

---

[1]Source: American Medical Association - Medical Education in the United States, JAMA 202:725-832, 1967.

[2]This ratio of number of entering medical students to population does not seem to be closely related to the per capita income of the state. Arkansas, 50th in rank according to income, ranks 7th in number of entering medical students. Mississippi, 51st in rank according to income, ranks 19th in number of entering medical students, etc.

trends are similar to those seen in farming (more large farms, fewer small farms, see figure 8), and in retail trade (more sales in multiunit chain stores, see figure 9). The reasons are complex, but a major factor seems to be the fact that the physician wishes the advantages of the larger towns (education, social and recreational activities, better hospital and supporting facilities, etc.) The role of the wife and family of the physician in deciding where he will settle is a major one, and the community which wishes to attract a physician must consider those factors which would attract his college graduate wife as strongly as they consider their hospital facilities.

North Carolina can look forward with the nation as a whole, to an increasing shortage of physicians, which makes it mandatory that we consider (1) the optimal manner in which manpower is distributed over the state, and (2) the entire spectrum of resources which, under his direction, will make it possible for the physician to see more patients than he does today. These resources include nurses, technicians, assistants, medical secretaries, and other persons, public health facilities, ambulatory care facilities, home care units, and many others. There is no indication that an adequate supply of physicians will improve the distribution of physicians. Whether few or many, they seem to go to the larger rather than the smaller towns, usually for social as well as medical reasons.

SUMMARY STATEMENT ON THE SHORTAGE OF MEDICAL DOCTORS AS IT APPLIES TO PUBLIC HEALTH

Presented to the Subcommittee on the Shortage of Medical Doctors in Small Communities and Rural Areas of North Carolina -- January 5, 1968

That the field of Public Health shares the problem under consideration by this Committee is evidenced by a look at relevant statistics. For example, of the 81 budgeted positions for Local Health Directors, 24 are vacant or are being temporarily filled by physicians serving in an acting or part-time capacity. As might be anticipated, the situation is more critical in the rural counties. Almost half of the Health Departments serving counties containing no cities of greater than 10,000 population are operating without a full-time Health Director. On the other hand, all but one of the Health Departments serving counties with one or more cities of 10,000 or greater population have a full-time Health Director.

Of equal concern is the ages of our present full-time Local Health Directors. One of every three has passed his 65th birthday. Only two of 44 are under 45 years of age. There is a dearth of young physicians entering the field of Public Health.

There is a serious manpower problem as it applies to Public Health Physicians in Local Health Departments. A vacancy in the Director position adversely affects any program. In many instances, practicing physicians in the community are called upon to serve as Acting or Part-time Directors.

Aside from encouraging counties to come together in cooperative arrangements, such as District Health Departments, to better utilize existing manpower, the State Board of Health has promoted the employment of well-trained, experienced Public Health Administrators in leadership positions in Local Health Departments.

Furthermore, regionalization of public health services, careful planning among agencies to avoid overlapping functions, studies to evaluate local needs

and comprehensive planning to meet them, plus extensive use of modern communications methods will hopefully make it possible to offset loss of public health physicians and to make better use of those presently directing public health activities.

TABLE I

Health Director Vacancies - Urban vs. Rural

Health Director Positions in Counties or Districts Containing at least one city of 10,000 or greater population . . .			Same for Counties or Districts Containing no city of 10,000 or greater population . . .		
Position Status	#	%	Position Status	#	%
Filled	31	97	Filled	26	53
Unfilled	1	3	Unfilled	23	47
Total	32	100	Total	49	100

TABLE II

Age of Full-Time Health Directors

Age Range	#	%
Under 45	2	5
45 - 54	8	18
55 - 64	20	45
65 and over	14	32
Total	44	100

PRESENTATION BY THE NORTH CAROLINA DEPARTMENT OF MENTAL HEALTH, JANUARY, 1968:

I. NEEDS OF THE MENTAL HEALTH DEPARTMENT

A. Unfilled positions in hospitals, centers and community programs

Total currently: 70

Many vacancies are in predominantly rural areas which have a community program but have been unable to recruit a psychiatrist-director (REFER TO STATE MAP)

Other areas currently have no program but will eventually need psychiatrists when the program develops (REFER TO WHITE AREAS ON MAP)

Projected: 33 comprehensive community mental health centers. Average requirement: 3 psychiatrists for each center.

B. Need for GP backup in the communities

For workup and referral of patients to mental health facilities

In some communities there is no physician to refer patients for treatment

For aftercare of patients

Point to the rapid increase in admissions and discharge since 1956-57 (State mental hospitals) (DISTRIBUTE FIGURE 1)

Discharges:	1956-57	1966-67
	3,600	16,500

Admissions:	1956-57	1966-67
	4,100	14,000

This tremendous increase in both admissions and discharges has in turn heightened the need for general physicians in the communities to provide screening and referral as well as aftercare. This was not an acute need prior to 1956.

II. RECOMMENDATIONS TO MEET THE NEEDS

A. Comprehensive health care
(Mention comprehensive health planning and comp. mental health planning which preceded it)

Needed: Total system of health care with the general hospital as the focus; gp is tied in with the general hospital and is not practicing in a vacuum; coordinated teamwork in a group situation; will attract not only more gp's but other specialities as well, including psychiatrists.

Needed: A "third faculty" in the medical school

Quotation:

"My call to action is toward re-establishing medicine's community roots. I urge the creation of a "third faculty" whose task would be to prepare students for practice in the community. It would conduct research, experiment with new forms and patterns of service, and teach, using the community itself as its laboratory and classroom. In addition to its educational function, it would link community services with medical centers. The third faculty would be a bridge between the community and academic medicine . . . We must do everything possible to surmount the economic, social, and geographic barriers to health care and make equal access to health services more than a pious hope."

William H. Stewart
Georgetown Medical Bulletin
20(1):39-44, 1966

Note: This trend has already begun in psychiatry. Note the Community Psychiatry Divisions at UNC, Duke and at other universities over the country.

It has been possible for the Department of Mental Health to recruit more psychiatrists as a result of working in close collaboration with other medical schools in the state. We will continue working closely with three medical schools as well as with the other universities and colleges in the state.

STATE OF NORTH CAROLINA
DEPARTMENT OF MENTAL HEALTH
P. O. BOX 9494
EXECUTIVE OFFICES
441 N. HARRINGTON STREET
RALEIGH, N. C. 27603

EUGENE A. HARGROVE, M.D.
COMMISSIONER

BEN W. AIKEN
GENERAL BUSINESS MANAGER

December 11, 1967

The Honorable Hugh S. Johnson, Jr.
Legislative Research Commission
State Legislative Building
Raleigh, North Carolina

Dear Mr. Johnson:

This acknowledges your letter advising that the Legislative Research Commission has been directed by the General Assembly to make a study of the ways and means of providing medical doctors for small towns and communities in North Carolina. You invite ideas or suggestions as to how this shortage might be relieved.

Considerable thought has been given for some time to the problem of solving the shortage of doctors for mental health facilities including the state hospitals and the community mental health clinics, as well as to obtaining medical doctors for rural areas and small towns. Several solutions have been considered. They are as follows:

(1) Physicians might be more willing to provide services in rural areas if they could associate themselves with a group of physicians. Overwork and professional isolation play a large role in a doctor's reluctance to practice in rural areas.

(2) Trends are in the direction of group practice, specialization and the provision of services from regional health centers. We need to capitalize on the comprehensive regional health centers which include heart, stroke, and cancer centers as well as regional mental health centers.

(3) Perhaps one other plan to be considered would be to have the medical students or unlocated recent graduates spend time with physician leaders, both in the field of mental

health and general practice of medicine. These students might then be motivated to do recruiting with other students during the academic year.

(4) Efforts should be made to recruit more than one physician for practice in rural areas and small towns in order to prevent isolation from the nearby clinics and nearby hospitals.

(5) If the desired goal is to locate general practitioners in small towns and rural communities, progress could probably be made by having more general practitioners on medical school faculties, externship with general practitioners, or a department of general practice or family care in the medical school.

(6) Increase the number of doctors being graduated each year and grant the general practitioner better recognition and hospital staff privileges.

(7) Small towns or rural areas in order to recruit doctors will have to establish facilities in which physicians could practice first class medicine.

These expressed ideas do not afford an immediate solution to the problem of securing more doctors for the small towns and rural communities but may prove helpful in studying the problems at this time.

Sincerely,

Eugene A. Hargrove, M. D.
Commissioner

EAH:M:et

MEMORANDUM ON THE LEGAL STATUS OF THE PHYSICIAN'S ASSISTANT

The Legal Status

This section on the Legal Status of the Physician's Assistant pertains to the need, current status, and present efforts for proper and desirable legal development. Included are the questions as to type of legal development and thoughts as to the most desirable solutions of the legal problems.

Contributed by:

E. Harvey Estes, Jr., M.D.
Professor and Chairman
Department of Community
Health Sciences
Duke University School
of Medicine

Comments of Legal Status of the Physician's Assistant Program

Almost every physician who considers using a physician's assistant inquires about the legal status of such individuals. There is also concern among hospitals and hospital administrators. Because of this universal interest, and because of our own concern for an orderly program of development a conference was held at Duke earlier this year to review these problems and to offer suggested solutions. This meeting was attended by leaders of the Medical Society of the State of North Carolina, including representatives of the Board of Medical Examiners, the Legislative Committee, and the Medico-legal Committee. The North Carolina Nurses' Association was also represented as was the American Medical Association. Several individuals representing schools planning the development of such programs were also in attendance. A resume of this meeting follows and is self explanatory.

In addition to the concern of the individual physician and hospital administrator concerning these new manpower categories, there is also a legitimate concern on the part of those considering such training programs and the medical profession as a whole. We have had inquiries regarding curriculum, availability of trainees, etc. from a large number of individuals and institutions who are interested in training such categories. Some of these are medical centers with extensive faculty and facility availability and with considerable previous medical educational experience. Others

are colleges with educational experience but with no clinical faculty or facilities. Still others are individual groups of doctors with clinical facilities but with no educational experience. We have also had inquiries from community hospitals that wish to train such individuals. The development of such programs without established guidelines, approved and supervised by the medical and nursing profession, will almost certainly lead to chaos. The graduate of one program will not be at all equivalent with the graduate of another, and the public will in all likelihood be served poorly. Because of the number of developing programs and their continuous multiplication, guidelines for curriculum and for legal control are of utmost importance.

Resume: Conference on Ethical and Legal Implications
Of Health Manpower Innovations,
Duke University,
March 31, April 1, 1968

The meeting convened with a statement that the Conference was intended to cover health manpower innovations in general, though the Duke Physician's Assistant Program would be used as a specific example of problems which might arise. In order to acquaint the conferees with the Duke program, the background and the nature of the program was presented briefly. Other similar programs were cited, including some of the new experimental programs involving an expanded role for nurses. Dr. Ernest Furgurson briefly reviewed the impact of a physician's assistant in a private practice setting in eastern North Carolina.

The second session began with a presentation of the evaluative plans for the Physician's Assistant Program. Evaluation of the reaction of patients and physicians, evaluation of technical competence, and evaluation of economic impact are all parts of this projected study. After this presentation, there was a general discussion concerned with insuring objectivity and adequacy of the evaluative process. It was agreed that the evaluation must eventually include not only the above items, but also the effect of the physician's assistant on the quality of medical care as evaluated by some form of medical audit.

The next portion of the program was concerned with ethical ques-

tions raised by health manpower innovations. At present we have no way of introducing new members into the health care team within an organized framework of development. It was pointed out that mechanisms have been established for the introduction of new drugs and for new clinical procedures. These mechanisms have evolved gradually under the impetus of granting agencies such as the Public Health Service and the American Heart Association. The mechanism generally involves a committee of people who are not involved in the experiment but who have knowledge so as to offer valid opinions. These individuals are given complete information about the experiment, they discuss the proposal and assure themselves that the patient's rights in the proposed experiment are protected fully and that all safeguards possible are used. This committee is organized under some unit of authority such as the dean of a medical school. The committee is given complete information in written form, and in most cases it periodically receives follow-up reports.

A similar mechanism was proposed for the health manpower area. It would be the responsibility of any group who wished to initiate a program of training a new category to submit their proposal in writing to such a committee which would act as a representative of the public. The committee would consider the manpower innovation, its objectives, its curriculum, its faculty and its facilities. The committee would also receive periodic follow-up reports with evaluations of those

utilizing the manpower category. It was suggested that this committee also be organized under some unit of organizational structure, and it was felt best to involve the practicing professions very directly. It was proposed that this committee be set up as a substructure of an official board such as the Board of Medical Examiners. This committee could have representation from nursing, from hospital administration and from other organized elements within the health care professions. The committee could report in turn to the various elements of the Health Care System regarding their decisions and also regarding followings of trainees.

The advantages of this system are: innovations could be carried out under an organized framework, successful innovations could be perpetuated and unsuccessful experiments could be eliminated. Such a mechanism was felt practical for a wide variety of manpower innovations, including new categories such as the physician's assistant, new roles for established categories such as nurses, and other groups not yet considered. It was conceded that any system likely to be devised could be subject to abuse, but that abuse could be reduced to a minimum by full visibility and full reporting plus the involvement of all professions involved.

The question of licensing of new health manpower categories was raised. It was generally felt that formal licensing of each new health manpower category was likely to lead to more complications than solutions.

Current licensing arrangements tend to fragment and disjoint the medical care delivery process rather than unify it. The question of licensing the producers of various assistants was discussed. This is to an extent contained in the above suggestion. Still another system might be to license the physician or the group of physicians who wish to use various new forms of health manpower. The ability of a physician to supervise, the professional integrity of the physician, and his ability to utilize such individuals would be considered in this licensing process.

There was a considerable amount of discussion of the obligation of those who train new manpower categories to the individuals trained. There is also an ethical obligation to a person who comes into such a program to the extent that he is allowed to progress and advance in the future. Such a path is not clearly delineated for the physician's assistant at the present time, though most felt that this was necessary. The recognition of prior training and the ability to apply this as credit toward the granting of more advanced degree is a major problem which required cooperation of all professions involved. It was agreed that degrees are probably not necessary for most tasks, but it was also conceded that a degree might be advantageous for the individual since it has become almost the lowest common denominator of educational experience.

There was some discussion of the effects of new manpower categories on insurance costs in the professional liability area. No problems have

thus far been encountered and in no case has the employment of a physician's assistant raised the cost of professional liability insurance. There was general agreement that these experiments in new health manpower categories should be carried out in areas of the country where malpractice suits were less common and North Carolina appears to be optimal in this regard.

The current legal climate was next explored. There were some divergent opinions among the group. On the one hand, there were those who felt that medicine has a great deal of latitude to innovate in this area, and that there is no realistic basis for fear since such penal and civil actions were so rare. On the other hand, many felt that there were substantial legal and related impediments to the use of new physician manpower and that this does constitute a real deterrent. Dr. Edward Forgotson reviewed this problem in some detail. The situation is quite different with regard to independent and dependent assistants. An independent assistant, one who is working seperate from the physician, is allowed to practice only under specific exceptions to the Medical Practice Act. There is no latitude for practice outside this statutory exception. On the other hand, a dependent assistant—one working under the authority, supervision and responsibility of the physician—the situation is more fluid. In general, dependent assistants are allowed by the law if their use is usual and customary in the community in which employed. There are exceptions to this however, and one case was cited

in which a nonlicensed nurse was held liable (in a malpractice action), the evidence being her lack of proper license. Thus the potential does exist for suits to be brought based on nothing more than delegation of authority to unlicensed personnel.

Dr. Forgotson summarized the steps which will be necessary to accomplish the above recommendations as follows:

1. License new health manpower categories and programs as experiments on a state level using a mechanism similar to those now existing for new clinical investigation and new drugs.
2. To license the physician or the institution which uses the assistants under the above program.
3. To study the ethical underpinnings which will ultimately be codified into law.
4. Develop a draft of a legal regulatory program which covers enforcement powers, recording powers, and other matters which should be incorporated into the law.

In discussing the above proposal there was general agreement that such a program would be a wise one and that it had a high probability of being accepted by both the Medical Society and the Nurses' Association. This must be presented to these bodies and explained carefully. The constitution of the special committee within the Board of Medical Examiners must be examined closely so that proper representation is established. It is felt that with the proper background of information and exchange, such a program might be accomplished in this state via the state legislature in the spring of 1969. This would be accomplished, hopefully, with the active help of the Medical Society of the State of

North Carolina, the North Carolina Nurses' Association, and the North Carolina Hospital Association.

It was agreed that the bodies involved would be approached with such a proposal and an attempt would be made to present a resolution to the North Carolina Legislature in 1969 authorizing the establishment of such a mechanism as presented above.

AMERICAN OSTEOPATHIC ASSOCIATION FACT SHEET

SEPTEMBER 1968

Prepared by the Editorial Department, American Osteopathic Association, 212 E. Ohio St., Chicago, Illinois 60611

FACT SHEET * FACT SHEET * FACT SHEET

Objectives of the American Osteopathic Association—"The objectives of this association shall be to promote the public health, to encourage scientific research, and to maintain and improve high standards of medical education in osteopathic colleges."

Vital Statistics

1. Number of Doctors of Osteopathy—13,372* (This does not include 3,504 physicians on record whose mail has been returned and who may, or may not, be deceased, but death has not been reported.)
   a. In private practice—10,229
   b. Not in private practice, but active—1,137 (In training programs, those with full-time hospital or college faculty positions, etc.)
   c. No information on practice—701 (May, or may not, be in private practice)
   d. Inactive-Retired—4,809

2. Number of D.O.s who are members of the American Osteopathic Association—10,053†
   a. Number of Student Members of the American Osteopathic Association—927†
   b. Associate Members of the AOA—37†

3. Types of practice—60.9 per cent are G.P.s; 16.3 per cent are G.P.s with special emphasis upon a specialty; 13.2 per cent limit their practice to a specialty, such as surgery, obstetrics, internal medicine, etc.; 9.6 per cent limit their practice to manipulative therapy and clinical conditions amenable to it.

4. Practice locations
   a. Communities with 50,000 and over population —49.1 per cent
   b. Communities with 5,000 to 50,000 population —27.6 per cent
   c. Communities with less than 5,000 population —23.3 per cent

Osteopathic Education

1. Number of colleges and their location—There are five osteopathic colleges: Chicago College of Osteopathy (5250 Ellis Avenue, Chicago, Illinois 60615), College of Osteopathic Medicine and Surgery (720-722 Sixth Avenue, Des Moines, Iowa 50309), Kansas City College of Osteopathy and Surgery (2105 Independence Avenue, Kansas City, Missouri 64124), Kirksville College of Osteopathy and Surgery (Kirksville, Missouri 63501), and Philadelphia College of Osteopathic Medicine (48th & Spruce Street, Philadelphia, Pennsylvania 19139).

2. Colleges in development and/or proposed—The Michigan College of Osteopathic Medicine is actively being developed and the land has been acquired in Pontiac, Michigan; other colleges are being discussed in other areas of the country such as New York, New Jersey, and Texas.

3. Preprofessional requirements—Admission to these colleges requires three years of preprofessional training in a college or university accredited by a regional educational association. On the average, present entrants have earned 117 of 120 hours usually required for graduation; 95 per cent hold a bachelor's degree. Preprofessional study is almost evenly divided between science and the humanities.

An entering student must have credit for at least 6 semester hours in English, with 12 recommended; 6 to 8 hours (a full year's work each) in physics and biology; 8 in inorganic and 4 to 8 in organic chemistry; and elective courses reflecting a broad cultural background.

4. Professional requirements—The degree Doctor of Osteopathy requires 4 academic years of study; 2 years devoted to anatomy, physiology, chemistry, pathology, bacteriology, and immunology; and 2 years to clinical subjects. Inherent in all osteopathic study is the role of the musculoskeletal system as a reciprocal factor in health and disease. Structural factors in disease processes are stressed, and students are trained in osteopathic manipulative therapy and in medical, obstetrical, and surgical procedures.

5. 1967-68 total undergraduate students in the five osteopathic colleges—1,823

6. 1968 graduates from the five osteopathic colleges —430

7. Postgraduate training—Of osteopathic graduates, 99 per cent complete internships in osteopathic teaching hospitals. Residency and other postgraduate training are offered by the colleges, hospitals, and specialty groups, and are part of the educational program leading to certification in the various medical specialties.

8. Number of internships available—461

9. Number of residencies available—548

*Figure from "A Statistical Study of the Osteopathic Profession—December 31, 1966," compiled by the American Osteopathic Association. Figures for 1967 are not yet available.
†Figure from the 1968 AOA YEARBOOK AND DIRECTORY OF OSTEOPATHIC PHYSICIANS.

Osteopathic Research—Total of U.S. Public Health Service-National Institutes of Health grants made to D.O.-research-and-training projects for the fiscal year 1966‡—$1,175,003.00.

The Osteopathic Progress Fund—The OPF is a unique program of philanthropic giving developed for and by the osteopathic profession itself. Begun in 1942, OPF has received $14,785,000 from the osteopathic profession for its colleges. The amount of giving per D.O. is approximately $100 per year; 85 per cent of the D.O.s give annually to the institution of their choice.

Specialty Practice

1. Specialties certified by certifying boards of the AOA—Anesthesiology, dermatology, internal medicine, neurology and/or psychiatry, obstetrics and gynecology, obstetrical-gynecological surgery, ophthalmology and/or otorhinolaryngology, pathology, pediatrics, physical medicine and rehabilitation, proctology, radiology, surgery, neurological surgery, urological surgery, orthopedic surgery, and thoracic surgery.

2. Number of certified specialists—1,149§

3. D.O.s devoting full or part time to specialty practice—3,021
   a. Full-time specialists—1,350
   b. Part-time specialists—1,671

Osteopathic Hospitals

1. Number of osteopathic hospitals—278‖ with a total of 18,587‖ available beds
   a. Hospital admissions for the year 1967 exceeded 661,000‖
   b. In 1967 over 274,800‖ surgeries were performed in osteopathic hospitals.
   c. In 1967, 65,800‖ babies were born in osteopathic hospitals.

2. Hospitals accredited and hospitals approved for intern and/or residency training by the American Osteopathic Association
   a. Accredited hospitals—124
   b. Hospitals approved for intern and/or residency training—77

3. Under the Hill-Burton program, as of Sept., 1966, 78 osteopathic projects (general hospitals, chronic disease facilities, rehabilitation facilities, nursing homes, and diagnostic and treatment centers), costing more than $74 million, have received federal support of more than $23 million for construction.

‡Figures for 1967 are not yet available.
§As of August 1, 1968.
‖Figure provided by American Osteopathic Hospital Association.

Licensure—There are 42 states and the District of Columbia that provide for the unlimited practice of medicine and surgery by osteopathic physicians. In 21 states and the District of Columbia, osteopathic physicians must pass a basic science examination prior to taking state boards for unlimited practice rights. In the states of Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Virginia, Wisconsin, and Wyoming, and the District of Columbia, the licensing board is a composite one, made up of both M.D.s and D.O.s.

Doctors of osteopathy are engaged in the legalized practice of their profession in all the states.

Osteopathic Medicine—The philosophy and science of osteopathic medicine was first described in 1874 by Dr. Andrew Taylor Still (1828-1917), a licensed physician. In 1892, he founded the American School of Osteopathy at Kirksville, Missouri.

Members of the profession are designated as physicians and surgeons, D.O. They are qualified to render complete health service. Osteopathic medicine encompasses all phases of medicine but goes beyond general medicine in its distinctive recognition of the function of the musculoskeletal system in health and disease. Diagnostic and therapeutic methods applied to this system make osteopathic medicine today's most comprehensive and complete approach to man's health problems.

Osteopathic medicine cooperates with all other branches of medical science. It maintains its independence in order to develop and perpetuate, for mankind, this unique and inclusive system of medical care.

AOA Officers and Trustees, 1967-68

President	Roy S. Young
President-elect	J. Scott Heatherington
Past Presidents	Earl K. Lyons
	John W. Hayes
First Vice President	W. S. Horn
Second Vice President	F. L. Reed
Third Vice President	Philip E. Greenman
Executive Director	Edward P. Crowell
Treasurer	Mr. Kenneth L. Ettenson
Editor	George W. Northup
Trustees	Philip Adler, Marion E. Coy, J. Vincent Murphy, Harry S. Still, Paul E. Wilson (term expires 1971); A. R. Fuller, George J. Luibel, James J. Riviello, William L. Silverman, John C. Taylor (term expires 1970); W. Clemens Andreen, Louise W. Astell, John H. Burnett, Henry N. Hillard, Donald R. Hinton (term expires 1969)

R

A STATEMENT BY THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA
REGARDING OSTEOPATHS
(Presented before the Legislative Research Study Commission, Sub-committee on Health Manpower, North Carolina General Assembly, Legislative Building, Raleigh, North Carolina, November 15, 1968)

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE:

My name is Edgar T. Beddingfield, Jr., a Doctor of Medicine.

I am a spokesman for the Medical Society of the State of North Carolina -- being the current President-Elect and a member of the Committee on Legislation.

The Medical Society is grateful for this opportunity to appear before you and to re-state its views on the issue at hand. The Medical Society is not aware of the precise nature of the current legislative proposal regarding Osteopathy under consideration by the Commission; however, as a result of an intensive and continuing study, and interest in such matters, our contention is that no new legislation is necessary or desirable.

During the legislative deliberations on this issue in 1967, it was clearly pointed out that there is no prohibition in the present Medical Practice Act against Osteopaths being admitted to the medical licensure examination, and upon successfully passing the examination, to become licensed as practitioners of medicine. The only requirement is that the State Board of Medical Examiners must satisfy themselves that quality and quantity of medical education is of a sufficiently high order.

This might be accomplished by one of two methods:

1) The Schools of Osteopathy could allow the accrediting agency that accredits all of the other medical schools in to their colleges to evaluate quality and quantity of their medical education, and if they successfully measure up by the same yardstick applied to other schools, this would satisfy legal requirements imposed upon the Board of Medical Examiners, and their graduates upon application could be admitted to examination in this State.

2) An alternate method, for the Colleges of Osteopathy, would be for them to invite the State Board of Medical Examiners, or their designated representatives, to conduct an on-site inspection and evaluation for the purpose of consideration of their program of medical education, and if this resulted in a satisfying of the requirements imposed by the Statutes upon the Board of Medical Examiners to accredit the Colleges of Osteopathy, the graduates, upon application, would be admitted to the examination.

Thus, there are two readily available mechanisms for the admission of osteopathic college graduates to the practice of medicine in North Carolina. To date, the Colleges of Osteopathy have not seen fit to avail themselves of either of these mechanisms.

Why?

We submit that if osteopathic college training and osteopathy graduates are equal in medical competence to schools of medicine and their MD graduates, they should have no reluctance to having identical yardsticks applied.

If, on the other hand, there is a difference in osteopathy and medicine, then the solution lies not in an imposition of non-MDs or perhaps dubious medical training upon the citizens of North Carolina, who must rely upon the licensing authority of the State to provide them with medical practitioners of assured training and quality.

The essence of a profession is that it accepts a responsibility for the competence of its members, particularly in the area of educational standards, professional and technical competency, and it exerts a degree of diciplinary authority over the members.

These areas of responsibility are delegated to our profession by the State. To infuse into this system a group of practitioners who are apparently not decided whether or not they are, or wish to become, members of the profession

and over whose educational institutions we have no surveillance or control, is not consistent with the responsibilities now delegated by the State to our medical profession, and we submit, is not in the public interest.

-0-

Raleigh, North Carolina
15 November 1968
ETBJr/lk

S

PROPOSAL SUBMITTED TO THE REGIONAL OFFICE OF EDUCATION AND THE OFFICE OF COMPREHENSIVE HEALTH PLANNING FOR SUPPORT THROUGH CONTRACTS TO ENCOURAGE FULL UTILIZATION OF EDUCATIONAL TALENT AND FURTHER RECRUITMENT FOR MAN POWER NEEDS IN THE MEDICAL AND PARAMEDICAL FIELDS

(Sec. 408, Higher Education Act of 1965; P. L. 89-329)

Title: A RECRUITMENT PROGRAM FOR MEDICAL AND PARAMEDICAL MAN POWER NEEDS IN THE TRI-STATE REGION OF VIRGINIA, NORTH CAROLINA AND SOUTH CAROLINA.

A project of the Old North State Medical Society (a constituent of the National Medical Association) and the State Board of Higher Education and the Office of Comprehensive Health Planning to identify, encourage, direct, admit, finance, and provide special counseling and guidance for high school and college students of financial need.

Proposer: Old North State Medical Society and North Carolina Board of Higher Education
Office of Comprehensive Health Planning

Project Supervisors:

1. Talent and Recruitment Council of the National Medical Association.
2. LeRoy R. Swift, M. D.,M.P.H,F.I.C.S., Chairman of Education Committee-Old North State Medical Society and Chairman-Talent and Recruitment Council of the National Medical Association (919-682-9147).
3. Dr. Howard R. Boozer, Director-Board of High Education (919-829-3881)
4. Dr. Charles M. Cameron, Jr.

Transmitted By: Dr. LeRoy R. Swift

Contracting Officer: Dr. W. T. Armstrong-Rocky Mount, North Carolina-Secretary Treasurer, Old North State Medical Society and Chairman Board of Trustees-National Medical Association

Tri-State Talent and Recruitment Regional Committee

Duration and dates of Activity: 60 months (July 1, 1968 through September 30, 1973)

***Total Funds Requested:** $954,636.50

Date transmitted: November 1967

* $100,000 forthcoming as a pro-rated share three states (Virginia-North Carolina and South Carolina for five years would total $1,500,000

ABSTRACT

OBJECTIVE: To further motivate the academically promising and deserving students toward appropriate bio-medical educational experiences, and careers. To insure that, once identified and motivated, the students will not be deterred from their course of action by lack of information, encouragement and financial assistance.

METHOD: To achieve these objectives, procedures will be established to conduct intensified recruitment programs designed to identify, encourage, admit, finance, enroll and follow-up students of exceptional financial need who could qualify for educational opportunities ranging from the highly practical one and two-year programs junior high schools and senior high schools to the sophisticated disciplines in our public and private colleges.

SUMMARY: Communications through the various mass media and selected pamphlets, brochures, films, talks, conferences, etc., will be designed for and directed to the students, their parents, high school counselors, teachers, and administrators concerning the availability of the procedures for obtaining and financing bio-medical educational opportunities.

A clearinghouse will be established between those institutions the students might appropriately attend and the various public and private efforts currently identifying deserving and needy students. Intensive and continuing efforts will be made to enroll and obtain financial assistance for those students identified. After enrollment, encouragement and attention will be maintained to promote completion of the student's chosen program.

PREAMBLE

Present government studies suggest a minimum of $3200 a year is needed to bring a man farm family of four above the poverty level, this anti-poverty, medical and paramedical assistance program now being proposed would ultimately provide incomes in jobs ranging from $3400 to $5,000 to an untapped minority.

In searching for solution it would be well to remember that a part of the problem is that people now expect much more than formerly. Apart from the obvious benefits of increased opportunity for Negro talent, a more important and more difficult to document effect of these changes is their long-run impact on Negro aspirations and subsequent nation wide adjustment. For years, Negroes in the United States have been confronted at almost every turn-in the mass media, in school textbooks, in employment, in housing, and public places-with an image that told them they were inferior backward and lazy. The late Harvard psychologist Gordon Allport, among others, contended that the omnipresent debilitating image has had a telling effect on the personality of Negroes. Only recently the sociologist James Coleman reported that the single most important factor accounting for the difference in school achievement between Negro and white children was self confidence. Dr. Coleman's study published as Equality of Educational Opportunity, suggests that doubt among Negro youths as to their ability to control their own destiny is part of a "vicious circle" in which an unfavorable self-image produces for them a "logical" reason for not achieving, leading to results that serve to reinforce the negative self-image.

One of the assumptions inherent in this Proposal is that a new image will be stimulated. If our popular media stimulate motivation while society fails to provide adequate opportunity frustration will be the inevitable result.

INFORMATION FROM STATE BOARD OF HIGHER EDUCATION, REGARDING STATE SUPPORT OF PRIVATE MEDICAL SCHOOLS

WATTS HILL, JR.
Chairman
Durham (1971)
LINDSAY C. WARREN, JR.
Vice-Chairman
Goldsboro (1973)
MRS. HARRY P. HORTON
Secretary
Pittsboro (1973)
S. E. DUNCAN
Salisbury (1973)
GORDON H. GREENWOOD
Black Mountain (1969)
W. C. HARRIS, JR.
Raleigh (1969)
ADDISON HEWLETT, JR.
Wilmington (1969)

NORTH CAROLINA

STATE BOARD OF HIGHER EDUCATION

1307 GLENWOOD AVENUE (ROOM 162)
P. O. BOX 10887
RALEIGH, 27605

HOWARD R. BOOZER . . . . . DIRECTOR
CAMERON P. WEST . . . . . ASSOCIATE DIRECTOR

J. P. HUSKINS
Statesville (1971)
J. PAUL LUCAS
Charlotte (1971)
HUBERT M. POTEAT, JR., M.D.
Smithfield (1969)
JOHN A. PRITCHETT
Windsor (1969)
WILLIAM B. RANKIN
Lincolnton (1969)
EMIL ROSENTHAL
Goldsboro (1969)
CLARENCE WATKINS
Durham (1969)
MRS. GEORGE D. WILSON
Fayetteville (1969)

December 13, 1968

Mr. Hugh S. Johnson, Jr., Chairman
Subcommittee on Shortage of Medical Doctors
North Carolina Legislative Research Commission
State Legislative Building
Raleigh, North Carolina

Dear Hugh:

On November 15 I indicated to you that as soon as I received information from the two private medical colleges, Duke and Bowman Gray, with reference to the number of students who are in rotating internships, I would compute the formula as suggested by you for supporting these two institutions. As I understand the formula, you have suggested as a possible approach that each school would be supported annually based on the following classifications:

1) $100 for each student in medical school and $500 for each of these who were North Carolinians. My interpretation is that this means $400 additional for each North Carolinian.

2) additional support of those students in rotating internships - $1,000 for non-North Carolinians and $5,000 for North Carolinians.

Duke (1968)

286	Out-of-state medical students @ $100	$ 28,600
52	North Carolinian medical students @ $500	26,000
9	Out-of-state rotating internships @ $1,000	9,000
3	North Carolinians in rotating internships @ $5,000	15,000
	Annual Total	$ 78,600

Bowman Gray (1968)

133	Out-of-state medical students @ $100	$ 13,300
94	North Carolinian medical students @ $500	47,000
23	Out-of-state rotating internships @ $1,000	23,000
10	North Carolinians in rotating internships @ $5,000	50,000
	Annual Total	$133,000
	Annual Total of Both Schools	$211,600
	Estimated* Biennium Total	$423,200

*Based on maintaining 1968 ratios and enrollments.

It is my understanding that both Dr. Meads as well as the representatives from Duke feel that the approach of support on the basis of rotating internships is unrealistic.

You will be interested to know that both Dr. Meads and Dr. Anlyan will appear on the agenda of the Board of Higher Education meeting on January 17 to present the needs of those two schools to the Board of Higher Education as information.

I would like to express again to you the interest of this Board in working with you and other members of the Legislature in any way possible not only in the specific responsibility charged to your committee but also in any other area of medical education.

Sincerely yours,

Cameron West

dj

October 2, 1968

U

MEMORANDUM REGARDING STATE FINANCIAL AID TO
PRIVATE MEDICAL SCHOOLS

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

MEMORANDUM #68-21

TO: **Deans and Vice Presidents, U. S. Medical Schools**

FROM: Robert C. Berson, M.D., Executive Director

SUBJECT: **State Financial Aid to Private Medical Schools**

AAMC has been receiving a growing number of inquiries concerning the processes through which certain state governments make state funds available to medical schools which are or are part of privately controlled institutions.

I am attaching, hereto, a report on that subject based on the information currently available to us. Because the situations confronting private schools desirous of receiving state aid vary so greatly from institution to institution and because the legislative and constitutional pictures involved are so different, our report does not concern itself with administrative details. We hope it will prove suggestive and provide sources for more detailed information to those interested.

We would be most appreciative if our readers will volunteer additions to or corrections of the material presented.

Attachment

PRIVATE MEDICAL SCHOOLS
AND
STATE FUNDS
(1968)

We know of four instances where state funds are available to private medical schools: New York, Pennsylvania, Florida, and Kentucky.

New York's two-phased program is highly structured, based on permanent statutory authority, and involving well defined formulae and contractual relationships. Pennsylvania's program, while it is surprisingly unstructured and has no apparent constitutional or statutory base other than that involved in the annual appropriations and budgetary process, is easily as significant in effect as is New York's. The Florida program, which has a statutory base, is limited by law to the first medical school to achieve accreditation after the passage of that law (University of Miami School of Medicine) and, presumably, will be of interest only to privately controlled universities in states that do not have medical schools. Similarly, Kentucky's state aid goes only to the School of Medicine at the University of Louisville and we are advised that the relationship between that university and the state is currently undergoing such change as to render the existing relationship of little but historical interest.

A more detailed picture of each program appears below.

New York

The New York program has two phases. The first, which is administered by The State University of New York, became effective in 1966. The second, for which it is expected that first funding will become available early in 1969, is administered by the State Board of Education.

Phase One

The initial program through which state funds became available to the private medical schools is based on Section 358 of the New York State Education Law which reads as follows:

"STATE AID FOR CERTAIN HIGHER EDUCATIONAL INSTITUTIONS

1. State financial assistance may be provided for designated shares of capital expenditures or operating expenditures or both to the following type of institution (operating in conjunction with the state university program):

   a. Medical schools, research centers and similar institutions or facilities operating specific training or research programs or projects pursuant to contracts with the state

university. The acceptance of any such financial assistance or the making or any such contract by or on behalf of a medical school, research center or similar institution or facility shall not subject it or its programs to supervision, control or regulation by the state university trustees except to extent that such supervision, control or regulation are expressly stated in the contract. ....."

More explicit and specific authority is granted regularly with legislation on the annual budget.

The authority thus given the State University is exercised through formal contracts between the State University and private schools which are drafted in accordance with an overall state plan. The state plan provides for operational grants keyed to increased enrollments of no less than five students per class and amounting to $6,000 for each such additional student up to a maximum of 25. There is currently no provision for extending such payments beyond 1974-5.

The state plan also contemplates payments for capital projects (new construction, modernization, equipment) not in excess of 50-percent of costs and, again, only when such projects are required by increased enrollments. The maximum construction grant which may be made any one school ranges from $2 million for a school with less than 300 students to $5 million for a school with 500 or more students.

A sample agreement between the State University and a private medical school cites as a major reason for the making of such agreement the fact that "an expansion in the teaching facilities and programs of the private medical schools in the state in conjunction with those of the medical schools in the State University is essential to meet more adequately such critical need for more medical school graduates".

The agreement relates specifically to the federal Health Professions Educational Assistance Act and its requirements for expanded enrollment and for matching funds. It stipulates that the institution applying for state aid must have submitted an acceptable application for federal aid (for a federal "basic grant" if operational aid is requested; for a federal construction grant if construction aid is requested).

One unusual provision in the agreement, which might well serve as a model for federal agencies and others participating in a multi-funded project, is the stipulation by the State University that, to meet its informational requirements with respect to a construction project, it will accept copies of the reports and plans submitted to the federal government.

Under this program New York makes no stipulations as to the residency status of students.

We have on file a summary of the state plan, a copy of the 1968 New York statute, and a copy of a sample agreement. We shall be happy to make copies available to you.

New York Phase Two

We have described above the pattern currently followed by the State of New York in helping finance the expansion of enrollment in private medical colleges. In June of 1968, New York enacted an additional statute recommended by the McGeorge Bundy committee under which (if funds are appropriated by the legislature in 1969 as is expected) the state will provide institutional grants to all accredited non-sectarian private colleges and universities in the state. This legislation will provide the institutions involved with payments of $400 per bachelor or masters degree granted and $2,400 for each doctorate granted (including the M.D. degree).

The legislation, as enacted, makes o distinctions between types of graduate degrees and would give institutions the same $2,400 whether the degree was in music, medicine, or podiatry. It is our understanding, however, that state officials charged with administering the act are considering eventual amendments to the legislation which would provide, for instance, for scaling the amounts granted in terms of relative costs involved -- perhaps following the pattern of the federal "Health Manpower Act of 1968", which limits the total grant to any one school to the amount of non-federal expenditures the school has made during previous years.

Two other aspects of the New York law are of particular importance to medical schools. If a medical school is receiving payment under the Phase One pattern for X number of its M.D. graduates, that number of students must be subtracted from the total number for each of whom $2,400 will be provided. In short, no duplicate payments on the same student. However, if a school grants a student an M.D. degree and receives $2,400 therefor and that same student goes on to acquire a Ph.D., the school will receive an additional $2,400 for said student.1/

Note: The reason this report is not entitled "State Aid to Private Medical Schools" becomes apparent when one recognizes the vast philosophical and legal differences between the two methods described above through which state funds will reach privately controlled medical schools in New York.

Despite the title of the statute underlying Phase One, it can be contended that this program does not represent state aid to a private institution. The relationship between the State University and private institution is a strictly contractual one under which in return for X numbers of dollars the private institution agrees to produce Y numbers of a particular product (in this instance, medical students). The principle is the same as would be involved in a contract for Y number of microscopes or text books which would not be construed as state aid to the manufacturer of the latter products.

On the other hand, the Phase Two program is undeniably a program of state aid to private institutions and, in many states (including New York), could give

1/ Information and materials relevant to New York's Phase One were provided by Mr. Richard S. Dingle, Director, Health Affairs Planning, State University of New York, Thurlow Terrace, Albany, New York, and, on Phase Two, by Dr. Elliott Leuallen, State Board of Education, 800 N. Pearl Street, Albany, New York. Neither of these gentlemen are responsible for the interpretations presented above.

rise to questions of constitutionality in any instance involving a private institution "having a significant religious affiliation".

This latter point has no current applicability to any of New York's schools of medicine, but the difference between the two approaches could have considerable significance in other jurisdictions.

Note: Anyone seriously concerned with this subject will want to read the excellent "New York State and Private Higher Education - Report of the Select Committee on the Future of Private and Independent Higher Education in New York State, January 1968", available from Bureau of Publications, State Education Department, Albany, New York 12224.

This so-called McGeorge Bundy Report, in addition to providing a most persuasive case for state aid to private institutions of higher education, advocates amending the state constitution so as to make that aid available to all qualified institutions whether church related or not. It also discusses and concludes that "there is no inherent contradiction between the continued expansion of the public universities and a prudent attention to the reinforcement of the private institutions".

Pennsylvania

"Medical schools in Pennsylvania have received appropriations from the state regularly since 1953. There is no specific statutory basis for the practice, and the authority is derived from the rather negative provision of the State Constitution (Article 3, Section 18) that 'no appropriation shall be made to any charitable or educational institution not under the absolute control of the Commonwealth, except by a vote of two thirds of all the elected members of each House of the General Assembly'.

"By agreement among the six schools and with the state, appropriations have been based on enrollment -- a dollar figure multiplied by the number of medical school undergraduates. The per capita contribution has risen over the years from $2,000 to $3,900.

"Following the pattern of state assistance to independent institutions in Pennsylvania, appropriations acts have allocated funds for the 'general maintenance' of the recipient institutions. The phrase has been interpreted to mean that the funds may be spent for virtually any current operating expense exclusive of debt amortization. The dollar figure has customarily been qualified by the words 'or so much thereof as may be necessary', thus requiring the institution to demonstrate that annual operating expenses exceed revenues by at least the amount of the appropriation. Quarterly audits of institutional accounts are conducted by the state.

"This arrangement has been in effect continuously since 1953 for four of the medical schools -- Hahnemann Medical College, Jefferson Medical College,

Woman's Medical College, and the University of Pennsylvania School of Medicine. In the case of the medical schools affiliated with Temple University and the University of Pittsburgh, the arrangement was modified when those universities accepted 'State-Related' status in 1965 and 1966, respectively. In addition to their 'general maintenance' appropriations, these institutions now receive 'Tuition supplement' appropriations to compensate them for the difference between the tuition rate set by the Legislature for Pennsylvania residents (currently $225 per semester) and the rate which the school otherwise would have to charge.

"Implementation of a 'Master Plan for Higher Education' formulated by the State Board of Education has been under discussion for almost two years. The 'Master Plan' proposes support for graduate and professional education at independent institutions on a basis of grants to the institutions of $5,000 for each Ph.D. candidate and each post-baccalaureate student in schools of medicine and veterinary medicine. Legislation along these lines was introduced at the past session of the General Assembly but did not come to a vote. It seems likely that the proposal will receive serious consideration in the coming session.

"State support for physical plant expansion also has been available through the General State Authority. For several years prior to 1963 the medical schools, along with other state-aided institutions, participated in this program. The Authority constructed projects approved by the Governor and the Legislature and leased them to the Department of Public Instruction, which sub-leased them to the institutions at a nominal rental. This assistance is still available to the state-related universities, but since 1963 all General State Authority legislation has included a provision that state-aided institutions must repay the full cost of all projects through annual 'rentals'." 2/

The Pennsylvania program does not require student body expansion, has no residency stipulation, and is not conditioned on parallel applications for federal funds (though, of course, the medical schools do apply for and receive the latter).

We should, perhaps, point out that Pennsylvania's state-aid is not limited to schools of medicine but goes as well to several other types of colleges, universities, and institutions including museums, libraries, and schools of law, veterinary medicine, osteopathy, and art.

Readers may want to send for "Medical Training Facilities and Medical Practice in Pennsylvania", published by the Joint State Government Commissior General Assembly of the Commonwealth of Pennsylvania, Harrisburg, Pennsylvan: 1967. This document does not discuss the philosophical or legal problems involved in state-aid programs but does present charts and data compiled for the information of the legislature which may well prove of interest to other

2/ The above-quoted material was kindly provided us by E. Craig Sweeten, Vice President, University of Pennsylvania. For more detailed explanation of the Pennsylvania program, it is suggested that queries be directed to Dr. David H. Kurtzman, Superintendent of Public Instruction, 317 Education Building, Harrisburg, Pennsylvania 17126.

Florida

The University of Miami School of Medicine, a non-public institution, receives financial assistance from the state under a statute which offered that assistance to whatever institution developed the first accredited medical school in the state.

The applicable provision of state law is Section 242.62 of the Florida Statutes (reproduced below).

It provides that the state shall pay the sum of $4,500 per year for each student admitted and enrolled. Payments are made only in terms of students who are or whose parents are legal residents of Florida.

Should such a student resign or be expelled during the school year, the school must reimburse the state on a pro rata basis.

State funds are for operation and maintenance and may not be used for construction nor for the maintenance or operation of a hospital.

The applicable section of the Florida State Statutes reads as follows:

> "242.62 Appropriation to first accredited medical school.--
>
> (1) The state, as hereinafter provided, shall pay the first accredited and approved medical school established in the state the sum of four thousand five hundred dollars per year for each student admitted and enrolled in such institution, subject to the provisions hereinafter set forth.
>
> (2) In order for a medical school to qualify under the provisions of this section and to be entitled to the benefits herein, said medical school:
>
> (a) Shall be primarily operated and established to offer, afford and render a medical education to residents of the state qualifying for admission to said institution;
>
> (b) Shall be operated by a municipality or county of this state, or by a nonprofit organization hereafter established exclusively for educational purposes;
>
> (c) Shall, upon the formation and establishment of an accredited medical school, transmit and file with the board of regents of this state documentary proof evidencing the facts that such institution has been certified and approved by the council on medical education and hospitals of the American Medical Association and has adequately met the requirements of said council in regard to its administrative facilities, administrative plant, clinical facilities, curriculum and all other such requirements as may be necessary to qualify with said council as a recognized, approved and accredited medical school;

(d) Shall certify to the board of regents of this state sixty days prior to the commencement of any school year the name, address and educational history of each student approved and accepted for enrollment in said institution for the ensuing school year.

(3) The board of regents shall, within sixty days of the receipt of the student enrollment of said medical school, pay to said school, each year, the sum provided in subsection (1) for each student accepted and approved for enrollment in said medical institution, provided said medical student is a legal resident of the state or, if said student is not of legal age, his parents or legal guardian are residents of the state at the time of said student's acceptance and approval as a medical student; provided that the first-year medical school class shall consist of not more than ninety-five such Florida residents. In the event any student shall resign or be dismissed from said medical institution for any reason whatsoever before the end of a school year, then such medical institution shall, within thirty days from said dismissal or resignation, remit to the state, through the board of regents, a pro rata amount of the sum before paid by the state to said medical institution, said amount to be computed by dividing the total number of days in the school year into the sum paid for that student and multiplying the result by the total number of days remaining in such school year after such resignation or dismissal.

(4) Such institution is herewith and hereby prohibited from expending any of said sums received under the terms of this section for any purposes whatsoever, except the operation and maintenance of a medical school and for medical research. Said institution is further prohibited from expending any sums received under the terms of this section for the construction or erection of any buildings of any kind, nature or description or for the maintencance and operation of any hospital in any form or manner whatsoever."

Kentucky

Kentucky provides financial assistance to the privately controlled University of Louisville School of Medicine under a statute which, since it sets forth the rationale for such aid, is reproduced herewith.

"AN ACT RELATING TO EXPANSION OF PUBLIC HIGHER EDUCATION.
Be it enacted by the General Assembly of the Commonwealth of Kentucky:

Section 1. KRS 164.026 is amended to read as follows:

(1) The General Assembly recognizes the continuing need for /medical and dental/ education and research in Kentucky, and that the need is larger than the capacity of the facilities of the state universities /university/ to supply. The General Assembly finds that the University of Louisville /Medical and Dental Schools/ helps to supply, for the entire state, this need /existing in the fields of medical and dental education and research/, and declares that support of the University of Louisville /Medical and Dental Schools/ is a public purpose for which public money may be validly expended.

(2) The University of Louisville shall keep its books and records available to the State Auditor. An audit of expenditure of public money by the University is subject to the laws generally governing audits of expenditures of public money. (House Bill #133, January 18, 1968)."

The amount of money furnished by the state is not based on any formula but is determined by inclusion in the Governor's budget each biennium. The University (which began as a municipal institution) also receives nominal support from the city of Louisville.

It is our understanding that the relationship between the University of Louisville and the state is to be changed in the near future and that the pattern of aid currently existing will no longer exist. We are unable to say, at this time, what form it will take.

EXTRACT ENTITLED "SUPPLY OF PHYSICIANS" FROM THE REPORT OF THE HEALTH MANPOWER ADVISORY COMMISSION, WASHINGTON, D.C., 1967:

B. Supply of Physicians

1. Physician Shortage

The Commission believes that there is currently a shortage of physicians and that this shortage will worsen in relation to growing demand, despite the expected increase in the supply of physicians in the years ahead. To understand why this shortage exists, it is essential to distinguish between the services provided directly by physicians to patients and the services provided to patients under the direction of physicians. Because physicians have rapidly increased their use of auxiliary personnel, diagnostic equipment, laboratory facilities, etc., services provided under the direction of physicians have increased far more rapidly than has the number of physicians. If the "productivity" trends of the last decade continue, the output of medical services per physician will increase by 50 percent between 1965 and 1975.

Even under the most pessimistic assumptions, the growth in the supply of physicians is expected to keep pace with population between now and 1975. Given the expected increase in output per physician, there will be at least a 50 percent increase in the per capita supply of physician-directed medical services. Moreover, hospital services, which complement and sometimes substitute for those of the physician, will also increase more rapidly than population.

On the other hand, for that component of medical care which can be supplied only by the physician—direct consultation between patient and physician—growing shortages are apparent. A particularly serious aspect of this shortage is the difficulty of gaining entry into the medical care system. The

[1] A detailed analysis of demand and supply relationships in 1975 for these categories of personnel, is given in Appendix V, Volume II, "Health Manpower in 1975—Demand, Supply, and Price." That Appendix provides the supporting material for the discussion in the remainder of this section.

definitive evaluation of an illness should be made at the highest level of competence with the least possible delay. Once he is undergoing diagnosis or treatment, the patient is accustomed to having various tests and procedures carried out by non-physicians. But for the initial judgment, he expects and requires the personal attention of a physician. Delay in diagnosis and treatment is at the least frustrating and at times dangerous. The qualitative improvements in care which may be indirectly responsible for the delays are neither apparent to nor appreciated by a patient unable to see a physician.

A number of factors appear to account for the seemingly contradictory trends of increasing medical services and decreasing availability of direct physician contact. These factors arise, fundamentally, from the continuing rapid increase in medical knowledge which has greatly enhanced the physician's ability to control illness, but which has altered his method of practice in ways that lessen his availability to individual patients.

Specialization. The most extensive change in medical practice has been the trend toward specialization, an inevitable consequence of the rapid increase of medical knowledge. Less than 2 percent of today's medical graduates go into general practice, and the role of family physician is increasingly taken by internists and pediatricians. Specialization has decreased the numbers of physicians available to provide care for the entire family and has resulted in a reduction in the number of persons seen per physician. Surveys of the National Center for Health Statistics show that between 1959 and 1964 the total number of visits to physicians increased by only 4 percent, while the number of physicians in practice increased by 8 percent. However, the large increase in services provided under the direction of physicians (81 percent between 1955 and 1965, as mentioned earlier) indicates that the amount of care provided per visit expanded far more rapidly than the number of visits.

Managerial, clerical, and other nonmedical responsibilities. While the use of auxiliary personnel permits extension of the physician's ability to provide care, it also requires that he spend an increasing amount of time in supervisory duties, thereby reducing the time spent in direct patient contact. As the practice of medicine continues to grow in complexity, the physician's managerial responsibilities will also continue to increase, further curtailing his time available to patients. Increased complexity also characterizes the methods of payment for medical care. As a consequence, the physician has to spend larger amounts of time fulfilling administrative requirements of government, insurance carriers, and legal responsibilities.

Hospital services by physicians. The growing importance of the hospital as a place for providing medical care has necessitated an increase in the number of hospital-based physicians and in the amount of time spent by private practitioners in the hospital. Although many of the hospital-based

physicians provide ambulatory care in the hospital outpatient department or emergency room, the overall result has been to decrease the availability of physicians at what has customarily been the first point of call—the physician's office.

We believe that the factors discussed above account in large part for the increasing difficulty in obtaining convenient and timely access to the personal services of physicians. This difficulty has worsened in spite of a 5 percent greater increase in the number of physicians than in population between 1955 and 1965. For the decade ending in 1975, population is expected to increase by 13 percent and the supply of physicians by 17 or 18 percent. This slight relative increase in the supply of physicians cannot outweigh the forces acting to decrease access to them.

2. Additional Needs for Physicians

While the need to increase the number of physicians above presently planned levels is clear, the extent of the increase required is uncertain. The answer will depend, in part, upon how successful we are in improving the medical care system in ways that will conserve the physician's valuable time. It will also depend upon whether we undertake a number of highly desirable actions which will add further requirements for physicians beyond those already discussed.

Care for the disadvantaged. In order to provide adequate care for the disadvantaged, a substantial increase in the numbers of physicians will be required. The reasons for the present inadequate care of these groups are complex, and the overall shortage of physicians is not the only limiting factor. Therefore, simply increasing the supply of physicians will not significantly alleviate the existing problems. Nevertheless, if effective health programs for these groups are designed and implemented, there will be additional demand for physicians' services. Some indication of the size of this demand can be gained from data collected by the National Health Survey.[8] They show that, if per capita expenditures for physicians' services of families with incomes under $4,000 (in 1962) should rise to those of families with incomes of $4,000–7,000, national expenditures on physicians' services would increase by 8 percent. Since individuals in the low income group now receive a substantial amount of free care, the 8 percent figure is probably an overestimate. On the other hand, persons with low income frequently have more health problems than the rest of the population and therefore might require more physicians' services than

[8] National Center for Health Statistics, *Medical Care, Health Status, and Family Income,* Series 10, Number 9, May 1964.

are now received by middle income groups. On balance, an additional demand of 8 percent for care of the disadvantaged is probably a reasonable working figure.

Full-time hospital staffs. The increasing shift of medical care to the hospital has not only diminished the time available to practitioners for home visits and office practice; it has also led to an increase in the number of full-time physicians on hospital staffs. While the most acute need for full-time or part-time physicians has been to staff hospital emergency rooms or clinics—to which patients are turning more and more in lieu of private practitioners—the need extends also to the rest of the hospital, and applies particularly to the intern and resident staffs. Only 75 percent of the available positions in approved intern and residency programs are now filled.[9] To fill all positions would require an additional 3,500 graduates each year.

The shortage of interns and residents is undoubtedly exaggerated by the inefficient way in which they are used. Their low salaries have made them a very inexpensive way of providing medical services in hospitals, and excess demand by hospitals for such trainees will continue as long as their salaries remain far below the costs of obtaining equivalent services from practicing physicians.

Nevertheless, hospitals are increasingly using full-time chiefs of service and other staff physicians, as well as interns and residents, to improve the quality of the care they provide. As hospitals move to acquire more physicians, the number available to provide care outside of the hospital will be reduced.

New demands from biomedical advances. Current expenditures for biomedical research exceed two billion dollars annually. The development of certain cures or preventives, such as immunizations for polio and measles, may reduce existing demands for physicians. More frequently, however, wholly new modes of treatment (such as the artificial kidney, open heart surgery, and organ replacement) will add to demand. Furthermore, the frequency of disease is changing from acute illnesses, from which the patient either died or quickly recovered, to chronic illnesses which requires protracted care. Perhaps the biggest potential demand will arise from medical advances that make possible the treatment of diseases which were formerly untreatable. An example is the care of mental illness. The effectiveness of present methods is so limited, and so much physician time is required, that greater numbers of psychiatrists would have little impact on the overall problem of mental illness. But if the introduction of psychoactive drugs is any indication of future trends, major advances in treatment can

[9] Journal of the American Medical Association, Volume 198, No. 8, November 21, 1966.

be expected. The result surely would be to require and attract more physicians than are necessary now, when most patients with mild psychiatric disorders receive no custodial care and often little or no treatment.

Demands for educational opportunity. At present, there are more than two qualified applicants for each of the roughly 8,800 places in the entering classes of medical schools. Furthermore, the current increase in bachelor degrees indicates that by 1975 there will have to be spaces for 16,500 new medical students if the present inadequate ratio of medical school spaces to bachelor degrees is to be maintained. This figure is 50 percent above the projected 1975 capacities of medical schools. Education to the limit of an individual's capabilities is, like the right to health care, becoming an established national policy. It is likely that medical schools will be under heavy pressure to respond to demands for educational opportunity as well as demands for medical care.

Continuing education. There is need for a greatly expanded program of continuing education for health professionals. The reasons for this conclusion are discussed later in this Report. At this point, however, we should note that a successful program of continuing education will further diminish the time that physicians have available to spend with patients. Continuing education for two weeks a year would be equivalent to a 4 percent reduction in the available time of physicians. If continuing education programs become widespread, they will provide an additional requirement for expansion in the output of medical schools.

Foreign medical graduates. Almost 7,000 graduates of foreign medical schools [10] enter the United States each year. Approximately 4,500 of these become interns or residents in hospitals whose training programs are approved by the American Medical Association. In these programs they receive training and also assume major responsibilities for patient care. There is evidence that many of the remaining 2,500 foreign medical graduates (FMG's) receive training and provide care under poorly supervised conditions in programs that have not been approved. Our permanent supply of physicians is presently augmented at the rate of 1,400 a year by FMG's who become fully licensed to enter practice, and by an unknown number who remain without licenses. Approximately 17 percent of new licentiates and 28 percent of interns and residents in approved training programs are FMG's. In total, there are currently more than 40,000 FMG's in the United States, comprising 14 percent of the active physicians in the country.

Although most FMG's come to this country ostensibly to obtain further training for the benefit of their countries of origin, they are given major responsibilities for patient care while they are here. Many of those who are

[10] Schools outside the United States or Canada.

given such responsibilities do not meet the minimum standards of professional competence which are required of graduates of American medical schools. Furthermore, much of the training that they receive prepares them poorly for the problems that they will face when they return to their own, less developed countries. The panel of the Commission that studied foreign medical graduates in detail documented the need for a new national policy regarding FMG's. We share their view and recommend that *the United States should produce a sufficient number of physicians to meet its needs and, further, that it should assist other countries, particularly developing nations, to improve their systems of medical education and their levels of medical practice and public health.*

Implementation of such a national policy regarding FMG's should in no sense bar immigration to the United States of anyone from a developing country just because he happens to be a physician. But if this Nation produces enough physicians to meet its projected needs, there will no longer be reason to accord FMG's the immigration priorities which they now receive because they are in a category of critically short manpower.

Such a policy will also create a need for physicians beyond that necessary to replace the FMG's who are now imported to care for United States citizens. Assisting developing nations will require the expansion of educational exchange programs with those countries as well as the provision of high quality graduate medical training for those FMG's who come here to learn. Expanded exchange programs will require more American physicians overseas, which means that they will not be available for patient care and for teaching in this country. At the same time, the graduate training programs for FMG's who come to the United States will have to be specially designed. They must either fit the trainees for medical practice when they return to their own countries or, for those planning to stay here permanently, they must qualify them to meet the standards of medical education and health care prevailing in the United States. Again, this will require the time of American physicians to provide the training and to supervise the trainees.

Because these policies will result in a marked reduction in the supply of foreign medical graduates available to provide patient care in the United States, steps to implement them must be coordinated with actions to increase the output of American medical schools. As FMG's are phased out over a number of years, an eventual expansion of 20 percent above present enrollment in U.S. medical schools will be necessary to replace this specific source of manpower.

In summary, changes in public policy, introduction of new programs, attempts to fill unmet health and educational needs, and predictable but undefined advances in research can all be expected to add substantially

to the future requirements for physicians. Although all of these events may not come to pass, the long lead-time required to bring about significant changes in the supply of physicians makes it prudent to assume that some of them will occur. If we take preliminary steps now to expand medical school capacity throughout the first half of the 1970's, the full benefits of the expansion program will not be realized until 1979—more than a decade in the future.

3. Increasing the Production of Physicians

In order to reverse the trend toward the decreasing availability of the personal attention of physicians, and to anticipate additional needs that are likely to arise in the future, we make the following recommendations:

The production of physicians should be increased beyond presently planned levels by a substantial expansion in the capacity of existing medical schools, and by continued development of new schools.

Federal funds in support of capital or operating costs of education should be provided to a medical school in such a way that they create economic incentives for the school to expand enrollment while improving its quality. Such incentives should be based on increases in the absolute numbers of medical students.

At least initially, primary dependence must be placed upon expanding the capacity of existing medical schools. In contrast to the development of new schools, expansion can be accomplished quickly and economically. Many medical schools are now quite small, and the average graduating class is well under 100 students. Although faculties of medical schools often resist expansion because they believe it may lower the quality of education, a recent summary of available studies [11] shows that class size is unrelated to academic aptitude of students, achievement on National Board Examinations, attrition rates, or ultimate career choices. We see few drawbacks to expansion, and great advantages in terms of saving time, reducing initial investment and overhead expense, and conserving teachers. New medical schools provide benefits to the community in which they are built above and beyond the education of new doctors. These benefits are important, and we urge continuation of legislative authority to assist in the construction of new schools. However, legislation arising from the need for more physicians should give initial emphasis to the expansion of existing schools.

[11] Sanazaro, P. J., "Class Size in Medical Schools", *The Journal of Medical Education*, Volume 41, No. 11, Part 1, November 1966.

We have not reached a firm conclusion on the precise amount by which physician production should be increased. We do, however, wish to make two comments:

1. Although the need for more physicians is urgent, the costs and dangers of crash effort to increase production appear to outweigh the benefits. Graduates of U.S. medical schools only increased from 7,000 in 1955 to 7,400 in 1965, but they are expected to exceed 10,000 by 1975. The numbers of physicians are such that very substantial increases in the annual production of physicians (e.g., 8,000 or 100 percent increase) will affect the total number (280,000) only slowly. In the short run at least, the dominant constraint will be the capacity of medical schools to expand without lowering the quality of their educational programs or incurring unreasonably high costs. Therefore, plans for increasing production should be drawn up in close cooperation with the leadership of medical schools and their affiliated institutions. Although currently planned expansion will not be sufficient to meet the anticipated needs, the setting of new goals should be tempered by the realization that medical schools' enrollments are already increasing at the fastest rate in decades.

2. Curriculum review aimed at reducing both the length of formal medical education and the length of specialty training should be considered as an integral part of any expansion plan. By lessening the delay in earning power, such a revision would help to attract additional highly qualified individuals who would otherwise be unable to consider medicine as a career choice. More important, it would release substantial quantities of teaching and physical resources that could then be used to expand educational capacity.

TABLES FROM THE DOCTOR SHORTAGE BY RASHI FEIN, THE BROOKINGS INSTITUTION, WASHINGTON, D.C., 1967:

TABLE 1.—*Trends in the supply of health manpower*

[Thousands of persons]

	1950	1955	1960	1965	Percent increase, 1955–65
Physicians (M.D. and D.O.)[1]	233	255	275	305	20
Active physicians (M.D.)	209	228	247	278	22
Private practice (M.D. and D.O.)	168.1	169.9	179.2	190.7	12
Training (M.D.)	21.4	31.0	37.6	43.5	40
Other non-Federal (M.D.)	16.8	25.2	27.3	34.4	37
Other Federal (M.D.)	12.6	13.0	14.2	18.9	45
Nursing and related personnel	734	886	1,085	1,366	54
Professional nurses in practice	375	*416	504	*600	44
Practical nurses in practice	138	*172	206	*266	55
Aides, orderlies, and attendants employed	221	*298	375	500	68
Radiologic technologists [2]	31	*45	60	70	56
Clinical laboratory personnel [3]	30	50	68	85	70
Dentists and allied personnel [4]	170	197	221	241	22
Total dentists	87.2	94.9	101.9	109.3	15
Active non-Federal dentists	75.3	76.1	82.6	86.3	13
Dental hygenists (active)	7.0	*9.8	12.5	15.1	54
Dental assistants (employed)	55.2	*68.9	82.5	91.0	32
Dental laboratory technicians (employed)	21.0	*23.0	25.0	25.5	11
Pharmacists (active)	101	*109	117	118	8

[1] Figures for categories of physicians not in private practice are given for M.D.'s only, because detailed breakdowns were not available for D.O.'s before 1960. Training includes Federal as well as non-Federal interns and residents.

[2] All figures are rough estimates.

[3] Excludes physicians. All figures are rough estimates.

[4] Total includes all dentists whether active or inactive.

NOTE.—Asterisk (*) indicates the number is based on a straight-line interpolation between the closest available data points.

Source: *Health Resources Statistics*, 1965, U.S. Department of Health, Education, and Welfare, Public Health Service, National Center for Health Statistics, PHS Publication No. 1509.

TABLE III-4

Family Physician Potential (M.D.), Selected Years

Type of Private Practice	1931	1940	1949	1957	1965
Pediatrics	1,396	2,222	3,787	5,876	9,726
Internal Medicine	3,567	5,892	10,923	14,654	22,432
General Practice[a]	112,116	109,272	95,526	81,443	65,951
Total	117,079	117,386	110,236	101,973	98,109
Total per 100,000 Population	94	89	75	60	50

Source: 1965: calculated from U.S. Public Health Service, *Health Resources Statistics, 1965*, p. 103; all other years, Surgeon General's Consultant Group on Medical Education, *Physicians for a Growing America* (1959), p. 84.

[a] Includes part-time specialists.

TABLE III-5

Type of Practice Distribution of Nonfederal Physicians by County Group, 1959

County Group	Percent of Physicians			
	General Practice[a]	Full-Time Specialty	Hospital Service	Other[b]
United States	37	36	18	9
Metropolitan-adjacent	34	38	19	9
Greater metropolitan	31	39	22	8
Lesser metropolitan	31	41	19	9
Adjacent to metropolitan	57	24	11	8
Isolated	58	24	10	8
Isolated semirural	54	27	11	8
Isolated rural	84	5	3	8

Source: U. S. Public Health Service, *Health Manpower Source Book*, Sec. 10, *Physicians' Age, Type of Practice, and Location*, p. 13.

[a] Includes part-time specialization.

[b] Teaching, Administration, and Not in Practice.

TABLE III-6

Nonfederal Physicians (M.D.) per 100,000 Population, by County Group, 1963

County Group	Total Active	Active in Private Practice[a]		
		Total	General Practice	Full-Time Specialty
United States	125	91	35	56
Metropolitan-adjacent	136	98	35	63
Greater metropolitan	173	118	38	80
Lesser metropolitan	125	92	30	62
Adjacent to metropolitan	75	65	38	27
Isolated	75	65	38	27
Isolated semirural	81	69	38	31
Isolated rural	46	44	38	6

Source: U. S. Public Health Service, *Health Manpower Source Book*, Sec. 18, *Manpower in the 1960's*, p. 25.

[a] Difference between "total active" and "total active in private practice" is accounted for by "hospital staff, interns, residents, teaching, research, industry."

TABLE III-7

Age Distribution of Nonfederal Physicians by County Group, 1959

County Group	Physicians, Percentage Distribution				
	22–34 years	35–44 years	45–54 years	55–64 years	65 and over[a]
United States	21	28	23	14	14
Metropolitan-adjacent	22	27	23	14	14
Greater metropolitan	23	26	23	15	13
Lesser metropolitan	23	29	22	13	13
Adjacent to metropolitan	15	29	23	14	19
Isolated	16	29	22	13	20
Isolated semirural	16	30	22	13	19
Isolated rural	18	24	18	12	28

Source: U. S. Public Health Service, *Health Manpower Source Book*, Sec. 10, *Physicians' Age, Type of Practice, and Location*. p. 29.

[a] Includes age unknown.

TABLE B-1

Physician Visits per Person per Year, by Selected Demographic Characteristics, July 1963–June 1964 and July 1958–June 1959

Characteristic	July 1963–June 1964	July 1958–June 1959
All persons	4.5	4.7
Sex		
Male	4.0	4.2
Female	5.1	5.3
Age		
Under 5 years	5.5	6.0
5–14 years	2.8	3.4
15–24 years	4.3	4.0
25–44 years	4.5	4.7
45–64 years	5.0	5.1
65 years and over	6.7	6.7
Education of head of family		
Under 5 years	4.0	3.9
5–8 years	4.2	4.3
9–12 years	4.4	4.6
13 years and over	5.4	6.1
Unknown years	4.2	5.1
Residence		
SMSA[a]	4.8	5.0
Outside of SMSA: Nonfarm	4.3	4.6
Farm	3.3	3.6
Geographic Region		
Northeast	4.5	5.1
North Central	4.4	4.3
South	4.2	4.5
West	5.4	5.7
Color		
White	4.7	4.9
Nonwhite	3.3	3.2
Family Income		
Under $2,000	4.3	4.4
$2,000–$3,999	4.3	4.3
$4,000–$6,999	4.5	4.8
$7,000–$9,999	4.7	5.5
$10,000 and over	5.1	
Unknown	4.1	4.6

Source: NCHS, *Physician Visits by Place of Visit and Type of Service*, p. 13.

[a] Standard Metropolitan Statistical Areas.

X

TABLES FROM HEALTH MANPOWER PERSPECTIVE: 1967, PUBLIC HEALTH SERVICE, WASHINGTON, D.C., 1967:

Federal Aid Available for Education and Training of Health Service Personnel

[See p. 62 for exclusions and footnotes]

Agency and program	Level of training [1]	Type of aid	Extent of support for health occupations training	Amount of aid (millions)
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE Health professions educational assistance:				
Grants for construction of new, expanded, or improved teaching facilities (Health Professions Educational Assistance Act of 1963, as amended in 1965 and 1966) (P.L. 88-129, approved Sept. 24 1963; 42 U.S.C. 293-293h).	BP.....	Grants for up to 66⅔ percent of costs of construction of new schools or major expansion of existing schools; 50 percent of costs of minor expansion, renovation, or replacement (veterinary medicine added in 1966).	Grants through Mar. 1, 1967 will provide for a total of 3,324 new 1st-year places in schools of medicine, dentistry, public health, pharmacy, and optometry.	$135.0 (1967 appropriation).
Health professions student loans (Health Professions Educational Assistance Act of 1963, as amended in 1965 and 1966) (P.L. 88-129, approved Sept. 24, 1963; 42 U.S.C. (294-294c).	BP.....	Support of student loan funds for students of medicine, dentistry, and other health professions (veterinary medicine added in 1966).	In fiscal year 1967, loans were given to some 21,000 students in health professions.	$25.3 for capital contributions and $10.0 for revolving funds (1967 appropriations).
Improvement grants (Health Professions Educational Assistance Amendments of 1965) (P.L. 89-290, approved Oct. 22, 1965; 42 U.S.C. 295f-295f-4).	BP.....	Basic improvement (formula) grants and special improvement grants to schools for improvement of educational programs; no matching required.	Approximately 170 accredited schools of medicine, osteopathy, dentistry, optometry, and podiatry received basic improvement grants in fiscal year 1967.	$30.0 (1967 appropriation).
Scholarship grants (Health Professions Educational Assistance Amendments of 1965) (P.L. 89-290, approved Oct. 22, 1965; 42 U.S.C. 295g).	BP.....	Grants to schools for scholarships to needy students in health professions, up to $2,500 a year; no matching required.	About 2,000 students of medicine, osteopathy, dentistry, optometry, pharmacy, and podiatry received aid in fiscal year 1967.	$4.0 (1967 appropriation).

1. BP means "basic professional"

APPENDIX TABLE 1.—*Graduates of foreign medical schools newly licensed in the United States and those serving on hospital house staffs: 1950–65*

Year	New licentiates [1]		Hospital house staff	
	Number	Percent of total	Number	Percent of total
1950	508	8	2,072	10
1955	1,107	14	5,036	17
1960	1,619	20	9,457	25
1965	1,688	19	10,974	27

[1] Includes an estimated 200 graduates a year of Canadian medical schools.

Source: Council on Medical Education, Americal Medical Association. "Medical Licensure Statistics for 1965." J. American Medical Association 196: 857–906, June 6, 1966.

Council on Medical Education, American Medical Association. "Medical Education in the United States." J. American Medical Association 194: 731–823, Nov. 15, 1965.

APPENDIX TABLE 2.—*Immigrants admitted to the United States, selected health occupations:* 1960–66

Occupation	1960	1961	1962	1963	1964	1965	1966
Physician	1,574	1,683	1,797	2,093	2,249	2,012	2,552
Dentist	110	119	115	177	160	182	209
Nurse—R.N.	3,828	3,449	3,700	4,355	4,230	4,247	3,574
Practical nurse	182	126	124	153	193	225	105
Midwife	0	0	47	59	46	56	57
Dietitian, nutritionist	58	63	48	82	93	66	89
Pharmacist	134	177	225	206	267	276	262
Veterinarian	28	40	70	52	63	69	63
Therapists and healers, n.e.c.	140	138	166	159	188	207	158
Optician, lens grinder, and polisher	32	39	50	50	65	60	[1]

[1] Data not available.

NOTE: Figures include some already in the United States who were granted an adjustment of status to that of permanent resident.

Source: U.S. Department of Justice, Immigration and Naturalization Service. Annual Reports.

APPENDIX TABLE 5.—*Type of practice of physicians (M.D.): 1950–65*

Type of practice	1950	1955	1960	1965
Total	219,997	241,711	260,484	292,088
Active	208,997	228,553	247,257	277,575
Private practice	158,189	159,371	168,142	180,752
Family practice [1]	116,400	([2])	([2])	98,109
Nonprivate practice [3]	16,816	25,197	27,341	34,403
Training programs	21,416	31,028	37,562	43,508
Federal	12,576	12,957	14,212	18,912
Retired, not in practice	11,000	13,158	13,227	14,513
Rate per 100,000 civilian population:				
Private practice	103.0	95.4	92.2	92.0
Family practice [1]	75.8	([2])	([2])	50.0

[1] Includes general practitioners, internists, and pediatricians.
[2] Data not available.
[3] Includes teaching, research, public health, industry, etc.

Source: "Health Resources Statistics: Health Manpower, 1965." Public Health Service Pub. No. 1509. Washington, U.S. Government Printing Office, 1966, 182 pp.

APPENDIX TABLE 6.—*Physicians per 100,000 population served, average in 6 medical groups providing prepaid medical services, by specialty*

Specialty	Average physicians per 100,000 population served	
	Mean	Median
Total [1]	109.4	
Internal medicine	45.2	44.9
Allergy	1.6	1.4
Dermatology	2.8	2.5
Pediatrics	18.0	15.8
Obstetrics	9.1	8.0
Orthopedics	3.2	3.0
Ophthalmology	3.7	3.3
Otolaryngology	4.6	3.5
Surgery	6.5	6.7
Urology	1.9	1.5
Radiology	4.4	4.0
Physical medicine [2]	1.3	1.0
Anesthesiology [2]	1.5	1.5
Pathology [2]	1.8	1.6
Neurology	1.0	1.0
Psychiatry	2.8	1.5

[1] Exclusive of interns and residents in hospitals.
[2] Physical medicine based on 3 groups; anesthesiology based on 2 groups; pathology and neurology based on 4 groups. These services are provided in the remaining groups in other ways.

Source: Based on unpublished data for different years from the Kaiser Foundation (2 groups), HIP, Montefiore, Group Health Association (D.C.), and Rip Van Winkle.

APPENDIX TABLE 9.—*Annual graduates for selected health occupations: 1940–75*

Year	Physicians		Dentists	Nurses—R.N.			Practical nurses	Dental hygienists	Medical record librarians	Medical technologists	Occupational therapists	Physical therapists	Radiologic technologists
	M.D.	D.O.		Baccalaureate	Diploma	Associate degree							
1940	5,097	447	1,757	.....	23,600	.....	(1)	430	58	(1)	(1)	(1)	(1)
1950	5,553	373	2,565	.....	25,790	.....	3,000	529	83	2,011	391	627	923
1955	6,977	459	3,081	2,704	25,826	199	9,694	857	137	1,956	469	634	(1)
1960	7,081	427	3,253	4,136	25,188	789	16,491	992	137	2,573	414	675	2,285
1961	6,994	506	3,290	4,039	25,311	917	16,635	1,023	139	2,809	355	675	(1)
1962	7,168	362	3,207	4,300	25,727	1,159	18,106	1,219	152	2,856	302	689	2,315
1963	7,264	362	3,233	4,481	26,438	1,479	19,621	1,257	142	3,259	364	757	2,722
1964	7,336	354	3,213	5,059	28,238	1,962	22,761	1,429	161	2,679	471	891	2,887
1965	7,409	395	3,181	5,381	26,795	2,510	24,331	1,491	180	3,283	550	900	3,158
1966	7,574	369	3,198	5,498	26,278	3,349	25,688	1,650	(1)	(1)	(1)	(1)	(1)
1970	8,500	450	3,900	9,000	28,600	9,500	39,000	(1)	(1)	(1)	(1)	(1)	(1)
1975	10,200	500	4,900	15,600	31,100	15,600	62,800	(1)	(1)	(1)	(1)	(1)	(1)

[1] Data not available.

Source: "Health Resources Statistics: Health Manpower, 1965." Public Health Service Pub. No. 1509. Washington, U.S. Government Printing Office, 1966, 182 pp. and unpublished data.

TOP PAYING OCCUPATIONS, COMPILED BY
U.S. DEPARTMENT OF LABOR, 1965:

LABOR

TOP-PAYING U.S. OCCUPATIONS

According to a study published in 1965 by the U.S. Department of Labor (based on data from the 1960 Census), medicine, dentistry, and law ranked among the highest paying occupations in the United States. Annual median earnings, median schooling, and the percentage of women are given for the top 83 of the 321 occupations covered in the study.

OCCUPATION	EARNINGS	SCHOOLING	WOMEN
Physicians	$14,561	17.5	6.8%
Managers, self-employed—banking and other finance	12,757	14.3	5.2
Dentists	11,858	17.3	2.3
Professors and instructors—medical sciences	11,666	17.5	17.2
Lawyers and judges	10,587	17.4	3.5
Airplane pilots and navigators	10,274	13.5	.6
Osteopaths	10,128	17.3	12.0
College presidents and deans	9,704	17.4	23.0
Managers, self-employed—insurance and real estate	9,410	12.9	13.2
Managers, salaried—manufacturing	9,090	13.1	6.7
Physicists	9,043	17.2	4.2
Aeronautical engineers	9,018	16.3	1.6
Veterinarians	8,882	17.4	2.1
Chemical engineers	8,810	16.7	.9
Sales engineers	8,694	16.1	.3
Architects	8,651	16.8	2.5
Economists	8,649	16.8	14.5
Electrical engineers	8,553	16.2	.8
Metallurgical engineers and metallurgists	8,534	16.3	1.0
Geologists and geophysicists	8,409	16.9	2.3
Optometrists	8,404	17.0	4.2
Mining engineers	8,359	16.5	.3
Mechanical engineers	8,355	16.1	.3
Managers, salaried—business services	8,340	14.6	21.1
Managers, salaried—insurance and real estate	8,231	13.7	17.2
Engineers, technical	8,062	16.0	.8
Professors and instructors—agricultural sciences	7,918	17.4	—
Managers, salaried—communications and utilities	7,916	12.8	10.9
Professors and instructors—engineering	7,841	17.4	2.2
Public relations men and publicity writers	7,826	16.1	23.1
Professors and instructors—psychology	7,811	17.5	21.2
Mathematicians	7,780	17.1	26.5
Managers, self-employed—manufacturing	7,736	12.3	6.9
Psychologists	7,726	17.5	31.1
Industrial engineers	7,673	15.2	2.1
Managers, salaried—construction	7,632	12.4	3.4
Civil engineers	7,606	16.1	.6
Locomotive engineers	7,586	9.8	.2
Professors and instructors—social sciences	7,510	17.5	29.9
Personnel and labor relations workers	7,490	15.9	30.9
Managers, self-employed—wholesale trade	7,465	12.3	5.1
Professors and instructors—economics	7,447	17.5	6.6
Managers, salaried—banking and other finance	7,439	13.7	12.7
Professors and instructors—biological sciences	7,410	17.5	16.5
Managers, self-employed—business services	7,399	12.9	15.8
Professors and instructors—physics	7,373	17.3	3.8
Managers, salaried—transportation	7,351	12.4	4.5
Natural scientists—miscellaneous	7,351	16.5	9.8
Professors and instructors—chemistry	7,340	17.4	12.1
Managers, salaried—wholesale trade	7,339	12.7	7.0
Professors and instructors—geology and geophysics	7,319	17.4	2.6
Designers	7,296	13.8	18.3
Managers (non-farm)—officials, societies, unions, etc.	7,187	12.1	10.1
Railroad conductors	7,179	10.5	.3
Pharmacists	7,176	16.2	7.7
Foremen—communications, utilities, sanitary services	7,147	12.0	1.8
Chemists	7,120	16.6	8.6
Officer pilots, pursers, and engineers—ship	7,119	10.5	.5
Sales workers—stock and bond salesmen	7,118	14.5	6.4
Electrotypers and stereotypers	7,042	11.7	.8
Photoengravers and lithographers	7,026	12.2	5.2

(continued)

AVERAGE GROSS CHARGES PER FAMILY FOR PERSONAL HEALTH SERVICES

table 144

Charges cover physicians' services, hospitals, medicines, and other medical and dental goods and services.

Family income group	1958 All families	1958 Insured	1958 Uninsured	1963 All families	1963 Insured	1963 Uninsured
Total	$294	$339	$194	$370	$429	$201
Under $2,000	165	233	136	228	292	162
$2,000 to $3,499	226	256	191	245	337	144
$3,500 to $4,999	287	304	236	289	322	212
$5,000 to $7,499	336	352	240	409	438	253
$7,500 and over	411	425	317	480	501	317

Source: 1958, Odin W. Anderson, Patricia Collette and Jacob J. Feldman, "Changes in Family Medical Care Expenditures and Voluntary Health Insurance—A Five-Year Resurvey." 1963, Ronald Andersen, Odin W. Anderson, "Progress in Health Services."

INDEXES OF MEDICAL CARE PRICES

table 145

1957–59 = 100.

Item	1950	1955	1960	1964	1965
Medical care, total	73.4	88.6	108.1	119.4	122.3
Physicians' fees	76.0	90.0	106.0	117.3	121.5
Tonsillectomy	81.5	92.7	107.9	118.7	122.2
Optometric examination and eyeglasses	89.5	93.8	103.7	110.7	113.0
Dentists' fees	81.5	93.1	104.7	114.0	117.6
Hospital room rates	57.8	83.0	112.7	144.9	153.3
Obstetrical case	67.7	90.8	105.0	115.2	117.8
Prescriptions and drugs	86.6	92.7	102.3	98.4	98.1

Source: U.S. Bureau of Labor Statistics.

PHYSICIANS, DENTISTS, AND NURSES

table 146

Item	1950	1955	1960	1964
Physicians, total	232,700	255,200	274,800	297,100
Percent in private practice	72	67	65	63
Private practice, total	168,100	169,900	179,200	188,400
General practice—percent	48	39	31	26
Full-time specialty—percent	24	28	34	37
Dentists, total	87,164	94,879	101,947	107,231
Active non-Federal	75,313	76,087	82,630	84,800
Nurses, active professional	375,000	430,000	504,000	582,000
Ratio per 100,000 population: [1]				
Physicians, total	149	150	148	151
Private practice	109	102	98	97
Dentists, total	57	57	56	56
Active non-Federal	50	47	46	45
Nurses	249	259	259	306

[1] Ratio based on population figures most appropriate for the categories shown.

PHYSICIAN AND DENTAL VISITS PER YEAR: 1963–64

table 147

SMSA = Standard Metropolitan Statistical Area.

Item	Total	Residence: Inside SMSA's	Residence: Outside SMSA's: Nonfarm	Residence: Outside SMSA's: Farm	Family income: Under $4,000	Family income: $4,000 to $6,999	Family income: $7,000 and over
Physician visits—mil	844	568	237	39	223	263	317
Male—mil	356	238	100	18	85	113	142
Female—mil	488	331	137	21	138	150	175
Visits per person	4.5	4.8	4.3	3.3	8.6	4.5	4.9
Male	4.0	4.2	3.7	3.0	7.2	3.9	4.3
Female	5.1	5.4	4.8	3.7	9.8	5.1	5.4
Dentist visits—mil	294	216	67	11	43	85	152
Male—mil	129	96	28	6	16	37	71
Female—mil	165	121	39	6	26	49	81
Visits per person	1.6	1.8	1.2	0.9	1.7	1.4	2.3
Male	1.4	1.7	1.0	0.9	1.4	1.3	2.2
Female	1.7	2.0	1.4	1.0	1.8	1.6	2.5

Source, tables 146 and 147: U.S. Public Health Service.

LIST OF DOCUMENTS IN COMMISSION FILES

SHORTAGE OF DOCTORS IN RURAL AREAS

x indicates materials on loan from other agencies
* indicates materials sent to subcommittee members

1. Distribution of physicians, hospitals and hospital beds in the United States. 1966. AMA. V. 1, Regional, state and county. 263p. 2 copies
2. Distribution of physicians, hospitals and hospital beds in the United States. 1966. AMA. V. 2, Metropolitan areas. 331 p. 2 copies
* 3. Community health planning data book. 20 p.
* 4. Supply and distribution of resources essential to health care in North Carolina. 1965 UNC School of Public Health. 38 p.
* 5. Distribution and characteristics of physicians . . . in North Carolina. 41 p.
* 6. The ESC quarterly, medical professions edition. 67 p.
* 7. Memorandum on a medical school for East Carolina College. 22 p.
* 8. JAMA reprint. Role of the medical school in health care in Oklahoma. d. 4 p.
9. Roster of registered physicians in North Carolina. 190 p.
10. Medical education in the United States, 1965-66. (Education number of JAMA) 97 p.
11. Medical school admission requirements 1967-68. AAMC. 296 p.
12. Medical scholarship and loan fund programs. AMA pamphlet. 58 p.
13. Health in a changing rural environment. AMA pamphlet. 8 p.
* 14. Educational loans for medical and related studies. Medical Care Commission pamphlet. 23 p.
15. Constitution of state of Georgia (Scholarships for doctors in small communities) 96 p.
16.. Medical training facilities and practice in Pennsylvania. 43 p.
17. The relation of a medical school to surrounding communities (tear sheets from JAMA, Oct. 30, 1967) 17 p.
18. Distribution of health manpower in rural areas. d. 2p.
19. New education training programs to meet health manpower needs. d. 16 p.
20. Preliminary report on health care in rural . . . New York. d. 12p.
21. Health manpower to meet rural-urban needs. Journal of Tenn. medical association. d. 6 p.
22. 4th regional rural health conference (Western States) AMA 42 p.

23. Proceedings of the 17th national conference on rural health. 50 p.
24. Proceedings of the 19th national conference on rural health. 48 p.
25. AMA directory report service (quarterly distribution tables) d. 23 p.
26. Material from Mississippi on the medical education loan program. d. 20 p.
27. Controversy in today's medical education (Pennsylvania) d. 15 p.
28. Undergraduate education, a new horizon (Pennsylvania) d. 16 p.
x 29. Health resources statistics. 1965. 182 p.
* 30. Reprint from U. S. News and World Report. Answers to doctor shortages in the United States. d. 3p.
31. Kentucky statute on medical scholarships. d. 2p.
32. Datagrams - physician manpower: medical school applicants. d. 2 p.
* 33. Reprint from New York Times - The country doctor. d. 1 p.
* 34. Charts from Employment Security Commission. d. 9 p.
35. Reprint from National Observer - Accent on general practice draws student doctors. d. 1 p.
36. Supplement to North Carolina Medical Journal - Roster of members. 176 p.
* 37. Medical Society of North Carolina placement survey charts (exerpt) d. 2 p.
38. South Carolina statute. Scholarships at the Medical College of South Carolina. 1 p.
39. Report . . . exemption of hospital and medical service corporations from . . . taxes. 19 p.
40. Medical Society of North Carolina. Placement service survey charts. 41 p.
41. American Osteopathic Association yearbook and directory. 433 p.
42. Kirksville College of Osteopathy and Surgery catalog. 96 p.
43. Kansas City College of Osteopathy and Surgery catalog. 64 p.
44. Philadelphia College of Osteopathy catalog. 123 p.
45. Registry of accredited osteopathic institutions, 1967-68. 45 p.
46. A statistical study of the osteopathic profession. 35 p.
47. Section from JAMA. Medical licensure statistics for 1966. 64 p.

48. Section from Journal AOA. Advisory board for osteopathic specialists. 45 p.
49. Chicago College of Osteopathy catalog. 96 p.
50. Bulletin of the College of Osteopathic Medicine and Surgery. 95 p.
51. Federal grants to osteopathic colleges. 1966. d. 2 p.
52. AMA report on policy toward osteopathy and AOA's response. d. 7 p.
53. Accreditation in osteopathic medicine. 4 p.
54. State of North Carolina office of comprehensive health planning. d. 2 p.
55. Teachers of family medical practice . . . to K(ansas) U(niversity) d. 1 p.

x 56. JAMA, June 6, 1966. State board number. 294 p.

x 57. Attitudes of physicians toward small-community practice. d. 17 p.

x 58. Health manpower source book. 68 p.

x 59. JAMA, June 19, 1967. State board number. 298 p.

60. UNC Medical School catalog. 171 p.
61. Bowman Gray School of Medicine catalog. 110 p.
62. Duke University School of Medicine catalog. 127 p.
63. N. C. Study of manpower and training needs for medical and health service occupations, Sept. 1963. 63 p.
64. Reprint from N. C. Medical Journal. Annual report of the mental hygiene committee to the board of directors. pamphlet, 8 p.

* 65. Chart from N. C. Medical Society - Number of Physicians in specialty groups (exerpt from large chart book) 1 p.