THE SHORTAGE OF FAMILY PHYSICIANS

REPORT OF THE

VIRGINIA ADVISORY LEGISLATIVE COUNCIL

TO

THE GOVERNOR

AND

THE GENERAL ASSEMBLY OF VIRGINIA

COMMONWEALTH OF VIRGINIA
Department of Purchases and Supply
Richmond
1972

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FREQUENTLY USED ABBREVIATIONS

AMA—American Medical Association
EVMS—Eastern Virginia Medical School
MCAT—Medical College Admission Test
MCV—School of Medicine, Medical College of Virginia, Health Sciences Division of Virginia Commonwealth University
UVa—School of Medicine, University of Virginia

THE SHORTAGE OF FAMILY PHYSICIANS

Report of The

Virginia Advisory Legislative Council

Richmond, Virginia
December 13, 1971

To: HONORABLE LINWOOD HOLTON, *Governor of Virginia*

and

THE GENERAL ASSEMBLY OF VIRGINIA

RECOMMENDATIONS

RECOMMENDATION NO. 1: We recommend that MCV and UVa establish and expand family practice residency programs that meet the qualifying criteria of and are approved by the Residency Review Committee of the AMA. It is necessary that adequate funding be appropriated by the General Assembly in order to provide for the development of such family practice residency programs. Funds appropriated by the General Assembly should be specifically earmarked for approved family practice residency programs on a cost per resident position basis. These residency positions must be created before they can be filled.

RECOMMENDATION NO. 2: We stress the need for Virginia's medical schools to teach family practice as an integral part of the medical curriculum. Adequate time must be allotted during the second, third and fourth years of medical school to assure that the students are fully exposed to the potentials of family practice as a career. Training must also be provided to insure that medical students clearly understand the techniques and methods by which high quality family medical care can be delivered.

RECOMMENDATION NO. 3: We recommend that the State medical scholarships offered each year be increased in amount from $1,500 to $2,500 each. MCV and UVa should each receive 40 such scholarships. Any scholarship not utilized by October 1 of any year by either school should be made available to the other school. The interest rate charged on scholarships not repaid by service in areas of need in the Commonwealth should be the prevailing commercial rate rather than the rate on student loans.

RECOMMENDATION NO. 4: We urge the State Department of Education to encourage high school guidance counselors to urge capable high school students to enter the study of medicine. Potential candidates should particularly be informed of the rewards of family practice. High school guidance counselors should stress medical careers due to the small percentage of Virginia's rural high school graduates who study medicine and also in view of the improved scholarship program recommended in this report.

RECOMMENDATION NO. 5: We recommend that the two State medical schools attempt to reach an enrollment of at least 75 percent Virginians as soon as possible. We do not recommend that a quota on resident and non-resident students be established by law.

RECOMMENDATION NO. 6: We encourage the General Assembly to consider favorably the development of a new private four-year medical school in the Tidewater area. Should the State legislature approve of giving aid to private institutions and should the Eastern Virginia Medical School (EVMS) be established, it is recommended that State funds be directly appropriated to EVMS on a per in-State student basis only and that these funds be used only for educational purposes and not for capital outlay and maintenance of the institution. Further, it is recommended that the medical scholarships also be extended to EVMS students when the school is established.

RECOMMENDATION NO. 7: We urge that the Virginia Council on Health and Medical Care be provided with an opportunity to expose medical students, house staffs, and faculties at MCV and UVa to the full resources of the Physician Referral Service of the Virginia Council.

RECOMMENDATION NO. 8: We recommend that the two medical schools develop plans for ideal rural group practices, and assist physicians and communities in setting up these facilities. By working in a group practice, the three or more doctors of the group could alternate being on call. Thus, better care could be provided, and the isolation and overwork so characteristic of solo rural practitioners could be avoided.

RECOMMENDATION NO. 9: We commend the Medical Society of Virginia and the Virginia Academy of Family Physicians for initiating studies on the use of paramedical personnel, and we recommend that they continue these efforts.

RECOMMENDATION NO. 10: We support the State Board of Medical Examiners' procedure of licensing physicians, including foreign medical graduates. Our quality of medical care must not be sacrificed by the licensing of inferior practitioners as a means of increasing our supply of physicians.

RECOMMENDATION NO. 11: We recognize that there has not been enough cooperation or coordination between the two medical schools, and we strongly urge that this relationship be improved. The schools have both established model family practice clinics or satellite teaching units and have yet to consider a provision to divide the State between the two established schools and the Tidewater area medical school when it is established.

We recommend that the administrators of MCV and UVa meet regularly and work closely to improve the health care of all Virginians. Such a working relationship is a necessity if the schools are to have a statewide coordinated system under which the family practice residency programs can operate.

RECOMMENDATION NO. 12: We recommend that for the purposes of research the admissions committees of both medical schools keep ongoing records of all applicants (accepted and unaccepted) which will include each applicant's name, place of origin, father's occupation, MCAT scores, and willingness to practice in Virginia for a period equal to the length of medical school training.

RECOMMENDATION NO. 13: Due to the crisis in family practice involving all citizens of the Commonwealth, we recommend that this study be continued for a two year period to keep abreast of developments and needs in this area.

SUMMARY OF EVENTS

In 1970 the Virginia State Senate and House of Delegates passed a joint resolution directing the Virginia Advisory Legislative Council (VALC) to study the problem of the shortage of family physicians in the rural and urban areas of Virginia.

HOUSE JOINT RESOLUTION NO. 104

Directing the Virginia Advisory Legislative Council to study the shortage of family physicians.

Whereas, there exists an acute shortage of family physicians in Virginia to serve both rural and urban areas; and

Whereas, this shortage is growing more serious due to an increasing demand for and a decreasing number of family physicians; and

Whereas, this shortage is causing a growing concern among people who find themselves living in areas without adequate medical care; and

Whereas, this shortgage is slowing the economic growth of many communities and the State; now, therefore, be it

Resolved by the House of Delegates, the Senate concurring, That the Virginia Advisory Legislative Council is directed to study the shortage of family physicians.

The Council shall consider, study, and report its recommendations on the ways and means to relieve the shortage of family physicians.

The Council shall also study the scholarship programs presently available to medical students and students in allied fields at the State's two schools of medicine and to consider ways and means to make these scholarships available to more State citizens desirous of pursuing a medical career.

All State agencies, institutions, and the governing bodies and agencies of the political subdivisions shall assist and cooperate with the Commission [Council] in its study.

The Council shall report its finding and recommendations to the Governor and the General Assembly not later than October one, nineteen hundred seventy-one.

The VALC appointed a 20 member committee to conduct the initial study and report to Council. Delegate A. H. Richardson of Dinwiddie chaired the Committee. Dr. A. Epes Harris, Jr., of Blackstone was Vice-chairman.

Also serving on the Committee were Delegate L. Ray Ashworth of Wakefield, Mr. Walter C. Ayers of Richmond, Delegate Archibald A. Campbell of Wytheville, Delegate C. W. Cleaton of South Hill, Delegate Russell L. Davis of RockyMount, Mr. Wayne Dennison of King George, Mr. Edgar J. Fisher, Jr., of Richmond, Mr. James A. Hancock of Colonial Heights, Dr. Edward W. Hook of Charlottesville, Mr. Larry M. Jones of Lawrenceville, Mr. Baskerville Knott of Dinwiddie, Delegate George N. McMath of Onancock, Dr. Fitzhugh Mayo of Richmond, Dr. Roy E. McTarnaghan of Richmond, Miss Anne Dobie Peebles of Carson, Dr. Robert S. Smith of Dinwiddie, Mr. Clayton H. Steed of Lawrenceville, Dr. Clarence W. Taylor, Jr., of Shawsville.

The Virginia Advisory Legislative Council and the Division of Statutory Research and Drafting made staff and facilities available to carry out this

study; they assigned the necessary employees to assist the members and the study group at all times.

The VALC Committee Studying the Shortage of Family Physicians first met on July 28, 1970, in Richmond, Virginia. The Committee held a public hearing at that time and also decided that additional public hearings would be held in Norfolk, Virginia on September 9, 1970, in Northern Virginia (Alexandria), on September 15, 1970, in Abingdon, Virginia, on October 6, 1970, and in Roanoke, Virginia, on October 7, 1970 with various subcommittees conducting each of the hearings and obtaining a sampling of opinion from the length and breadth of the State.

Information was gathered on the admission of students at MCV and UVa (origin of students—whether urban or rural, resident or non-resident, and their MCAT scores), on the school's graduates (what they practice and where, the effect of their residency programs on their practice location), and on State medical scholarships (the number being used and the cost of increasing the amount of the scholarships), and on the expansion of the medical schools. (See Appendix A). This information was compiled for the Committee by William M. O'Brien, M. D., of the School of Medicine of the University of Virginia. The Committee also heard from and questioned officials of MCV and UVa.

A list of persons appearing before the Committee appears in Appendix D.

At the conclusion of its study, the Committee reported its findings and recommendations to the Council. We gratefully acknowledge the services of the Committee members and commend them for their fine efforts.

THE CRISIS IN PRIMARY HEALTH CARE

One of the most pressing problems facing the State is the provision of comprehensive and high level primary medical care to all Virginians. In spite of all that has been done by Congress and other groups, Virginia is currently suffering from a severe shortage of family physicians. Three Virginia counties (Bland, King and Queen, and Spotsylvania Counties) are already doctorless, and eight others (Craig, Greene, Highland, King George, Powhatan, Rappahannock, Stafford, and Surry Counties) have one physician. Many other localities also face a crisis. This trend must not be permitted to continue.

The AMA Directory is at least two years behind in collecting statistical data on physician population. A recent survey of physicians practicing in Virginia indicated, however, that the State had 1,202 general practitioners of whom one-third were over age 60. Rural areas had one practitioner per 4,260 inhabitants, and urban areas had one per 3,440. Based on the numbers of new general practitioners licensed in the past ten years, Virginia may lose 28 percent of the 1967 supply of general practitioners by 1972. This loss may be partially attributed to the fact that 25 percent of the general practitioners in Virginia will reach age 65 in the next year. Unspecialized pediatricians and internists are replacing some general practitioners in the urban areas, but there are virtually no replacements in rural areas, particularly in the poorer and more sparsely populated regions of the State. The national emphasis on programs for research, specialization, and urban areas makes it unlikely that present trends will be reversed. Should the present trend persist, Virginia may have virtually no rural physicians within 15 years. The complete report is attached as Appendix B.

Urban areas are not without problems. Many inner city areas have no physicians, and many urban families, while able to find specialty care, cannot find a family physician.

Part of the decline in general practitioners is attributable to their leaving to enter one of the specialities. A study of this decrease of family doctors was conducted in Virginia in 1967 [1] to determine physicians' reasons for withdrawal from general practice. Seventy-three former general practitioners, internists, and pediatricians completed questionnaires for the study concerning their experiences and reasons for leaving primary practice. At least two-thirds of the doctors listed overwork as their major reason for leaving. The overwork they cited referred not only to long hours, but also to the physical and emotional strain they experienced because they were unable to get away from their work. They also complained of unsystematic approaches to patient care and unavailability of techniques for enhancing the capabilities of primary practice. Others mentioned such items as difficulty with billing or dissatisfaction with the community. The physicians realized that there were alternative career pathways which would offer them high prestige and controlled hours and workloads. Eventually, the family doctors selected these medical careers in lieu of their general practices.

The shortage of primary physicians is not confined to Virginia, but it is a problem that is shared nationwide and to some extent worldwide. Fewer than two percent of the American medical graduates now enter general practice, and foreign countries such as Israel, Yugoslavia and Holland are finding it equally difficult to attract graduates to primary care medicine. The growing awareness of and increasingly critical nature of these problems has already evoked some response in the United States. The subject has been discussed in general terms by several national commissions including the Citizen's Commission on Graduate Medical Education (usually referred to as the "Millis Report"),[2] by an ad hoc AMA committee on the Education for Family Practice in 1966,[3] and by a National Advisory Commission on Health Manpower in 1967.[4] Public pressure has demanded that Congress enact new laws in almost every recent session to correct the shortage of health professionals. A few of these laws are for manpower development and training in 1962; for nurse training in 1962; for health professions education in 1963; for allied health professions education in 1966; for community health construction act in 1963; for hospital and medical facilities in 1964; for regional medical programs (often called the war on heart disease, cancer and stroke) in 1965; for comprehensive health planning in 1966; and, of course, for financing health care (Medicare and Medicaid). The AMA also attempted to alleviate the crisis in 1969 by establishing a speciality in family practice to provide better training and preparation of such doctors and to counteract the fact that "general practice" was not a speciality. In spite of the numerous commissions, the new legislation, and the increasing interest in the problem, the shortage of family doctors appears to be increasing.

Before offering solutions to the problem, the events leading up to the present crisis must be understood. In the latter part of the nineteenth century the American Medical Association instituted a requirement that physicians receive their medical education at medical school rather than through

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1. Crawford, Ronald., Ph. D., McCormack, Regina C., M.D.: Reasons Physicians Leave Primary Practice. *Journal of Medical Education* 46: 263-268, 1971.
2. Citizen's Commission on Graduate Medical Education (Chairman: J.S. Millis). *The Graduate Education of Physicians.* American Medical Association. Chicago, 1966.
3. Council on Medical Education. *Meeting the Challenge of Family Practice.* American Medical Association. Chicago, 1966.
4. *Report of the National Advisory Commission on Health Manpower.* (Chairman: J.I. Miller). U.S. Govt. Printing Office, 1967.

apprenticeships with practicing physicians. In addition, the population was spreading west which put increasing burdens on our health care system. Thus immediately following the Civil War there was a severe physician shortage in this country. Second-rate medical schools sprang up in an effort to meet the demand for health care, and in the process, the quality of medical education greatly suffered. The 1910 "Flexner Report" was the outgrowth of the public reaction that grew up against the diploma mills of the time. The report established rules for excellence in medical education which are now entirely inappropriate. Dogmatic ideas concerning class size and numbers of medical schools restricted the supply of physicians. The universal swing towards specialization also gained momentum as full-time teachers and all-specialist faculties consumed medical education. Discoveries and new treatment methods developed during this time added enthusiasm to the specialization movement and gradually fewer and fewer medical graduates were attracted to the field of primary health care, which is generally accorded to include 85 percent or more of the total health care needs of any population group. After World War II, advances in science and technology showed much promise in the field of medicine and the U.S. Congress began pouring billions of dollars into the research programs of our medical schools. Interest in the primary care field declined and the number of primary care physicians has continuously decreased.

The "Millis Report" [5] was the first national study which pinpointed the primary care area as the crux of the health care crisis in America. A realization of the magnitude of the problem has occurred within the medical profession and the general public in the past five years. In our present study on the shortage of primary physicians alone, all who testified (56 in total) at the Committee hearings agreed that a crisis in health care exists.

In past attempts to alleviate the shortage of primary care physicians, there have been several factors which tended to impede the solution to the problem. Funding for medical research continued without corresponding allocations for teaching patient care. Jurisdictional arguments between general practitioners, internists, and pediatricians over who should participate in any new program persisted. Medical school class size remained constant as it had for several decades. The suggestion of training paramedical personnel to furnish all the needed primary health care further delayed the solution to the problem.

All areas of the country are affected by the shortage of primary physicians. The rural areas have the greatest needs followed by the central cities. In Virginia we will have to produce approximately 112 primary doctors per year in order to meet the demand for health care and to catch up with our population growth on a basis of 2,500 patients per primary physician. Presently, our production of primary physicians in Virginia is just about equal to the attrition rate in our current inadequate supply as indicated in the following table. Clearly a new and different approach is needed in order to correct the shortage.

Medical Schools must be prepared to train a new type of physician one who is prepared to function as a family physician. The new physician must be trained to evaluate the patient's total problems. He must provide a high proportion of the care needed by most patients, and he must also coordinate the care provided by others when necessary. Prevention, health maintenance, diagnosis, treatment, and rehabilitation must be of equal concern to him. In addition to the usual in-hospital practice he must care for ambulatory and out-of-hospital patients throughout their illnesses, and he must understand the environmental and emotional problems of the patient and his family. This is

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5. Citizen's Commission on Graduate Medical Education, *supra*.

the type of comprehensive, family-centered patient care that is needed from the modern family physician. The recommendations in this report are offered in order to provide solutions to the documented need of Virginians for more of these family practitioners who are capable of rendering high quality primary care.

PRIMARY PHYSICIAN OUTPUT OF VIRGINIA'S MEDICAL SCHOOLS *

	UVa			*MCV*		
	1950-55	*1955-60*	*1960-65*	*1950-55*	*1955-60*	*1960-65*
General Practice	77	53	37	171	116	80
Internal Medicine	67	62	54	62	69	57
Pediatrics	30	26	26	28	37	30
TOTAL	174	131	117	261	222	167
Per Year	35	26	23	52	44	33

COMBINED PRODUCTION PER YEAR

	1950-55	*1955-60*	*1960-65*
UVa	35	26	23
MCV	52	44	33
TOTAL	87	70	56

* Figures obtained from *Medical School Alumni* special statistical series, published by the AMA, 1968.

GENERAL APPROACH

The solution to the crisis in health care lies with the medical schools, the medical profession, communities, patients, and the General Assembly. In particular, this study deals with the obligations and responsibilities of the State medical schools to the health care of Virginians. The medical profession, in general, and the leadership of the State schools should be alarmed at the concerns and anger of the vast majority of laymen concerning the inadequacies of their health care, and should note the interest with which representatives of the public have discussed this problem.

New and innovative thinking on the part of the medical profession will be required—not only to alleviate the shortage of family physicians in areas of need—but to prevent the federal and State governments from dictating exactly how health care should be delivered by medical personnel.

Those communities wanting and needing physicians should not look upon this report or new programs of the State's medical schools as a panacea. They must look to themselves and make their locality as attractive as possible. No physician will accept 24 hour duty 365 days of the year. Communities must accept group practices if they want to attract physicians to their areas. No physician will move his family to a community which is not alert, progressive, and a pleasant place to live. No physician will sacrifice his children in a poor educational system, and any family will demand easy access to recreation and relaxation. Doctors will go to progressive communities and not to the inactive ones.

This study can be broadly divided into two areas. We have scrutinized the efforts of the state's two medical schools to train family physicians and have also searched for solutions outside the structure of the schools.

FAMILY PRACTICE RESIDENCIES

RECOMMENDATION: WE RECOMMEND THAT MCV AND UVA ESTABLISH AND EXPAND FAMILY PRACTICE RESIDENCY PROGRAMS THAT MEET THE QUALIFYING CRITERIA OF AND ARE APPROVED BY THE RESIDENCY REVIEW COMMITTEE OF THE AMA. IT IS NECESSARY THAT ADEQUATE FUNDING BE APPROPRIATED BY THE GENERAL ASSEMBLY IN ORDER TO PROVIDE FOR THE DEVELOPMENT OF SUCH FAMILY PRACTICE RESIDENCY PROGRAMS. FUNDS APPROPRIATED BY THE GENERAL ASSEMBLY SHOULD BE SPECIFICALLY EARMARKED FOR APPROVED FAMILY PRACTICE RESIDENCY PROGRAMS ON A COST PER RESIDENT POSITION BASIS. THESE RESIDENCY POSITIONS MUST BE CREATED BEFORE THEY CAN BE FILLED.

Primary health care is presently the number one health priority in Virginia, and in order to deliver adequate primary care, more family physicians are needed. UVa and MCV have instituted a division and department, respectively, of family practice in their schools of medicine. They are also increasing the numbers of students in their medical school classes.

Medical school graduates are not, however, trained family physicians. They must still take their internships and residencies. Thus, no matter how many students the medical schools educate and regardless of the new family practice curricula, if a doctor must go outside of Virginia to complete his training, there is a substantial likelihood that he will remain outside Virginia.

We believe that it is primarily through the establishment of family practice residency programs that the number of family doctors will increase. Residency programs are costly; as the place of residency, however, is a major influence in determining where a doctor practices, we urge the development of more residency programs in the State. In view of the critical shortage of family physicians, we feel that it is crucial that the State appropriate funds for the establishment and development of family practice residency programs in Virginia.

State medical schools in Florida, Georgia and Kentucky attempted to alleviate their family doctor shortage through exposing their undergraduates to the problems of family practice, providing scholarships, and limiting out-of-state students. Family practice residency training was not provided, however, and as a result, the schools achieved suboptimal results in their efforts to attract students to family practice.

In their brief introduction to family practice, undergraduate medical students of the Florida, Georgia and Kentucky schools actually lived in rural communities for a period of six weeks. After exposure to rural areas, the students were able to appreciate the needs of the rural residents; they were unprepared, however, to serve these communities as competent family physicians due to their lack of technical postgraduate training. Had family practice residency programs (which offer the necessary technical training) been provided, the schools might have been able to produce family physicians capable of handling a variety of medical problems. We feel that both adequate undergraduate family practice programs and residency programs must be employed to successfully prepare physicians for family practice.

The residency programs which we support in Virginia are designed to be much more effective in educating the individual who intends on spending a

lifetime in family medicine. In the past, the general practitioner has gone into practice following a one year rotating internship program. After such brief training, the doctor feels incapable of dealing with many of the problems of modern medicine. The Virginia medical schools have now developed new programs which include the traditional year of hospital internship and further offer graduates two years of continuing experience with patients in a model family practice unit. These programs will yield family physicians who are broadly trained in internal medicine, obstetrics and gynecology, pediatrics, psychiatry, community medicine and minor surgery so that they will be able to offer comprehensive medical care of a quality far higher than previously possible. These residency programs have been designed to meet the requirements of the AMA.

The residency training of the family physicians as set forth by the AMA consists of two parts. First, the resident's base of practice must be in a model family practice unit, where he will generally spend a portion of each day. During his three-year residency, the majority of his family practice training will occur in the model unit. Second, education and supervised training in medicine, pediatrics, surgery, obstetrics-gynecology, psychiatry, community medicine and electives (anesthesiology, radiology, dermatology, ophthalmology, urology, orthopedics, et cetera) will be available to the resident during the three year period.

The family practice residency programs will be developed under a statewide coordinated system utilized by medical students from MCV and UVa. Each school has established model Family Practice Clinics or Satellite Teaching Units in coordination with hospitals around the State. By establishing the programs throughout Virginia, it is hoped that the distribution of family physicians will be more widespread.

As used herein, the term "residency position" means the production of one family practitioner per year. Since the residency program is three years in length, one position actually means that three men are in training each year, one in each year of the residency program.

MCV is establishing a multi-centered system with AMA-approved programs in Blackstone, Newport News (at Riverside Hospital), and Fairfax (at Fairfax Hospital). Presently, MCV has 16 resident positions available each year with plans for eight additional places. Blackstone has four resident positions; Riverside Hospital has eight positions; and Fairfax Hospital has four. There are plans for a program developing in Norfolk which will train eight residents; this is projected, however, for operation beginning in 1973.

UVa has developed a new Family Health Center near the UVa Medical Center as the base for its residency program which has been submitted to the Residency Review Committee of the AMA. Upon approval by the Review Committee, this program will make six resident positions available each year. Roanoke Memorial Hospital's affiliated family practice residency program was also included in the UVa proposal. This program will also be able to provide six resident positions each year for a total of twelve positions in the UVa system, including Roanoke. Similar programs in Lynchburg, Winchester, and the Community Hospital in Roanoke are also under study for development.

If the family practice programs are to succeed in helping solve a major problem in the delivery of health services, they must be supported. Therefore, we recommend that adequate State funds be appropriated to encourage the expansion of such family practice residency programs which are approved by the Residency Review Committee of the AMA. Initially, the appropriations

should support all aspects of the program, including faculty, residents, supporting personnel, research and operating expenses. Funding should also support the provision of educational opportunities in family practice for medical students.

The funds appropriated to the programs should be earmarked and based on the number of family practice residency positions in each. We feel that budgeting on this basis will not only insure the adequate funding of the family practice programs, but it will also avoid the possibility of removing support from other existing programs.

FAMILY PRACTICE IN THE CURRICULUM

RECOMMENDATION: WE STRESS THE NEED FOR VIRGINIA'S MEDICAL SCHOOLS TO TEACH FAMILY PRACTICE AS AN INTEGRAL PART OF THE MEDICAL CURRICULUM. ADEQUATE TIME MUST BE ALLOTTED DURING THE SECOND, THIRD AND FOURTH YEARS OF MEDICAL SCHOOL TO ASSURE THAT THE STUDENTS ARE FULLY EXPOSED TO THE POTENTIALS OF FAMILY PRACTICE AS A CAREER. TRAINING MUST ALSO BE PROVIDED TO INSURE THAT MEDICAL STUDENTS CLEARLY UNDERSTAND THE TECHNIQUES AND METHODS BY WHICH HIGH QUALITY FAMILY MEDICAL CARE CAN BE DELIVERED.

The number of family practitioners must be increased before the problem of inadequate health care can be solved. In this age of specialization, the patient can rarely locate a family physician who can evaluate an individual's total health care needs. Therefore, the patient must first diagnose his own ailments to determine which specialist he should see. This is expensive, time-consuming and inefficient. In earlier days general practitioners could manage a patient's health care needs efficiently. The practitioner had an easier role to fill then than he does today because knowledge was limited and specialization was not well-developed. Today, however, there is a need for a better trained family physician. He must have a breadth of knowledge in internal medicine and pediatrics, community and preventive medicine and practical psychiatry so that he can function as a family physician capable of rendering family-oriented, comprehensive patient care.

New approaches in educating the family practitioner are clearly needed, and the Council feels strongly that family practice programs must be taught as an integral part of the medical curricula of both State medical schools.

For many years medical students in UVa and MCV have been taught by highly specialized physicians who are oriented toward diseases of specific organ systems, for example cardiology. These men are indispensable to the practice of medicine, but they are unable to care for all of the ills of a family group as their orientation is toward serious illnesses of specific organs. As a result, the medical schools' faculties are eminently qualified to teach the fundamentals of disease processes, but they are less likely to guide their students in the handling of family practice problems. The specialists also tend either consciously or subconsciously to encourage their students to enter their fields of interest. Therefore, the everyday handling of problems of individual patients and their families is neglected in the medical curriculum. This problem can be corrected by introducing family practitioners into the faculties of the medical schools to provide the students with instruction on the common diseases encountered in an average family. By exposing students to a model of family practice in the community, they are more likely to consider this field of medicine as a career.

Until this year, there was no teaching of family practice as a separate speciality in either State medical school. Beginning in the year 1970-71, MCV initiated a Department of Family Practice which has equal footing with other departments and specialities and is therefore able to compete for students. UVa established a Division of Family Practice under the Departments of Internal Medicine and Pediatrics. Medical students interested in the UVa family practice program take their basic science courses at the medical school. For their clinical education, the students may spend varying periods of time in the family practice unit in Charlottesville or in the affiliated institutions in Roanoke and in the future those in Winchester and Lynchburg. In these hospitals students receive instruction from interested practicing physicians as well as from a nucleus of full-time faculty members based in the institutions. We commend the establishment of family practice programs at both UVa and MCV and urge their expansion and development.

The Council further commends the preceptorship programs which are sponsored by the Virginia Academy of Family Physicians in coordination with our two State medical schools. These programs allow interested medical students the opportunity to move to the office of a family physician for varying lengths of time. During that time, the student will be exposed to the problems of the family practitioner as well as to the potentials of family practice as a career. We urge the continued utilization of these programs.

SCHOLARSHIPS FOR MEDICAL STUDENTS

RECOMMENDATION: WE RECOMMEND THAT THE STATE MEDICAL SCHOLARSHIPS OFFERED EACH YEAR BE INCREASED IN AMOUNT FROM $1,500 TO $2,500 EACH. MCV AND UVA SHOULD EACH RECEIVE 40 SUCH SCHOLARSHIPS. ANY SCHOLARSHIP NOT UTILIZED BY OCTOBER 1 OF ANY YEAR BY EITHER SCHOOL SHOULD BE MADE AVAILABLE TO THE OTHER SCHOOL. THE INTEREST RATE CHARGED ON SCHOLARSHIPS NOT REPAID BY SERVICE IN AREAS OF NEED IN THE COMMONWEALTH SHOULD BE THE PREVAILING COMMERCIAL RATE RATHER THAN THE RATE ON STUDENT LOANS.

The State legislature passed a model State medical scholarship act in 1943 which the General Assembly amended in 1971 (Chapter 4 of Title 23 of the Code of Virginia). This legislation provides for scholarships worth $1,500 each which are awarded to those medical students who declare their intent (upon completion of their education including up to three years as an intern or resident) to promptly pursue family practice medicine in an area of need (urban or rural) in Virginia. The Council looks favorably on the broadened eligibility policy of the amended 1971 act which also affords out-of-state students and interns the opportunity to be potential scholarship recipients. These scholarships are repaid by the recipient by a year of practice for each year he was a beneficiary of the student aid. If the student chooses not to practice in an area of need, he must reimburse the State for the total amount of the scholarship stipend plus interest computed at the prevailing rate charged on student loans at the school attended by the scholarship recipient.

In past years the medical scholarships were not fully utilized for various reasons. Now, however, there are applicants for all the scholarships due to the introduction of family practice into the medical school curriculum, increased interest in family practice and the change in attitude of the students.

We feel strongly that MCV and UVa should encourage the use of the State medical scholarships as a means of alleviating the shortage of family physicians. A survey of eighty scholarship recipients revealed that half had fulfilled the terms of their scholarship contract by practicing as family doctors

in areas of need. The remaining half had elected to repay the State the total scholarship stipend plus interest. In spite of this partial failure of the scholarship program to guarantee primary practitioners in areas of need, the Council believes that the yield from these scholarships has been reasonably high, and therefore, recommends that the number of scholarships be increased. This seems appropriate upon considering the number of applicants for support at MCV and UVa. We believe that each school should receive 40 scholarships each. Such a program would provide support for 10 medical students in each of the four years of medical study at each medical school. Any scholarship not utilized by October 1 of any year by either school should be made available to the other school. Under the existing legislation on State medical scholarships, the transfer of the funds between the schools would be difficult as the money for the scholarships is included in the budgets of each institution. The Legislature should provide a mechanism for the exchange of scholarships.

We also urge that the amount of each scholarship be raised from $1,500 to $2,500. Based on the cost of living study conducted at MCV and UVa, the $1,500 scholarship is an inadequate amount to offer a medical student. A $2,500 scholarship, however, is more realistic and would be more effective in attracting and supporting medical students today. The amount of the scholarships must be increased as the cost of attending UVa School of Medicine alone has risen about 3.5% per year since the scholarship program was initiated in 1943. The cost of books as well as room and board has also greatly increased since 1943 and probably at a rate much more than 3.5% per year. We suggest that the scholarships be tied to a cost of living index as a means of maintaining realistic support for medical students.

In order to attain its objective of alleviating the family physician shortage, the scholarship program must not be considered as a means by which to obtain easy loans for medical school tuition. Therefore, we urge that the rate of interest charged on scholarships not repaid by service be the prevailing commercial rate rather than the rate charged on student loans.

HIGH SCHOOL EDUCATION AND COLLEGE PRE-MEDICAL TRAINING

RECOMMENDATION: WE URGE THE STATE DEPARTMENT OF EDUCATION TO ENCOURAGE HIGH SCHOOL GUIDANCE COUNSELORS TO URGE CAPABLE HIGH SCHOOL STUDENTS TO ENTER THE STUDY OF MEDICINE. POTENTIAL CANDIDATES SHOULD PARTICULARLY BE INFORMED OF THE REWARDS OF FAMILY PRACTICE. HIGH SCHOOL GUIDANCE COUNSELORS SHOULD STRESS MEDICAL CAREERS DUE TO THE SMALL PERCENTAGE OF VIRGINIA'S RURAL HIGH SCHOOL GRADUATES WHO STUDY MEDICINE AND ALSO IN VIEW OF THE IMPROVED SCHOLARSHIP PROGRAM RECOMMENDED IN THIS REPORT.

The delivery of health care in Virginia could improve if the number of suitable State applicants would increase. Both State medical schools, however, are presently at a disadvantage since Virginia's educational system does not produce many qualified medical school applicants. Nationally, 95.4 medical school applicants are generated per million population while Virginia only produces 75.9 applicants per million population. Only 41.2 Virginians per million population actually enter medical school while the nation generates 47.9 entrants per million population.

The number of applicants produced in rural Virginia is far less than that from urban areas. The large urban areas (Roanoke, Richmond, suburban

Washington, et cetera) generate about 101.6 applicants per million population, whereas rural areas only produce about 37.5 applicants per million. This lack of rural candidates has an adverse effect on rural health care, as only 1.7 percent of the urban applicants establish rural family practices while at least 20 percent of the rural candidates enter rural family practices. More capable rural high school and college students should be encouraged to enter medicine.

The State, in general, could well afford to increase the number of medical school applicants, and we, therefore, recommend that high school counselors urge capable students to consider a medical career and particularly one in family practice.

ALTERING ADMISSIONS POLICIES OF MCV AND UVA

RECOMMENDATION: WE RECOMMEND THAT THE TWO STATE MEDICAL SCHOOLS ATTEMPT TO REACH AN ENROLLMENT OF AT LEAST 75 PERCENT VIRGINIANS AS SOON AS POSSIBLE. WE DO NOT RECOMMEND THAT A QUOTA ON RESIDENT AND NON-RESIDENT STUDENTS BE ESTABLISHED BY LAW.

Virginia must educate more family practitioners if the primary health care crisis is to be solved. The admissions policies of both medical schools were studied and we believe that the policies should be altered to admit more Virginians as a means of alleviating the shortage of physicians.

Contrary to the opinion of several witnesses at our hearings, there is no evidence that the AMA has ever urged medical schools to limit their class size. MCV and UVa are making exemplary progress toward increasing their enrollment, and this effort must continue. The projected enrollment for MCV in 1973 is 563 students and 461 students for UVa, which is an increase in their present enrollments of 39 and 72 students, respectively. This increase will be possible pending the expansion of the schools as well as the development of their affiliated programs. It is estimated that the expansion and utilization of these existing medical facilities, resources and professional personnel is the most efficient and economical method of increasing the number of physician graduates and trainees. But this will be far from meeting the needs. Virginia is going to need 400 doctors per year by 1975 and at the present rate the two medical schools plan to graduate only 256 doctors per year.

Enlarging the enrollment of MCV and UVa is only part of the solution toward increasing the number of family physicians in Virginia. Despite the fact that this State is one among 12 others which has two tax-supported state medical schools, there are only 19 states which have fewer practicing physicians per capita. Virginia has 21 percent fewer doctors than is average for the United States. The Council believes that the problem can be partially corrected by altering the admissions policies of MCV and UVa to increase the number of Virginia residents in the two medical schools.

A recent study of the graduates of MCV and UVa (see Appendix A) revealed that the possibility of an out-of-state applicant who graduates from one of our schools practicing in Virginia is between ten and twenty percent. Virginia residents, on the other hand, are more certain to establish their practices in the State. A sample of 1,375 UVa graduates for 1943-1964 indicated that 55 percent of the Virginia resident graudates remained in the State, whereas only 21 percent of the non-resident graduates stayed in Virginia. Three percent of the out-of-State graduates remained to practice in the rural areas of the State.

We realize that the supply of qualified applicants from Virginia is less than the United States average. Virginia generates 75.9 applicants per million population while the nation produces 95.4 candidates per million population. Of

these applicants, Virginia yields 41.2 medical school entrants per million population and the nation, 47.9 entrants.

West Virginia generates approximately the same number of medical school students as Virginia, yet the West Virginia state medical school (which utilizes a very restrictive admissions policy) is able to maintain a student body of which 80 percent are residents. North Carolina (which produces only 25 medical student entrants per million population) also has 80 percent residents in its medical school student body.

Figures on the percentage of out-of-State students accepted in other area medical schools in their 1970 entering classes are as follows: the University of South Carolina accepts 13.3 percent; University of Maryland, 5 percent; State University of New York Upstate Medical Center, 12 percent; and State University of New York at Buffalo, 17 percent.

Virginia's medical schools were studied in 1962-63 *(Physicians for Virginia, Part I,* Report of the State Council of Higher Education, Senate Document No. 15, 1964). That study exorted the medical schools to take more Virginia students (Recommendation B-2) in order to serve the needs of the people of Virginia. That recommendation has not thus far been implemented by the medical schools. In fact, both schools had increased the percentage of out-of State students in the student body over the last twenty years:

MCV			*UVa*	
Virginians	*Nonresidents*		*Virginians*	*Nonresidents*
80%	20%	*1950*	82%	18%
64%	36%	*1960*	65%	35%
65%	35%	*1970*	52%	48%

It is generally considered that the northeastern part of the United States is under-educating doctors for its own area. Of the total applicants accepted at UVa and MCV in 1970, UVa accepted 15% and MCV 12% New York and New Jersey residents.

Both schools are to be commended for the fact that this year UVa has accepted 65.8% and MCV 80.9% Virginia students in their entering classes.

The Council urges the two tax-supported State medical schools to respond to the health care needs of Virginians by attempting to reach an enrollment of 75 percent residents as soon as possible. If this recommendation is followed, then we believe that the number of practicing physicians will increase in Virginia. The number of family practitioners should, therefore, at least increase proportionally. In particular, the number of family practitioners in rural areas should increase if special attention is given to rural applicants. The MCAT scores of former rural candidates showed that these applicants were as well qualified for entrance to MCV and UVa as were the urban students. The study further indicated that 20 percent of the rural students return to practice in a rural Virginia area, whereas only 1.7 percent of the urban students practice in this area of need.

Over 3,000 applications to the University of Virginia and the Medical College of Virginia were studied, classifying them into point of origin, locality, in which part of the United States, if in Virginia whether rural or urban, written aptitude tests and others. This work was done at the University of Virginia and it is presumed that MCV would be somewhat similar.

One of several criteria for admission on which all medical schools rely to

some extent is MCAT scores. In the last year studied, 1969, at UVa it was found that Virginians had to have higher MCAT scores to be admitted to medical school than non-Virginians. (See Table 1 below). However, rejected non-Virginians had significantly higher scores than rejected Virginians. (See Table 2 below).

TABLE 1

MEAN MEDICAL COLLEGE ADMISSIONS TEST SCORES OF THOSE ACCEPTED AT THE MEDICAL COLLEGE OF VIRGINIA AND THE UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE.—1969

	Virginia Average	*Out of State Average*
Quantitative Ability		
University of Va.	625	613
MCV	588	—
Verbal Ability		
University of Va.	584	581
MCV	542	—
Premedical Science		
University of Va.	603	593
MCV	563	—
Current Events		
University of Va.	589	601
MCV	554	—

TABLE 2

MEAN MEDICAL COLLEGE ADMISSIONS TEST SCORES OF THOSE REJECTED AT THE MEDICAL COLLEGE OF VIRGINIA AND THE UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE.—1969

	Virginia Average	*Out-of-State Average*
Quantitative Ability		
University of Va.	539	571
MCV	532	—
Verbal Ability		
University of Va.	497	543
MCV	504	—
Premedical Science		
University of Va.	503	533
MCV	503	—
Current Events		
University of Va.	522	557
MCV	527	—

The new admissions policy is not intended to sacrifice the quality of education of MCV and UVa. The recommendation simply gives notice to the admissions committees of the two schools to make every effort to enroll Virginia applicants.

EASTERN VIRGINIA MEDICAL SCHOOL

RECOMMENDATION: WE ENCOURAGE THE GENERAL ASSEMBLY TO CONSIDER FAVORABLY THE DEVELOPMENT OF A NEW PRIVATE FOUR YEAR MEDICAL SCHOOL IN THE TIDEWATER AREA. SHOULD THE STATE LEGISLATURE APPROVE OF GIVING AID TO PRIVATE INSTITUTIONS AND SHOULD EVMS BE ESTABLISHED, IT IS RECOMMENDED THAT STATE FUNDS BE DIRECTLY APPROPRIATED TO EVMS ON A PER IN-STATE STUDENT BASIS ONLY AND THAT THESE FUNDS BE USED ONLY FOR EDUCATIONAL PURPOSES AND NOT FOR CAPITAL OUTLAY AND MAINTENANCE OF THE INSTITUTION. FURTHER, IT IS RECOMMENDED THAT THE MEDICAL SCHOLARSHIPS ALSO BE EXTENDED TO EVMS STUDENTS WHEN THE SCHOOL IS ESTABLISHED.

One-fourth of the State's population living in urban proximity in Eastern Virginia is not receiving what is equivalent to the minimal reasonable expectation for health care due to a shortage of physicians. In an effort to alleviate this situation, the Tidewater area is currently developing its own medical school. Dr. Mason C. Andrews appeared before the Committee to present the plans for the proposed EVMS. The school as projected will be able to have a graduating class of about 64 physicians a year beginning in 1976. It is anticipated that many of these doctors will be prepared as family physicians because the EVMS plans to emphasize the training of this type of physician. If created, the Norfolk based school can further alleviate the State's shortage of physicians by attracting practicing doctors who desire to work in an area that can provide post-graduate education. Economically, the State would benefit from EVMS as it will attract professionals to the area as jobs are generated by the institution. This economic consideration is in addition to the school's primary premise of eventually providing proper health care for more than one million area people.

We feel that our comments on the Norfolk school plans would be repetitious as they were considered by the State Council of Higher Education *(Physicians for Virginia, Part II,* House Document No. 12, 1964) for the Virginia General Assembly.

We would like, however, to commend the efforts of those in the Tidewater area who are participating in the establishment of this institution which has as a primary goal the creation of more primary physicians, including family practitioners. The family practice program being developed at the proposed medical school is to be praised as it could act as a potential future source of family practitioners. Therefore, the Council feels that the General Assembly should be encouraged to look with favor upon the development of a new medical school in the Tidewater area, and should provide financial support through appropriations based on a per in-State student basis only. Such appropriations should be earmarked for educational purposes only and should not be used for capital outlay and school maintenance. It is also recommended that State medical scholarships should be offered to EVMS students when the school is established. This would represent a minimal investment for the benefits to be accrued to the people of the Commonwealth.

PHYSICIAN REFERRAL SERVICE

RECOMMENDATION: WE URGE THAT THE VIRGINIA COUNCIL ON HEALTH AND MEDICAL CARE BE PROVIDED WITH AN OPPORTUNITY TO EXPOSE MEDICAL STUDENTS, HOUSE STAFFS, AND FACULTIES AT MCV AND UVA TO THE FULL RESOURCES OF THE PHYSICIAN REFERRAL SERVICE OF THE VIRGINIA COUNCIL.

A key to placing physicians in areas needing medical services is a good referral service. The Virginia Council on Health and Medical Care has founded an ideal referral service in Virginia which can be utilized at no charge. The service can be a vital resource to communities which are attempting to attract a physician. The major deficiency of the present service, however, is that it is not utilized to its potential. Both State medical schools are remiss in not requiring all of their seniors to attend meetings describing the opportunities for practice in Virginia. MCV and UVa are failing to acquaint their seniors and house staffs to the referral service. Further, the faculties of both medical schools appear to be uninformed of the resources of the referral service as few of them are believed to channel their requests from communities, hospitals and physicians in Virginia to the Council.

The Virginia Council sponsors a health careers recruitment program which is presented upon request to Virginia high school student bodies. The service was organized in 1958, and last year alone it was credited with exposing 85,000 high school students to 50 careers in the health profession. The response to the recruitment program has been considerable, and the Council feels strongly that these Virginia recruits should have full knowledge of the resources of the referral service upon their graduation. An intense effort, therefore, needs to be made by MCV, UVa, and the medical profession in the State to publicize this service. Giving Virginia trained physicians adequate exposure to the referral service might be one method of directing doctors to areas where they are needed in the State.

RURAL GROUP PRACTICE

RECOMMENDATION: WE RECOMMEND THAT THE TWO MEDICAL SCHOOLS DEVELOP PLANS FOR IDEAL RURAL GROUP PRACTICES, AND ASSIST PHYSICIANS AND COMMUNITIES IN SETTING UP THESE FACILITIES. BY WORKING IN A GROUP PRACTICE, THE THREE OR MORE DOCTORS OF THE GROUP COULD ALTERNATE BEING ON CALL THUS, BETTER CARE COULD BE PROVIDED, AND THE ISOLATION AND OVERWORK SO CHARACTERISTIC OF SOLO RURAL PRACTITIONERS COULD BE AVOIDED.

There must be a radical revision of the concept of the delivery of health care in rural Virginia areas if family physicians are to be attracted to these locations. Many rural physicians have abandoned their practices primarily due to overwork as well as lack of privacy, peace of mind and family life. The majority of those who were unable to tolerate rural practice had a solo practice. If group practices were introduced into rural areas, however, we believe that physicians would find these areas more agreeable. The Council is not encouraging the establishment of group practices because we favor them over solo practices, but because this seems to be one of the few viable solutions to the problem of rural isolation.

Today's transportation makes it no longer necessary to have individual practitioners scattered throughout the countryside. The physicians should,

however, group together in a clinic where they can provide care for a much wider area.

It will be necessary for the public to retool their thinking toward this new method of health care delivery. They must realize that when they go to the doctors' clinic, they might be attended by anyone in the group. They must also adapt to being seen by persons other than physicians for certain illnesses. More medical care will have to be done as out-patient care rather than in-patient care.

The physician just completing his training lacks the business knowledge and skills to manage the complexities of developing a group practice. To successfully launch such an effort requires the services of architects, financiers, record librarians, et cetera. Few young physicians possess expertise in all of these areas. We, therefore, urge MCV and UVa to consider methods of developing group practices and of further developing the expert techniques which are needed for creating such a practice.

PARAMEDICAL PERSONNEL

RECOMMENDATION: WE COMMEND THE MEDICAL SOCIETY OF VIRGINIA (MSV) AND THE VIRGINIA ACADEMY OF FAMILY PHYSICIANS (VAFP) FOR INITIATING STUDIES ON THE USE OF PARAMEDICAL PERSONNEL, AND WE RECOMMEND THAT THEY CONTINUE THESE EFFORTS.

Over 50 programs are being developed to train nurses, ex-Army medical aides, students with a two year college background, and others to function as physicians' assistants. It is believed that these people can help meet the demand for medical care by assuming many of the routine tasks which consume a large part of a physician's time. The assistants could, therefore, free a doctor to treat patients with more serious illnesses.

The Medical Society of Virginia and the Virginia Academy of Family Physicians recently initiated studies on the use of paramedical assistants. We urge them to continue with their efforts toward defining the limits of the duties of paramedical assistants and toward developing training programs for them. We feel that future public needs for health care will require the use of such personnel.

The Council believes that paramedical personnel might be a substantial part of the solution to our health care problem. Recent history showed us that a few years ago a majority of the nursing profession felt it was absolutely impossible to properly produce a competent nurse with a two year community college nursing education. The success of the associate degree nursing program in the community college in helping to solve the shortage of nurses should indicate how today's education can aid the medical profession.

FOREIGN PHYSICIANS

RECOMMENDATION: WE SUPPORT THE STATE BOARD OF MEDICAL EXAMINERS' PROCEDURE OF LICENSING PHYSICIANS, INCLUDING FOREIGN MEDICAL GRADUATES. OUR QUALITY OF MEDICAL CARE MUST NOT BE SACRIFICED BY THE LICENSING OF INFERIOR PRACTITIONERS AS A MEANS OF INCREASING OUR SUPPLY OF PHYSICIANS.

The Council gave serious consideration to the question of the licensing requirements for graduates of foreign medical schools who wish to practice

medicine in Virginia. It is readily acknowledged that a number of such graduates have rendered and are rendering outstanding service to people throughout the Commonwealth. Virginia is presently utilizing 782 foreign physicians *(1967 Medical School Alumni Special Statistical Series)* out of a total of 5,147 Virginia physicians *(Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1967).* Thus, foreign physicians in Virginia compose 15.19% of the practicing doctors in the State or one out of every seven physicians. Furthermore, of the doctors licensed by examination in Virginia in 1968, 1969 and 1970, 49% were foreign.

These foreign physicians are rendering the quality of medical care which is expected by the State for its citizens. It is our belief, therefore, that the program for testing and screening foreign physicians through the Educational Council for Foreign Medical Graduates (ECFMG) exams which are administered by the State Board of Medical Examiners is a sound one. We have no desire to interfere with this procedure.

At a public hearing the fact that there are 40 unlicensed foreign physicians living in the Spanish-American community in the greater Washington area was presented. Most of the physicians are refugees from Cuba, and all have failed their ECFMG exams. It was urged that, if trained and accredited, these foreign physicians could not only be utilized in alleviating the shortage of physicians in the Washington, D.C. vicinity, but they could also be relocated in the rural areas of the State with a minimum of effort.

After studying the feasibility of initiating a refresher training course for the Cuban physicians, it was concluded that it would be both expensive and risky. Many of the physicians are over 50 years of age and would only be able to practice for a short period should they become licensed. It is doubtful that they could pass the ECFMG exam as many of them have repeatedly failed the test by substantial margins. Further, establishing a refresher course would be risky as the educational background of the Cuban physicians cannot be verified. There is a refresher training course available for Spanish-American doctors in Miami, but the physicians have not taken advantage of it.

We concluded, therefore, that establishing a training course for the Spanish-American doctors would not prove to be an effective utilization of funds. We also believe that the singling out of any nationality or group for special treatment establishes a dangerous precedent which might eventually affect the quality of medical care rendered in the State. In our belief, no such exception should be made.

COOPERATION BETWEEN THE MEDICAL SCHOOLS

RECOMMENDATION: WE RECOGNIZE THAT THERE HAS NOT BEEN ENOUGH COOPERATION OR COORDINATION BETWEEN THE TWO MEDICAL SCHOOLS, AND WE STRONGLY URGE THAT THIS RELATIONSHIP BE IMPROVED. THE SCHOOLS HAVE BOTH ESTABLISHED MODEL FAMILY PRACTICE CLINICS OR SATELLITE TEACHING UNITS AND HAVE YET TO CONSIDER A PROVISION TO DIVIDE THE STATE BETWEEN THE TWO ESTABLISHED SCHOOLS AND THE TIDEWATER AREA MEDICAL SCHOOL WHEN IT IS ESTABLISHED.

WE RECOMMEND THAT THE ADMINISTRATORS OF MCV AND UVA MEET REGULARLY AND WORK CLOSELY TO IMPROVE THE HEALTH CARE OF ALL VIRGINIANS. SUCH A WORKING RELATIONSHIP IS A NECESSITY IF THE SCHOOLS ARE TO HAVE A STATEWIDE COORDINATED SYSTEM UNDER WHICH THE FAMILY PRACTICE RESIDENCY PROGRAMS CAN OPERATE.

Several factors influence the making of this recommendation: the crisis in the delivery of health care, particularly primary care, the expense of medical education and facilities, the establishment of family practice clinics and satellite teaching units in various areas of the State and the plans for development of the Eastern Virginia Medical School. Coordination and cooperation to a much greater degree than heretofore practiced by the schools will be necessary to prevent waste of assets and scarce resources and to best further the interests of the State and its citizens in delivery of health care. All areas of the State could benefit from the establishment of a clinic or teaching unit in the vicinity. Some clinics or teaching units could be operated more efficiently and conveniently in some areas by one school or the other. Thus the schools should plan and coordinate their efforts in these areas so that there may be the most efficient use of resources and the widest distribution of benefits.

RECORDS OF MEDICAL SCHOOL APPLICATIONS

RECOMMENDATION: WE RECOMMEND THAT FOR THE PURPOSES OF RESEARCH THE ADMISSIONS COMMITTEES OF BOTH MEDICAL SCHOOLS KEEP ONGOING RECORDS OF ALL APPLICANTS (ACCEPTED AND UNACCEPTED) WHICH WILL INCLUDE EACH APPLICANT'S NAME, PLACE OF ORIGIN, FATHER'S OCCUPATION, MCAT SCORES, AND WILLINGNESS TO PRACTICE IN VIRGINIA FOR A PERIOD EQUAL TO THE LENGTH OF MEDICAL SCHOOL TRAINING.

In attempting to obtain information on medical school applicants, both those accepted and those rejected, it was found that the information sought was either difficult to obtain or unavailable.

There will be, we are sure, future studies of community health problems judging by the number of studies which have been conducted and the growing concern over and critical nature of the problems. This information would be valuable to future studies and would be simple to obtain. The medical schools could easily ask these questions on the application form.

THE CONTINUING NATURE OF THIS EFFORT

RECOMMENDATION: DUE TO THE CRISIS IN FAMILY PRACTICE INVOLVING ALL CITIZENS OF THE COMMONWEALTH, WE RECOMMEND THAT THIS STUDY BE CONTINUED FOR A TWO-YEAR PERIOD TO KEEP ABREAST OF DEVELOPMENTS AND NEEDS IN THIS AREA.

The recommendations of this report are only beginning steps toward solving the problem of the delivery of primary health care to areas of need. Both the public and the medical profession are of necessity going to have to retool their thinking toward new methods of health care delivery.

It would be tragic if this report were filed in some archive and forgotten. An extensive study of this problem was done in 1964 (*Physicians for Virginia, Part I,* Report of the State Council of Higher Education, Senate Document No. 15, 1964) and resulted in pathetically little action toward a solution of the problems confronting us. It is essential that this inquiry not end with the submission of this report, but rather than an ongoing surveillance of this problem be developed to assure that productive programs which are correcting the health care crisis are adequately supported.

Respectfully submitted,

ROBERT C. FITZGERALD, *Chairman*

ARTHUR H. RICHARDSON, *Vice-Chairman*

M. CALDWELL BUTLER

RUSSELL M. CARNEAL

C. W. CLEATON

EDWARD E. LANE

LEWIS A. McMURRAN, JR.

WILLARD J. MOODY

GARNETT S. MOORE

SAM E. POPE

JAMES M. THOMSON*

JAMES C. TURK

EDWARD E. WILLEY

Henry E. Howell, Jr., was inaugurated as Lieutenant Governor December 4, 1971 and vacated his Senate seat. Accordingly, he did not sign this report.

* ADDITIONAL STATEMENT OF JAMES M. THOMSON

What has been said by the report relative to the needs of a medical school in Tidewater Virginia apply with equal force to Northern Virginia because of its larger population. At an appropriate time this matter will be raised by representatives from the Northern Virginia area.

APPENDIX A

SURVEY OF MCV AND UVa GRADUATES AND APPLICANTS

SUMMARY

Frequently used abbreviations;

MCV =Medical College of Virginia, now part of Virginia Commonwealth University

UVA =the University of Virginia

MCAT—Medical College Admission Test

This reports a survey of all applicants to the state's two medical schools for the year 1969, and all the graduates for three classes, 1960, 1961, and 1962. Most of these classes presumably have completed postgraduate training and military service, and are settled in practice by this time. In addition, the report surveys all graduates from the University of Virginia from 1943 to 1964.

Many of the questions in the report concern the "rural" origin of students. In this report, "rural" is defined solely by population density. The state is divided up into 10 "deciles," each containing 13 political subdivisions arranged by population density. These 10 deciles, named A to J, go from the 13 most rural (low population density) subdivisions in the state of Virginia, "A," to the 13 most urban (highest population density) subdivisions, "J".

1. ORIGINS (RURAL OR URBAN) OF APPLICANTS ACCEPTED AND REJECTED AT MCV AND UVA.

Applicants to the UVa are not evenly distributed throughout the various population density deciles. The large urban areas generate far more individuals who apply to medical school than the rest of the state. The densest decile (J) had twice as many applicants as is expected. Percentages of acceptances in decile J are actually less than in other areas, but the end result is that the urban areas have a disproportionate number of acceptances. No evidence that either of the schools discriminate against applicants from rural areas is found. The boy from a rural area has about a 50% chance of acceptance if he applies, while the urban boy has only a 33% chance.

2. THE NUMBER OF QUALIFIED APPLICANTS FROM RURAL VIRGINIA NOT ACCEPTED AT UVA OR MCV.

The answer hinges on the word "qualified." The MCAT scores of rural Virginians rejected from the two schools are no different than the national average. Presumably, many of these students are unqualified, and would have difficulty getting through medical school. It is conceivable that some of them would graduate, and become practitioners.

3. THE MEDICAL COLLEGE ADMISSION TEST SCORES OF APPLICANTS ACCEPTED AND REJECTED AT MCV AND UVA.

In order to enter MCV, the average accepted student has an MCAT score of the premedical science section 14 points less than the average accepted student in the United States. To enter UVa, a student must have a score which is 36 points higher than the national average of accepted candidates. The average Virginia candidate rejected at both MCV and UVa has a score 8 points higher

than the average rejected candidate. The average out-of-state candidate rejected by UVa has a score 38 points above the national average of rejected applicants. Thus, the two schools seem to have approximately the same admission standards as other American medical schools.

4. THE NUMBER OF OUT-OF-STATE AND VIRGINIA APPLICANTS TO MCV AND UVA AND THE NUMBER OF OUT-OF-STATE AND VIRGINIA APPLICANTS ACCEPTED.

Over the past five years, MCV has offered 47% of all Virginia applicants who do not withdraw during application process a place at their medical school. UVa offers 39.3% of Virginians places. Of the MCV classes, 66% are Virginians, and of the UVa classes, 54% are natives. MCV offered 12% of out-of-state applicants who completed the admission process an opportunity to attend their medical school, while the figure at UVa was 11.9%. Over the past 5 years, the percentage of out-of-state students MCV has averaged 33.9%, and at UVa has averaged 45.7%.

5. THE PERCENTAGE OF OUT-OF-STATE STUDENTS ACCEPTED IN THE MEDICAL SCHOOLS OF NEIGHBORING STATES.

In several surrounding states, the state universities have very restrictive admissions policies, notably the University of North Carolina and the University of West Virginia, which take approximately 80% of their student bodies from their respective states. Virginia generates 41.2 accepted candidates to medical school per million population per year based on the years 1966-1969. West Virginia is about the same as Virginia, but North Carolina generates only 26. Maryland generates 59.6, and Washington, D.C., 75.5. These compare with the national figure of 47.9 acceptances per million population. Excellent education and high economic status of families in the large urban areas surrounding Washington and Baltimore explain the higher rates in Maryland. An excess of Virginia's successful applicants come from the large urban area near Washington and the areas around Richmond and Norfolk. States which are predominantly rural, like North Carolina, with no large urban areas obviously have few applicants and few acceptances.

6. THE PERCENTAGE OF STUDENTS ACCEPTED AT MCV AND UVA WHOSE FATHERS ARE DOCTORS.

The percentage is quite high considering the small numbers of doctors and the population. In the class of '69, the MCV had 18 students whose fathers were physicians practicing in Virginia, while the UVa had 10. Survey of the MCAT scores of physician's sons compared to other applicants at both MCV and UVa revealed no significant differences in scores. This it would appear that physician's sons are admitted under the same criteria as other candidates. Although the two schools accepted a total of 28 physician's sons in the class applying in 1969, they also rejected 45 physician's sons who were not qualified.

7. THE FATE OF VIRGINIA APPLICANTS NOT ACCEPTED AT MCV OR UVA MEDICAL SCHOOLS.

About a third of Virginians rejected by the UVa find places in other medical schools. The sample of UVa applicants rejected from 1960-1963 who later received a medical degree revealed 33 found places at MCV, 20 at other U.S. medical schools, and two at foreign schools. Of those 55, only nine are in general practice, and only two are in general practice in rural areas. Of the 16 rejectees from rural areas who did obtain M.D.'s, only 1 has entered general practice. A complete survey from MCV was not done, but probably would reveal similar results. Most of the 209 Virginia residents rejected by UVa who were unable to find a place at any medical school were very serious academic risks. It is likely that many of them would have failed in medical school.

8. WHERE OUT-OF-STATE STUDENTS ARE NOW PRACTICING AND TYPE OF PRACTICE.

Of 171 graduates of the two schools from 1960 to 1962 who were out-of-state residents, only 12.2% are now practicing in Virginia, and only 3.3% of these in rural areas. In a larger sample of 1375 UVa graduates for 1943-1964, a total of 21.3% of graduates coming from out of state stayed in Virginia, but only 3.4% of these in the seven most rural deciles.

9. WHERE VIRGINIA STUDENTS ARE NOW PRACTICING AND TYPE OF PRACTICE.

Of all living graduates of MCV, 41.2% are practicing in Virginia, while for UVa, 35.6% are practicing in Virginia.

10. THE PERCENTAGE OF GRADUATES OF UVA AND MCV WHO ARE GENERAL PRACTITIONERS, THE PERCENTAGE WHO ARE SPECIALISTS, AND THE PERCENTAGE WHO ARE RESEARCHERS.

Of all living graduates of the MCV, 29.1% are general practitioners, and of the UVa, 15.9% are general practitioners. Less than 1% of the graduates of both schools are in research, the remainder are specialists.

11. THE NUMBER OF GRADUATES OF MCV AND UVA WHO ARE ENGAGED IN GENERAL PRACTICE, INTERNAL MEDICINE AND PEDIATRICS IN VIRGINIA.

The exact answer is unknown, but for MCV graduates 29% are general practitioners, 13.6% internists, and 5.4% pediatricians; while the figures for UVa are 15.9%, 18.8%, and 7.3%.

12. THE NUMBER OF DOCTORS IN PRIVATE PRACTICE IN VIRGINIA WHO DID THEIR RESIDENCY IN VIRGINIA.

Exact figures are not available. This is a very important factor in deciding where a physician will settle. The failure of the state of Virginia to get its adequate share of funds for postgraduate training of physicians from the federal government compounds the state's difficulty. In fiscal years 1966 and 1967, the average state received $194 in federal funds per capita for postgraduate training of health workers. Virginia received only $0.95 per capita. In the same period in training grants, the average U. S. medical school received $10,137 per graduating student in training grants. The state of Massachusetts received $21,231 per graduating student, but Virginia received $5,260. Thus, the state is at a considerable disadvantage in attracting physicians for postgraduate training, and other states that are more richly endowed by the federal government can attract physicians from Virginia.

13. THE PLACE OF PRACTICE, TYPE OF PRACTICE, RURAL OR URBAN ORIGIN, MEDICAL SCHOOL ATTENDED AND PLACE OF RESIDENCY OF DOCTORS PRACTICING IN VIRGINIA.

From the extensive data available, it is apparent that only about one in five rural boys will return to a rural area to practice. The rest migrate to urban areas, and become specialists. For graduates for the two schools from urban areas and from out of state, less than 5% will ever practice in a rural area in Virginia. The vast majority remain in urban areas.

14. THE CORRELATION BETWEEN RURAL OR URBAN ORIGIN AND THE PLACE AND TYPE OF PRACTICE.

The chance of producing general practitioners is certainly greater in selecting a boy from a rural area. Four out of five boys from a rural area,

however, become specialists and/or migrate to urban areas. The chance of producing a practitioner for the most rural counties from a young man of urban origin is very low, probably less than 1 of 30.

15. THE NUMBER OF STUDENTS USING RURAL SCHOLARSHIPS TODAY COMPARED WITH THE NUMBER IN PRIOR YEARS.

A survey was done of beneficiaries of rural scholarships only at the UVa. From 1944 to 1967, an average of 3.79 students per class accepted rural scholarships, and received an average of 2.5 years of support. About one-half of the students buy their way out of their commitment for rural medicine. Of those who do become general practitioners in rural areas, only one-third remain in rural areas, one-third migrate to do general practice in urban areas, and one-third become specialists. Of those who buy their way out, about three out of four become specialists.

16. THE COST OF ATTENDING MEDICAL SCHOOL WHEN THE SCHOLARSHIP PROGRAM WAS INITIATED COMPARED WITH THE COST TODAY.

The cost of attending medical school has risen about 3.5% per year since 1943, which is probably less than the rate at which other prices have risen. The cost of attending the University of Virginia when the rural scholarship program began in 1943 was $424 per year for tuition and fees, and is at present $785 for tuition and fees.

17. THE COST OF INCREASING THE AMOUNT OF THE RURAL SCHOLARSHIP TO $3500.

This would probably run in the vicinity of $20,000 for each of the two schools.

18. THE COST OF INCREASING THE NUMBER OF RURAL SCHOLARSHIPS (AT $3500).

The cost of increasing the number or rural scholarships would depend on the number created. The real question is whether students would accept them in preference to loans which do not commit them to practice in rural areas.

19. THE COST OF PROVIDING A $2000 PER YEAR SCHOLARSHIP TO ANY MCV OR UVA STUDENT TO BE REPAID BY A YEAR OF SERVICE IN VIRGINIA FOR EACH YEAR OF THE SCHOLARSHIP.

The program would be extremely popular if the time could be served in urban areas or in residencies in Virginia hospitals. If it involves becoming a general practitioner in rural areas, the program would probably have few applicants, and might not be fully subscribed.

20. THE FUTURE ENROLLMENT PLANS OF MCV AND UVA.

By 1973, the Medical College of Virginia will have an enrollment of 563, and the University of Virginia 461.

METHODS

In order to answer the questions of the Virginia Advisory Legislative Council, we have coded the records of Medical College of Virginia and University of Virginia applicants and graduates. The answers are based on the following samples:

1. All 265 MCV and 176 UVa graduates in the period 1960-1962.
2. All 311 applicants to MCV and all 269 applicants to UVa who were residents of the state of Virginia for the year 1969.
3. All 857 out-of-state applicants to UVa for the year 1969. Since large numbers of out-of-state applications are received, and the labor of coding is very large, data on out-of-state applicants for the Medical College of Virginia was not done. However, it is safe to assume that the out-of-state applicants from the two schools were quite similar.
4. Finally, 1375 graduates of the University of Virginia from 1943-1964.

The total number of individual records surveyed and summarized was 3077.

It is important to realize that analysis of recent graduating classes of the two schools is difficult, if not impossible, since so many of the graduates are in military service or still in training. Thus, it would be impossible to determine where these young men will eventually settle. The 1960-1962 classes are probably the most recent that have completed both their military service and post graduate training. Therefore, these classes were selected.

Some of the information displayed in the charts may be unfamiliar to the layman. The Medical College Admissions Test has four parts. Since it is given to every student applying to medical schools, it is a relatively uniform test, and free of some of the fluctuations which characterize college grades from various institutions. The scores on the test are manipulated in such a way that the average applicant would have a score of 500, and that the score has a standard deviation of 100. Thus, if one knows the scores and the tables for the area under the normal curve, one can readily predict the exact percentile on which the student stands. A score of 700 would mean that the student was exceeded by only 2½% of the population of applicants, and that 97½% of applicants did worse. (In some tables, the scores are given as 50.7 rather than 507, etc.)

The four parts of the test are quantitative ability, verbal ability, premedical science, and current events. The scores for quantitative ability and premedical science are thought to be better determinates of scientific ability. Verbal ability may be very important in assessing the abilities of candidates from smaller colleges and rural areas.

In analyzing the data, occasionally statistical tests were used to determine if differences existed. The tests used were chi square and Student's t-test which are described in any standard statistical text.

DEFINITION OF RURAL

Several of the questions by the Advisory Council concern the distribution of applicants and students from "rural" areas, but the Council does not define "rural." For this study, "rural" is defined in the following fashion. The state of Virginia consists of 130 political subdivisions. Of these, 96 are counties (from Accomack to York) and the rest are cities (from Alexandria to Winchester). For each subdivision, the population in the 1970 census is divided by the number of square miles, and the 130 subdivisions arranged by population density. The lowest population density is in Highland County (6.08 persons per square mile), and the highest is in the city of Alexandria (7,395.87 persons per square mile). The 130 political subdivisions in Virginia are arranged according to the increasing population density, and the state is split into ten deciles of 13 subdivisions named A through J. The thirteen subdivisions of the state with the lowest population density are decile A, which includes Highland, Bath, Craig, Bland, and so on, up to New Kent County (25/sq mi). The next decile, B, begins with Nelson County and goes through Appomattox County, and so on through the entire state until we come to the last decile, J, which begins with the city of Fairfax and ends with the city of Alexandria. The deciles are listed in the appendix.

This is an arbitrary way of classing the state into rural versus urban. For instance, the city of Bristol with a population density of 3,714 is in the highest decile even though it is a relatively isolated city in a rural part of Virginia. In the absence of a better definition, we have used this method.

The population density by deciles can be well summarized in a table. Decile A, which is the least populated area, has a total area of 4,931 square miles and the total population of the 13 counties in this group is 85,923. The mean density for this decile is 17 persons per square mile. As can be seen, the deciles gradually ascend in population.

VIRGINIA'S POPULATION DENSITY BY DECILES

DECILE	AREA (SQUARE MILES)	1970 POPULATION	PERSONS PER SQ. MILE
A	4931	85923	17
B	5461	147002	26
C	5749	195774	34
D	5600	245471	43
E	5914	298940	50
F	5607	369120	65
G	4433	502127	113
H	1857	1325786	713
I	110	321716	2924
J	178	1115445	6266

Decile H deserves some comment. It consists of several densely populated suburban counties with close proximities to cities, such as Prince William County and Fairfax County. Decile I consists of several of the state's smaller cities, such as Staunton and Williamsburg, while decile J is composed of all the state's large cities including Fairfax, Falls Church, Richmond, Arlington, Alexandria, etc.

130 VIRGINIA COUNTIES IN DECILES BASED ON POPULATION DENSITY

RANK	COUNTY NO.	COUNTY NAME	POPULATION DENSITY
DECILE A			
1	45	HIGHLAND	6.07933
2	9	BATH	9.61481
3	23	CRAIG	10.4881
4	11	BLAND	14.6965
5	46	K AND QUEEN	17.2673
6	15	BUCKINGHAM	18.3976
7	76	RAPPAHANNOCK	19.4719
8	4	AMELIA	20.7432
9	88	SURRY	21.0071
10	25	CUMBERLAND	21.4549
11	89	SUSSEX	23.1129
12	20	CHARLOTTE	24.7345
13	63	NEW KENT	25
DECILE B			
14	52	NELSON	25.0043
15	31	FLOYD	25.5222
16	17	CAROLINE	25.5974
17	55	LUNENBURG	26.3815
18	56	MADISON	26.4159
19	50	KING WILLIAM	26.9676
20	32	FLUVANNA	27.0248
21	54	LOUISA	27.2451
22	79	ROCKBRIDGE	27.5447
23	13	BRUNSWICK	27.9309
24	3	ALLEGHANY	27.9395
25	28	ESSEX	28.396
26	6	APPOMATTOX	28.5243
DECILE C			
27	71	POWHATAN	28.7164
28	77	RICHMOND	30.4219
29	85	SOUTHAMPTON	30.6129
30	40	GREENSVILLE	31.907
31	69	PATRICK	32.5842
32	12	BOTETOURT	33.1989
33	19	CHARLES CITY	33.4674
34	39	GREENE	34.3007
35	38	GRAYSON	34.3089
36	10	BEDFORD	34.7117
37	37	GOOCHLAND	34.8408
38	33	FRANKLIN	37.4067
39	41	HALIFAX	37.595

VIRGINIA DECILES (CONT.)

RANK	COUNTY NO.	COUNTY NAME	POPULATION DENSITY
DECILE D			
40	67	ORANGE	38.9605
41	30	FAUQUIER	39.9621
42	86	SPOTSYLVANIA	40.1565
43	72	PRINCE ED	40.2773
44	8	AUGUSTA	44.8479
45	83	SHENANDOAH	45.073
46	49	KING GEORGE	45.1629
47	82	SCOTT	45.2245
48	65	N'UMBERLAND	46.195
49	66	NOTTOWAY	46.2987
50	22	CLARKE	46.5632
51	18	CARROLL	46.7449
52	52	LEE	46.8226
DECILE E			
53	24	CULPEPPER	46.8329
54	58	MECKLENBURG	47.0064
55	35	GILES	47.0253
56	59	MIDDLESEX	47.6894
57	26	DICKENSON	47.991
58	95	WYTHE	48.1283
59	27	DINWIDDIE	49.4004
60	81	RUSSELL	50.793
61	2	ALBEMARLE	51.1231
62	93	WESTMORELAND	51.4492
63	68	PAGE	52.4715
64	80	ROCKINGHAM	55.1728
65	5	AMHERST	55.8287
DECILE F			
66	46	ISL OF WIGHT	57.3197
67	70	PITTSYLVANIA	58.0919
68	1	ACCOMACK	61.7106
69	36	GLOUCESTER	62.4844
70	14	BUCHANAN	63.1319
71	64	NORTHAMPTON	63.9027
72	51	LANCASTER	64.2676
73	34	FREDERICK	66.7275
74	91	WARREN	69.8676
75	92	WASHINGTON	70.5268
76	53	LOUDOUN	71.8569
77	84	SMYTH	72.0667
78	90	TAZEWELL	76.2759

VIRGINIA DECILES (CONT.)

RANK	COUNTY NO.	COUNTY NAME	POPULATION DENSITY
DECILE G			
79	42	HANOVER	79.7833
80	57	MATHEWS	82.3903
81	16	CAMPBELL	82.6698
82	94	WISE	87.4623
83	61	NANSEMOND	87.4776
84	75	PULASKI	90.4098
85	87	STAFFORD	90.7269
86	73	PRINCE GEO	103.53
87	60	MONTGOMERY	119.385
88	47	JAMES CITY	120.628
89	44	HENRY	132.555
90	21	CHESTERFIELD	167.076
91	78	ROANOKE	243.101
DECILE H			
92	101	CHESAPEAKE	260.407
93	96	YORK	269.943
94	74	PRINCE WM	322.035
95	43	HENRICO	665.362
96	127	VA. BEACH	674.925
97	29	FAIRFAX	1140.4
98	118	NORTON	1333.67
99	116	NEWPORT NEWS	1842.36
100	103	COLONIAL HTS	1887.12
101	115	MARTINSVILLE	1965.3
102	110	GALAX	2092.67
103	111	HAMPTON	2118.93
104	99	BUENA VISTA	2141.67
DECILE I			
105	121	RADFORD	2319.2
106	114	LYNCHBURG	2351.43
107	128	WAYNESBORO	2366.71
108	109	FRED'BURG	2408.33
109	104	COVINGTON	2515
110	125	STAUNTON	2722.67
111	102	CLIFTON F'GE	2750.5
112	129	WILLIAMSBURG	3023
113	105	DANVILLE	3313.64
114	113	HOPEWELL	3353
115	108	FRANKLIN	3440
116	124	S. BOSTON	3444.5
117	123	ROANOKE CITY	3542.88

VIRGINIA DECILES (CONT.)

RANK	COUNTY NO.	COUNTY NAME	POPULATION DENSITY
DECILE J			
118	106	FAIRFAX	3661.67
119	98	BRISTOL	3714.25
120	119	PETERSBURG	4512.87
121	112	HARRISONBURG	4868.33
122	130	WINCHESTER	4881
123	126	SUFFOLK	4929
124	107	FALLS CHURCH	5386
125	117	NORFOLK	6159.02
126	120	PORTSMOUTH	6164.61
127	100	CHAR'VILLE	6480
128	122	RICHMOND	6746.51
129	7	ARLINGTON	7261.83
130	97	ALEXANDRIA	7395.87

1. THE ORIGINS (RURAL OR URBAN) OF APPLICANTS ACCEPTED AND REJECTED AT MCV AND UVA

The numbers of applicants by deciles are shown in the following table.

VIRGINIA APPLICANTS

By Population Density
1969

	MCV			UVA		
Decile	Total	Accepted	Rejecteu	Total	Accepted	Rejected
A	9	4	5	8	6	2
B	7	1	6	4	3	1
C	6	3	3	3	1	2
D	6	3	3	4	1	3
E	13	6	7	8	5	3
F	11	4	7	7	3	4
G	16	5	11	11	6	5
H	64	26	38	42	17	25
I	32	17	15	36	11	25
J	144	55	89	141	40	101
TOTAL	308	124	184	264	93	171

Are all parts of the state equally represented? It would be fair to expect applicants and accepted students to be evenly distributed throughout the state by population density. Using chi square as a test, the observed and expected numbers of applicants and acceptances were calculated. The results indicate the distributions are uneven. (See tables at end.)

The reason is apparent in looking at these tables. At MCV decile J, the most dense decile consisting of large cities like Fairfax, Richmond, etc., generated 55 acceptances (30 expected on a population basis). The area also had an excess of rejections—89 (44.5 expected). UVa accepted 40 from decile J (22 expected), and rejected 101 (41.4 expected). It would appear that the large urban areas simply produce far more qualified applicants—there are more professional people, better schools, more money and more chance to go to college in these large urban areas.

Are rural areas discriminated against? At MCV the five most rural deciles (A-E) had 17 acceptances (26 expected on the basis of population) and 24 rejections (38.8 expected). UVa had 16 acceptances (13.6 expected) and 11 rejections (36.12 expected). Thus the rural areas had 33 acceptances and 35 rejections, while the most urban decile has 45 acceptances and 190 rejected.

If the rural boy applies, he has about a 50% chance of entry, while the urban boy has only a 33% chance of entry. The rural areas simply do not generate as many applicants. (See questions 8 and 9 for more information on rural vs urban origin of graduates.)

***** ACCEPTED VA. APPLICANTS—MCV

OBSERVATIONS AND TOTALS:

	O	E	T
A	4	2.31251	6.31251
B	1	3.95638	4.95638
C	3	5.26902	8.26902
D	3	6.60655	9.60655
E	6	8.04561	14.0456
F	4	9.93442	13.9344
G	5	13.5141	18.5141
H	26	35.6819	61.6819
I	17	8.6586	25.6586
J	55	30.0208	85.0208
T	124	124.	248.

O-Observed
E-Expected
T-Total

CHI SQUARE = 22.5022 WITH 9 D.F.

P = 0.00807

***** REJECTED VA. APPLICANTS—MCV

OBSERVATIONS AND TOTALS:

	O	E	T
A	5	3.43147	8.43147
B	6	5.87076	11.8708
C	3	7.81855	10.8185
D	3	9.80327	12.8033
E	7	11.9386	18.9386
F	7	14.7414	21.7414
G	11	20.0532	31.0532
H	38	52.9474	90.9474
I	15	12.8482	27.8482
J	89	44.5471	133.547
T	184	184.	368.

O-Observed
E-Expected
T-Total

CHI SQUARE = 30.1577 WITH 9 D.F.

P = 0.0007

***** ACCEPTED VA. APPLICANTS—U. VA.

OBSERVATIONS AND TOTALS:

	O	E	T
A	6	1.73439	7.73439
B	3	2.96729	5.96729
C	1	3.95176	4.95176
D	1	4.95492	5.95492
E	5	6.03421	11.0342
F	3	7.45081	10.4508
G	6	10.1356	16.1356
H	17	26.7614	43.7614
I	11	6.49395	17.494
J	40	22.5156	62.5156
T	93	92.9999	186.

O-Observed
E-Expected
T-Total (O,E)

CHI SQUARE = 18.0194 WITH 9 D.F.

P = 0.03573

***** REJECTED VA. APPLICANTS—U. VA.

OBSERVATIONS AND TOTALS:

	O	E	T
A	2	3.18903	5.18903
B	1	5.45598	6.45598
C	2	7.26615	9.26615
D	3	9.11065	12.1106
E	3	11.0952	14.0952
F	4	13.6999	17.6999
G	5	18.6364	23.6364
H	25	49.2065	74.2065
I	25	11.9405	36.9405
J	101	41.3997	142.4
T	171	171.	342.

O-Observed
E-Expected
T-Total

CHI SQUARE = 64.7147 WITH 9 D.F.

P = 0

2. THE NUMBER OF QUALIFIED APPLICANTS FROM RURAL VIRGINIA NOT ACCEPTED AT MCV OR UVA.

This is a difficult question since it involves interpretation of the word "qualified." The question can be better answered with question 7 concerning the fate of Virginia applicants not accepted at MCV or UVa.

The ultimate answer to the question can only be relative. Obviously many of these applicants from rural Virginia would like to go to medical school. Some of the ones who had very poor academic records would undoubtedly fail in medical school. A few of them would probably graduate from medical school, and might become practicing physicians. As illustrated in question 3, rejectees from both MCV and UVa have much lower MCAT scores than accepted students, and have approximately the same MCAT scores as average students rejected from other American medical schools. For example, for quantitative ability, the average Virginia applicant rejected by MCV had a score of 531, the average Virginia applicant rejected by UVa had a score of 540, and the average American rejected by all American schools had a score of 526. See question 7.

The question of a prejudice against rural applicants should be investigated. Using the figures of question 3, one can calculate the numbers of applicants expected from various rural deciles. For example, in 1969 decile A, the most rural, produced six applicants who were accepted at UVa. Based on the population of the decile 1.73 acceptances would be expected.

The acceptances and rejections for various deciles are not evenly distributed by population at UVa and MCV. Deciles H and I, which contain most of Virginia's suburbia, generated about twice as many applicants and acceptances as did other parts of the state. This is probably related to the affluence and ease of access to higher education of the more fortunate Virginians living in these areas.

3. THE MEDICAL COLLEGE ADMISSION TEST SCORES OF APPLICANTS ACCEPTED AND REJECTED AT MCV AND UVA.

The answer to this question involves a large amount of data, which is given at the end with breakdowns by the decile from which the student came. It can best be summarized in the following table which gives the scores for one test, premedical science, for the two schools.

Premedical Science Scores

		Virginia Applicants 1969	Out of State 1969	All Graduates 1960-62
MCV	Accepted	563	——	466
	Rejected	503	——	——
UVa	Accepted	603	593	509
	Rejected	503	533	——
USA	Accepted	577		
	Rejected	495		

Both MCV and UVa will reject a few candidates who have better scores than the national average, and will accept a few candidates probably slightly better than the national average. For out-of-state applicants to the University of Virginia, students are rejected who, on the average, run 30 points above the average for rejected state applicants. A similar statement would probably be true for MCV.

In summary, the two schools seem to have the same criteria for admitting medical students as most American medical schools.

THE GRAND MEAN MCAT SCORES OF ACCEPTED AND REJECTED APPLICANTS TO MCV AND THE MEAN MCAT SCORES BY POPULATION DENSITY

TOTAL - GRAND MEAN

ACCEPTED VIRGINIA APPLICANTS TO MCV MEDICAL SCHOOL

DECILE	# ACC	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	4	56.75	.000	57.50	.000	56.50	.000	60.50	.000
B	1	60.00	.000	56.00	.000	60.00	.000	53.00	.000
C	3	49.33	.000	57.67	.000	54.00	.000	57.33	.000
D	3	56.67	.000	65.00	.000	59.33	.000	59.67	.000
E	6	55.33	7.146	47.50	4.764	54.50	7.450	45.50	6.156
F	4	58.25	.000	52.75	.000	55.50	.000	55.25	.000
G	5	58.80	8.075	50.00	9.849	55.40	5.595	48.00	5.958
H	26	60.38	7.414	58.73	7.667	55.50	5.286	58.27	6.422
I	17	58.82	6.136	52.47	7.977	57.00	5.937	54.06	7.567
J	55	59.22	7.470	52.82	7.180	54.64	7.166	55.53	7.023
TOTAL	124	58.80	7.35	54.23	7.88	56.33	6.58	55.43	7.53

REJECTED VIRGINIA APPLICANTS TO MCV MEDICAL SCHOOL

DECILE	# REJ	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	5	56.40	5.941	49.80	9.257	54.00	6.205	54.80	2.168
B	6	35.33	13.171	50.00	6.343	47.17	8.035	53.67	4.967
C	3	49.33	.000	54.33	.000	52.67	.000	58.67	.000
D	3	53.00	.000	43.00	.000	51.67	.000	47.00	.000
E	7	45.57	7.020	50.29	9.604	45.57	9.108	51.00	10.328
F	7	51.14	9.263	45.00	10.440	47.86	7.841	50.57	7.976
G	11	53.64	6.757	48.91	9.214	51.82	7.757	48.45	5.905
H	38	53.00	7.986	52.82	8.898	50.53	3.226	55.63	7.416
I	15	53.40	7.453	49.60	6.490	51.87	5.630	49.87	8.659
J	89	53.67	9.100	50.26	8.752	8.183	8.183	52.60	7.797
TOTAL	164	53.15	8.64	50.42	8.72	50.33	7.86	52.72	7.83

3. APPLICANTS HAD ONE OR MORE MCAT SCORES OF ZERO AND WERE REJECTED

** A STANDARD DEVIATION OF 0 MEANS THE CALCULATION WAS NOT PERFORMED

THE GRAND MEAN MCAT SCORES OF ACCEPTED AND REJECTED APPLICANTS TO U.VA. AND THE MEAN MCAT SCORES BY POPULATION DENSITY

TOTAL - GRAND MEAN

ACCEPTED VA. APPLICANTS TO U.VA. MEDICAL SCHOOL

DECILE	# ACC	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	6	63.17	6.014	61.67	6.252	60.50	3.866	60.33	6.213
B	3	62.00	.000	56.33	.000	56.67	.000	57.33	.000
C	1	62.00	.000	62,00	.000	59.00	.000	67.00	.000
D	1	60.00	.000	66.00	.000	65.00	.000	65.00	.000
E	5	56.60	6.269	51.60	3.444	757.80	7.662	49.20	10.000
F	3	62.33	.000	52.33	.000	56.00	.000	51.67	.000
G	6	62.00	8.854	56.17	8.110	57.00	4.472	53.00	11.063
H	17	63.18	9.085	59.65	7.762	60.53	5.245	60.33	5.363
I	11	61.36	4.751	56.35	7.904	60.00	5.310	56.91	6.833
J	40	63.47	6.123	59.36	7.482	59.68	5.366	60.88	7.339
TOTAL	93	62.55	6.94	58.39	7.56	60.33	5.38	58.90	7.31

REJECTED VA. APPLICANTS TO U. VA. MEDICAL SCHOOL

DECILE	# REJ	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	2	59.50	.000	48.50	.000	51.50	.000	59.50	.000
B	1	61.00	.000	41.00	.000	49.00	.000	46.00	.000
C	2	42.50	.000	42.50	.000	43.00	.000	49.00	.000
D	3	51.00	.000	55.33	.000	54.33	.000	54.33	.000
E	3	57.00	.000	47.67	.000	51.67	.000	43.67	.000
F	4	49.00	.000	47,75	.000	49.75	.000	55.00	.000
G	5	54.80	3.701	48.00	8.093	50.40	1.342	47.60	3.286
H	25	56.56	7.714	52.64	7.566	53.24	10.026	53.76	6.037
I	25	51.76	7.933	48.32	7.614	49.68	8.640	50.76	7.694
J	101	54.08	8.429	49.63	7.713	50.03	7.297	52.31	7.272
TOTAL	171	53.97	8.31	49.73	7.94	50.33	7.85	52.20	7.12

5. APPLICANTS HAD ONE OR MORE MCAT SCORES OF ZERO AND WERE REJECTED

** A STANDARD DEVIATION OF 0 MEANS THE CALCULATION WAS NOT PERFORMED

THE GRAND MEAN MCAT SCORES OF ACCEPTED AND REJECTED OUT OF STATE APPLICANTS TO U. VA. AND THE MEAN MCAT SCORES BY GROUP

TOTAL - GRAND MEAN

ACCEPTED OUT OF STATE APPLICANTS TO U. VA. MED. SCHOOL 1969

PLACE	# ACC	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	38	60.68	7.022	58.66	5.929	58.34	6.077	60.18	7.417
B	12	62.25	6.137	55.83	8.310	59.83	4.387	59.67	7.924
C	3	63.00	.000	58.67	.000	61.67	.000	65.67	.000
D	3	64.33	.000	60.33	.000	56.33	.000	55.67	.000
E	0	.00	.000	.00	.000	.00	.000	.00	.000
TOTAL	56	61.34	6.63	58.14	6.37	59.33	6.02	60.13	7.24

REJECTED OUT OF STATE APPLICANTS TO U. VA. MED. SCHOOL 1969

PLACE	# REJ	QUAN	ABL/S.D.	VERB	ABL/S.D.	P.M.	SCI/S.D.	CUR	EVEN/S.D.
A	548	57.35	8.432	35.11	8.036	53.90	7.857	56.53	7.797
B	129	56.37	7.715	52.50	8.449	52.26	7.565	53.64	7.382
C	57	58.26	8.230	53.40	8.623	53.74	6.383	55.40	8.538
D	47	55.94	8.593	52.64	7.870	52.43	7.893	53.06	7.075
E	5	48.40	9.711	43.40	13.939	46.40	11.718	46.20	10.474
TOTAL	786	57.11	8.35	54.33	8.28	53.33	7.178	55.70	7.74

15. APPLICANTS HAD ONE OR MORE MCAT SCORES OF ZERO AND WERE REJECTED

** A STANDARD DEVIATION OF 0 MEANS THE CALCULATION WAS NOT PERFORMED

LEGEND:
A = URBAN NORTH
B = URBAN SOUTH
C = RURAL NORTH
D = RURAL SOUTH
E = IN MILITARY SERVICE

4. THE NUMBER OF OUT-OF-STATE AND VIRGINIA APPLICANTS TO MCV AND UVA, AND THE NUMBER OF OUT-OF-STATE AND VIRGINIA APPLICANTS ACCEPTED.

The following four tables summarize the numbers of applicants by residence to the Medical College of Virginia and the University of Virginia for the past five years (1966-1970).

The total applications are somewhat deceptive. Those candidates who withdraw before action invariably do so because a place is available at another medical school. Likewise, many Virginians who are offered a place at our medical schools decide to go elsewhere.

Both schools keep records of total number of applications received. This does not necessarily mean that the application is complete or that the individual who applied is eligible to enter medical school. Frequently, students apply who have never taken courses required for entrance, such as physics or organic chemistry. If these students are rejected, they are counted as a rejected applicant. Therefore, the number of students rejected include both students who are qualified to enter medical school and who have completed all the requirements, and some unqualified students. The exact figures on the number of students who are rejected and who are unqualified for admission are unknown, but probably amount to at least 15% of the total rejected.

The tables are self explanatory. At the University of Virginia, an out-of-state applicant has about an 11.9% chance of being admitted, while an in-state applicant has a 54.3% chance of being admitted.

All medical schools compete avidly for the better candidates, and a Virginian who has an excellent academic record can pick and choose among the various schools. Students of this type are likely to be offered a place at both the University of Virginia and the Medical College of Virginia, and often attend Harvard, Yale, or another school of their choice. Conversely, the student from Virginia with a very poor academic record will probably not be offered a place at either the University of Virginia or the Medical College of Virginia. The medical schools have no control over applicants from Virginia, and it is important to realize that many students probably make their decisions to leave Virginia and pursue a medical career elsewhere long before they enter either of the state's two medical schools.

VIRGINIA COMMONWEALTH UNIVERSITY

NUMBERS OF APPLICANTS - VIRGINIA RESIDENTS

Year	Total Applications	Withdrew Before Action	Applied Did Not Withdraw	Offered A Place	Enrolled	% of Applicants Offered Places *	% of Class From Virginia
1970	324	43	281	136	97	48.4	71.3
1969	318	31	287	122	93	42.5	68.4
1968	254	19	235	119	78	50.6	60.9
1967	260	21	239	116	82	48.5	64.1
1966	234	13	221	104	73	47.1	65.2
5 Year Total	1390	127	1263	597	423	47.3	66.1

* This percentage is derived by dividing the number of applicants offered a place by the number of applicants who did not withdraw before they were notified of action taken multiplied by 100.

VIRGINIA COMMONWEALTH UNIVERSITY

NUMBERS OF APPLICANTS - OUT-OF-STATE RESIDENTS

Year	Total Applicants	Withdrew Before Action	Applied, Did Not Withdraw	Offered A Place	Enrolled	% of Applicants Offered Places*
1970	1179	155	1024	93	39	9.1
1969	1185	156	1029	96	43	9.3
1968	936	138	798	105	50	13.2
1967	730	117	613	110	46	17.9
1966	636	78	558	80	39	14.3
5 Year Total	4666	644	4022	484	217	12.0

* This percentage is derived by dividing the number of applicants offered a place by the number of applicants who did not withdraw before they were notified of action taken multiplied by 100.

UNIVERSITY OF VIRGINIA

NUMBERS OF APPLICANTS - VIRGINIA RESIDENTS

Year	Total Applications	Withdrew Before Action	Applied, Did Not Withdraw	Offered A Place	Enrolled	% of Applicants Offered Places *	% of Class From Virginia
1970	291	30	261	108	51	41.4	55.4
1969	319	51	268	96	46	35.8	54.1
1968	241	25	216	92	44	42.6	52.4
1967	263	30	233	94	46	40.3	56.8
1966	227	37	190	69	41	36.3	52.6
5 Year Total	1341	173	1168	459	228	39.3	54.3

* This percentage is derived by dividing the number of applicants offered a place by the number of applicants who did not withdraw before they were notified of action taken multiplied by 100.

UNIVERSITY OF VIRGINIA

NUMBERS OF APPLICANTS - OUT-OF-STATE RESIDENTS

Year	Total Applicants	Withdrew Before Action	Applied, Did Not Withdraw	Offered A Place	Enrolled	% of Applicants Offered Places *
1970	1114	169	945	96	41	10.2
1969	989	126	863	86	39	10.0
1968	790	95	695	98	40	14.1
1967	673	111	562	81	35	14.4
1966	785	109	676	84	37	12.4
5 Year Total	4351	610	3741	445	192	11.9

* This percentage is derived by dividing the number of applicants who were offered places by the number of applicants who did not withdraw before they were notified of action taken multiplied by 100.

5. THE PERCENTAGE OF OUT-OF-STATE STUDENTS ACCEPTED IN THE MEDICAL SCHOOLS IN NEIGHBORING STATES

This is a difficult question to answer since one can only rely on the catalogs of these schools, or information obtained directly from the schools. No information could be obtained from Howard University in Washington. Of the other Washington medical schools, Georgetown has an enrollment of 462, of which 33 are Virginians, and George Washington has an enrollment of 431, of which 18 are Virginians. I could not obtain enrollment figures for the University of Maryland or for Johns Hopkins.

In West Virginia, the total enrollment in the state medical school is 232, of whom 188 are from West Virginia. Of these, 33 come from the District of Columbia, and none come from Virginia.

For the University of Tennessee, no information is available. Meharry Medical College is in Tennessee, and has an enrollment of 268. Of these, 24 are from Virginia.

In North Carolina, no information is available from the Bowman Grey School of Medicine at Wake Forest. Duke University has an enrollment of 348, of whom 21 are from Virginia and 51 from North Carolina. The University of North Carolina at Chapel Hill has an enrollment of 287. Of these, 231 are North Carolinians, and only 4 are from Virginia.

One gets a better feeling for Virginia's situation by comparing the number of applicants generated in the state, and the number of Virginians accepted in any medical school. Table I summarizes these figures for 1966-1969, and calculates rates per million population, so that figures for Virginia, the entire USA and neighboring states can be compared.

VIRGINIA APPLICANTS 1966-1969

Rates of Application and Acceptances Compared to the Entire U. S. A.

Area	Population in Millions 1968	Year	Total Applicants	Applicants per Million Population	Total Accepted	Accepted per Million Population	% Accepted
U.S.A.	197.863	1966-7	17811	90.0	8958	45.3	50.3
		1967-8	18239	92.2	9542	48.2	52.3
		1968-9	20572	104.0	9954	50.3	48.4
			56622	95.4	28454	47.9	50.3
Virginia	4.541	1966-7	346	76.2	186	41.0	53.8
		1967-8	362	79.7	202	44.5	55.8
		1968-9	326	71.7	174	38.3	53.4
			1034	75.9	562	41.2	54.4

From: Mattson DE, Johnson DG, and Sedlacek WE: The study of applicants, 1966-67. J Med Educ 43:1-13, 1968.

Jarecky RK, Johnson DG, and Mattson DE: The study of applicants, 1967-68. J Med Educ 43:1215-1228, 1968.

Stritter FT, Hutton JG, Dube WF: Study of U.S. medical school applicants, 1968-69. J Med Educ 45:195-209, 1970.

As is apparent, Virginia is immediately in difficulty since it generates only 75.9 applicants per million population while the rest of the United States generates 95.4 applicants per million population. Only 41.2 Virginians per million population enter medical school, while for the nation the figure is 47.9. Thus, one would have to conclude that young Virginians going to college are less likely to apply to medical school and less likely to enter medical school. Since producing physicians is dependent on obtaining a good supply of applicants, both medical schools are at a disadvantage since the state of Virginia's educational systems do not produce as many qualified college students.

Having applied to medical school, a young Virginian has a better chance of entry than the rest of the country. 54.4% of all Virginia applicants were admitted to medical school as opposed to the national average of 50.3.

Of the 1,034 applicants generated in the period 1966-1969, 731 applied to the University of Virginia and 748 to the Medical College of Virginia. Presumably, many of these were duplicate applications, and one would have to conclude that something less than 300 Virginians who wanted to attend medical school may not have even applied to either of the state's two medical schools.

Of Virginians who applied to medical schools, 562 actually entered medical school. By examining the tables in question 4, one can determine that the University of Virginia accepted 131 Virginians and the Medical College of Virginia accepted 233. Thus, the two state schools admitted 364 applicants from Virginia while 198 of Virginians decided to attend medical school in other states. Thus, 35.1% of those physicians who were able to obtain entry into medical school from 1966-69 had left the state even before they began medical school. At the University of Virginia, 124 state residents were offered places, and elected to go elsewhere, and at MCV 106 Virginians were offered places. and elected to go elsewhere. Again, some of these were duplicate offers, and something less than 54 Virginians must have obtained entry to medical school without even applying to either of the state's two medical schools. During this three-year period, 472 Virginians wished to attend medical school, and were rejected by both out-of-state schools and the state's own schools.

It is very important to realize that the supply of qualified applicants from Virginia is smaller than in the rest of the United States and, further, that many well-qualified Virginians elected to leave Virginia and pursue their medical education elsewhere. These two factors certainly contribute to the problems of obtaining physicians in Virginia.

How Virginia fares compared to other states is shown in table II. North Carolina fares the worst of any state in the region, while Maryland and D.C. fare the best. This is probably because of the large numbers of applicants from the affluent Washington-Baltimore suburbs.

VIRGINIA APPLICANTS 1966-1969

Rates of Application and Acceptances Compared to Surrounding States

Area	Population in Millions 1968	Applicants per Million Population	Accepted per Million Population	% Accepted
Virginia	4.541	75.9	41.2	54.4
N. Carolina	5.059	54.4	26.0	47.9
Tennessee	3.936	85.0	51.7	60.8
W. Virginia	1.807	69.9	41.0	58.6
Maryland	3.680	103.0	59.6	57.9
Washington DC	0.808	190.6	75.5	39.6
U.S.A.	197.863	95.4	47.9	50.3

6. THE PERCENTAGE OF STUDENTS ACCEPTED AT MCV AND UVA WHOSE FATHERS ARE DOCTORS

In the class of 1969, the Medical College of Virginia had 18 students whose fathers were physicians practicing in Virginia, and the University of Virginia had 10. In addition, the University of Virginia accepted 12 out-of-state applicants whose fathers were physicians. (Figures not available for MCV) Although the percentage of students whose fathers were physicians is rather high, this is not particularly surprising since one of the main motivations to enter medical school is an exposure to medicine.

A more pertinent question would be whether the physician's sons are given any preference. The Medical College Admissions Test of doctor's sons compared to the rest of the group accepted at both MCV and UVa are in no way different, which would indicate that neither school gives any preference to sons of physicians. They must demonstrate the same competence that any other candidate would.

APPLICANTS TO MCV AND UVA IN 1969

Virginia Residents Who Were Sons of Doctors

	MCV					UVA				
	Number	Quan. Ability	Verbal Ability	Premed. Science	Current Events	Number	Quan. Ability	Verbal Ability	Premed. Science	Current Events
ACCEPTED										
Total	124	588	542	563	554	93	626	584	603	589
Doctor's son	18	576	558	519	546	10	629	571	591	597
REJECTED										
Total	184	531	504	503	527	171	539	497	502	522
Doctor's son	17	525	509	501	544	26	519	513	490	527

OUT-OF-STATE APPLICANTS TO UVA 1969

Accepted and Rejected for Doctor's Sons

ACCEPTED	Number	Quantitative Ability	Verbal Ability	Premedical Science	Current Events
All out-of-state applicants	56	613	581	593	601
Out-of-state father a doctor	12	613	563	588	585
REJECTED					
All out-of-state applicants	786	571	543	533	557
Out-of-state father a doctor	106	575	547	535	559

7. THE FATE OF VIRGINIA APPLICANTS NOT ACCEPTED AT UVA

This question presents some difficulties since the records of any applicants rejected by UVa who subsequently pursued a successful medical career would be at another medical school. The survey was conducted as follows:

Methods. All records of applicants from the Fall of 1960 to the Fall of 1963 were surveyed. For Virginia residents who were rejected, residence and MCAT scores were recorded. An attempt was made to identify this individual in the latest *American Medical Association Directory.* (The Bureau of Health Manpower of the USPHS has heavily supported this directory, and it is the most accurate and complete roster of physicians available.) If the individual was found, his address, type of practice, and specialty boards were recorded. This method would not detect Virginians who entered medical school and failed. Extending the survey to applicants after 1963 is futile, since many would still be in school and not in the *Directory.* The UVA does not have records of applicants rejected before 1960. The only way to obtain a more accurate survey would be a direct query to U.S., Canadian, and foreign medical schools.

Results. The four-year sample contains 596 applications of Virginia residents which are summarized in Table I. Of these 506, 332 (55.8%) were offered places at the University of Virginia Medical School. Of this group of offers, 174 enrolled at the University of Virginia Medical School (52.5% of those offered places or 29.2% of the applicants).

Table I.

REJECTED VIRGINIANS

Fall, 1960 - Fall, 1963

			ADMISSIONS		
RESIDENCE	Total Applicants	Rejected	Offer	Rejected Offer	Enrolled
Virginia	596	264	332	158	174
Out of State	2064	1816	248	148	100

The 158 Virginians who rejected offers of admission represent an interesting subgroup about which the committee has asked no questions. Presumably some attended MCV, but many left the state to study elsewhere. Had they already decided to practice elsewhere? How many returned to Virginia?

Of the 596 applications received from Virginians, 264 applicants were not offered places at the University of Virginia Medical School. Of these, 93 either had failed to complete the academic requirements for entrance to medical school or failed to take the Medical College Admission Test.

A total of 171 applicants who were academically qualified, did complete an application and did complete the Medical College Admission Test, received letters of rejection from the University of Virginia. Thus, of the 513 students with satisfactory credentials, only about a third were not offered places at the UVA.

Of the 171 rejected applicants, 55 were admitted to other medical schools and graduated. It is likely that a few others were admitted but failed. The test

scores for these individuals were very low, and it is likely that if accepted, many would fail.

Table II

FATE OF REJECTED VIRGINIANS

Total Rejected		264
Ineligible, failed to complete application, etc.	83	
Failed to take Medical College Admissions Test	10	
Completed application, eligible, and rejected	171	
Never graduated from other schools	116	
Graduated from other schools	55	
Medical College of Virginia	33	
Other U.S. Schools	20	
Foreign schools	2	

Of 55 students admitted to medical school, 33 attended MCV. Eleven attended medical school in adjacent states (three at Bowman-Grey, two at Duke, two at George Washington, and one each at Howard, Meharry, Tennessee and Maryland). Nine attended school elsewhere in the USA (none had more than one rejectee), and two attended school in Canada. Thus, of the total of 509 in-state applicants to the University of Virginia, it would appear that 387 definitely entered medical school, and that probably close to 400 were in medical school at one time or another.

MCAT scores at the time of application. Table III displays the MCAT scores of rejected applicants. Since it is difficult to compare grades at various schools, and since the MCAT is a highly standardized and uniform test, this was selected as a yardstick.

Table III

MCAT SCORES OF REJECTED VIRGINIANS

Group	Number	Quantitative Ability	Premedical Science
Students admitted to UVA	274	533	522
Rejected at UVA			
Graduated from MCV	33	160	452
Graduated from other schools	22	490	465
Never graduated from medical school	116	430	420

Present location. Students rejected by UVA who graduated from other schools are located as shown in Table IV.

Table IV

LOCATION OF STUDENTS REJECTED BY UVA

Location	MCV Grads	Other Grads	Total
Virginia	10	1	11
Adjacent states	1	12	13
Other	9	2	11
Military service	13	7	20
TOTAL	33	22	55

Practice. Of 55 rejected students who eventually received an MD, 54 had completed their internship. Their current status is summarized in Table V.

Table V

STATUS OF STUDENTS REJECTED BY UVA

	MCV Grads	Other Grads	Total
In internship	1	0	1
In general practice	6	3	9
In specialty training	10	6	16
Full-time hospital employees	13	9	22
Medical school teachers	2	0	2
Administration	1	2	3
Research	1	1	2
TOTAL	33	22	55

Twenty graduates are still in military service, and most are listed as "full-time hospital employees." Some of these may enter general practice.

Of the nine now in general practice, only two are practicing in Virginia, both in urban areas. Two, one educated at MCV and one at Northwestern, practice in rural towns elsewhere in the U.S.: one in Wisconsin and one in Oklahoma.

Rejectees of rural origins. Sixteen of the 55 rejectees obtaining an M.D. came from rural areas. Eight are still in military service, seven are training as specialists, and one is in general practice in Biloxi, Mississippi. The percentage of rural candidates rejected is slightly less than the percentage of rural candidates accepted.

Table VI

VIRGINIANS REJECTED BY UVA

Size	Origin		
Example	Large Urban Areas Richmond, Norfolk	Small Towns Front Royal	Rural Big Stone Gap
Graduated from MCV	25	2	6
Graduated from other schools	16	2	4
Never graduated	85	15	16
TOTAL	126	19	26
%	73.7	11.1	15.2

8. WHERE OUT-OF-STATE STUDENTS ARE NOW PRACTICING AND TYPE OF PRACTICE

By location, UVa and MCV, in the classes of 1960-62, graduated 171 out-of-state students (MCV=101, UVa=70). The locations of these graduates is about the same.

Graduated 1960-62, location 1969		%
Total	171	
In military service, out-of-state	150	87.7
In three urban deciles H-J	17	9.9
In seven rural deciles A-G	4	2.3

A survey of 1375 UVa graduates from 1943-1964 reveals that 13 of 379 (3.4%) out-of-state graduates settled in the seven most rural deciles, and 68 (17.9%) settled in the three most urban deciles.

Of these 171 out-of-state graduates, 61 are GP's (45 from MCV, 16 from UVa). Thirteen of these are in Virginia (9 from MCV, 4 from UVa). The rest are mainly specialists or in specialty training.

Thus, the chance of an out-of-state applicant remaining in Virginia is somewhere between 10 to 20%. (Data are at end of questions 9 and 13.)

9. WHERE VIRGINIA STUDENTS ARE NOW PRACTICING AND TYPE OF PRACTICE

Appendix 6 of *Medical Alumni, 1967* gives a partial answer for all living alumni of the two schools.

	MCV		UVA	
	Number	%	Number	%
Total graduates	3491	100	2571	100
Practicing in Virginia	1439	41.2	914	35.6
Contiguous state	861	24.7	480	18.7
Noncontiguous state	1191	34.1	1177	45.8

A survey of 1960-62 graduates of the two schools reveals 49 graduates from the five most rural deciles. Of these, 8 (16.3%) had settled in the very rural areas. A total of 94 graduates came from the seven most rural deciles, and 21 (22.3%) had settled in a similar rural area. A survey of 1375 UVa graduates from 1943-64 showed 33 of 179 (18.4%) from the seven most rural deciles returned to comparable rural areas. Thus, somewhere around 1 in 5 rural boys return to the country to practice.

The MCV in the 1960-62 classes produced 62 Virginians who became GP's, and 45 (72.6%) stayed in our state. The UVa produced 45, of whom 28 (62.2%) stayed in the Old Dominion.

How often do boys from urban areas go to practice in rural areas? Of the 176 graduates in the 1960-62 classes of MCV and UVa, only 3 (1.7%) went to the five most rural deciles, and only 10 (5.7%) went to the seven rural deciles. Of the 1375 UVa graduates from 1943-64, 5.3% of those from urban Virginia went to the seven rural deciles.

For out-of-state graduates in 1960-62, the numbers of general practitioners produced were:

School	Out-of-State Graduates	Became GP's	Settled in Virginia	Settled Out-of-State
MCV	101	45	4	36
UVa	70	16	4	12
Total	171	61	8	48

Only four of these eight general practitioners staying in Virginia settled in the seven rural deciles.

Summary of migration from origin at application to eventual practice location showing to and from individual deciles and to and from out-of-state areas are appended below. Detailed charts for individual deciles follow this.

265 MEDICAL COLLEGE OF VIRGINIA GRADUATES 1960-1962

		Residence at Entry	Residence Now
Total Virginians		164	109
Deciles	Density		
A	lowest	4	0
B		5	0
C		9	3
D		8	6
E		4	1
F		18	6
G		12	6
H		11	13
I		19	13
J	highest	74	61
Out-of-state		101	156
Urban north		21	51
Urban south		34	42
Rural north		7	6
Rural south		36	12
Military service		3	45

176 UNIVERSITY OF VIRGINIA GRADUATES 1960-1962

		Residence at Entry	Residence Now
Total Virginians		106	57
Deciles	Density		
A	lowest	1	1
B		2	0
C		1	1
D		11	3
E		4	1
F		4	2
G		11	5
H		2	7
I		23	10
J	highest	47	27
Out-of-state		70	119
Urban north		48	51
Urban south		14	31
Rural north		4	1
Rural south		3	3
Military service		1	33

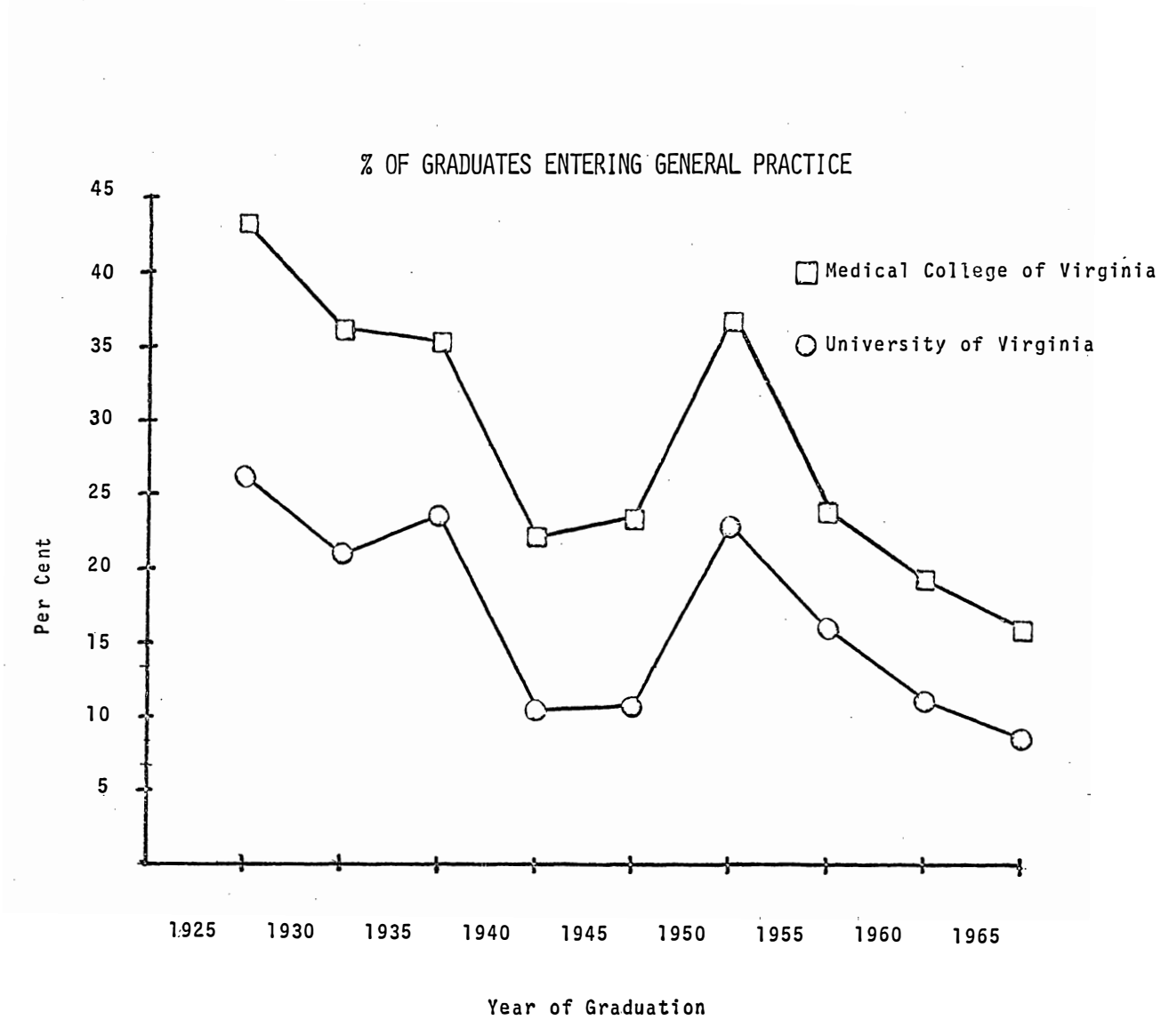
10. THE PERCENTAGE OF GRADUATES OF UVA AND MCV WHO ARE GENERAL PRACTITIONERS, THE PERCENTAGE WHO ARE SPECIALISTS, AND THE PERCENTAGE WHO ARE RESEARCHERS

The answer is obtained from *Medical School Alumni, 1967*, The American Medical Association, Chicago, 1968, pp 109-110.

The percentage of graduates entering general practice produced at both schools has steadily declined over the past two decades (see graph).

	MCV	%	UVA	%
Total graduates living	3491		2571	
General practice	1017	29.1	409	15.9
Specialists*	2113	60.5	1889	73.5
Research	31	0.9	17	0.7

* Specialist is any practitioner in a specialty recognized by the AMA. 29 MCV and 24 UVa graduates list themselves as specialists in fields not recognized by the AMA.


% OF GRADUATES ENTERING GENERAL PRACTICE
Medical College of Virginia
University of Virginia
Per Cent
45
40
35
30
25
20
15
10
5
1925
1930
1935
1940
1945
1950
1955
1960
1965
Year of Graduation

11. NUMBER OF GRADUATES OF MCV AND UVA WHO ARE ENGAGED IN GENERAL PRACTICE, INTERNAL MEDICINE AND PEDIATRICS IN VIRGINIA

Medical Alumni, 1967 gives the number of graduates from UVa and MCV who are in these various specialties, but does not break down the totals into those who are practicing in Virginia versus out-of-state. Likewise, it gives the numbers of general practitioners, internists, and pediatricians in Virginia, but does not tell which were graduates of the state's two medical schools and which were graduates of out-of-state schools. The data is as follows:

TYPES OF PRACTICE

Location of practice	Anywhere				Virginia	
Graduate of	MCV		UVa		Any School	
	Number	%	Number	%	Number	%
Total graduates	3491	29.1	2571	15.9	5224	23.2
General practice	1017	13.6	490	18.8	1211	14.6
Internal medicine*	475	5.4	483	7.31	764	6.68
Pediatrics*	190		188		349	
Total graduates practicing in Virginia	1439	41.2	914	35.5		
% of total physicians in Virginia	27.5		17.5			

*Internal medicine and pediatrics do not include such subspecialties as dermatology, neurology, pediatric, cardiology, etc.

(From *Medical Alumni, 1967*)

The number of MCV graduates who are general practitioners *in Virginia* is not available. Since MCV has 3491 living graduates, of whom 41.2% practice in Virginia, and since 29.1% of MCV graduates are general practitioners, an *estimate* is 418. For UVa, an *estimate* is 144. A detailed survey of all physicians registered in the state would be required to obtain the exact number.

12. THE NUMBER OF DOCTORS IN PRIVATE PRACTICE IN VIRGINIA WHO DID THEIR RESIDENCY IN VIRGINIA

In order to answer this question, it would be necessary to query every physician in Virginia. Even for graduates of MCV and UVa, the information is not available since the schools do not have complete records of residency training of their graduates. This information could be obtained from the Virginia Board of Medical Examiners if they would open their records.

My own opinion is that performing postgraduate training in the state is one of the strongest attractions to remaining in practice here. Next in order of importance are attending medical school here, attending undergraduate schools here and, least important, being a resident of the state. A fear expressed by laymen is that faculty in medical schools discourage students from entering general practice or from staying in the state. It is very apparent from the admissions figures in question 4 that many qualified Virginians are offered places in the state's two medical schools, but then elect to go to medical school elsewhere. Presumably, many of these end up doing their postgraduate training elsewhere. These young men may already have made a decision to leave Virginia, and practice elsewhere even before entering medical school. If the faculties of medical schools should encourage our students to practice in rural areas, it would seem even more important that undergraduate faculties in state schools likewise encourage able Virginians to remain in the state.

Much of the funding for postgraduate training of physicians is through the federal government in the form of training grants to medical schools, and Virginia fares very poorly in obtaining such awards. For fiscal year 1966-67, expenditures per capita for health projects were:

Health Expenditures - F.Y. 1966 and 1967

	$ per capita federal health expenditures	$ return in health grants per $ income tax spent on health
U.S. average	$ 9.41	$1.00
Massachusetts	20.96	2.00
New York	11.93	0.95
Pennsylvania	10.43	1.12
D.C.	34.87	2.79
Maryland	15.36	1.22
Virginia	5.44	0.67
West Virginia	5.14	0.92

A breakdown of how this money was divided is:

F.Y. 1966 & 1967	United States	Virginia
Total grants per capita	$9.41	$5.44
Research	3.76	1.50
Construction of health facilities	2.70	2.33
Formula grants to state health departments	0.32	0.32
Projects to develop new health services	0.69	0.34
For training health workers	1.94	0.95

The fact that Virginia fails to get its fair share of money for new health projects and for training puts us in a poor competitive situation in getting new

doctors into Virginia. For training alone, the District of Columbia gets $8.12 per capita; Massachusetts gets $5.37; Maryland gets $3.88; New York gets $2.69; Pennsylvania gets $2.05; and we get 95 cents. Our 34¢ per capita for projects is small compared to Pennsylvania's $0.94, D.C.'s $4.23 (Colorado gets $1.40, and Missouri, which is almost exactly the same size as Virginia, gets $1.33).

Perhaps the most devastating consequence of the maldistribution of federal funds is that it gives the states which get a lot of federal money a license to steal doctors from states which don't get federal funds.

Table III shows the number of doctors per 100,000 people, and the amount of HEW training grant money per medical student. Research grants are used to pay faculty salaries, and the research grants per medical student are given.

Table III

State	Doctors in 1967 per 100,000 pop. in 1960	Training Grants per Medical Student	Research Grants per Medical Student
U. S. average		$10,137	$19,638
Massachusetts	208	21,233	47,295
New York	234	10,376	25,848
Pennsylvania	149	8,222	15,716
D.C.	388	4,913	10,160
Maryland	193	13,716	25,638
Virginia	127	5,262	8,277
West Virginia	93	5,424	7,715

The results again are obvious. Virginia gets about half as much as the average U.S. state per medical student in federal support, while Massachusetts got four times as much as Virginia per doctor educated. Research funds are used to hire professors who educate medical students, and Virginia gets one-third the national average, while Massachusetts gets six times as much as we do.

The conclusion seems obvious. The federal government spends four times as much in stimulating postgraduate medical education in Massachusetts as it does in Virginia. The figures are based on Public Health Service Grants and Awards, Fiscal Year 1967. Part 5 Summary. U.S. Government Printing Office.

Since the federal government favors support of training programs in more urban states, and Virginia fares quite poorly in obtaining these funds, it is difficult for the state to retain its brighter graduates, or attract graduates from other areas to training programs in the state of Virginia. The failure of the state of Virginia to obtain its fair per capita share of monies available to support development and training of health personnel should be of some concern to the Council.

13. THE PLACE OF PRACTICE, TYPE OF PRACTICE, RURAL OR URBAN ORIGIN, MEDICAL SCHOOL ATTENDED, AND PLACE OF RESIDENCY OF DOCTORS PRACTICING IN VIRGINIA.

This is a difficult question to answer since we do not have complete information on graduates of other United States medical schools and foreign schools who are practicing in Virginia. This type of information would have to be obtained from the State Board of Medical Examiners. It is important to remember that about one out of seven doctors practicing in Virginia is foreign trained. Some discussion of this problem is in the paper "Physician Supply in Rural Virginia."

For graduates of the two schools for 1960-62, the chances of ending in given locations are

	Practicing in Most Rural Deciles (A-E)
From most rural areas (A-E)	16.3%
From intermediate areas (F-G)	6.6%
From urban Virginia (H-J)	1.7%
From out of state	1.1%

Extensive tables of movements from residence at entry to medical school to present location are attached. They all clearly indicate that urban Virginians and graduates from out of state rarely practice in sparsely populated rural areas, and that *most* (80%) rural graduates migrate to urban areas.

ORIGIN AND PRESENT LOCATION OF 176 UVA GRADUATES 1960-1962

		Present Location			
	Origin	Most Rural	Intermediate	Most Urban	Out of State
A-E	Most Rural	3	2	8	6
F-G	Intermediate	0	1	7	7
H-J	Most Urban	2	3	23	44
	Out of State	1	1	6	62

ORIGIN AND PRESENT LOCATION OF 265 MCV GRADUATES 1960-1962

		Present Location			
	Origin	Most Rural	Intermediate	Most Urban	Out of State
A-E	Most Rural	5	1	9	15
F-G	Intermediate	3	6	13	8
H-J	Most Urban	1	4	54	45
	Out of State	1	1	11	88

ORIGIN AND PRESENT LOCATION OF 1375 UVA GRADUATES 1943-1964

Origin	Present Location: Most Rural	Intermediate	Most Urban	Out of State
Most Rural	33	13	62	71
Intermediate	5	16	40	44
Most Urban	16	18	280	317
Out of State	8	5	68	379

14. THE CORRELATION BETWEEN RURAL OR URBAN ORIGIN AND PLACE OR TYPE OF PRACTICE

This information for graduates from the state's two medical schools is summarized in the following table. Information for students graduating from medical schools outside of the state of Virginia who are now practicing in this state is not available.

The migration of students between individual deciles can be clearly seen on these tables. The chance of a boy who originated in the three most urban deciles of practicing in a rural area is about one in fifty. The chance of a rural boy returning to a rural area to practice is about one in five.

It is a mistake to think that all rural boys return to rural areas to do rural general practice. About four-fifths of them end up in urban areas.

MEDICAL COLLEGE OF VIRGINIA GRADUATES 1960-1962

ORIGIN AND PRESENT LOCATION OF 265 MCV GRADUATES 1960-1962

PRESENT LOCATION

ORIGIN

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0
B	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4
C	0	0	1	0	0	0	0	0	1	3	1	2	1	0	0
D	0	0	0	3	0	0	1	0	0	1	0	0	0	2	1
E	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
F	0	0	1	1	0	4	0	2	0	7	1	2	0	0	0
G	0	0	0	1	0	0	2	0	1	3	2	2	0	0	1
H	0	0	0	0	0	0	0	5	1	2	0	1	0	0	2
I	0	0	0	1	0	0	1	1	3	5	1	4	0	0	3
J	0	0	0	0	0	1	2	5	4	28	16	4	1	1	12
K	0	0	0	0	0	0	0	0	0	2	12	2	0	0	5
L	0	0	0	0	1	0	0	0	0	2	4	13	1	4	9
M	0	0	0	0	0	1	0	0	0	0	2	1	1	1	1
N	0	0	0	0	0	0	0	0	1	6	9	10	2	3	5
O	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0

LEGEND

A—J ARE THE VA. DECILES IN ASCENDING ORDER OF POPULATION DENSITY

K = URBAN NORTH

L = URBAN SOUTH

M = RURAL NORTH

N = RURAL SOUTH

O = IN MILITARY SERVICE

EXAMPLE— TO SEE HOW MANY GRADUATES FROM CLASS N (THE RURAL SOUTH) ARE NOW IN L (THE URBAN SOUTH) LOOK AT ROW N, COLUMN L TO FIND THE ANSWER— "1". TO MAKE A COMPARISON WITH THE TOTAL NUMBER OF GRADUATES FROM CLASS N, SUM THE ENTIRES IN ROW N TO GET "36".

UNIVERSITY OF VIRGINIA GRADUATES 1960-1962

ORIGIN AND PRESENT LOCATION OF 176 UVA GRADUATES 1960-1962

PRESENT LOCATION

ORIGIN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
B	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
C	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
D	0	0	0	2	0	0	1	0	1	2	3	1	0	0	1
E	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0
F	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1
G	0	0	0	0	0	0	1	0	1	3	0	3	0	0	3
H	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
I	0	0	0	1	0	2	1	0	3	4	3	5	0	0	4
J	0	0	0	0	1	0	0	5	2	6	10	8	0	2	11
K	1	0	0	0	0	0	1	1	0	3	28	6	0	0	8
L	0	0	0	0	0	0	0	0	0	2	6	3	1	0	2
M	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0
N	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

LEGEND

A—J ARE THE VA. DECILES IN ASCENDING ORDER OF POPULATION DENSITY

K = URBAN NORTH

L = URBAN SOUTH

M = RURAL NORTH

N = RURAL SOUTH

O = IN MILITARY SERVICE

EXAMPLE—TO SEE HOW MANY GRADUATES FROM CLASS A (VA.'S LOWEST POPULATION DENSITY DECILE) ARE NOW PRACTICING IN CLASS J (VA.'S HIGHEST DECILE) LOOK AT ROW A, COLUMN J TO FIND "1". TO MAKE A COMPARISON WITH THE TOTAL NUMBER OF GRADUATES FROM CLASS A, SUM THE ENTRIES IN ROW A TO GET "1".

UNIVERSITY OF VIRGINIA GRADUATES 1943-1964

ORIGIN AND PRESENT LOCATION OF 1375 U. VA. GRADUATES

PRESENT LOCATION

ORIGIN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A	1	1	0	0	1	0	0	0	2	1	1	1	1	2	1
B	0	4	0	0	1	0	1	2	1	2	3	0	1	3	4
C	0	0	2	0	0	3	1	0	6	7	0	0	1	1	5
D	0	0	1	12	0	3	2	0	6	16	2	2	2	10	8
E	0	0	2	0	8	2	1	7	1	11	3	3	0	7	10
F	0	1	0	4	0	14	0	3	10	12	0	4	1	4	6
G	0	0	0	0	0	0	2	1	6	8	7	1	0	8	13
H	0	0	1	0	2	1	3	18	8	22	4	11	3	19	33
I	0	0	0	1	3	8	4	4	59	24	11	2	2	29	25
J	0	4	0	0	5	0	2	15	15	115	36	22	12	45	63
K	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
L	0	1	0	0	0	2	1	0	3	14	7	21	2	20	16
M	0	0	0	0	1	0	1	0	1	6	9	1	9	15	28
N	0	0	0	0	0	0	0	2	4	10	4	3	1	46	15
O	1	1	0	0	4	1	0	10	4	15	29	11	12	22	107

LEGEND

A—J ARE THE VA. DECILES IN ASCENDING ORDER OF POPULATION DENSITY

K = IN MILITARY SERVICE

L = RURAL SOUTH

M= RURAL NORTH

N = URBAN SOUTH

O = URBAN NORTH

EXAMPLE—TO SEE HOW MANY GRADUATES FROM CLASS O (THE URBAN NORTH) ARE NOW PRACTICING IN CLASS A (VA.'S LEAST POPULOUS DECILE) LOOK AT ROW O, COLUMN A TO FIND "1". TO SEE HOW MANY GRADUATES FROM CLASS A ARE NOW PRACTICING IN CLASS N (THE URBAN SOUTH) LOOK AT ROW A, COLUMN N TO FIND "2".

15. THE NUMBER OF STUDENTS USING RURAL SCHOLARSHIPS TODAY COMPARED WITH THE NUMBER IN PRIOR YEARS

Beneficiaries of Rural Scholarships at UVa

Class Class	Number of Students	Years of Support	Class Class	Number of Students	Years of Support
1944	3	3	1956	9	24
1945	1	1	1957	8	17
1946	0	0	1958	5	13
1947	2	2	1959	6	17
1948	2	4	1960	1	2
1949	0	0	1961	3	9
1950	2	4	1962	5	13
1951	9	25	1963	0	0
1952	3	6	1964	2	6
1953	9	26	1965	2	5
1954	10	28	1966	1	1
1955	7	19	1967	1	5
24 years	91	231	Average	3.79	2.538

Over the first 24 years of the program from 1944 to 1967, a total of 91 UVa students took advantage of the program. This averaged out to 3.79 students per year who held scholarships for an average of 2.538 years.

The fluctuation of the number of students accepting the scholarships probably is related to the availability of other scholarship funds. In the years immediately following World War II, many students received aid from the G.I. Bill of Rights. About 1960, federal loans which had no requirement for rural service and no interest until after graduation were easily available to all needy students. Since about 1968, federal loan funds have been reduced. If a student is confronted with a possibility of obtaining aid from a rural scholarship which encumbers him to a period of service in a rural area or a federal loan which has no such encumbrances, he is very unlikely to take the rural scholarship.

Of the present enrollment of the University of Virginia, only six students are recipients of rural scholarships out of a student body of 350.

It is too early to tell what some of the more recent graduates of the schools will do to satisfy the obligations of their rural scholarships. I did trace all of the recipients at the University of Virginia who graduated before 1964. These individuals should have had time to complete their military service and their postgraduate training and be in practice. Of 91 students in this category, three had failed to graduate, 41 had practiced in a rural area, and 42 had bought their way out of the program. Of those buying their way out of the program, one had practiced for 17 months of a three-year commitment, and another had practiced for 11 months of a 12-month commitment. Thus, 40 of the 42 made no attempt to repay their obligation.

Of those who bought their way out of the program, and had been graduated a sufficient time to finish their military service, I was able to trace 39 through the AMA Directory. Only seven were in general practice. Three who had never repaid their time were doing general practice in large urban areas (e.g., Los Angeles, Little Rock). Four who bought their way out of the program did return and did practice in rural Virginia. Presumably, they tried some other activity first, and they decided to return to rural areas of Virginia later. Thirty-two who

bought their way out of the program became specialists. Ten of these were practicing in urban areas of Virginia, and twenty-two were practicing in urban areas elsewhere in the United States.

Of the 40 who entered rural general practice, 14 are still in general practice in a rural area similar to the Virginia rural area in which they served their time. Eight left general practice in a rural Virginia area, and moved to a Virginia city. Three left rural Virginia areas to do general practice in other states (two emigrated to Flagstaff, Arizona, and one to Oakridge, Tennessee). Twelve left general practice completely, obtained specialty training, and are now practicing as specialists. Many of these are in highly specialized areas such as ophthalmology, radiology, orthopedic surgery, and most have left the state of Virginia. The first recipient of a rural scholarship at Virginia is now an orthopedic surgeon in Atlanta, Georgia; another is a dermatologist in El Paso, Texas; one is an obstetrician in Virginia Beach; one is an ophthalmologist in New Bern, North Carolina; and one is an internist in Wilmington, North Carolina. Only five who became specialists remained in the state of Virginia.

Survey of this data revealed a few interesting details. The state attorney general was forced to sue three who benefited from the rural scholarship, and then refused to serve in rural areas. One UVa graduate who did serve in a rural area answered an emergency house call to treat a person injured in a family altercation. When he knocked on the door, he was decapitated by a shot gun blast.

SUMMARY OF UVA RECIPIENTS OF RURAL SCHOLARSHIPS 1944-1964

TOTAL RECIPIENTS	87					
Failed in medical school		3				
Graduated		84				
Practiced in a rural area in Virginia			42			
Partial payment				3		
Full payment				39		
General practitioners					28	
Dead in rural general practice						1
Still in rural area in Virginia						14
Repaid, now in rural Virginia (Counted below)						(4)
Left rural area, GP-urban Virginia						8
Left rural area, GP-other state-urban area						5
Specialists					13	
Virginia						7
Other states						6
Untraced*					1	1
Bought out			42			
Partial payment				3		
Full payment				39		
General practitioners					7	
Rural Virginia (Listed above, counted here)						4
Other states, urban areas						3
Specialists					35	
Virginia						12
Other states						23
TOTAL	87	87	84	84	84	84

*He may be a foreign medical missionary.

16. THE COST OF ATTENDING MEDICAL SCHOOL WHEN THE SCHOLARSHIP PROGRAM WAS INITIATED COMPARED WITH THE COST TODAY

UNIVERSITY OF VIRGINIA

Session	In State			Out of State
	Tuition	Comprehensive Fee*	Total	Total
1943-4	310	114	424	360
1944-6	310	104.50	314.50	720
1946-7	350	114	464	500
1947-50	350	115.50	465.50	1,800
1950-2	400	59	459	1,600
1952-7	400	64	464	4,000
1957-8	450	64	514	900
1958-9	450	74	524	900
1959-60	500	74	574	1,000
1960-1	490	79	569	980
1961-2	510	81	591	1,025
1962-3	510	87	597	1,025
1963-4	560	197	757	1,175
1964-5	535	152	687	1,100
1965-6	550	162	712	1,190
1966-7	550	162	712	1,190
1967-8	550	162	712	1,190
1968-9	550	167	717	1,190
1969-70	550	167	717	1,190
1970-1	585	200	785	1,315

* From 1943 to 1962, the comprehensive fee included all library, health, athletic and laboratory fees. From 1963 on, it also included rental of a microscope

In addition to these costs, a student would have to purchase books, and pay room and board. These costs vary greatly. Further, each year increasing numbers of entering students are married, and now most of the class is married at graduation. Few students were married in the 1940's.

The cost of attending is best gauged by the tuition and comprehensive fee, which has increased from $424 to $785 in 28 years. The cost has increased 85% since 1943, or about 3.5% per year, which is probably less than the rate other prices have increased.

17. THE COST OF INCREASING THE AMOUNT OF THE RURAL SCHOLARSHIP TO $3500 PER YEAR

At present, the rural scholarship pays $1500 per year. Based on the experience at the University of Virginia over the past 22 years, about 4.125 boys in each graduating class utilize the scholarship for an average of 2.33 years. This would mean that an average of 9.625 scholarships per year are provided. Increasing the amount of the scholarship to $3500 per year would be an increase of $2000, and would cost $19,249.72 per year.

18. THE COST OF INCREASING THE NUMBER OF RURAL SCHOLARSHIPS AT $3500

The real question is whether the scholarships would go begging. If they are accepted, would the students later buy their way out? The present rural scholarship program is not fully subscribed.

19. THE COST OF PROVIDING $2000 PER YEAR SCHOLARSHIP TO ANY MCV OR UVA STUDENT TO BE REPAID BY A YEAR'S SERVICE IN VIRGINIA FOR EACH YEAR OF THE SCHOLARSHIP

If a year of service is defined as a year of house staff training as an intern or resident, or a year of practice in an urban community such as Falls Church or Norfolk, the number of applicants would be very high. This probably would be a tremendously popular program, and it could cost huge amounts of money. The problem with rural scholarships both here and in Indiana and Nebraska is that the students simply do not want to go to rural areas. When entering medical school, students are reluctant to accept an arrangement which forces them to go to a rural area unless they are desperate for funds.

20. THE FUTURE ENROLLMENT PLANS OF MCV AND UVA

Academic Year	MCV	UVa
Past enrollment		
1965-6	341	295
1966-7	375	294
1967-8	416	303
1968-9	451	320
1969-70	478	331
1970-71	510	349
Future enrollment		
1971-2	524	389
1972-3	531	427
1973-4	563	461
1974-5	?	?

APPENDIX B

PHYSICIAN SUPPLY IN RURAL VIRGINIA *

BY

WILLIAM M. O'BRIEN, M. D.

AND

JOAN E. WOOD, B. Sc.

FROM THE DEPARTMENT OF PREVENTIVE MEDICINE
UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE
CHARLOTTESVILLE, VIRGINIA 22901

* Supported in part by a contract from the Office of Comprehensive Health Planning of the Virginia State Department of Health.

SUMMARY

In 1967, Virginia had 1202 general practitioners, of whom one-third were over age 60. Rural areas had one practitioner per 4260 inhabitants, and urban areas had one per 3440. Based on the numbers of new general practitioners licensed in the past ten years, Virginia may lose 28% of the 1967 supply of general practitioners by 1972. Unspecialized pediatricians and internists are replacing general practitioners in urban areas, but there are virtually no replacements in rural areas, particularly in the poorer and more sparsely populated regions of the state. The national emphasis on programs for research, specialization, and urban areas makes it unlikely that present trends will be reversed. Within fifteen years Virginia may have virtually no rural physicians.

INTRODUCTION

This report presents data on the current supply of primary care physicians (more often referred to as general practitioners or family physicians) in rural Virginia, and compares the supply of all types of physicians in urban and rural areas. Based on current trends, some crude predictions about future supply are made. The serious shortage of family physicians described below is hardly any great revelation, although few studies have specifically compared shortages in urban versus rural areas. Although most Virginia physicians are aware of the problem, this paper does provide quantitative data on the shortage of general practitioners in our state.

The subject has been discussed in general terms by several national commissions including the Citizen's Commission on Graduate Medical Education (usually referred to as the "Millis Report"),[1] by an ad hoc American Medical Association committee on the Education for Family Practice in 1966,[2] and by a National Advisory Commission on Health Manpower in 1967.[3] The public is also concerned, and our elected representatives in Congress have enacted new laws in almost every recent session to correct the shortages of health professionals. A few of these are for manpower development and training in 1962; for nurse training in 1962; for health professions education in 1963; for allied health professions education in 1966; for community health construction act in 1963; for hospital and medical facilities in 1964; for regional medical programs (often called the war on heart disease, cancer, and stroke) in 1965; comprehensive health planning in 1966; and, of course, the major acts for financing health care, including Medicare and Medicaid. In spite of the numerous commissions and new legislation; the shortage of family doctors appears to be worsening.

METHODS

Most of the raw data analyzed in this report come from publications of the U. S. Census Bureau and the American Medical Directory. The Census data included information on economic conditions in 1964 on all political subdivisions in Virginia.[4] Estimates of Virginia's population in 1967 were based on figures supplied by the Virginia State Department of Health.[5] The American Medical Directory was used to obtain information on all physicians listed as practicing medicine in the state of Virginia in the year 1967.[6] The data were coded, keypunched, read onto magnetic tape, and analyzed using standard computer and statistical techniques.

We divided the 96 counties and 34 cities in Virginia into rural and urban areas as follows: each city was considered as an urban area and each county, with the exception of Arlington and Fairfax, was considered as a rural area. Arlington and Fairfax counties were classified as urban areas because of their extremely high population densities. In more detailed analyses, all 130 political subdivisions were ranked in order of population density as measured by persons per square mile. Poverty was measured by the percent of families with yearly incomes of less than $3000, and all 130 subdivisions were ranked from richest to poorest.

We arbitrarily defined a primary care physician as an unspecialized practitioner who will treat any type of illness. He may later refer the patient with complicated problems to a secondary care physician (a specialist) who treats only certain diseases or conditions. We define a general practitioner as anyone who lists general practice as his specialty in the American Medical Directory, and who indicated that he is either in full-time general practice or in general practice with some specialty practice.

Some pediatricians and internists who have no medical subspecialty do deliver primary care to a subset of the total population. Therefore, in addition to general practitioners, we have studied the distribution of pediatricians and internists with *no* subspecialties who indicate that they are in full time practice. In this study we have assumed that other physicians, for example pediatricians who list themselves as subspecialists in hematology, are not primary care physicians.

RESULTS

Total number and ages of physicians in Virginia.

For 1967, we found 5077 physicians licensed and residing in Virginia. Excluding those not in practice or retired, the total was reduced to 4811 active physicians. This represents about 104.5 physicians per 100,000 population. This compares to the national average of 132 physicians per 100,000. Only 19 of the 50 states have fewer active physicians per 100,000 than our state.[7]

Table 1

Total Virginia Physician Supply in 1967*

	Number	Average Age	Physicians per 100,000 Persons
Primary Care			
General Practice	1202	54.3	26.1
Medicine & Pediatrics	650	48.8	14.1
Secondary Care			
Specialists, other	2959	45.7	64.2
Total Active Physicians	4811	48.3	104.4

*Excludes those retired or not in practice.

Table 1 separates active physicians into primary and secondary care groups. Note that only 25% of active doctors are general practitioners, only one for every 3830 people. The general practitioners tend to be older than other physicians. If an average physician finishes his training at 30, and retires at 65, then the average age of physicians in practice should be roughly 47.5 years; but for generalists, it is 54.3 years.

Table 2

Changes in Primary Care Physician Supply in Virginia

Group	Number	Age Distribution in 1967		New Registrations		% Change in Supply by 1972*
		55-59	60+	'58-'62	'63-'67	
General Practitioners	1202	160	400	116	20	-27.6
Internists & Pediatricians Without Subspecialties	650	65	102	93	22	-6.8
Total Primary Care	1852	225	502	209	44	

*Assumes new registrations will continue at same average rate as in the last ten years and that all physicians retire at age 65.

Table 2 gives further information on the age structure of primary care physicians in Virginia. In 1967, 33.3% of the state's general practitioners were over age 60 and 46.5% were over age 55. Assuming that new registrations of family physicians will continue at the same rate as it has in the last ten years, and that physicians retire at age 65, by 1972 the state will lose 400 practitioners; but only 68 replacements will enter practice, which would represent a net loss of -27.6% of the 1967 supply. Table 2 indicates net numbers of nonspecialized internists and pediatricians are declining at a slower rate.

Space does not permit detailed descriptions of projected supplies for various subdivisions of the state. Surprisingly, the most severe losses of general practitioners by 1972 may not occur in the most distant and rural regions of the Commonwealth: the Richmond region might see a decline in family physicians of -48%, and the Charlottesville region a decrease of -23%, while suburban Washington may see no change. Unspecialized internists and pediatricians, however, are found almost exclusively in urban areas, and presumably are assuming the role of family physicians. In contrast, no one is replacing the rural general practitioner.

Table 3

The Age Distribution of Virginia's Urban and Rural General Practitioners in 1967

Age Range	Percents of Grand Totals		Total
	Rural	Urban	
25-29	0.19	0.59	0.42
30-34	3.06	1.91	2.41
35-39	10.52	10.31	10.40
40-44	14.15	15.32	14.81
45-49	17.02	14.14	15.39
50-54	9.18	10.60	9.98
55-59	12.43	13.99	13.31
60-64	9.75	10.90	10.40
65 and over	23.70	22.24	22.88
Total	100.00%	100.00%	100.00%
Number	523	679	1202
Population	2,223,666	2,378,425	4,602,091
Population per physician	4,260	3,440	3,840

Table 3 summarizes the age distributions of rural and urban general practitioners. We produced this table to test the hypothesis that rural family doctors were older, but were surprised to find the urban doctors were not significantly younger. The table does show that the rural areas have significantly fewer generalists ($X^2 = 11.1$, $p = 0.0008$), which is doubly important since rural areas of the state have virtually no specialists.

The table also shows a gross deficiency in younger general practitioners. By the age of 30 to 34, a physician should have completed the one to three years of training required for general practice, and the usual two-year military obligation. Yet this age bracket shows less than one-fifth the number of doctors one would expect based on previous experience.

Table 4

Physician Graduates in the Decade 1956-1965

Practicing in Virginia						
Source of Physicians	Approximate Total Graduates	Total Licensed in Virginia	Primary Care		% of Graduates	
			General Practice	Medicine, Pediatrics	in Virginia	in Primary Care
Medical College of Virginia	850	331	91	46	39	16
University of Virginia	700	223	46	22	32	8
Other American schools	---	534	63	59		
Foreign schools	---	283	7	12		
Total	1550	1371	207	139		

The origin of Virginia's recent physician supply.

We studied all physicians licensed and residing in Virginia in 1967, and who graduated from medical school in the decade 1956-1965. Some physicians graduating from our state schools in the latter part of this period may still be in training or in military service, and may eventually return to the state; so the figures are probably an underestimate of the eventual results of this decade. Table 4 does, however, illustrate that only about two percent of Medical College of Virginia graduates and one percent of University of Virginia graduates from this decade have entered general practice in Virginia. At both schools this percentage is showing a progressive decline every year. Note that 20.6% of all the new physician supply from this decade of graduates is foreign trained, and 39% are graduates of schools in other states.

What fraction of the physicians that Virginia trains end up in practice here? We assumed that a physician is 25 when he graduates and 65 when he retires, and that if one of our graduates leaves the state and is replaced by another nonVirginia graduate there is no net loss. We can estimate the number of physicians graduating from the two Virginia medical schools in the period 1926 to 1966. This totaled 5982 physicians. Assuming these physicians to be white males, based on a 1966 life table,[8] we would expect 5447 to still be alive in 1966. Yet the state had only 4811 active physicians at that time; so we estimate that the state suffered a net loss of roughly 11.6% of the physicians which it educated since 1926. If one could correct this figure for recent graduates in training or military service, the net loss would probably be negligible.

The relation of poverty and population density to physician supply.

Do depressed rural economic areas have the worst problems? To study this we ranked Virginia's 130 political subdivisions (counties and cities) by population density (persons per square mile) and poverty (percent of families with incomes under $3,000). Groups of thirteen subdivisions were then combined into ten deciles. We emphasize that the deciles are not contiguous geographic areas and do not have equal populations, but are a grouping of political subdivisions with similar economic or population characteristics.

General practitioners were fairly evenly distributed in the deciles ordered by degree of poverty. In the poorer deciles, the general practitioners were somewhat older: in the poorest deciles 34% were over age 60, while in the three richest deciles 26% were over age 60. Unspecialized internists and pediatricians were concentrated in the richer deciles, with the poorest 65 political subdivisions of the state having only 29, or approximately one per 26,900 inhabitants, while the richest 65 divisions had 621, or approximately one per 4,000 people.

The ability to recruit new physicians was closely related to poverty. None of the three poorest deciles had been able to recruit a new pediatrician or internist in the last ten years, and if they recruit practitioners at the rate of the past ten years, they will lose 38.1% of the present general practitioners by 1977. Note that the cities are also losing primary care physicians at a rapid rate, but the cities are replacing them with specialists. The rural areas are simply not replacing the practitioners.

The state was also subdivided by the population density of its cities and counties. The two most densely populated deciles have a larger proportion of general practitioners, approximately one for each 2740 persons, while the remaining regions have approximately one for each 4680 persons. The general practitioners were somewhat older in the most sparsely populated regions. The 26 most rural political subdivisions have no unspecialized internists and pediatricians. The next 65 political subdivisions have 46, or approximately one

for every 36,100 persons; while the 39 most densely populated subdivisions have 604, or approximately one for every 4480 persons. The 26 most rural political subdivisions have recruited 2 general practitioners in the last 10 years. If only 2 more are recruited in the next 10 years, the areas will lose 53.7% of the 1967 physician supply by 1977 with no replacements.

DISCUSSION

Other authors have commented on the desirability of directly measuring medical services rendered rather than head counts of doctors.[9] Unfortunately, no measures of the former are easily obtainable, and all students of the doctor shortage have been forced to use the latter. The American Medical Directory is hardly a perfect or completely accurate roster of physicians, but it is the best source of data available, and has been widely used in studies of physician supply.[7,10] Periodic surveys of physicians are being done to improve the completeness and accuracy of the Directory.

The rapid decline in the number of general practitioners has been noted by other authors. Fahs and Peterson [11] predicted that if the present trends continue, the United States would have no general practitioners by 1995. The data collected in this survey indicate that the number of available general practitioners in Virginia is rapidly decreasing. Retirement due to age and recruitment of general practitioners into specialties is decreasing available supply with few new practitioners entering the field. Nonspecialized pediatricians are replacing some of the general practitioners in urban areas; but, if present trends continue, there will be virtually *no* physicians in rural areas within 15 years.

The relationship of poverty to lack of physicians has been noted by Estes,[12] who showed a direct relationship between per capita income and physicians per 100,000 population in both the United States and in North Carolina. Benham, Maurizi, and Reder,[13] in a detailed economic study of migration and location of physicians, found that, generally, doctors migrated to areas with high average per capita incomes. Further, their data indicated that physicians would sacrifice some income for "the amenities of an urban environment." This study clearly indicates that counties with low population densities have fewer general practitioners, as do poor counties. Seven Virginia counties were in both the poorest decile and most rural decile. The combination of a poor county with a low population density represents a tremendous challenge for providing medical care. Such areas in Virginia had only a few, elderly, primary-care physicians in 1967, and will have no physicians within a few years.

The supply of general practitioners is already critically short. In February of 1969, the Virginia Council on Health and Medical Care was aware of 154 openings for general practitioners, but had 43 general practitioners available, of whom Virginia can probably attract only a portion. This can be contrasted with the 198 opportunities for specialists which were available and 193 physicians who were potentially available to fill these positions. Interestingly, there were 77 opportunities for pediatricians and internists, but only 45 men available. The remaining, strictly secondary-care specialties had 121 opportunities with 148 physicians available. It is not surprising that Mr. Edgar Fisher, director of the Virginia Physician Placement Service, reports that filling openings for general practitioners to be his main burden.[14] The picture on a national level is no brighter. The annual figures of the American Medical Association's Physician Placement Service [15] indicate the supply of general practitioners is decreasing,

but the demand is increasing. In 1963, 489 generalists were seeking positions, with 793 openings to choose from. By 1967, only 241 were available, with 969 openings.

This year general practice was finally recognized as a specialty. Will this turn the tide? If the trends in general practice internships and residencies are any indication, the answer is no. In 1967-68, of 7506 Americans taking internships, only 31 chose general practice internships. Tragically, general practice residencies are not attracting many graduates. In 1967, of 22,904 American graduates in residency training, only 0.63%, or 1 in 160, were in general practice residencies. Other specialties have attracted the vast majority of graduates: 3909 in general surgery, 3800 in internal medicine, 2617 in psychiatry and 1335 in pediatrics. Further, the number of graduates in general practice residencies is declining. In 1956, 468 men were in training, but by 1967 this had declined to 408. The programs increasingly rely on foreign graduates, with the percentage of non United States participants rising from one-half to two-thirds in the last five-year period.[15]

A few universities have recognized their obligation to train more family physicians, and in the past five years the number of medical school affiliated, general practice residencies increased from 20 to 39. The number of Americans in university programs remained about the same with 58 enrolled in 1963 and 56 in 1968, but the numbers in programs not affiliated with medical schools fell in this period from 119 to 88. The programs have a bad reputation with students, the most frequent criticism being that the general practice resident assigned to a specialty service is treated as just another rotating intern, and thus has a poor learning experience. Unless very radical changes are made in these programs, it seems unlikely that they will attract more graduates.

One out of five men entering general practice in Virginia is foreign trained. It seems tragic both that many qualified Americans are denied medical training because of a lack of facilities at medical schools, and that many underdeveloped foreign countries lose their best talent. The use of foreign graduates to supply our medical needs, however, is the only thing averting an acute manpower crisis both in Virginia and in the nation.

Are the nation's medical schools responsible for this depressing situation? The schools do not encourage or discourage specialization, but they do demand excellence. Surveys of attitudes of medical students have revealed their feelings on the average are more positive toward general practice than any of the specialties both at entry and on graduation.[16] The students presumably specialize, not because they have come to despise general practice during their medical education, but simply because of much better opportunities elsewhere.

The schools themselves do not solely control educational policy. This is set by the profession and the schools and by the national government. The average American medical school receives 52% of its support from federal sources, and 14% from state sources, and it is difficult for a school to sustain any program without federal support. Present national health priorities emphasize research, specialization, and medical care in urban areas. Federal officials have devoted little attention to rural health problems and certainly no large scale effort is being exerted to develop new methods of delivering care to rural areas, to support family practice, or to interest and assist physicians in developing rural practices. A few examples will serve to illustrate low federal priorities for medical care in rural areas.

During 1967, the Public Health Service supported 4,519 individuals in research fellowships, and 1,406 senior research investigators with career development awards. The Public Health Service supports 6700 training

programs at a cost of $315 million per year. The majority of these train medical specialists for research and practice, but as far as can be determined, none train general practitioners. Consider that in 1967, the entire country had only 16 full-time directors of general practice residencies.

It is a mistake to think the decline in the supply of rural practitioners is solely retirement without replacement. Many rural practitioners are recruited in the middle of their productive life into other more attractive programs. These include specialty and research training programs, the regional medical program, neighborhood health centers in urban ghettoes, etc. At the same time, virtually no federal programs are operating to funnel replacements into rural areas.

When new national medical manpower needs arise, federal policies permit recruiting general practitioners. For example, in the late 1950's there was a shortage of trained psychiatrists. Between 1959 and 1962, the General Practitioner Training Program of the National Institute of Mental Health offered general practitioners and others wishing to become psychiatrists up to $12,000 per year salary while receiving their training at government expense. The total cost of the program was in excess of $15,000,000 and 504 new psychiatrists were created. Of these, 62% came from general practice with another 28% from internal medicine and pediatrics. Thus, 90% of those recruited came from physicians who previously gave primary care. This, of course, is robbing Peter to pay Paul. The physicians are merely being moved from primary care into secondary specialized care as dictated by national policy.

The federal health priorities are such that 90% of all health developmental program expenditures are for basic research. Very little is available for developing new methods or facilities of delivering medical care, and practically all of this is spent in urban areas.

Federal health officials spend very few tax dollars in rural areas. Much of Virginia, is unfortunately, rural. In 1967, the Public Health Service gave an average of $9.35 per United States citizen in grants and awards. Massachusetts residents received an average of $20.80, but Virginians got only $5.82 per person.[17] The Public Health Service spends only $0.81 per capita in the nation on grants to develop and improve health services. Virginia gets only a meager $0.24 per person. Virginia's institutions do not do particularly well in obtaining support for health programs. Massachusetts Institute of Technology, which trains no medical students, receives more money to support faculty salaries and for investigative programs in health research than do *both* the Medical College of Virginia and the University of Virginia, which together produce about 200 new physicians every year. Virginia Polytechnic Institute, which provides premedical education for many Virginians, got less federal health dollars than did Sweden's Karolinska Institute, while the College of William and Mary fared only about as well as Denmark's Carlsberg Breweries. While one might admit that the Karolinska Institute and Carlsberg Breweries may do excellent medical research, one must also admit that Sweden and Denmark are very wealthy countries and well able to support their own institutions.

In 1967, the state of Missouri ranked 13th in population in our nation, and Virginia ranked 14th. The Public Health Service spent 82.7¢ per person in Missouri to develop better health care through a regional medical program, and devoted 6.5¢ per person for a similar program in Virginia. In the past year, contributions have increased greatly in Missouri, while the Virginia program is not being developed. Although the average Missourian pays only 12% more federal income taxes than the average Virginian, in return he gets in excess of 1300% more federal support for developing a regional medical program.

In 1967, the Public Health Service spent $1.8 billion on health grants and awards. These included 16,838 research grants, 1,017 construction grants, 6,693 training grants, 6,471 research career program awards, 485 formula grants for health services, and 1,959 project grants to develop health services. Not a single one of these grants appears to directly train or stimulate family physicians to practice in rural areas, and very few can be construed as having even a vague or indirect effect to improve rural general practice, while many programs openly invite rural practitioners into other fields. Some have said that general practice is dead, and they may be right. The problem, however, is who will replace the rural general practitioner. The answer seems to be—no one.

For the past 15 years, the Public Health Service has emphasized basic research on cancer, heart disease, stroke, etc., and is investing about $1 billion a year in basic research. During this period, the U. S. mortality rates have not changed. By 1985, the National Institutes of Health plans to double its research force and attract 17,000 new M.D.'s into basic research.[18] By 1985, there may be no physicians in rural Virginia, and even if the investment in research pays off, no one will be available to deliver the new advances to the rural people. If no family physicians are available in the near future, the United States mortality rates, particularly in rural areas, may increase drastically.

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APPENDIX C

REPORT OF THE DEAN, EASTERN VIRGINIA MEDICAL SCHOOL

TUESDAY, JULY 6, 1971

I. *RESPONSIBILITY OF HIGHER EDUCATION FOR THE QUALITY OF HEALTH CARE*

The primary issue to which our project is addressed is the level of health care received by the one-fourth of Virginia's population living in urban proximity in eastern Virginia. This is dependent upon higher education locally.

There is general agreement that *only* through the presence of a *local* School of Medicine will this be equivalent to the minimal reasonable expectation for health care—and equivalent to that available in all other similar size populations. This is true because of a combination of factors.

Numbers of Health Personnel. There are about 40 per cent less doctors per population in Hampton Roads than in the Richmond area. Doctors, and all health personnel tend to settle where they train. Doctors tend to select a locality for their life's work which is more intellectually stimulating in this field and in which they can do their best work and grow professionally, rather than shrink comparative to their own best potential. They tend to select locations with the most excellent continuing education programs. Only a local Medical School furnishes these needs.

Medical Center Resources. In addition, special talents and facilities in the Medical School Center round out the setting for reasonably excellent medical care and the environment attractive to practitioners.

For some of these needs, some people can travel 90 miles or more, but, in fact, for many they cannot and, in effect, they are not available for large numbers of people. This involves, of course, emergencies and the practical impossibility of delivering continuing care on a distant basis. Furthermore, the most beneficial effect upon the broad level of health care delivered in any area involves the continuing education of the practicing physician who delivers most of the care, and the evidence is totally conclusive that this occurs best on the broadest basis where there is a local School of Medicine. A local school will serve as the base for an area wide educational network extending principally to area hospitals. The report of the Carnegie Commission on Higher Education in 1968 and again in 1970 emphasized the importance of the Health Science portion of higher education to the quality of health care obtained locally and strongly urged the creation of new schools in areas not currently served by them. It emphasized a relative numerical deficiency in the volume of medical education as determined by its failure to grow proportionately with the population and especially to go further to meet the additional needs generated by the increasing complexity of medical science.

II. *TRAINING OF M. D.'s AND OTHER HEALTH PERSONNEL*

The most apparent immediate product of the developing Medical School will be a graduating class of about 64 physicians a year, but the actual number of students which it will make possible in an excellent training situation will reach about 2,000 total medical and paramedical personnel in the Medical

Center proper and several hundred more interns and residents throughout the area whose teaching programs will be directly dependent upon the Medical School for the quality of educational program which it will take to attract them. The by-products of these training programs in the area hospitals have already been referred to as increasing the professional capacity of the practicing physicians who deliver health care to the entire population.

III. *EFFECT ON OTHER LOCAL HIGHER EDUCATION*

Since the health sciences constitute an increasingly large proportion of the total higher educational spectrum, since they attract particularly high caliber faculty and students, and since a new School of Medicine providing the opportunity for important innovation is especially attractive to leaders in the field, the new school in Hampton Roads will certainly strengthen the attractiveness of the academic environment for students and faculty in all other higher educational institutions in the area and there will be many fields of mutual scientific and urban sociological interest. Many students will share courses on several campuses through exchange programs monitored by reliable cost-accounting. A cross-fertilization stimulates the academic environment and the contribution of the urban university to all local residents.

IV. *ECONOMIC IMPACT*

Extrapolation from other cities of similar population size indicates that the University Medical Center will generate 10,000 jobs and a payroll approximating $30 Million with an annual cash turnover exceeding $100 Million when the expenditures of persons coming to the area for medical care and not leaving it are considered. This will be the second largest industry in eastern Virginia, following the Newport News Shipbuilding and Drydock Corporation.

It is now becoming increasingly recognized that a medical graduate is a national resource and therefore a national responsibility. In spite of the cut back in federal funds for research grants, there has been a constantly increasing federal participation in the basic operating costs of medical schools. There is every probability that legislation will pass the current Congress which will further stimulate the creation of new schools. The location of these schools which will receive substantial federal support for the foreseeable future is of great importance to Virginia, and will soon be specified rather irreversibly (like the Interstate Highway System). If all of the nine new schools which are needed are built in states other than Virginia and their construction and operation are largely supported through federal grants, Virginia would miss what in effect is an extremely large, new industry which it could have had for the asking because it had the best location in the Nation for it. North Carolina is now developing its fourth medical school with a population not greatly different from Virginia, and Florida is developing its fourth and fifth since the year 1945, again in a somewhat similar population. These new schools would receive a large federal assistance. These economic considerations are in addition to the basic proposition and reason for a Medical School in eastern Virginia, namely that it is indispensable to the proper health care of more than one million people.

V. *EDUCATIONAL OPPORTUNITY*

It is reasonable for the residents of eastern Virginia to expect educational opportunities not greatly inferior to those of every other similar size population in the Nation. The opportunity to attend a medical school and to participate in a variety of paramedical educational programs where they live and work is a reasonable expectation and will frequently mean the difference between having or not having the opportunity for this type of training.

VI. *CURRENT TRENDS IN MEDICAL EDUCATION*

Emphasis on Correcting Critical Shortage of Health Personnel.

Federal legislation has provided a substantial financial encouragement to the creation of new schools during the last four years. The Association of American Medical Colleges has adopted as its main goal for the next six years the correction of the existing deficiency by the creation of 12 new schools of medicine, stimulated by substantial federal grants for construction, start-up funds, and operating assistance on a per student basis. It will push legislation to implement this in the current Congress. Assistance for modest expansion of existing schools is also proposed. The Carnegie Commission on Higher Education has recommended substantial assistance with the emphasis on nine new schools to bring to population centers now deprived of their elevating influence for improved health care, but especially to explore new ideas in a manner which is less practical for existing schools.

Emphasis on Training Physicians for the Practice of Medicine.

The family physician or primary physician is receiving increasing emphasis in attracting medical students to this career, residency programs, certification in the specialty, and in continuing education for the physician in practice. But, far beyond that, the emphasis is on training medical students, interns, and residents to treat patients. The achievement of this involves closer relations with community hospitals and actual training in these hospitals, in physicians offices, and in clinics and future group clinics. This training involves the use on the Faculty of practicing physicians to a greater degree. In the process, these physicians become better doctors and better teachers.

Reduction of Proportion of Research Effort by Faculty.

Although the fact that the pursuit of new knowledge in any teaching environment is essential to the quality of the teaching and the quality of the practice, best current judgment is that too great a proportion of faculty interest, capacity, and time has been diverted to research, and that this exceeded the effective yield therefrom. This occurred because of possibly excessive federal funding for this purpose and inadequate funding for teaching pursuits. The result is a generation of faculty who are primarily oriented toward research and whose employment requires a greater number of square feet for construction and whose tenure now makes them serious liabilities to the medical schools where they are employed. Since federal funds for research are available now on a greatly reduced basis, the new recruitment of faculty does not require provision for so much research space and research personnel or the expense of so many people devoting so much of their time to research. Rather, the emphasis is on the teaching.

Emphasis on Curriculum Innovation (Shortening Training).

The classic separation of medical education into two years of basic science and two years of clinical science is rapidly changing. It has long been generally accepted that both of these should be taught in the same environment because each type of talent is important to the other, but it is now more clearly a goal of medical educators to attempt to improve education by relating more directly the clinical science to the basic science years, in the process avoiding duplication, and to shorten the curriculum (possibly by one year) saving time in the life span of the practitioner and costs of education.

Emphasis upon Transmitting the Beneficial Effect of Primary and Continuing Education upon the Health Care Delivered Throughout an Area.

A local critical mass of talents and resources in the medical school center is a nucleus of an area wide educational network through which the benefits flow to the patient.

Education Where the People are. See Carnegie Commission Report.

Reduction of Costs

Most of the trends cataloged above, impelled by intelligent application of existing experience in the pursuit of better results, are resulting in substantial savings in the cost of operation and construction of facilities necessary for modern medical education. One of the *most expensive* elements in most classic medical schools is the *university hospital.* Characteristically, for various reasons, the annual operating deficit of these hospitals far exceeds the deficit financing required for the entire Medical School operation. In Virginia this proportion has exceeded two to one. In addition, these university hospitals tend to require recurring substantial increments for capital additions. One current trend, which the Eastern Virginia Medical School embraces, is the arrangement for the hospitals involved in the teaching process to be independently operated and self sustaining. This, in itself, impels cost scrutiny and administrative efficiencies through necessity. Experience indicates, however, that it is a sound procedure whereby hospitals where patients are treated are able to deliver superior health care, and the students and interns educated therein come in closer contact with medicine as it is actually practiced.

The use of *practicing physicians* on the *faculty* who are contributing to improving the breadth of educational experience and improving the health care delivered, also reduces faculty costs. This is, of course, more achievable in an urban area. The limitations of resources imposed on a basically privately financed school impel ingenuity in efficiency in the use of space and employees and yet experience indicates that results are comparable and sometimes superior.

VII. *STUDY BY STATE COUNCIL ON HIGHER EDUCATION*

At the direction of the Virginia General Assembly, the State Council on Higher Education conducted a study of medical education in Virginia, generally, and the feasibility of a private School of Medicine in Hampton Roads specifically. This study was conducted by the staff in close and frequent communication with a statewide committee under the chairmanship of Mr. Thomas C. Boushall containing representative leaders from the legislature, medicine, and civic life throughout the state. This committee used effectively eight nationally respected leaders in education and included the Deans of the two Virginia Medical Schools. The report is attached but their basic conclusion was that *Virginia* was seriously deficient in health manpower, far below the national average, and unduly dependent on the graduates so far in schools, was a debtor state in this regard and *could not meet the increasing reasonable demands for physicians through the maximum, optimum expansion of the two existing schools,* and that *a third school was important to establish.* It indicated that this should be established in the Hampton Roads area and specified that certain financial requirements which are substantially less than those presently proposed for the Eastern Virginia Medical School.

During the course of this study, there was general agreement that the optimum size for a medical school class was limited and probably in the neighborhood of 100 students per class. Evidence was repeatedly presented to indicate that expansion of an existing school by significant increment (50 students or more) was roughly comparable in cost to the establishment of a new school in a new location producing the same number of products. However, the

new school would yield innumerably greater by-products and greater benefits because it would form a sufficient critical mass to upgrade the health care opportunities and educational opportunities in an area not previously served. Evidence repeatedly suggested that the cost of increasing the number of students in a class was roughly a straight line relationship depending on the number of students.

The study set the optimum, maximum size for a class at the University of Virginia School of Medicine at 100 students per class and at the Medical College of Virginia at 128 students per class. It was agreed by all concerned that some additional state expense was required to bring the classes at these schools to this point, and to improve the quality at this level. It was agreed that future expansion should occur through the encouragement of the third school for reasons indicated above.

The Virginia General Assembly adopted the report of the Council on Higher Education and established the Norfolk Area Medical Center Authority to implement it. A great deal of progress has been made toward this goal and many actions have been taken and commitments made on the basis of this official policy.

VIII. *WHAT IS ASKED OF THE STATE*

The residents of eastern Virginia have assembled an impressive collection of resources on which to base a school of medicine. These include $23 Million worth of recent construction in a planned, well located Medical Center area with an adequate 65 acre site on the limited access major highway system for the area. The substantial teaching and service programs in this center are now operating on a sound, non-deficit financial basis.

The local citizens are well on their way to raising $15 Million for endowment and a local share of construction. Although the campaign for legacies has not yet begun, there is evidence of $3 Million worth of legacies now favoring the new Medical School. On a national level, the record of local initiative and sound procedures in identifying and solving urban problems and especially local health care planning and performance has created a very favorable environment for national support for this area and state resource.

In view of the above, and of the imminent designation of the complete package of federally assisted medical school centers, it has been necessary for the developers of the Eastern Virginia Medical School to deviate from their original intent to raise all of the required funds for endowment. They have sought and obtained a firm commitment from the City of Norfolk to supply $500,000 annually toward this project (the City is now supplying more than $200,000 annually). It has been further requested that the State encourage the development of this School through a modest per student subsidy comparable to that provided in many other states, but only after the following conditions have been met through local effort.

1. Basic Science buildings, clinical science building, and library, to be built entirely with local private resources and federal matching. The most recent study of our local requirements indicated that this cost would be a total of $15 Million requiring slightly over $5 Million in local matching funds.

2. The affiliated area hospitals will provide requisite clinical facilities at no cost to the State. Their record of continuous expansion to meet area needs and to conduct rather extensive teaching programs within a budget strongly supports their commitment to do this. The 2:1 federal matching funds for such construction strengthen this capacity.

3. Endowment and local appropriations to provide, when added to a per student subsidy, sufficient operating funds for an accredited School of Medicine to the satisfaction of the Governor.

4. Likewise to the satisfaction of the Governor, development of legacies to the Medical School totaling $10 Million would be a precondition to eligibility for the per student subsidy requested below.

Once these conditions are met, the State has been requested to provide a $4,000 per year, per student subsidy, the amount not to exceed $1 Million annually (this figure would not be obtained until 1976 or 1977) and not to exceed half of the deficit financing.

SUMMARY

1. There exists an urgent need in Virginia, especially in Eastern Virginia for more health manpower.

2. Eastern Virginia, the largest population in the United States not now served by a School of Medicine, needs and deserves its beneficial influence upon the level of health care as well as the educational opportunities and the stimulation of other higher education which it provides.

3. Because of the resources already assembled, and the private auspices of the School and of the existing clinical facilities, the State has the opportunity to encourage the development of this major resource meeting basic, legitimate needs of its people, with modest financial assistance, and with maximum protection against increasing liability.

4. The cost projections for the capital and operation of the developing School have been repeatedly examined by a variety of responsible authorities, singly and together. These projections are similar to the new School in Kansas City, Missouri, which has received preliminary accreditation on this basis.

5. Because of the national interest in meeting this national need, the opportunity for Virginia to develop, largely at federal expense, a major resource may not last indefinitely if not seized now. When the Eastern Virginia Medical School is established, it will not only provide to eastern Virginia the enormous benefits enumerated above, but will contribute substantially to the health manpower throughout Virginia and will provide to the State and to the Nation important innovations in the efficiency and quality of education and area wide delivery of health care.

APPENDIX D

PERSONS APPEARING BEFORE THE VALC COMMITTEE STUDYING THE SHORTAGE OF FAMILY PHYSICIANS

Dr. Mason C. Andrews, Norfolk Area Medical Center Authority, Norfolk, Virginia

Dr. Wallace Baker, Family Practitioner, Alexandria and Springfield, Virginia

Mr. C. R. Boitnott, Jr., Mayor, New Castle, Virginia

Mr. George O. Bryant, Executive Secretary, Board of Supervisors, Southampton County, Virginia

Dr. Robert L. Cassidy, Culpeper County Medical Society, Culpeper, Virginia

Mrs. Velma P. Colley, Haysi, Virginia

Mrs. Covington, Bastion, Virginia

Dr. Kenneth R. Crispell, Dean, School of Medicine, University of Virginia, Charlottesville, Virginia

Dr. Charles L. Crockett, Jr., Assistant Dean, Continuing Education, School of Medicine, University of Virginia, Charlottesville, Virginia

Dr. Charles H. Crowder, Chief of Staff, South Hill Hospital, General Practitioner, South Hill, Virginia

Dr. R. L. Davis, Practicing Family Physician, Co-Chairman of the Preceptorship Program sponsored by the Virginia Academy of General Practice

Mr. Robert B. Delano, President, Virginia Farm Bureau Federation, Richmond, Virginia

Mr. James E. Drinkard, Minister, Glade Spring, Virginia

Dr. W. C. Elliot, Lebanon, Virginia

Dr. Belle Fears, Director, Accomack-Northampton Health District

Mr. Edgar J. Fisher, Jr., Director, Virginia Council on Health and Medical Care, Richmond, Virginia

Dr. Claiborne Fitchett, Chairman, Medical Advisory Committee of Norfolk Area Medical Center Authority, Norfolk, Virginia

Mr. William H. Flannagan, on behalf of the Virginia Council on Health and Medical Care, Administrator, Roanoke Memorial Hospital, Roanoke, Virginia

Dr. Julian L. Givens, Family Practitioner, Independence, Virginia

Mr. Victor Gilley, Superintendent, Bland County Public School System, Bland County, Virginia

Dr. Giles Gilmer, Lebanon, Virginia

Dr. Thomas L. Gorsuch, President, Virginia Society of Internal Medicine, Internist, Waynesboro, Virginia

Dr. T. Winston Gouldin, Chairman, Education Committee of the Virginia Academy of General Practice, Practicing Physician, Norfolk, Virginia

Mr. G. P. Grindstaff, Damascus, Virginia

Dr. James T. Hamlin, III, School of Medicine, University of Virginia, Charlottesville, Virginia

Dr. Desmond Hayes, Tidewater Academy of General Practice, Norfolk General Hospital, Norfolk, Virginia

Dr. Miles E. Hench, Director of Admissions, Medical College of Virginia, assisted Dr. William M. O'Brien in the preparation of the report to the Committee, Richmond, Virginia

Mr. William B. Hopkins, Virginia State Senator from the 32nd District, Roanoke, Virginia

Dr. Thomas H. Jennings, President-elect, Virginia Academy of General Practice, Practicing Physician, Bedford, Virginia

Dr. W. Stanley Jennings, Chesapeake Hospital Authority, Chesapeake, Virginia

Mr. Stanley B. Kamm, Secretary, Shenandoah County Physician's Procurement Committee, Woodstock, Virginia

Mr. James P. LaMar, Representative, Madison, Virginia Pharmaceutical Association, Madison, Virginia

Mrs. Saint George Lee, Medical Society of Virginia-Health Department, Physician Manpower Study, Richmond, Virginia

Mr. Harry H. Mansbach, Chairman, Norfolk Area Medical Center Authority, Norfolk, Virginia

Mr. Richard Marshall, Pharmacist, Urbanna, Virginia

Dr. Allen McIntosh, Family Physician, Fairfax, Virginia

Dr. Samuel E. Miller, Practicing General Physician, Abingdon, Virginia

Mr. John G. Minahan, Practicing Rural Pharmacist, Russell County, Virginia

Colonel G. A. Monti, Acting Chief, Virginia Office of Economic Opportunity of the Division of State Planning and Community Affairs, Richmond, Virginia

Dr. M. Pinson Neal, Jr., Associate Dean, School of Medicine, Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University, Richmond, Virginia

Mrs. Betty N. Norris, Assistant to the Dean, School of Nursing, University of Virginia, President, Virginia League for Nursing, Charlottesville, Virginia

Dr. William M. O'Brien, Primary Author of the Statistical Report to the Committee, Associate Professor of Internal Medicine, School of Medicine, University of Virginia, Charlottesville, Virginia

Mr. Stanley Omwake, Administrator, Tazewell Community Hospital, Tazewell, Virginia

Mr. Ford C. Quillen, Delegate from Washington and Scott Counties and the City of Bristol

Mrs. Les Runyon, Representative, Virginia Farm Bureau Federation, State Women's Committee, Check, Virginia

Dr. William R. Sandusky, Chairman of the Admissions Committee and Professor of Surgery, School of Medicine, University of Virginia, Charlottesville, Virginia

Mr. Richard E. Shoemaker, Assistant Director, Social Security Department of the National AFL/CIO, Chicago, Illinois

Mr. R. Maclin Smith, Delegate from Lunenburg County, Lunenburg, Virginia

Dr. Thomas Stage, Director, Veterans Administration Hospital, Salem, Virginia

Dr. Carl E. Starke, Mayor, Wytheville, Virginia

Mr. George Rogers Clark Stuart, Delegate from Washington and Scott Counties and the City of Bristol, Abingdon, Virginia

Mr. Amos Tinnell, Administrator, R. J. Reynolds-Patrick County Memorial Hospital, Stuart, Virginia

Dr. Walter Vermilya, General Practitioner, Clifton Forge, Virginia

Dr. W. B. Waddell, General Practitioner, Galax, Virginia

Dr. Harry S. Wise, Norfolk Department of Public Health, Norfolk, Virginia

Dr. Maurice Wood, Associate Professor of Family Practice, School of Medicine, Medical College of Virginia, from England to do research on family physicians, Richmond, Virginia

Mr. Kenneth Wyant, Jr., 3rd Year Medical Student, University of Pittsburgh, participant in the Student American Medical Association Preceptorship Summer Program, Pittsburgh, Pennsylvania

APPENDIX E

HOUSE JOINT RESOLUTION NO. _____

Directing the Virginia Advisory Legislative Council to continue the study of the shortage of family physicians.

Whereas, the Virginia Advisory Legislative Council conducted a study of the shortage of family physicians pursuant to House Joint Resolution No. 104 of the 1970 Acts of Assembly; and

Whereas, the Council made many recommendations to begin to alleviate the shortage; and

Whereas, the effects of these recommendations should be studied and additional solutions planned; now, therefore, be it

Resolved by the House of Delegates, the Senate concurring, That the Virginia Advisory Legislative Council is directed to continue the study of the shortage of family physicians. The Council shall follow up on the results of the recommendations made as a result of the study conducted pursuant to House Joint Resolution No. 104 of the 1970 Acts of Assembly and shall make such additional recommendations as to ways and means to alleviate the shortage of family physicians in Virginia as may be necessary or advisable.

The Council shall conclude its study and report to the Governor and the General Assembly no later than December one, nineteen hundred seventy-three.