ALASKA LEGISLATURE COMMITTEE FILES 1981-1982 8672

1522 SHESS SB 615

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attention be given now to the feasibility of developing a residency program in Family Medicine with the ultimate intent of expanding into programs of graduate medical education in the fields of Internal Medicine, Pediatrics, Obstetrics/Gynecology, etc.

In addition to a substantial teaching hospital resource, medical students require some experience, probably in the fourth year, in ambulatory clinics. These can be located at some site away from the primary teaching hospital described above but are a significant component of the education of a physician in these times.

Housing for clinical faculty and teaching space may be needed on the hospital site if school and hospital are not immediately adjacent -- a much to be desired arrangement.

6. Adequate Supply of Students for the Study of Medicine:

An effort should be made early on to determine the population of college students in Alaska who opt for the study of medicine and who during the past five years have been applicants to medical schools and additionally, the number of premedical students who have indeed been admitted to medical studies.

These students may require financial support for the pursuit of an educational program extended through premedical college days, medical school and then the residency program subsequent to that.

7. Scholarly Research Activities:

Every medical school has to develop the capacity for adding to the body of knowledge and the development of a climate of learning which would facilitate the development of attitudes of life-long study in the students enrolled therein. It would seem to me that one of the things which could be done in the near future in anticipation of a medical school would be for the State to support the development of certain research activities in the general area of public health. By this, I mean that qualified persons should be supported in the study of the special health problems in Alaska. These I assume (from far away) have to do with some of the fundamental areas of the maintenance of health such as sewage disposal and water purification for the various communities as well as prevention of infectious diseases and special diagnostic and treatment facilities for such problems as alcoholism, drug abuse and any other special areas where medicine and social behavior come together.

8. I would suggest that some attention be given by appropriate persons early on to a study of the use of physician extenders for the delivery of medical care throughout the State. By a physician extender, I mean a physician's assistant, a nurse practitioner, or some other category

of health care provider who is not a physician, who would not be given independent prerogatives of the practice of medicine and who would always perform under guidance of a licensed physician, or a group of physicians, preferably. I refer you to the experience of the Australians in providing some form of supervision, by radio, of persons trained to deliver a limited amount of medical care in the "outback" central area of Australia. It is quite possible that some areas of low population, in remote places in Alaska, may never be able to attract a physician, full time; thus, other methods should be explored. (This may be done already.)

During the period of feasibility studies and early development of a new school of medicine in Alaska, it would appear prudent to continue relationships with the University of Washington, which has long demonstrated its interest in and capacity to aid in development of educational programs at sites far distant from Seattle.

Accreditation is a public statement which provides assurance to society that graduates of the accredited school are achieving reasonable and appropriate national standards, assurance to the students that they receive a useful and valid educational experience, to the institutions sponsoring the medical school that their efforts and expenditures are suitably allocated and to the licensure authorities of the fifty states and five jurisdictions that the graduates of the medical school are worthy of licensure. The Liaison Committee on Medical Education through its staff, Dr. Petersen and myself, are very interested in your proposals and would welcome further inquiry from you as this consideration may be continued in the future. We should like to know of early commitments for a school, results of feasibility studies, etc., as these emerge. Upon request, we can provide significant consultation on all of the many tasks to be performed.

Sincerely,

J. R. Schofield, M.D.

JRS:jp

cc: Edward S. Petersen, M.D.

UNIVERSITY OF ALASKA

February 19, 1982

Bill Tyboch
Behrends Bldg

The Honorable Charles H. Parr
Chairman, Senate HESS Committee
The Alaska State Senate
Pouch V
Juneau, Alaska 99811

RE: Senate Bills 615 and 616 - Medical School

Dear Senator Parr:

The University of Alaska has reviewed the potential impacts of establishing a medical school in Anchorage and has concluded that although such establishment may be justifiable in the future, at the present time, it is not.

Wayne Myers, M.D., Director of the WAMI medical education program on the Fairbanks campus, will present testimony at the hearing today indicating how medical education, health research and health care delivery services can be augmented through the University over the next ten year period. He will also consider the demand for physicians nationwide and in Alaska, the high cost of medical training and the trends nationally in medical school operation. His testimony, supported by a representative from the University of Washington Medical School, will indicate that it is not in the best interests of the University of Alaska or the State to consider establishment of a medical school at this time.

Sincerely,

George C. West
Vice President for
Academic Affairs

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LINE TERMINATED - CP

SB 615 file

George C. West
Vice President for
Academic Affairs & Institutional Planning

University of Alaska
102 Bunnell Building
303 Tanana Drive
Fairbanks, Alaska 99701

January 21, 1982

Senator Charles H. Parr
Pouch V
Juneau, Alaska 99811

Dear Charlie:

Wayne Myers informed me that he will be testifying at your HESS Committee hearing on February 19 on SB 615 and 616 to establish a medical school in Anchorage. You may know that the University was asked in a legislative intent statement attached to the FY82 budget to plan to institute a second year of the medical program currently offered. Wayne prepared an answer to that statement which became the body of the text submitted to Jay Hogan in December. In case you have not seen that statement, which is pertinent to your hearings, I am enclosing a copy for your information.

By the way, I enjoyed listening in on the Interior Delegation teleconference last Tuesday evening. I was especially pleased that the Greater Fairbanks Chamber of Commerce has taken a strong position on the University's budget.

All regards.

Sincerely,

George C. West

GCW:kap

cc: Jay Barton
Sherman Carter

Enclosure

Attachment D

Offering of a second year of medical school in Alaska would be extremely expensive, and would not now be educationally nor economically desirable, and indeed would probably not now even be possible.

Presently, the University of Alaska is able to offer the first year of medical school, the same as may specific, selected universities in the states of Idaho and Montana, as an integral part of the full program at the School of Medicine at the University of Washington. The students in this first-year program at the University of Alaska are actually enrolled in the School of Medicine at the University of Washington which exercises supervision of and tight quality control over this first year program offered at the University of Alaska. The whole approach was set up on the basis of only the first year of medical school being offered at selected universities in Alaska, Idaho and Montana, as acceptable to the University of Washington. Provisions are made for a certain number of second-year medical students to enter the School of Medicine at the University of Washington. It is not possible for Alaska unilaterally to make any change in the present arrangement and for the University of Washington simply to start accepting third year, rather than second year medical students. There is no possibility of that university doing this without massive changes in the instructional program at the University of Alaska with resulting increases in cost. The change might still not permit any more students from Alaska to receive medical degrees from the University of Washington.

The statement of legislative intent regarding the offering of a second year of medical school in Alaska may have been raised by the question, "where do we go from here to provide increased medical education and services for citizens of the state of Alaska?" This matter is discussed below.

The first requirement if the University of Alaska were to attempt to present the second year of the present four-year program of medical school, would be to develop a curriculum which would mesh with the last two years of medical school, in order to prepare the students adequately and to provide proper sequencing of courses and ensure a smooth transition into clinical years. This would require adopting the curriculum developed by the faculty of the University of Washington School of Medicine (Appendix I). That would necessitate an additional 762 hours of teaching, doubling the amount of time in the present program. Of the 754 hours in the first year of the present program, 615 are taught by basic scientists in the fields of Anatomy, Histology, Biochemistry, Microbiology, Physiology, Pathology and the Neurosciences. The additional 139 hours in the present first-year program are taught mostly by clinicians, many of them on a voluntary basis.

The courses taught in the fourth, fifth and sixth quarters (the second year) of the Basic Curriculum of the University of Washington School of Medicine, are the types of courses which relate the basic sciences of medicine to clinical problems to prepare students for the clinical phase taught in the third and fourth years. Basic scientists do participate in the teaching of these second year courses, but the bulk of the material must be taught by physicians. This would mean that the University of Alaska would have to develop full-fledged clinical departments.

Alaska cannot from its current medical school applicant pool of 40-45 students recruit a class large enough to justify a free-standing medical faculty and administrative structure. That would present formidable, if not insurmountable problems, with the present difficulty in securing research grant funds to develop the critical mass of free-standing departments required to have an operation that would be accredited by the Liaison Committee on Medical Education.

The first-year program in Alaska is expensive, costing over $40,000 per student, and a second-year program would be more so. The first-year program is defensible in that it permits expansion of the overall class size of the University of Washington School of Medicine without major capital expenditures, since it was possible to use existing facilities outside Seattle. It exposes students early in their careers to a non-urban medical environment. It is not clear that doubling that exposure would generate sufficient additional interest to justify the expense.

At the present time, the cost to the State of Alaska for the ten students enrolled in the second year at the University of Washington School of Medicine is $243,000, or $24,300 per student. For reasons stated above this is a cost-effective arrangement for the State of Alaska, if it can be shown that a significant number of students with WAMI exposure choose Alaska as a practice site.

Students in the University of Washington School of Medicine system are exposed to medical practice in Alaska by participating in two programs supervised by the Alaskan component.

a. Students who are residents of Alaska may be admitted to the medical school and take the first year of medicine in Alaska. Also, each year there are a few students from non-Alaska WAMI states who select to come to Alaska for the first year of medical school. Some of these students consider the possibility of returning to Alaska to practice.

b. Alaska WAMI has four community clinical units for fourth-year medical students. Two of these units are in Family Medicine, one in Ketchikan and the other in Anchorage. Anchorage has the other two units, one in Obstetrics and Gynecology and the other in Psychiatry. Students and residents rotate through these units. Through the 1980-81 academic year 221 students and twenty-five residents had participated in the teaching in these clinical units.

The University of Alaska is just beginning to accumulate data regarding the question of how many students who were exposed to the Alaska WAMI experience are returning to Alaska to set up practice. The WAMI operation is in its eleventh year. Since the usual medical curriculum of four years is followed by a residency program of three to four years there is a long delay before former students are fully qualified to practice. Since 1971, thirty-four individuals who have participated in a WAMI experience have chosen to practice in Alaska. In the first nine months of 1981, fifty-nine persons were granted licenses to practice medicine in Alaska. Nine of these physicians had graduated from the University of Washington School of Medicine and had been exposed to the WAMI Program during their training.

This preliminary data indicates that the present program is effective in attracting young physicians to Alaska through exposure to WAMI supervised programs. The costs of mounting a second-year program would seem to outweigh the benefits, particularly since the present arrangement is effective in achieving the initial goals of the WAMI program.

However, this does raise the question of what additional cost-effective activities might be initiated and supervised by WAMI to improve the quality of health care delivery in Alaska, some possibilities of which are as follows:

a. The class size could be expanded. Alaska, with 3.5 medical school entrants per 100,000 population per year, now ranks 49th among the 50 states in student access to medical education. The quality of the present pool of forty-five applicants for ten positions would allow for the admission of an additional three to five students. These students could be accommodated without additional cost for faculty or facilities. They would have to be supported by the state while finishing their medical studies in Seattle. The present cost to the state of such an increase would be $22,000 per year per student.

b. The number of fourth-year clinical units could be increased. It would be feasible to develop Pediatric and Internal medicine units, thus increasing exposure of students and/or residents in these primary care teaching units. The cost at present would be approximately $60,000 per unit.

c. It would be possible to develop an affiliated Family Medicine Residency in collaboration with an established and accredited residency program "outside." The residents would spend one year in Alaska and two years in the affiliated site. This would be organized to accommodate both students and residents. Under the present scheme, contact is lost with former students during their three to four year residency training period. The change arrangement would afford the opportunity for a limited number of students to complete their training in Alaska, maximizing the probability that they would establish practice here. Alaska is the only state with no such postgraduate medical education program. Accreditation requirements include a cohort of four residents. The estimated cost remains to be determined. The total cost would be approximately $50,000 per student per year but some of these costs are usually offset by patient care revenues.

d. There is a need to accommodate students from rural Alaska who would like to enter the health profession as nurses, physicians, physician assistants, or in one of the allied health fields. There are excellent opportunities for health professionals in rural Alaska. Therefore these individuals

upon graduation could return to their home region. A proposal has been developed for a "bridge program" tailored to meet the needs of students from the bush so they would succeed in the science-oriented university studies necessary for the health professions. This program would mesh with the support services for students from the bush and interrelate with the University of Alaska Native Program. Estimated costs for this two-semester unit would be $11,000 per student, or $110,000 for a pilot group of ten students.

e. There are projected needs for physician assistants prepared to practice in rural Alaska. There will be an estimated forty-five positions for physician assistants or nurse practitioners working for the native health corporations in subregional health centers or as teachers of community health aides. In addition there are about thirty positions for these types of practitioners in remote sites with supervision by private practitioners or the Indian Health Service. Students indigenous to Alaska from the above-described "bridge program" would be ideal candidates for an affiliated physician assistant program partially taught in Alaska with the curriculum modified to prepare graduates for practice in a bush setting. This program could be developed in conjunction with other WAMI activities and would accommodate up to five students per year. The estimated cost would be $20,000 per student per year.

THE BASIC CURRICULUM

First Quarter (Autumn)		Hours	Credits
Introduction to Medicine and the Curriculum Orientation			
HUBIO 510	P-Anatomy (Microscopic)	51	3
HUBIO 511	P-Anatomy (Gross)	87	5
HUBIO 512	P-Mechanisms in Physiology	54	6
HUBIO 513	P-Introduction to Clinical Medicine	16	2
HUBIO 514	P-Molecular and Cellular Biology I	12	1
HUBIO 515	P-The Ages of Man	38	4
		258	21
Second Quarter (Winter)			
HUBIO 520	P-Cell and Tissue Response to Injury	70	7
HUBIO 521	P-Natural History of Infectious Disease and Chemotherapy	72	7
HUBIO 522	P-Introduction to Clinical Medicine	35	2
HUBIO 523	P-System of Human Behavior I	30	3
HUBIO 524	P-Molecular and Cellular Biology II	39	4
		246	23
Third Quarter (Spring)			
HUBIO 530	P-Epidemiology	20	2
HUBIO 531	P-Head, Neck, Ear, Nose and Throat	66	5.5
HUBIO 532	P-Nervous System	79	8
HUBIO 534	P-Endocrine System	36	3.5
HUBIO 535	P-Introduction to Clinical Medicine	30	3
HUBIO 536	P-Molecular and Cellular Biology III	19	2
		250	24
Fourth Quarter (Autumn)			
HUBIO 540	P-Cardiovascular Respiratory System	116	10
HUBIO 541	P-Skin System	24	2
HUBIO 542	P-Introduction to Clinical Medicine	72	6
HUBIO 543	P-Principles of Pharmacology I	40	3.5
		252	21.5
Fifth Quarter (Winter)			
HUBIO 550	P-Introduction to Clinical Medicine	36	2
HUBIO 551	P-Gastro-Intestinal System	60	6
HUBIO 552	P-Reproductive Biology	42	5
HUBIO 553	P-Musculoskeletal System	60	5
HUBIO 554	P-Genetics	22	2
HUBIO 554	P-Medicine, Health and Society	40	4
		260	24
Sixth Quarter (Spring)			
HUBIO 560	P-Introduction to Clinical Medicine	85	6
HUBIO 561	P-Hematology	43	4
HUBIO 562	P-Urinary System	60	6
HUBIO 563	P-System of Human Behavior II	31	3
HUBIO 564	P-Pharmacolgoy II	31	3.5
		250	22.5

Total Credits 136

MEDICAL EDUCATION NEEDS

Basic Questions

The question of whether Alaska should establish a medical school can be addressed in two ways:

a) Should we move directly and immediately?

b) Should we begin laying the groundwork now, setting up a system of immediately needed health personnel training and research programs which can at the appropriate time become components of medical school?

Physician Supply

Alaska now ranks approximately 40th in the nation in physicians per capita. These national comparisons omit federal physicians which are relatively numerous in Alaska. Hence we probably rank in the 30s nationally. The relative youth of Alaska's population and the extensive use of physician extenders, such as village health aides, lets our physician supply take care of more people than would physicians in a state with a more elderly population and no physician extenders.

Substantial numbers of physicians are migrating to Alaska. In the first 9 months of 1980, 58 M.D.s took out new Alaska licenses, for an annual in-migration rate of 70-80 per year. We do not have out-migration figures since many doctors leave the state after 2-3 years of military or PHS duty but keep their Alaska licenses in force.

Future Physician Needs

Drs. Chase and Rosenblatt of the University of Washington have used two different methods to project the number of family physicians, general internists and pediatricians which will be required in the WAMI states

in the next 20 years. One approach, "demand/utilization" assumes that people will use medical care as they currently use it in regions which are well supplied with doctors. The "needs" approach estimates the number of physicians which would be required to provide as much care as the medical profession feels should be provided.

Both approaches suggest Alaska needs more primary care physicians; right now at least 100 more family physicians, 20-30 more general internists and 20-40 more pediatricians. A similar increment should be added over the coming 20 years.

Nationally a surplus of physicians is expected to develop in the coming decade. Unfortunately the surplus will be in the specialty areas which are already oversupplied. The primary care specialties will be marginally supplied.

These factors suggest that a family medicine specialty training program should be developed in Alaska in the very near future.

Access to Medical Education

In 1980, 16 Alaska residents entered medical school. The WAMI Program accepted 10; other state medical schools accepted 2, and 4 entered private medical schools. Last year these 16 successful applicants were chosen from 45 candidates. Alaska ranks 50th in the nation in the number of state residents entering medical school per 100,000 population, and approximately 36th in the number entering per 1,000 baccalaureate degrees earned each year.

These modest figures represent a marked increase since the late 60s when Alaska was generating only 2-3 applicants per year. Major factors have been the WAMI Program which made admission to medical school a realistic aspiration for Alaskans by providing 10 openings per year

reserved for Alaskans, and the general improvement in higher education opportunities for Alaskans.

Nationally the number of first year medical school openings has increased from 9,700 to 17,200 in the past 15 years as 19 new shcools opened and most existing schools expanded their classes.

The number of medical school applicants nationally peaked in 1974 at 42,600 with a success ratio of 1:2.8. In 1980, 36,000 applicants had a success ratio of 1:2.1. This decline in the number of applicants has not taken place in Washington, Alaska, Montana or Idaho where the number of applicants continues to climb.

Feasibility of an Alaskan Medical School

Medical schools require a large number of faculty to adequately cover the required curricular breadth. National experience suggests that 40 entering students per year is the bare minimum for a cost-effective operation. Of 126 U.S. medical schools only six are this small and at least three of these are in an early growth phase. For Alaska to admit 40 students per year from its present population of 400,000 we would have to accept 10 students per 100,000 population per year. This figure is exceeded by only four states; New York, Nebraska and North and South Dakota. Hawaii, Kansas and Maryland approach this figure with 9-10 per 100,000 per year.

If we aspire to give Alaskan applicants the national average chance of admission to medical school of approximately 1:2, the number of Alaskan applicants would have to double to fill a class of 40 students.

Last year approximately 1,100 Alaskans earned baccalaureate degrees, (two-thirds of them 'outside') or 2.75 degrees per 1,000 population.

This figure is far below the national average of 4 per 1,000 but it is increasing very rapidly at about 15% per year. It will probably surpass the national average because an unusually large proportion of Alaskans are of college age. (Alaskans' median age is 22 years versus the national median 28 years).

If the current growth in the number of Alaskan residents earning bachelor's degrees is sustained, we might be able to justify a medical school of minimal size in as little as six years. If a portion of this growth is a "post-pipeline" transient phenomenon, more modest educational growth should bring us to this point within 10 years.

The planning and development of a medical school in a site without an existing teaching hospital typically has taken seven years. Ten years is not unusual, and is probably a realistic figure for Alaska given our current reliance on "outside" centers for highly specialized care.

Medical School Finances

I have asked Dr. James Schofield, Director of the Department of Institutional Development of the Association of American Medical Colleges to send financial information directly to Senator Parr.

In general terms, capital instruction costs of recently developed schools have ranged from 30 to 100 million dollars depending on whether construction of a new teaching hospital was required.

In FY1979 the median operating cost of the U.S. medical schools was $43,000,000. The median level of state support was $10.2 million but the averaging process included private schools, some of which receive little state support. Furthermore, in this period of contracting federal participation, this figure is expected to rise.

EXISTING MEDICAL EDUCATION RESOURCES IN ALASKA

Preclinical Education

The WAMI Program teaches the first year of medical school in Fairbanks to approximately 12 students per year, with the equivalent of 6 full time faculty positions divided among 18 individuals.

Clinical Education

WAMI Community Clinical Units in Anchorage teach family medicine, psychiatry, and obstetrics and gynecology. Each unit is staffed by local physicians and trains students per six week blocks of instruction.

Postgraduate Education

There are currently no organized internships or residency training programs in Alaska. We are the only state lacking such programs.

Research

The WAMI Program in Fairbanks and the UAF Division of Life Sciences conduct a modest research program concentrating on environmental hazards (cold, air pollution, asbestos, protazoan diseases) and on health service delivery studies. Total health research budget is approximately $500,000.

The UAA School of Nursing, Center for Alcohol and Addiction Studies, and Departments of Biology and Chemistry conduct research in a variety of fields including hypothermia, traditional Eskimo healing practices, basic nerve physiology and microbiology.

The strongest and best established biomedical research unit in Alaska is the U.S. Center for Disease Control Field Station in Anchorage. This small (6 member) unit is internationally recognized particularly for its work on hepatitis and cancer among Alaskan Natives. President Reagan's budget proposals include, in various drafts, profound budget

cuts (35-57%) for CDC. These cuts will probably mean closure of the Alaskan operation. This is most regrettable. The CDC now serves an important function in guiding public health efforts in Alaska and would be a major building block in assembling an academic medical education/ public health unit in Alaska.

Teaching Hospitals

Providence Hospital in Anchorage is the largest hospital in the State and is a major potential resource. The medical staff in 1978 voted to continue to permit WAMI medical students to be trained there. The staff, however, defeated a motion to explore the feasibility of establishing residency training.

The Alaska Hospital and Medical Center expressed serious interest in both undergraduate and graduate medical education in 1977.

The Alaska Native Medical Center has several teaching programs in collaboration with other schools and has expressed interest in expanding this role.

Fairbanks Memorial Hospital and its medical staff have been extremely supportive of the WAMI Program and its students.

RECOMMENDATIONS

1) The feasibility of establishing a medical school in Alaska should be studied in detail with a projected date of opening of 1991. Such a study would cost approxiamtely $100,000.

2) A Family Medicine residency training program should be established in Alaska with an opening date of July 1984. Initial operating costs would come to approximately $700,000 per year rising to $1,000,000 per year when the program was full at three years. Remodelling costs for a required family medicine practice center would approximate $600,000. A major portion of the operating budget is traditionally recoverable from participating hospital revenues and from family practice center patient revenues. Eventually this program-generated revenue might total one half the operating budget. These levels of support, however, take four to five years to develop.

3) The present fourth year medical school offerings in Anchorage should be expanded to an entire year's curriculum with a targeted opening date of July, 1983. This can be accomplished without new construction with an operating budget of approximately $250,000 per year.

4) Negotiations should be opened with the University of Washington to increase the number of Alaskans admitted to the WAMI Program with a target of 13 slots in September 1983. Incremental cost would be approximately $10,000 in FY84, $80,000 in FY85, $140,000 in FY86, $200,000 in FY87 and thereafter.

5) The University's health research base should be strengthened. An

An initial step would be the adoption of the U.S. Center for Disease Control laboratory in Anchorage. This would cost approximately $600,000 per year.

6) Finally, the development of a medical school should not be permitted to eclipse the need for more modest health personnel training and research needs outlined in previously submitted materials.

Table 1

Supply vs. Requirements For Physicians in 1990

(1978 Supply shown for comparison)

	Supply* 1978	Supply* 1990	1990 Requirements	1990 Surplus or (Deficit)	1990 Supply as % of requirement
Primary Care Specialties					
General/Family Practice	67,300	88,250	84,000	4,250	105
General Internal Medicine	60,950	73,800	70,250	3,550	105
General Pediatrics	21,800	37,750	30,250	7,500	125
Surgical Specialties					
General Surgery	31,700	35,300	23,500	11,800	150
Orthopedic Surgery	12,350	20,400	15,100	5,000	135
Ophthalmology	11,750	16,300	11,600	4,700	140
Urology	7,100	9,300	7,700	1,600	120
Otolaryngology	6,100	8,500	8,000	500	105
Neurosurgery	3,000	5,100	2,650	2,450	190
Plastic Surgery	2,800	3,900	2,700	1,200	145
Thoracic Surgery	2,100	2,900	2,050	850	140
Obstetrics and Gynecology	21,900	34,450	24,000	10,450	145
Psychiatry (general)	23,900	30,500	38,500	(8,000)	80
Child Psychiatry	3,050	4,100	9,000	(4,900)	45
Anesthesiology**	14,050	19,450	21,000	(1,550)	90
Radiology**	18,500	27,800	18,000	9,800	155
Pathology	12,650	16,850	13,500	3,350	125
Emergency Medicine	5,000	9,250	13,500	(4,250)	70
Medical Specialties					
Hematology/Oncology	3,600	8,300	9,000	(725)	90
Gastroenterology	2,900	6,900	6,500	400	105
Cardiology	7,700	15,950	7,750	[illegible]	190
Dermatology	4,600	7,350	6,950	400	105
Neurology**	4,650	8,650	5,500	3,150	155
Pulmonary Diseases	2,600	6,950	3,600	3,350	195
Nephrology	1,850	4,850	2,750	2,100	175
Infectious Diseases	650	3,250	2,250	1,000	145
Allergy/Immunology	2,100	3,050	2,050	1,000	150
Endocrinology	1,400	3,850	2,050	1,800	190
Rheumatology	1,000	3,050	1,700	1,350	175
Pediatric Specialties					
Hematology/Oncology	n/a	550	1,650	(1,100)	35
Neonatology	n/a	700	1,300	(600)	55
Cardiology	600	1,000	1,150	(150)	85
Allergy	450	600	600	0	100
Endocrinology	n/a	250	800	(550)	30
Nephrology	n/a	200	350	(150)	55
Preventive Medicine	6,100	5,550	7,300	(1,750)	75
Nuclear Medicine**	n/a	n/a	4,000	n/a	n/a
Phys. Med. & Rehab.**	2,000	2,600	3,200	(600)	75
All other and unspecified	14,400	9,700		n/a	n/a
All Physicians	374,800	535,750	466,000	69,750	115

* Supply includes residents, but GMENAC estimated that residents provide direct health services at approximately [illegible] % of the level of a full-time practicing physician. Thus, the actual supply of physicians in 1990 will be less [illegible]

** Requirements in this specialty were [illegible]

Planning for Graduate Medical Education, An Institutional Effort

by John D. Chase, M.D., and Roger A. Rosenblatt, M.D.

If economics is known as the dismal science, health manpower planning defies polite characterization. Although economists rarely achieve consensus—and are rarely right—money, the subject of their discourse, commands our rapt attention. Trying to determine the appropriate mix of various types of health manpower personnel is to enter a morass where you are unlikely to be right—and will certainly not be loved.

The University of Washington School of Medicine has undertaken an effort to determine which physician specialties are most likely to be needed in the years ahead by the four state area: Washington, Alaska, Montana and Idaho.* Theoretically, by first determining the optimal mix of physician manpower and then contrasting this ideal state with the current and projected supply of physicians, we should be able to determine the existing deficits and surpluses of physicians by their respective specialties. Since the School of Medicine has under its jurisdiction more than 600 residency and fellowship training positions, ideally it could shape the future supply of postgraduate educational opportunities to match the demonstrated needs.

Unfortunately, although the progression of physicians from medical school through residency, postgraduate training and into practice may have some of the linear aspects of a stochastic chemical reaction, the resemblance is tenuous. Furthermore, while the theoretical process for predicting future manpower requirements is straightforward, the individual steps in this deceptively simple equation are fraught with imprecision. In its most skeletal form, the problem can be stated as follows: (1) Determine the amount of health services required by a defined population; (2) Determine the optimal mixture of various types of health personnel needed to provide services to the population; (3) Project the future change in population demography, and from this determine the numbers of various types of health professionals that will be required. Some have then suggested that by manipulating the educational, licensing and reimbursement systems the future supply can then be brought into harmony with the future need.

This rather pristine projection founders immediately on the concept of need. There does not exist, unfortunately, an Avogadro's number describing the number of physicians required to provide health care to a given population. Need is a relative concept, and it is impossible to reduce need to an absolute measure. All one can do is describe the assumptions used in determining the yardstick and proceed from there.

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*Methodological design and statistical analysis provided by Mr. Joseph Abrams.

Dr. Chase is associate dean for clinical affairs and professor of medicine. Dr. Rosenblatt is director of the research section and an assistant professor of family medicine.

The previous paper has described the methodological tools available to the health manpower planner. The crux of the issue revolves around the determination of the number and type of health professionals needed to care for a population of known size and demographic composition. This issue itself has two major components: first determining the number of encounters with the health care profession that will, or should, be generated by the population under discussion, and then partitioning these encounters among the wide variety of health professionals who minister to the public, often proferring services that overlap. Both components of this conundrum require that value judgements be made, and it is essential that these value judgements be made explicit in order to evaluate the recommendations that emerge.

However, as muddy as the problem may appear to those familiar with the more precise biomedical world, it is both the responsibility and privilege of the medical school to delve into these perilous waters. To abstain from attempts to determine and influence the future medical manpower of the region we serve is to accept as correct the highly arbitrary interplay of external forces that determines the distribution of specialty training opportunities in our facilities. Our clinical and educational facilities are limited, and it only makes sense to harness the efforts of our diverse and decentralized faculty and clinical institutions to train physicians who are both capable and willing to fill the real needs of the people they serve. Moreover, national policy is moving rapidly towards increased central control over the production of various physician specialists, both through inducements to provide training slots and by attempting, with less success, to change the reward system encapsulated in the mechanism of third-party reimbursement. Just as WAMI has demonstrated the ability of the medical school to create a decentralized regional system of medical education, the school should grapple with the difficult but important task of helping to determine into which specialties our students will flow as they complete postgraduate training and enter practice.

In light of these considerations, Dean Robert L. Van Citters appointed a Graduate Medical Education Advisory Committee to examine the issue of residency training in the WAMI area and to make recommendations as to possible changes in the residency mix, after determining as best as possible the future need for physicians in the WAMI area. This paper draws upon early work and presents some of the statistical information from which the eventual recommendations will be drawn.

Current Physician Supply for the United States and WAMI

The number of medical schools and medical students has expanded rapidly in the last two decades, the growth in student positions is now being reflected in a growing number of practicing physicians, both in absolute numbers and numbers relative to the population they serve. From 1963 to 1976, the number of licensed physicians in the United States expanded from 276,000 to 409,446; during this period, the University of Washington doubled its class size, largely through the creation in 1969 of the WAMI Program in regionalized medical education. Available residency positions have grown apace, and the University of Washington Affiliated residency positions have grown from 140 in 1960 to 500 at present.

The most pronounced growth has occurred in the disciplines of family medicine, internal medicine and pediatrics, the so-called primary care specialties. As depicted in Figure 1, all the specialties have shown some growth during the decade from 1968 to 1978, but primary care residency slots have more than doubled. This growth pattern can be attributed to the creation of the discipline of family medicine and increasing emphasis in general medicine and pediatrics—a deliberate societal and professional response to the widespread perception that many people lacked access to personal health care in an era of growing subspecialization.

Although this increase in the availability of primary care residency opportunities demonstrates the responsiveness of the School of Medicine to needs articulated both by the public and by the profession, it is difficult to determine the extent to which these modifications have been successful in meeting the needs of the region. Moreover, no yardstick exists for determining further changes. The purpose of this paper is to attempt to estimate future requirements for the primary physician specialties, and compare these estimates with the current supply of physicians by specialty in each of the WAMI states.

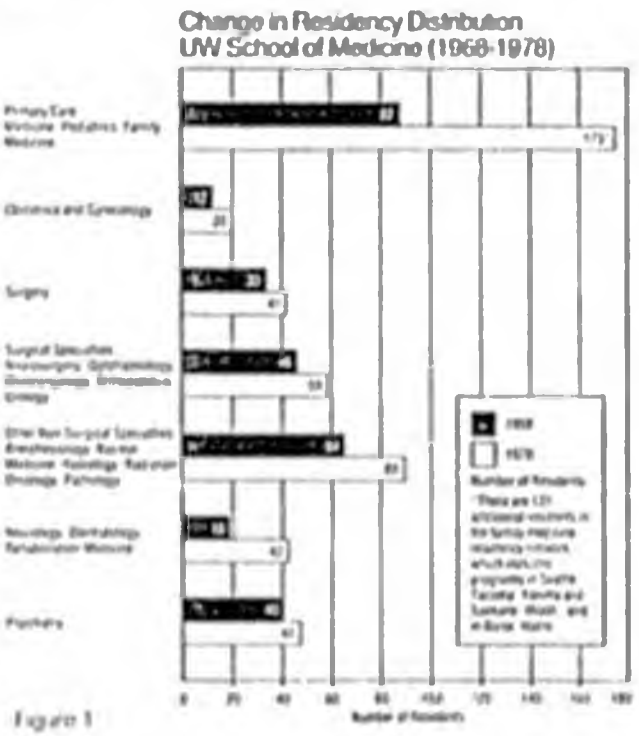

Figure 1

The Advisory Committee formulated a set of assumptions in order to make the scope of the problem manageable. Although the assumptions are of themselves controversial, they at least allow one to proceed. The most significant assumptions were: (1) The fee-for-service system will continue to be the major vehicle by which people obtain medical care; (2) The use of physician extenders and physician surrogates will not have a major impact on the number of physicians required; (3) Although major technological changes may either increase or decrease the public's demands for physicians, such factors will be ignored for the purposes of this study; (4) In addition to the commitment of the School of Medicine to assure an adequate supply and appropriate mix of physicians for the WAMI population, the school also has an obligation to provide adequate graduate training opportunities for local students graduating from our medical school. In actuality, although these assumptions may themselves be arguable, they had relatively little impact on the process of comparing needs and supply which is described below.

Health manpower planning is exquisitely sensitive to the data sources used. There is no shortage of data available to project both the supply and demand sides of the manpower equation; unfortunately, the sources of data are multiple and at times contradictory, a clear indication of the general theoretical murkiness with which the field is afflicted. However, in order to understand the figures presented here, it is necessary to have at least a passing acquaintance with the data sources themselves.

Data on population are provided most accurately by the decennial census—current lawsuits notwithstanding. Since the 1980 census data are not available at the time of this writing, we have used the most recent population projections generated either by the states themselves or by the Census Bureau. The population of the WAMI area is growing rapidly, chiefly because of the influx of people into the state of Washington. Figure 2 graphically depicts the population projections for each of the WAMI states.

Physician population has also grown, and grown more rapidly in the WAMI states than the population itself, this is reflected in Figure 3 which presents the population-to-physician ratio for each of the states and for the country as a whole. The source of the data is the American Medical Association, which despite a built-in reporting lag, has probably the best existing data system for tracking physician supply. It should be noted that the figures exclude federal physicians but include physicians in training, since, in 1977, 12.8 percent of all non-federal physicians in Washington were in training. In addition, since many of these training positions were created relatively recently, the rapid fall in the population-to-physician ratio in Washington is somewhat overstated. All of the WAMI states have fewer physicians per thousand population than does the nation as a whole. Washington ranks 14th among the states by

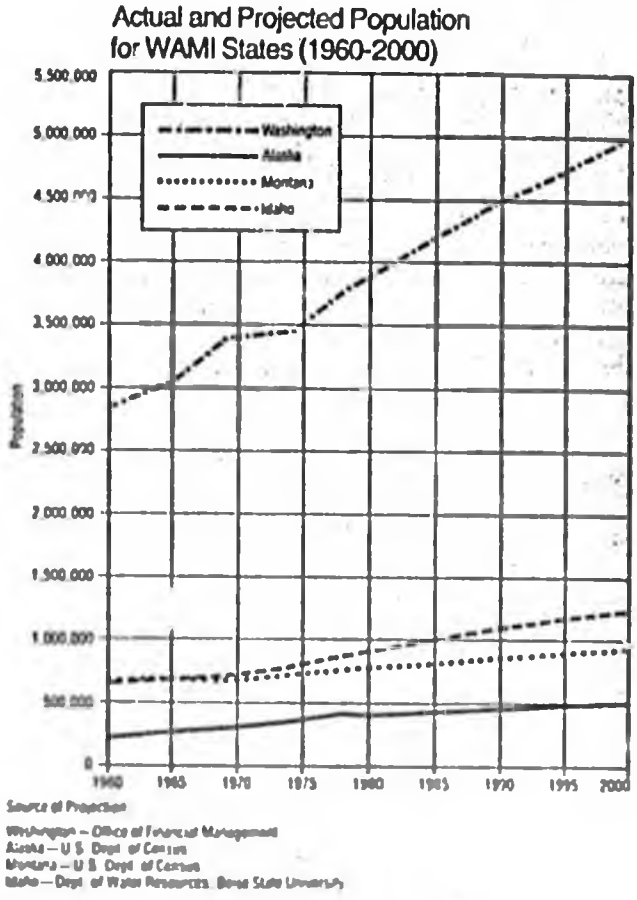

Figure 2

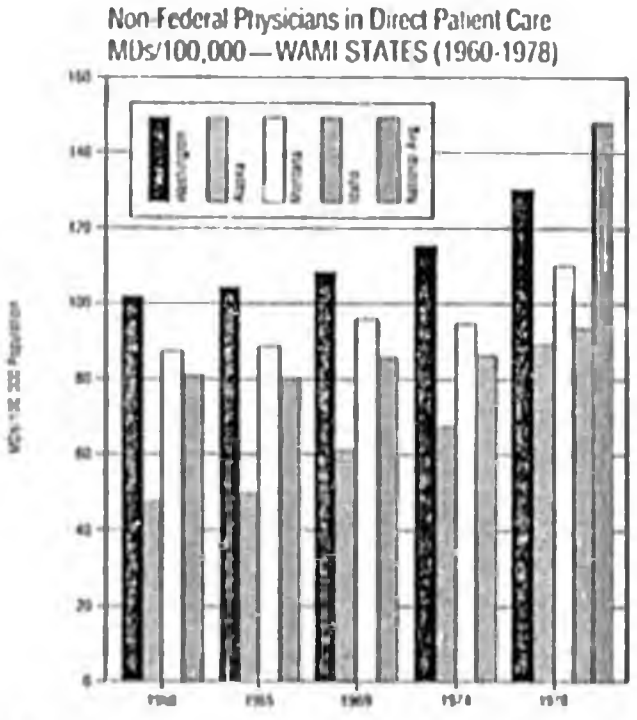

Figure 3

population-to-physician ratio, while Alaska, Montana, and Idaho are 46th, 38th, and 48th respectively.

Table 1 presents the distribution of physicians by specialty in the WAMI states with respect to the populations they serve and compares these figures to those prevailing in the nation as a whole. The figures for Washington closely resemble the national figures: 39 percent of the physicians are in the three major primary care disciplines, with the majority of physicians in narrower medical, surgical or ancillary subspecialties. The pattern is similar for each of the other states, except that the aggregate supply of physicians relative to population is significantly smaller.

It is clear from these figures that the medical profession in the United States consists predominantly of non-primary care specialists and of subspecialists. This finding is particularly striking when one considers the recent trends in the supply of the major primary care disciplines. The number of general and family practitioners has fallen from 30 percent of all physicians in 1960 to 15 percent in 1977 during a period where total numbers of physicians increased rapidly, a trend reflected in the statistics for the Northwest. During this same period, there has been an appreciable increase in both the number of general internists and pediatricians with respect to the population, although not sufficient to balance the overall total loss of primary care physicians available to the public. Given a national goal that 50 percent of all graduating physicians will enter the primary care disciplines of family medicine, general internal medicine, and pediatrics, the available statistics would indicate that in the country at large—and in the WAMI states in particular—we are short of the goal. In addition, we must take into consideration the age of those physicians currently in practice. Today's active general and family practitioners are for the most part members of an aging cohort of physicians who began practice in the 1940s. The average age of family physicians in the WAMI area is about 53 years, and a substantial number of those currently practicing will be lost to death or retirement over the next decade. In the same area, the average age of internists and pediatricians is 47.

Determining the Future Needs For Physicians in the WAMI Area

While our data as to the current supply of physicians are quite adequate, our tools for projecting and quantifying the need for different categories of physicians are quite imprecise. Data sources are plentiful, but the interpretation of those data sources is extremely sensitive to the assumptions made about how medical care is provided. We can ascertain with some precision the number of people in the population who will have myocardial infarctions during the coming year; we have

Table 1

Non-Federal Physicians in Direct Patient Care

MDs/100,000 Population/1977

	Washington	Alaska	Montana	Idaho	U.S.
All Primary Care					
GP/FP	31.9	26.7	29.4	31.5	24.1
Internal Medicine	19.5	12.9	15	9.4	24.1
Pediatrics	8.2	6.2	5.6	4.5	9.6
TOTAL	59.6	45.8	47.5	45.4	57.8
Surgical Specialties					
General Surgery	12.0	8.2	10.6	9.1	13.7
OB/Gyn	9.2	6.7	6.6	6.1	10.0
Neurosurgery	1.6	0.8	1.2	0.8	1.3
Ophthalmology	5.5	3.9	4.6	4.6	5.1
Orthopedics	6.6	7.0	5.1	5.3	5.3
Otolaryngology	2.9	2.3	2.3	1.6	2.5
Plastic Surgery	1.2	0.8	0.7	0.8	1.1
Colon/Rectal	0.2	0.0	0.0	0.0	0.3
Thoracic Surgery	0.7	0.2	0.5	0.4	0.9
Urology	3.4	1.7	3.2	2.9	3.1
TOTAL	43.3	32.1	35.8	31.6	43.3
Medical Specialties					
Dermatology	2.2	0.0	1.9	1.3	2.1
Ped All and Card	0.3	0.0	0.3	0.1	0.4
Cardiovascular	2.7	0.6	1.5	1.8	2.7
All other Int Med Subspec	2.6	2.0	1.6	1.2	3.5
Neurology	1.8	1.1	0.9	1.0	1.7
Psychiatry	10.6	5.3	4.1	2.9	10.6
Phys/Rehab & Other	9.0	6.5	3.5	3.7	7.8
TOTAL	29.2	15.5	13.8	12.0	28.8
Ancillary					
Anesthesiology	7.9	2.5	4.9	2.8	5.8
Pathology	4.4	2.5	3.6	2.5	4.4
Radiology	7.8	4.2	6.9	4.7	7.3
TOTAL	20.1	9.2	15.4	11.0	17.5

Population, 1977: U.S., 216,500,000; Washington, 3,527,000; Alaska, 355,900; Montana, 754,600; Idaho, 831,300

much more difficulty determining what kind of physicians should take care of them or what proportion of the physician's time will be spent in this endeavor. Yet when reduced to its element, that is the problem that we must deal with if we are to make any meaningful projection about manpower needs.

The simplest way to determine the future need for physicians is to derive a population-to-physician ratio for each specialty discipline and apply this ratio to the projected total population for the time period in question. There are several sources for such a ratio. One of the most used is that developed by *Medical Economics* and published in that magazine in 1973. These standards are professionally derived, a numerical consensus among health providers stating what the optimal level of physician supply should be to assure optimal health care. The advantage of this approach is its relative simplicity; once consensus has been hammered out among the participants, projecting future supply is quite straightforward. The disadvantage of the approach is that it tends to enshrine current patterns of care delivery since the professionals involved in the effort tend to start from a base of their own world outlook and experience. One can also question whether health professionals themselves are sufficiently dispassionate about the future of their respective disciplines to produce numbers based on logic rather than emotion or self-interest. Participating in such exercises helps physicians state explicitly their expectations about how health care should be provided but offers us relatively little in the way of assistance in the determination of actual future need for physicians' services. The recently released estimates made by the Graduate Medical Education National Advisory Council (GMENAC) used a modification of this approach. Their "adjusted needs model" used a population-based estimate of medical need, submitted to professional review and judgement at several steps in the process.

The Demand/Utilization Model

In our pluralistic medical system—a sometimes bewildering hybrid of private fee-for-service medicine, numerous third-party insurers, and overlapping federal, state, and local agencies—it is useful to look at what care people seek as an index to what care should be provided. Two basic data sources indicate which physician's services people actually use. The first is the National Ambulatory Medical Care Survey (NAMCS), an actual random sampling of what happens in the offices of private practice, fee-for-service physicians. NAMCS provides information on the demographic breakdown of patients seeking medical care, the illnesses prompting patient visits, as well as the workload and productivity of various types of physicians. It is only a partial picture, however, because it ignores hospital practice and does not account for the teaching, administrative, and research activities of physicians. It also excludes the increasingly large number of physicians working in organized settings such as health maintenance organizations, public institutions, or occupational clinics. Extrapolating from the NAMCS data alone seriously understates the number of physicians needed to fulfill their multiple societal roles.

The second major national source of data about health care utilization comes from the Health Interview Survey (HIS). HIS collects its information from a random sample of the population—not only that segment of the population that uses physicians—and thus provides a much more accurate reflection of the actual illness experience of the population, as well as another method of gauging the utilization of health services. It is likely to be a better reflection of the actual utilization of health services—since it collects information from patients who use physicians who work in all kinds of settings—and gives us some way to begin to assess the degree of unmet need. Information from the HIS survey indicates that 15 percent of all illnesses deemed to be medically serious by the respondent are never treated; 50 percent of all illnesses never result in physician consultation. It is important to recognize that segments of our population do not receive adequate medical care because of a variety of barriers including poverty, cultural disparities, and an inadequate supply of physicians in some rural and inner-city locations. Although increasing the aggregate supply of physicians will not of itself eliminate these barriers, projections of the number and types of physicians who should be produced ought to take account of these unmet needs.

Some very interesting information about the relative productivity of different types of physicians comes from comparing the utilization data gleaned from the Health Interview Survey with the actual relative supply of physicians. Although general and family physicians had dwindled to 15 percent of physicians by 1977, the Health Interview Survey showed that 51 percent of all physician visits in that year were to physicians identified by the respondent as G.P./F.P.; in contrast, general internists, whose numbers have been growing slowly over the last two decades and who now nationally comprise 14 percent of all physicians, accounted for only 11 percent of patient visits. However, it is not at all certain that patients can make a clear cut and accurate identification of their physician's specialty using identical terms. It is also noted that the data indicate a higher rate of hospital visits for the internists, and a greater frequency of care of the critically ill. These observations may in part explain this apparent wide variation in productivity. But it is very clear that the fiscal and numerical consequences of manpower planning will be highly dependent on whether family physicians or general internists assume the majority of care for adult patients. Parenthetically, pediatricians represent about five percent of all physicians and deliver about ten percent of

all patient visits. Table 2 adapts the HIS utilization data to the WAMI states and projects the number of physicians needed in the three major primary care categories for 1980, 1990, and 2000, using our best current data on population trends and adjusting the requirement to reflect needed time for hospital visits, practice management and other non-direct patient care requirements of practice. The technique used to calculate the number of physicians needed is relatively straightforward. The population is broken down into segments by age and sex; for each demographic "slice," the number of visits per year to each kind of physician is calculated from the survey data. Since we know the population pyramid for the WAMI states, we can sum up the expected utilization for each of the specialties and then divide the figure by the respective productivity of each kind of physician, i.e., the number of actual patient visits seen per year for each specialty. The result gives us the number of physicians needed to care for our growing population in the future, based on current patterns of utilization by patients and the maintenance of the status quo in the way medical services are delivered.

Table 2

Estimated Requirements for Primary Care Physicians for the WAMI States
Using a Demand/Utilization Approach
(Based on the Health Interview Survey)

	General/ Family Physicians	General Internists	Pediatricians
WASHINGTON			
1980	2,038	816	179
1990	2,426	984	220
2000	2,700	1,124	248
*Current Supply (1978)	1,043	535	248
ALASKA			
1980	202	72	35
1990	243	90	41
2000	275	104	41
*Current Supply (1978)	102	37	23
MONTANA			
1980	419	168	63
1990	476	196	64
2000	529	224	65
*Current Supply (1978)	225	96	44
IDAHO			
1980	474	182	75
1990	581	222	84
2000	839	275	97
*Current Supply (1978)	255	74	35

*Figures include only office- and hospital-based physicians

The data give us some insight into where the major disparities exist between the current supply of physicians and that which is needed to take care of patient loads given the current level and pattern of patient demand for physician services. There is a continuing and sizeable deficiency of primary care physicians who are occupied in direct patient care in all four states, with the exception of pediatricians in the state of Washington. Using this method as applied to the four-state area, we should almost double the number of general and family physicians and general internists, and have half again the number of pediatricians.

It is important to note that these numbers are very sensitive to the data source used; using data from the National Ambulatory Medical Care Survey gives much lower numbers in all categories for the number of physicians required. However, we consider that the Health Interview Survey data, which recognize the existence of sites of practice beyond private offices, reflect much more completely and accurately the actual behavior of the entire population. Thus we favor using this data in calculating physician need based on current patterns of utilization.

Projecting Physician Requirements Based on Need

The major flaw in the demand approach to manpower planning is that it perpetuates past solutions to the problems of medical care delivery. It does not describe an ideal or even necessarily a desireable model. If large segments of the population currently do not receive care because of an inadequate supply of the specific physician specialty, these inequities will persist if we use the demand model.

Establishing norms for medical care is a difficult proposition, however. How much medical care do people need? Which health services make a difference in helping people achieve an optimal state of well being? And once we have determined that ideal level of services, who should deliver them? These are very important questions, and it is both appropriate and essential that we ask them. However, unlike the more pristine world of the physical sciences, there are no preordained physical constants waiting to be discovered. Health services research, as a field of quantitative scholarly en-

deavor, is much too primitive a science to give unequivocal results to these fundamental questions. Ultimately, our opinions and our values will determine the framework in which these questions are asked and answered.

As part of this attempt to project the need for physicians, a measure was developed which has been termed "treated health needs." This method allows us to combine the most useful elements of the NAMCS and the HIS data bases. From NAMCS, we are able to determine what physicians usually do for a particular illness, e.g., how many times the patient is seen in the office setting. From the HIS survey, we have a fairly accurate idea of the distribution of illnesses and complaints in the general population. By melding these two data sources, we are able to determine the number of physician visits that would be generated if people sought medical attention for all conditions which usually result in physician consultation. By allocating these visits among the three major primary care specialties according to their current market shares and dividing by their relative productivity, one can derive an estimate of the number of physicians "needed" to adequately attend to the full range of illnesses reported by the general population. These figures for the WAMI states are presented in Table 3.

It is evident that determining optimal physician supply based on some estimate of "need" produces much higher figures than projecting numbers based on current level of utilization. A certain amount of skepticism is more likely in order. Although there are undoubtedly segments of the population who would be better off if they went to physicians more frequently, there probably are other segments of the population who would benefit from a little more distance from the medical establishment. Perhaps of more significance to the School of Medicine is that at this moment it is really immaterial which method is used if the point of the exercise is to determine which categories are deficient and which are in surplus. Although the ratios vary, the conclusions are very much the same for the demand model and for the needs model. Primary care physicians continue to be needed in appreciable numbers.

Discussion

The University of Washington School of Medicine, through the WAMI program and its network of affiliated postgraduate training programs, is having a direct and increasing impact on the number and type of physicians that practice in the states of Washington, Alaska, Montana, and Idaho. Although physician migration is an important factor in practice location, an institution with some measure of control over more than 600 postgraduate training positions should be able to influence the mix and distribution of physicians practicing in this area. Since the school exists primarily to serve the medical care needs of the people of this region, it is our responsibility to tailor our training opportunities to the needs of the population.

This preliminary effort to project the needs for primary care physicians in the WAMI area over the next 20 years is the first step in developing the data base that will enable us to make deliberate choices about how we channel our resources. We have started with the disciplines of family medicine, general internal medicine, and pediatrics because this group accounts for nearly

Table 3

Estimated Requirements for Primary Care Physicians for the WAMI States Using a "Needs" Approach

	General/ Family Physicians	General Internists	Pediatricians
WASHINGTON			
1980	3,139	692	307
1990	3,734	808	372
2000	4,813	940	397
*Current Supply (1978)	1,043	535	248
ALASKA			
1980	336	59	72
1990	389	70	82
2000	438	77	86
*Current Supply (1978)	102	37	23
MONTANA			
1980	645	147	139
1990	702	168	142
2000	804	185	146
*Current Supply (1978)	225	96	44
IDAHO			
1980	641	130	135
1990	703	161	142
2000	954	195	182
*Current Supply (1978)	255	74	35

*Figures include only office- and hospital-based physicians

three-quarters of all patient visits, yet represents a minority of the physician population. It is the general consensus of the major professional organizations and the public in general that the public will be served best by augmenting the ranks of primary care physicians. There is less consensus about which of the primary care disciplines deserves the most attention.

In the exercise described above, national surveys of office-based physicians and studies of the way in which the general population used medical resources were used to project the requirements for primary care physicians in the WAMI states over the next two decades. These projections assume that the patterns by which medical care is now being delivered will remain relatively stable and that population growth will continue. It is interesting to note that it is really unimportant whether current demand or assumed need is used as the benchmark by which to determine future physician requirements. Although the magnitude of the results differs, both methods predict continued large deficits for primary care physicians in the four-state area. The current supply of office- and hospital-based pediatricians appears to be adequate in Washington, but inadequate in Idaho, Montana and Alaska.

The School of Medicine has already initiated significant new programs that will have an impact on these situations. The creation of the Family Physician Pathway in 1968 and the creation of a network of family medicine residencies over the subsequent decade have greatly increased the number of students selecting and the number of residents completing training in family medicine. The more recent creation of primary care tracks in internal medicine and pediatrics has increased the sizes of both these residency pools and is channeling increasing numbers of students into generalist careers. Preliminary results show that the graduates of these programs tend to remain in the WAMI area; whether the production is sufficient to meet the need will await further data. It is obvious that this planning effort is in its infancy. We have not even dealt here with the numerous subspecialty training programs and the requirements for the graduates of their programs in our region.

It is extremely difficult to change the patterns and proportional efforts of postgraduate training. Our current residency and postdoctoral programs are the creation of years of work by dedicated clinicians, teachers and researchers. Clinical services are often predicated on adequate housestaff in certain disciplines. Medical school teaching is performed largely in the clinical years by residents. To perturb this system is to intrude on ground hallowed by tradition. Change will not come easily.

But change is necessary, and much is to be gained by generating that change from within the institution. Rather than being saddled with arbitrary dictates from external forces, we have the opportunity to mold our own destiny. We should continue to develop the best data and the best tools so that we can do it in as rational and dispassionate a manner as possible.

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Paper presented at Natl
AHEC symposium - Chapel Hill
North Carolina — reasonable
quantities -

J.

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Gary F. Dunn, M.A.
Associate Dean for Community Affairs
Director, North Dakota AHEC Program
School of Medicine
University of North Dakota
Grand Forks, North Dakota

AHEC: From Osmosis to Symbiosis

The conceptual impetus for the establishment of the present series of area health education centers first appeared in the 1970 Carnegie Commission report, Higher Education and the Nation's Health: Policies for Medical and Dental Education.[1] The report proposed:

> "area health education centers," which would provide facilities for patient care, often on a referral basis from surrounding areas; educational programs for house officers and, to some extent, for M.D. candidates who could rotate through an area health education center from a university health science center; clinical experience for allied health students; and continuing education programs for health manpower.

Responding to this concept, three different federal agencies -- the Bureau of Health Resources Development (BHRD) formerly the Bureau of Health Manpower Education, the Regional Medical Programs (RMP) and the Veterans Administration (VA) -- allocated funds for the development of such health manpower training centers. Although variations exist in the operations

of each type of area health education cen er, their broad goals and objectives are similar. A synthesized statement of the objectives of all area health education centers might read as follows:

> To establish a symbiotic relationship between the university health science center and community clinical resources for the purpose of providing quality, relevant clinical training of health manpower at the undergraduate and graduate level toward the subsequent increase in numbers and kinds of appropriate health care providers within the community.

Since the essence of AHEC is the interaction of all of its participants, by dissecting the above definition we may more clearly describe its complex interrelationships. The first phrase in the above definition provides abundant material to consider.

To establish a symbiotic relationship between the university health science center and community clinical resources

It is agreed that the ordering of the components -- university and community -- or -- community and university -- would vary depending on the type of AHEC being considered, but if the ranking issue can be deferred to other discussions this paper will proceed to a discussion of the partnership of the two elements.

A complex relationship is forecast in the word "symbiotic which Webster defines as "the intimate living together of two dissimilar

organisms in a mutually beneficial relationship." No documentation would seem necessary to illustrate the fact that the university health science center and community clinical resources are dissimilar. To belabor the major dissimilarity of each, the university health science center emphasizes education while the community clinical resources stress service. The challenge of AHEC is to organize the strengths of each in a mutually beneficial relationship.

The establishment of an effective AHEC programs requires the creation of this mutually beneficial relationship as a defined part of its working structure. It requires the development of an operational model which permits a maximum level of input from the community without the university's losing control of its fundamental mission, that of providing effective educational opportunities for its students. At the same time it requires that the university's presence in the community is not disruptive to the community's delivery of effective health care services.

In this sense, no one participant is a core element or the "center" of the program, and it is with good reason that the term "area health education and delivery system"[2] has been suggested to define this complex operation.

During the five years since the Carnegie Commission Report it has most often been the case that the university has approached the community with the suggestion of establishing an area health education center (system). The experience of this author has

been from the university side of this partnership as the director of BHRD AHEC program and it is from this vantage point that the author offers the observations which follow.

AHEC is a complex program which requires the university to establish new skills and procedures in order to enlist the support of community resources necessary for the establishment and development of decentralized health education programs. In addition, it requires that the university and the community adopt new and more positive attitudes toward each other. Each must come to see the other as a valuable resource for the development of health manpower personnel. In the process of forming this relationship the university must assume the initial responsibility for establishing sensitive and positive working relationships with its community partners.

In order for the university to establish a receptive framework for the potential relationship university representatives can best begin by visiting the communities and attempting to identify and contact all future participants necessary for the successful operation of the program. A partial list of participants would include community hospitals, clinics, physicians and their support personnel, including nurses and allied health, institutions of higher learning, officials from the state department of health, staff members from regional medical programs, comprehensive health planning, and regional political figures including those from city, county, and state government.

There is also great advantage in making contact with representatives from regional radio and television stations as well as local newspapers. By meeting with potential participants singly and in selected groups, university representatives are more able to establish the level of rapport necessary if the AHEC program is to receive a positive community reception.

From those persons selected to provide a receptive framework, individuals are asked to serve as members of a regional advisory committee. Every attempt must be made to include on the retional advisory committee as many elements from the greater community as possible to insure that the committee not become influenced by a limited number of persons with an over-represented vested interest. In addition, broad representation is necessary in providing a political base needed to assure continuation of the program.

Following formation of the regional advisory committee the university is ready to negotiate the program's priorities. Effective negotiation requires a thorough definition of what the AHEC program intends to do, who will be involved in doing it, where it will be done, what compensation will be allowed for the activity, and the role to be played by each element.

This is not an easy process and often requires days of negotiation. It is clearly the most difficult aspect of program development.

It is most advantageous for the university and regional advisory committee to jointly recruit and appoint a regional director. The regional director will be responsible for administering the AHEC's educational programs, for developing meaningful linkages between community elements involved in the training activity, and for advising the university as to the most effective course of action to be taken in pursuing its programs. In addition, the regional director serves as liaison between his regional advisory committee and the university, clarifying the community's needs, concerns, and demands to the university and the university's needs, concerns, and demands to the community. As difficult as this job description appears on paper, it has proven to be even more difficult in practice.

Without a reasonable measure of autonomy, the regional directors are unable to respond to the daily demands inherent in the operation of a decentralized program. This point cannot be over stressed. The university must come to the realization that considerable authority, including matters pertaining to budget, personnel, and contract affiliations must lie in the hands of the regional director.

Needless to say, this is not always well received by the parent institution. Too often the university sees this as a weakening of its power base. University administrators may become concerned that the AHEC regions are going too far in committing the university to a cause of action they are not sympathetic with. They often feel that the AHEC involves the university in areas where it doesn't belong.

To minimize these feelings the AHEC directors must continually review AHEC program objectives with the university's total administrative staff. Through this process the university is gradually becoming aware that the AHEC structure it helped to create produces a confederate model which demands that regions be permitted to make many decisions heretofore reserved by the university.

Returning to the original definition of AHEC objectives, the second phrase deals with the purpose for which the university-community partnership was formed:

... for the purpose of providing quality, relevant clinical training of health science manpower at the undergraduate and graduate level

AHEC is a decentralized program. To a great extent decentralization means "going where the action is". This may mean moving departmental chairmen and faculty out of the university and into the greater community. It often demands rotating undergraduate and graduate students from one region to another in order to gain maximum benefit from a variety of community resources. Invariably it requires a heavy reliance on community physicians to serve as faculty.

The population, geography, and wealth of most medical c..e-shortaged areas suggest that the most justifiable program for them to enter into is the training of primary care physi ,ans. The decentralized aspirations of community based medical education are not and should not be to attempt to emulate, through the establishment of a sophisticated health science complex devoted to research and tertiary care, those services which characterize the traditional medical school. This is not meant to be a criticism of such schools but rather to suggest that the appropriate intent would be to recognize their contribution and excellence while at the same time, on a community basis, attempting to steer toward a complementary

position.

The courses offered must reflect available patient material within the community. The courses, whether undergraduate or graduate, should cover a broad spectrum of experiences in medicine and need not be structured unlike those found to be effective in long standing medical schools. It is the intention of AHEC to launch a series of comparative studies that would give some insight into how students graduating from decentralized education programs compare with those graduating from centralized programs. Final evaluation of our educational program may be based on how well students trained in decentralized programs do on National Boards and how successful they are in their residencies.

It is understood that the community hospital will have insufficient community faculty to teach all courses and that the university will provide a portion of the faculty either by relocation or by rotation. Selection of participating community faculty must be based on defined criteria and handled with great diplomacy. Following selection the university has a further responsibility to present programs designed to aid the community faculty to better understand the teaching-learning process. These programs should be required of all community faculty and should be arranged so as to allow for maximum exchange of anxiety and information.

In addition, each participating element -- community faculty, community hospitals, regional and local politicians, etc. -- must somehow come to feel as though they are an intregal part of the decision making process.[3] This is especially true where it relates to the matter of program development. What this really means is that they want to be kept informed as to what is taking place before that information becomes public knowledge.

One aspect of the AHEC mission is the training of physicians well prepared and dedicated to offering excellent primary care. The influence of physician models and the physical environment elected for training is essential to achieve this goal. In its inception the AHEC program associated the university health science center with a community hospital. Although quality hospital-based training is essential, it does not readily lend itself, nor should it, to a level of understanding and appreciation of care required in the development of an effective primary care physician.

An example of how this might be done is through the establishment of a series of micro medical centers. The care received in these centers would be ambulatory, primary care and would complement the hospital based care offered in AHEC affiliated hospitals. The combination of micro medical centers and the AHEC affiliated hospitals operating in the immediate area would enable students and residents to observe and take part in the effective inner workings of these distinct yet comple-

mentary facilities. At the point where secondary help is required, the patient will be referred to appropriate specialists in the AHEC affiliated community hospitals, a system paralleling the referral pattern from the AHEC hospital to the university hospital.

The nucleus of the micro medical center would be a family practice unit. Contiguous to this unit would be a medical services component. Each of these units would contain clinical faculty offices, examining rooms, a small radiology and pathology service, and conference rooms for faculty and student multi-use. In addition there would be a bio medical media center containing TV and computer terminal capability, a small library, multi-use conference rooms, equipment maintenance unit, and office for staff.

As a result of Hill-Burton legislation there are a number of hospitals in rural sites with adequate space to establish micro medical centers. Not large enough to participate as AHEC referral hospitals, such small hospitals could serve as efficient outpatient centers and thus further decentralize medical education to rural communities.

It is to be here emphasized that the number of patients seen in micro medical centers should be directly related to educational need. It is not the intention to enter into a full service operation which would generate a greater number of patients than needed to achieve educational goals.

The final phrase in the definition of AHEC objectives refers to the anticipated improvement in health manpower distribution as a result of the AHEC program. The phrase reads:

... toward the subsequent increase in numbers and kinds of appropriate health care providers within the community

Basic to AHEC's development is the belief that regionalization of an educational system can attack the problems of access and physician distribution. A major assumption made by the AHEC program is that there will be a tendency on the part of those students who take their training in a rural region to return to that region when they enter practice. Longitudinal studies will be instituted in each AHEC program to test this assumption. In addition, the future of any AHEC program as relates to state financial support will certainly depend on whether or not it results in increasing the number of health manpower in the region it serves. This is particularly true of physician manpower.

Through the organizational structure of the regional advisory committee it is intended at all programs offered within the AHEC region be designed to train types of health manpower needed in that region. In addition, it is the intention of AHEC to suggest new types of personnel and new methods of health care delivery to meet the particular needs of the region. A willingness to attempt new modes will vary from region to region as well as from program to program.

Among the activities which area health education centers might assume is that of providing health training to the ultimate provider of health care -- the consumer. By decentralizing and regionalizing the health education system AHEC is in a position to effectively address a number of health problems in the greater community. A list of these problems would include: alcoholism and drug abuse; family counseling (including marital and sexual counseling); and uses and abuses of non-prescription drugs.

The recent groundswell of public indignation concerning these problems will require that greater attention be paid by the health science centers. AHEC can serve as an appropriate base for development of these programs.

In addition, area health education centers provide a mechanism for health care delivery research and the identification of neglected areas of health care delivery. A partial list of these would include: geriatric health care; nutrition, preventive medicine; and health care of long-term institutionalized persons.

In order to intensify awareness of at least one of these problems, geriatric health care, students (medical, nursing, and allied health) might be required to spend a period of time during their

training in an extended care facility, observing and working with aged patients.

Area health education centers might intensify the development of health care delivery and training models. The micro medical center proposal identified in this presentation is one example of what could be done. Many more are needed, however.

The AHEC system is in a position to encourage greater attempts to integrate health care education with other community educational systems. This would include elementary, intermediate, and secondary schools located within the regions. Programs at the elementary level may be designed to help children to better understand how the human body functions and how best to obtain and retain sound health. The elementary student could also be assisted to understand the differences between terminal, chronic, and acute illness. In addition, AHEC could assist districts in designing programs at the intermediate and secondary levels to assit students to better understand social diseases and the dynamics of sexual interaction.

Finally, the area health education might assume greater responsibility in the development of programs that permit input from recipients of health care services to respond to the care they are receiving.

The final success of AHEC will be determined on whether we have affected the numbers and kinds of appropriate health care providers (including the consumers themselves) within the community. Only then will we have proven that our symbiotic effort has produced its desired result and that health care providers, rather than being absorbed into the large population areas which formerly trained them, have trained and remained to provide health care in the communities which need them.

To date AHEC, more than any program of the health science center, represents a genuine move toward affirmative action. Its timing represents a level of serendipity not usually associated with the academic community.

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NORTH DAKOTA HEALTH MANPOWER

Report of a Study Prepared for the
North Dakota Medical Association

Gary F. Dunn, M.A.
Research Director

North Dakota Medical Research Foundation
Grand Forks, N.D.
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Research Staff:
Nancy J. Dunn
M. Elizabeth Johnson

Clinical Consultant:
William R. Harlan, M.D.

Executive Director:
Willard Wright, M.D.

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INTRODUCTION

The Flexner report published in 1910 established a pattern for medical education which continues to prevail. However, in recent years there have been a multiplicity of suggestions from many sources for change in the manner in which physicians and other health care professionals are educated to provide all the services that people expect to receive.

North Dakota now has an excellent two-year basic science medical school and a number of good educational programs in various institutions for training allied health care professionals. Among the many changes in the educational process now being carried out or proposed throughout the country, there is an almost universal trend towards providing clinical training at an earlier and earlier stage in the medical student's curriculum. Additionally, a number of studies, notably the report by the Carnegie Commission on Higher Education, suggest that existing two-year schools develop into degree granting institutions or be discontinued.

Recognizing the climate of change, the faculty of the North Dakota School of Medicine sought the advice of the North Dakota Medical Association leadership and other physicians. They were in general agreement that a complete survey should be carried out as soon as possible. It was generally agreed that the major emphasis of the survey would be to consider the future of the School of Medicine.

The North Dakota Medical Research Foundation is a non-profit foundation sponsored by the North Dakota Medical Association. The Board of Directors are identical with the Council of the State Medical Association. Currently, NDMRF is the sponsoring agency for the Regional Medical Program and provides assistance to the MECO and MEDEX Programs.

The Board of Directors appointed Willard Wright, M.D., as Executive Director of NDMRF and employed Gary Dunn, M.A., currently Assistant Dean, University of Alabama, to be Research Director.

CALENDAR OF STUDY PROCEDURE

The study began in September, 1971, and almost immediately attempts were made to communicate the purpose and findings of the study to various groups both within North Dakota and outside the state. These meetings were designed for two-way communication, giving state residents a chance to ask questions about, and react to, the study. The research director, members of the medical school faculty and members of the Regional Medical Program have met with and discussed this study with individual physicians, groups of physicians, district medical societies, allied health professionals and other individuals and groups who have an interest. Some of these are:

Council of the State Medical Association
Minot area medical society
Dickinson area medical society
Williston area medical society
Devils Lake area medical society
Fargo medical society

Meetings with other societies are also planned. Mr. Dunn visited the following clinics in the major cities of the state to explain the study and audit their facilities:

Fargo Clinic
Quain and Ramstad Clinic
Grand Forks Clinic
Dakota Clinic, Fargo

Phase I of the study, the assessment of health manpower in North Dakota, was completed on November 19. The next portion of the study concentrated on the training of health care workers in the state. In order to find out more about health education programs, facilities for training physicians and willingness of area physicians to teach medical students, questionnaires were went to the following groups:

North Dakota health training programs
North Dakota clinics
North Dakota physicians

During Phase I and after its completion, reports were given to the following decision-making groups:

Medical Center Advisory Council
Advisory Group of prominent citizens
Board of Directors NDMRF
Board of Higher Education
Council of the State Medical Association
Legislative Research Council Committee on Health Affairs

Beginning with an October meeting with President L. O. Loftsgard of North Dakota State University a continuing dialogue was maintained with the University through subsequent visits and telephone calls.

Mr. Dunn visited representatives of the following out-of-state groups to discuss the study and North Dakota's health care situation:

University of Minnesota New School at Duluth
A.A.M.C., Washington, D.C.
Mayo Clinic New School in Rochester
University of Minnesota Medical School
University of South Dakota Medical School
University of Washington
South Dakota Legislators
Montana Medical Centers

A questionnaire was sent on February 2, 1972 to all accredited medical schools in the United States asking them to respond to the idea of entering into a contractual arrangement to assure third year seats for U.N.D. Medical School graduates in degree granting institutions.

The final report of the study will be presented to the Board of Directors of the North Dakota Medical Research Foundation on March 24. The conclusions and recommendations of the council will go to the House of Delegates of the North Dakota Medical Association on May 4, 1972.

ALLIED HEALTH TRAINING IN NORTH DAKOTA

Phase I of this study provided an assessment of existing health manpower personnel and a projection of state nursing and allied health needs based on national projections. Sources of national estimates of manpower requirements which were used as the basis for this phase of the study were; (1) assembled professional judgments, (2) a computation of the manpower required to provide in each of the four Census regions of the United States the manpower available in the region with the highest rate of utilization, (3) manpower projections by the Bureau of Labor Statistics, and (4) needs for additional manpower as reported in a 1966 survey of hospitals. A survey of employment opportunities in North Dakota hospitals showed that needs are presently being met in most health care professions.[1]

North Dakota's health care situation is consistent with the national health manpower scene; there is a shortage of L.P.N.'s and of physicians. In addition, it is evident that the maldistribution of physicians within North Dakota heightens the problem of health care delivery.

It was the original intention of the Medical Society to study in depth the total health science training effort in North Dakota. However, because of limited resources and because it was discovered by the study group that a great deal of significant work had been done and was under way in the field of nursing and allied health, it was decided that the study should concern itself mainly with medical education. Health manpower training programs in North Dakota, already effectively identified as to number and type, were surveyed for additional information about their students, graduates and future plans.

Health manpower training programs on the professional level are present in North Dakota in all the major health services except medical records. Sixty-one programs train workers for twenty-one health occupations.[5]

A comparison of nursing services shows the state has a higher rate of registered nurses per 100,000 population than most of the nation. There is a pronounced need however, for L.P.N.'s. Last year 289 R.N.'s and 375 L.P.N.'s graduated from nursing programs in North Dakota. If past trends continue, one may assume that the majority of graduating registered nurses will seek employment outside the state, while most of the L.P.N.'s will remain in North Dakota.[6]

The ratio of pharmacists per population within North Dakota is lower than the national ratio.[4] However, only a slight need for pharmacists is indicated nationally. The state shortage seems to be a result of out-migration rather than opportunity for training. The School of Pharmacy at North Dakota State University, the only program in the state, reports that ninety-one students graduated in pharmacy last year. The school estimates that North Dakota retains 40% of its graduates to practice pharmacy in the state.[6]

Based on the estimated staff needed to give optimum care in 1966, a projection of the personnel needed in U.S. hospitals by 1975 showed that the increase in the number of occupational therapists and social workers, though small in number, represented a doubling of personnel over the nine year period. Last year a total of fifty-two students graduated in social work from the University and Mary College. The University of North Dakota plans to expand its program.[6]

Eighteen occupational therapy students graduated last year, all from the University of North Dakota. In addition, thirty-three students are presently training to be occupational therapy assistants at North Dakota State School of Science.[6] This is the only program in the state providing assistants in a field where the projected need for 1975 is expected to be twice that present in 1966.[5]

North Dakota programs could perhaps re-examine their goals in training speech pathologists and audiologists, one area where the projected 1975 need is expected to be only slightly greater than that existing in 1966.[5] Two of the three programs in the state, from which 85 students graduated last year, plan to expand.[6]

There are no training programs in medical records in North Dakota. No state need has been described[7] and the number of these workers needed nationally by 1975 does not seem sufficient to warrant starting new programs.[5]

One final word, it would seem that health manpower planners must become more adept at the process of establishing needs before they launch further new programs. Ongoing programs also need to be reevaluated in light of changing health needs and employment opportunities.

U.N.D. SCHOOL OF BASIC MEDICAL SCIENCES

History of the Schools of Basic Medical Sciences

The University of North Dakota School of Medicine was established in 1905, one of 10 medical schools in the period 1900 to 1915 either to organize or to reduce its curriculum to become a two year school. Underlying the trend to establish two year schools was the promise that basic science, but not clinical facilities, limit student output by the degree granting schools.

In 1940 there were still 10 two year schools of medicine; by 1966, however, 7 schools had expanded from two-year to four-year programs. The two year schools continuing beyond 1966 were North Dakota, South Dakota, and Dartmouth. Since that time Dartmouth has become a degree granting institution and five new two-year schools have been added. Four of these five schools (Nevada is the exception) have specific plans to develop into degree granting institutions as quickly as conditions allow.[8]

As recently as 1957 a report to the Association of American Medical Colleges stated that 400 additional third year seats were available in degree granting medical schools.[9] On this basis a 1958 report[10] even suggested that 10 new two-year schools with an average class size of 45 students were needed. In sharp contrast twelve years later is the Carnegie Commission recommendation that two-year medical schools either expand into degree granting institutions or cease operation.[11]

U.N.D. Graduates

In 1909 the first class, consisting of one student, was graduated from UND. Through the 1920's the school graduated approximately 25 students per year. The school has continued to grow so that in recent years graduating classes have averaged over 80 students.

The contributions to the physician force of the state made by the UND Medical School are undeniable. Approximately 75% of its graduates are in medical practice in North Dakota, comprising a significant percentage of the state's total physician population.

To date the 197 graduates who have returned to North Dakota to practice

medicine represent 36.7% of the total number of physicians in the state. Of the 203 general practitioners in the state 103 physicians, or 50.7% of these general practitioners, are UND graduates.[12]

U.N.D. Students

In 1971 the state of North Dakota had the highest percentage of applicants per population accepted into a first year medical school class. Of the 76 students from the state who applied for admission into medical schools across the nation 51 applicants (or 67.1%) were accepted into medical school.[13] Of these 51 students 46 attend UND School of Medicine.

Scores on the Medical College Aptitude Test (MCAT) are one measure of comparison between first year medical students at UND and first year medical students across the nation. In the following table the scores for the last two UND entering classes[14] are compared to the scores of all accepted and all non-accepted students applying to U.S. medical schools.[15]

MCAT Scores

		Verbal	Quantitative	General	Science
1970-71	accepted nationally	559	606	560	558
	accepted at UND	512	595	533	572
	non-accepted nationally	506	539	518	499
1969-70	accepted nationally	562	603	569	577
	accepted UND	490	570	520	540
	non-accepted nationally	506	536	524	507

On this test, given before entrance into medical school, UND students score slightly lower than the national scores of other accepted students. However, it is significant to note that following completion of the two year curriculum at UND each of these students has successfully transferred to a degree granting medical school.

Over the past eight years 359 North Dakota students have entered medical school. Of these students 312 have entered UND while only 47 students over the 8 year period have entered a medical school outside North Dakota.[15]

A questionnaire distributed in January 1972 to the present two classes of medical students at UND brought the following responses:

66% of the students felt they would not be in medical school if North Dakota had not at least a 2 year program.

21% of the students replied they planned to return to North Dakota to practice after graduation. 18% of the students responded they did not plan to return to the state, while 60% were still undecided.

37% of the students felt that attending the medical school (2 year) had influenced their decision to practice in North Dakota after graduation, while 63% felt attendance had not affected their decision.

In 1969-70 UND Medical School received a total of 150 applications for acceptance into the first year class. In 1970 the total dropped to 138 applications for the 52 seats in the first year class. This represents a ratio of 2.6 applicants for each first year seat. The national average for the same year was 13.3 applicants per first year position.[13]

At the writing of this report UND is receiving a record number of applications for the 63 first year seats in the class to begin in Fall 1972. A total of 450 applications have been received to date: 123 from North Dakota young people and 327 from out of state.[14] UND accepts very few non-resident students and priority is given to those states which have no medical school.

Transferability

Past and Present

Upon successful completion of the sophomore year at UND students transfer to the degree granting institution of their choice. The present curriculum, recently revised, is compatible with that of many degree granting institutions. To date no student has failed to secure a place in a third year class. However, in recent years transfer has been accomplished with increasing difficulty.

Last year each of UND's 50 graduating students successfully competed for one of the 295 third year seats available to transferring students. (This figure excludes students transferring from one degree granting

medical school to another.) Of these 295 seats, 169 were filled by students transferring from two year medical schools; 108 by students transferring from foreign schools; and 18 by students transferring from other degree programs. In just the past three years the number of transferring students from foreign schools has increased from 20 to 108, thus intensifying competition for these few seats at an astonishing rate.[17]

Transferability

Future

In November 1971 the UND School of Medicine wrote to the 45 schools which have in recent years accepted UND graduates asking these schools to indicate their ability to accept UND transfer students after 1975. Of the 37 schools which have in the last five years accepted 70% of UND's transferring medical students 22 schools now indicate foreseeable difficulty in accepting these students after 1975.

An obstacle predicted by the responding schools was future incompatibilities in curriculum. Brought about by early introduction of clinical material and by accelerated curricular programs these incompatibilities, however, accounted for only 18% of the projected transferring problems. As cited by 18 of the schools which traditionally receive UND graduates, 82% of the anticipated difficulty is due to lack of space within the class. This is due to the low attrition rate for students in medical school. (For the year 1970-71 the percentage of students withdrawing from medical school was 1.04%).[17]

Costs of Operation

The UND Medical School operated last year on a budget of $1,763,000.[18] The cost of operating the medical school reflects expenses borne by the school in teaching a total of 769 students (381 full time equivalents) per year. This figure includes not only medical students, but also undergraduate and graduate students in the bio-medical sciences, students in physical therapy, occupational therapy, medical technology, cytotechnology and nursing.

Following is a table of operating expenditures for degree granting medical schools over the past two years. In 1969-70 the three schools operating on the lowest budgets in the nation each spent between $3.5 and $5 million. The median expenditure for all degree granting schools for 1969-70 was $14.5 million.[17]

Table 34.—Total Expenditures				
	1968-69	%	1969-70	%
No. of fully activated 4 year colleges	85	100	87	100
No. spending between $2 million and $5 million	6	7	3	4
No. spending between $5 million and $10 million	21	25	20	23
No. spending between $10 million and $15 million	22	26	22	25
No. spending between $15 million and $20 million	13	14	14	16
No. spending between $20 million and $25 million	9	11	13	15
No. spending between $25 million and $30 million	5	6	2	2
No. spending over $30 million	9	11	13	15
Minimum amount spent	$ 2,894,768		$ 3,531,000	
Maximum amount spent	53,405,115		56,464,081	
Median expenditures	13,022,330		14,490,871	
Average expenditures	15,758,411		17,418,559	

Sources of Funds

Past and Present

Last year the State of North Dakota provided $920,000 (52% of the Medical School's budget) while the federal government contributed $843,000 (40%) of which $435,000 was designated for research. (Because of new priorities on the national level which favor support of education it may be expected that the amount of federal funds for research will be lower in future years.) Foundations and other sources contributed $129,000 (8%) of the medical school's operating budget last year.[18]

The smaller the medical school the less competitive it is for other than state monies. This has been true especially of the two year schools. At present the State of North Dakota provides approximately 52% of the medical school's financial support. South Dakota reports state support in excess of 76%[19] while state support at the University of Alabama is 15.2%. A strong tradition underlies North Dakota support of the medical school; a 1971 study ranked the state 13th in the nation in state expenditures for higher education.[20]

Physician Audit

On November 29, 1971, a questionnaire was sent to the 648 physicians presently practicing in the state asking if they would be interested in teaching medical students providing released time for preparation and compensation for effort were available.

To date 387 physicians in the state have returned the questionnaire. Of that number, 345 (or 89% of those responding) have expressed an interest in teaching medical students. The major reason noted by the 42 physicians not indicating an interest in teaching at this time was approaching retirement.

The total of 345 physicians interested in teaching medical school represents 317 private physicians (or 59% of the private physicians in the state) plus an additional 28 physicians in the military, V.A., and the Indian Service who have expressed an interest.

In the cities of Fargo, Bismarck, Grand Forks, and Minot the interest in teaching averages 65% of the physician population while 49% of the physicians practicing in all other areas of the state expressed their interest.

Of the total physicians responding positively, 294 physicians (85%) would be interested in teaching both undergraduates and residents and interns. A total of 39 physicians (11%) expressed a preference for teaching undergraduates, while 12 physicians (3%) preferred teaching residents and interns.[21]

Clinical Audit

For a variety of reasons there is no established criteria for determining the optimum ratio of patients to medical students or the numbers and kinds of experiences required to assure adequate exposure for a sound learning situation. One of the major questions in North Dakota has been whether or not there exists an adequate patient pool in terms of numbers and variety to offer a degree granting experience. What we have attempted to do, therefore, is to identify how many and what kind of patients are presently being seen in North Dakota and to compare that by category with a number of degree granting schools.

It should be emphasized that in no way will our conclusions infer that the physicians within the state are interested or willing at this point to permit exposure of their patients for the purposes of training medical students.

Nevertheless, we are comfortable with the fact that adequate patient material does exist should the medical community provide access and should the medical school expand and develop a plan to take advantage of it.[22]

Hospital Bed Audit

A commonly quoted standard of the number of hospital beds required for teaching is ten beds per student per entering class. By this standard a medical school with a class of 50 students would require a 500-bed hospital. Many medical schools operate their own teaching hospitals with fewer beds than this standard calls for.[23] In actual fact, of schools recently building university hospitals the range of beds per entering student is 2.7 to 6.3 (average 4.5).[24] In all but rare instances affiliations with a variety of neighboring hospitals, particularly Veterans' Administration hospitals, increase the amount of readily available clinical material. In addition, outpatient clinic teaching continues to grow in importance.

Following is the hospital bed capacity in North Dakota's four largest cities:[25]

Fargo	
St. Luke's	364 beds
St. John's	134 beds
Dakota	116 beds
	614 beds
Minot	
St. Joseph's	189 beds
Trinity	270 beds
	459 beds
Bismarck	
St. Alexius	258 beds
Bismarck Hospital	187 beds
	445 beds
Grand Forks	
United - St. Michael's	167 beds
United - Deaconess	151 beds
	318 beds

Other facilities that could be made available are: community hospitals in other cities, Veterans' Administration Hospital, and Air Force Base Hospitals.

Lacking a concrete proposal, it was deemed inappropriate at this point in the study to contact hospital administrators regarding their interest in becoming a teaching hospital.

ALTERNATIVES FOR ACTION

North Dakota has available to it a number of alternatives for future action to provide for physician education. A number were considered and discarded as impractical. Any final course of action must be considered in the light of resources available and priorities established for the best use of resources. The medical profession, educational authorities, legislative and government officials, and the general public share responsibility for a decision which will be in the best interest of the entire state.

The Council of the North Dakota Medical Association requested the study group to present for its consideration the following alternative proposals.

Cease Operation of the Medical School

The cessation of the medical school would result in immediate financial gain for the state, but such a gain would be offset by the expense of starting a new medical school at a future date, should the state deem it appropriate. (Start-up costs prior to the admission of the first medical student average $1.5 million.)[24] Basic to the consideration of any financial gain is the effect discontinuance of the school would have on North Dakota residents, the state, and the University itself.

North Dakota residents have a high rate of acceptance into medical schools, a situation which could change should the medical school close. During 1970-71 a total of 53 North Dakota residents attended medical school as first year students; 45 of these students attended UND. Of the states having no medical school following are the number of residents enrolled in a first year medical class in 1970-71: Alaska 5 students; Delaware 28 students; Idaho 23 students; Maine 19 students; Montana 26 students; Nevada 14 students; and Wyoming 17 students.

For the states having no medical school the above figures expressed as first year medical students per 100,000 population would appear as follows: Alaska 1.7; Delaware 5.1; Idaho 3.2; Maine 1.9; Montana 3.7; Nevada 2.9; and Wyoming 5.2. These figures contrast significantly with North Dakota's present 8.6 first year medical students per 100,000 population.

Cessation of the medical school would certainly affect the economy of the state. The medical school has become a basic industry in the state, affecting

employment opportunities and significantly influencing the influx of federal monies into the state.

The effect on the University community would be equally great if the medical school closed. Because the medical school serves as a resource to the bio-science, nursing, and allied health programs its loss could have a detrimental effect on the University's total science program including graduate education. Its absence would greatly affect the quality of these programs and could make it difficult to attract new faculty to these departments. In addition, the loss of the medical school might decrease the morale, stature, and confidence of the University.

Contractual Relationship With Degree Granting School(s)

There are a number of different ways in which an arrangement could be established where a degree granting medical school would agree to accept North Dakota students for all or part of their education.

One possibility is to continue as a two year school and enter into an agreement--either financial or non-financial--with one or more degree granting medical schools securing entrance of North Dakota students into their third year class. The length of such an agreement would have to be set, and would involve maintaining a lower division curriculum compatible with those of the other schools.

A modification of this third-year arrangement would be to establish a contractual arrangement with other schools on a selective basis for some aspects of the students' clinical training or for a portion of the class with specialist aspirations in research or other areas.

Such agreements would guarantee North Dakota students the opportunity of transfer and, initially, would be less expensive. The state would be "renting" instead of "buying" and as a result could eventually see less medical care return for the dollars invested. The medical school itself possibly could lose Federal funds since recent legislation favors degree granting schools to the exclusion of the two year schools.

It may also be difficult to find a degree granting medical school willing to enter into a long-term agreement to accept North Dakota transfers. Because of the increase in the number of students entering medical schools and the decrease in attrition rates, there will simply be fewer openings for

transfer students. A 1971 survey by the University of North Dakota Medical School showed that a majority of the schools which now accept North Dakota transfers will be unable to do so after 1975, for reasons of space rather than curriculum compatibility.[14]

Medical Schools willing to cooperate might not offer the kinds of emphases North Dakota might desire, or might be located significantly distant from the Upper Midwest region. Since many students form strong attractions to the area in which they finish medical school, North Dakota could potentially lose even more than the meager ratio of physicians it presently retains by requiring students to train in other regions.

A contractual arrangement for four years of medical schooling is also a possibility should North Dakota decide to discontinue its medical school. The only real advantage to such a plan would be that more North Dakota residents probably would be accepted into medical school than if no arrangements were made. The same problems of finance, space and location involved in the third-year arrangement would be present in this plan.

Develop a Degree Granting Program in Cooperation With Other States

A degree granting medical school developed in cooeration with other states would have a broader population base from which to draw potentially more students, more patients and more financial support.

Before such a school could be developed questions of jurisdiction and location would have to be answered and the problem of transferring funds across state lines solved. Lengthy negotiations would be necessary to iron out these political difficulties at a time when the federal government is urging and supporting immediate conversion to degree granting institutions. The loss of pride and identity a state feels when it no longer has its own medical school must also be considered.

There has been little favorable response from Minnesota or South Dakota to the idea of developing a medical school in cooperation with North Dakota. Several western states were willing to organize interstate health committees to study health manpower problems, but they have been slow to initiate interstate health manpower training programs primarily because of the nature of physician education, namely, clinical training.

Maintain the Status Quo

North Dakota could continue its two-year basic science medical school as at present, presuming that students would be accepted into the third year class at the medical schools to which they apply and informing the students of the risk they are taking. In order to assure students the opportunity of transfer, the medical school should commit itself to conducting frequent surveys of third-year openings at degree granting institutions.

The state would be educating the same number of students as it is now, with little turmoil or interference. It could, however, lose a unique opportunity to expand by failing to take advantage of federal monies now available for expansion.

Because federal funding incentives favor the degree granting medical schools, in the future two-year schools may find it difficult to retain and replace faculty with good quality teachers and physicians for clinical requirements.

Develop a Degree Granting Medical School in North Dakota

North Dakota might benefit from a degree granting school in a number of ways. By accounting for all four years of students' medical education, such an institution potentially could increase the number of physicians in the state. It should keep North Dakota residents' rate of acceptance into medical school high and eliminate the problem of transfer.

The economy of the state could benefit through the addition of federal monies now available for medical school expansion and physician training. The prestige usually enjoyed by a degree granting medical school and its faculty would also be present.

North Dakota would have the option of developing either a three or four year program. The comparative merits of each are as yet unknown. A student in the four year program attends school 36 out of 45 months with the traditional summer vacations. A student in the three year program attends school 33 out of 36 months in a more continuous program. Contrary to what may be assumed, we have not seen an advantage in terms of cost as relates to the three year school. No doubt this has to do with the fact that comparable experiences and services are provided regardless of the time period.

The four year medical school has become an established and accepted program in medical education. The relaxed pace of the program gives the student an opportunity for more elective study and the chance to earn tuition money during the summer vacation while having the advantage of another year to mature.

Although the three year program is basically untried, the national trend is in that direction. Capitation allowances for initiating the three year course are greater than those for the four year course since the shorter program provides initial increased physician output. Conversion to a three year school, however, would require more severe curricular changes than were the school to elect the traditional four year program.

OPPORTUNITIES FOR FUNDING

Federal Funds

In the closing weeks of 1971 President Nixon signed into law the Comprehensive Health Training Act which makes available to medical schools large amounts of federal funds.[26] Among the provisions is one encouraging conversion of two year schools of basic sciences to degree granting medical schools. This provision provides for a grant to a two year school equal to $50,000 times the number of medical students to be enrolled in its initial third year class if the two year school establishes a degree granting program. To be eligible for this grant the school must enroll a third class no later than the school year beginning in 1975.

The basic capitation grant provides that each three or four year school could receive $2,500 for each full time student enrolled in the first, second or third year of a program, thus making available up to $7,500 per student over the first three years of education. In addition, in the year of graduation $4,000 is available to the school for each student graduating in more than 3 years with the incentive that $6,000 is available for each student graduating in 3 years. A three year school over the period of a student's education, in other words, can receive $13,500 per student while a four year school can receive $2,000 less. Capitation grant material--regulations and applications--lead the list of priorities at the Bureau of Health Manpower Education.[27]

Special consideration would be given to those applicants developing schools of medicine which use existing facilities.

The Comprehensive Health Training Act also provides an authorization to hospitals for training of family physicians. Any public or nonprofit private hospital may apply for a family medicine training grant. This provision would make hospital participation in possible medical school expansion financially advantageous.

Veteran's Administration

Presently 82 medical schools in the nation maintain affiliations with 96 VA hospitals. Figures indicate that about one-half of all physicains entering practice each year receive some of their training at a VA hospital.

Introduced into this session of Congress was a bill which would have enabled the leasing, cost free, to a college or university, of VA hospitals and other facilities or remodeling to make them suitable for educational purposes. The bill also provided for a percentage of faculty salary reimbursement. Although defeated in this session, the VA's interest in medical education is evidenced by this legislation and might well be kept in mind in the event funding is made available in the future.[28]

National Academy of Sciences

The Institute of Medicine of the National Academy of Sciences is looking at the educational process in health professional schools in an attempt to integrate health workers into a health delivery team. Funds may soon be available to solidify a developing idea now taking hold at some schools: no longer should schools separately train physicians, nurses, physicians assistants, nutritionists, and others, but rather these professionals should be trained as a team which would be concerned with the total health of community residents.[29]

Private Foundations

There are additional sources of outside funds for the development of innovative programs. The Commonwealth Foundation, the [illegible] Foundation, the Kellogg Foundation, and the Brunner Foundation have supported expansion and development of health care patterns for many years. The Johnson Foundation, only now being set up, will be the second largest foundation in the country. The purpose of the foundation is improvement of delivery patterns of health care.

ELABORATION OF FOUR ALTERNATIVES

Following presentation of the various alternatives for action the Study Group was directed to develop further information on four of the alternatives. The assignment entailed:

(1) Establishing principles upon which a degree granting medical school in North Dakota would be founded and estimating the cost;

(2) Examining the effect of cessation of the medical school;

(3) Surveying with degree granting medical schools the possibility of a contractual relationship; and

(4) Approaching leaders in neighboring states regarding the possibility of regional cooperation.

The ensuing sections cover these alternatives in greater depth.

Expansion of the Medical School

Principles Upon Which Expansion Would Be Based

The reader should keep in mind that what is presented is at best an attempt to respond to the question of what might be done. It must be assumed that in order to become a degree granting institution the following must prevail:

(1) That the Board of Higher Education will authorize the medical school expansion to a degree granting institution.

(2) That the state legislature will appropriate the necessary funds for expansion.

(3) That the expansion will take place within existing clinical and hospital facilities.

(4) That the faculty has the capability of developing the necessary academic and clinical experiences to satisfy AAMC accreditation.

(5) That the primary role of the medical school will be to train family physicians.

(6) That the basic support services-- library and laboratories-- need merely to be augmented.

(7) That there is adequate classroom space and that the basic sciences would continue to be taught on the UND campus.

(8) That federal funding--which amounts to an average of 48% of all medical school budgets--will be available to North Dakota.

(9) That the school of medicine currently employs a large enough basic science faculty to provide service for the expansion without employing additional faculty.

(10) That because the plan does not intend to operate a university hospital the school's clinical staff would become a viable part of the existing health care system providing released time for interested practitioners to take part.

(11) That advanced instruction in limited specialty fields not be a part of undergraduate training.

(12) That with proper supervision and assistance community hospitals and practicing physicians can provide quality instruction.

(13) That any consideration for expansion will include post doctorate training in the form of residencies and as a general principle they should begin one or two years before the development of clinical teaching.

(14) That the majority of the clinical training would take place in larger towns, namely Fargo, Minot, Bismarck, and Grand Forks.

Budget Rationale

The budget we have prepared is based on national average ratios of faculty to students, the examination of existing medical school budgets, and the 14 assumptions listed above. Recognize that any manipulation of these variables should be accompanied by a change in rationale and figures.

Accurate cost figures are not possible at this phase of the study. Costs will vary according to type of program selected, physician and hospital donation of resources and facilities, etc.

The clinical budget represents full time equivalents which may be divided in a variety of ways. The funds allocated could be used to pay practicing physicians who would teach medical students part time in their communities.

The starting salary for associate professors in clinical medicine has been set at $35,000. An additional $5,000 was added to all but the "Other" category to allow for the appointment of department chairmen. These figures are consistent with national averages. Both the clinical and basic science faculty estimates are based on the establishment of a four year program enrolling 280 students.

Regardless of whether a three year or a four year program is selected by the medical school it is most likely, because of recruitment of staff, restructuring of the undergraduate experience, and designing of the clinical experience, that one program would be operational before 1978.

ESTIMATED BUDGET

Basic Sciences	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Anatomy	145,000	5,250	14,500	7	14,000	178,750
Pathology	145,000	5,250	14,500	7	14,000	178,750
Physiology-Pharm.	205,000	7,500	20,500	10	20,000	253,000
Microbiology	165,000	6,000	16,500	8	16,000	203,500
Biochemistry	165,000	6,000	16,500	8	16,000	203,500
Lab. Animal Service	50,000		5,000			55,000
Support Services	150,000		20,000	40		170,000

Basic Sciences--Subtotal 1,242,500

Administration	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Dean	40,000	5,000	4,000	1	2,000	51,000
Assoc. Dean Curric.	35,000	3,000	3,500	1	2,000	43,500
Assoc Dean Admiss.	35,000	3,000	3,500	1	2,000	43,500
Assoc. Dean Clinic	35,000	3,000	3,500	1	2,000	43,500
Finance Officer	17,500	1,500	1,750	1	2,000	22,750
Dir(s) of Med Ed	175,000	15,000	17,500	5	10,000	217,500
Support Services	36,000		3,600	6		39,600

Administration--Subtotal 861,350

Library	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Librarian	17,500	1,000	1,750	1	10,000	32,250
Asst. Librarian	10,000		1,000	2		11,000
Support Services	6,000		600			6,600

Library--Subtotal 49,850

Research	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
					100,000	100,000

Research--Subtotal 100,000

Clinical Sciences	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
Family Medicine	355,000	15,000	35,000	10	20,000	425,500
Pediatrics	285,000	12,000	28,500	8	16,000	341,500
Medicine	355,000	15,000	35,500	10	20,000	425,500
Surgery	285,000	12,000	28,500	8	16,000	341,500
OB-Gyn	145,000	6,000	14,500	4	8,000	173,500
Psychiatry	145,000	6,000	14,500	4	8,000	173,500
Anesthesiology	75,000	3,000	7,500	2	4,000	89,500
Community Med.	180,000	7,500	18,000	5	10,000	215,500
Radiology	110,000	4,500	11,000	3	6,000	131,500
Other--Derm, Opth, ENT, Neuro, etc.	210,000	9,000	21,000	6	12,000	252,000
Support Staff (clinical, lab, nurses, tech.)	90,000		18,000			198,000

Clinical Sciences--Subtotal 2,767,500

	Salaries	Travel	Employee Benefits	Number	Supplies and Materials	TOTALS
TOTALS	3,757,000	153,500	380,700	159	330,000	4,621,200

Contingency fund @ 7% 323,484

GRAND TOTAL 4,994,684

Effect of Cessation of the Medical School

Facilities

Over the years UND has built up an investment in facilities and equipment in the medical science building and the Ireland Research Laboratory valued at $5.8 million.[29] These are special purpose facilities which would continue to be adequate for use by the medical school, but would be costly to adapt for other purposes.

Faculty

What cannot be so easily reallocated is the expertise in the form of faculty which exists here. Concern should develop over what will become of the total bio-medical science faculty should the medical school be discontinued. It is true that in addition to medical students the faculty prepares undergraduates and graduate students in bio-medical sciences, however, the primary motivation to the majority of faculty members in coming to UND was the opportunity to teach medical students. Were the medical school to close it is conceivable that many faculty members would want to relocate. The 25 faculty members who have tenure would have to be reassigned. Those 16 faculty members not on tenure could conceivably be reassigend or be released.

Students

The primary reason for the existence of the medical school has been to provide educational opportunity for students in North Dakota. Should it close, our students would have to cast their lot with the rest of the nation. From what we have been able to determine they would be at a disadvantage. Our studies have indicated it is very unlikely North Dakota students will be admitted into medical schools outside of North Dakota. We know from our study that by and large those states who do not enjoy a medical school have a difficult job getting their students into medical school. At present, only an average of 5 or 6 North Dakota students per year enter a medical school outside the state while more than 40 North Dakota young people per year begin their medical education at UND.[15]

Finances

From a financial point of view by closing the medical school the people of North Dakota would gain by not having to increase their expenses.

However, they would also lose an undertermined amount of money (last year $843,000) from outside sources. For every dollar North Dakota spends on medical education 92 cents has been matched in contracts from the federal government and agencies elsewhere. Without a medical school North Dakota would not be eligible for such federal grants and subsidies.

Entering into a Contract with a Degree Granting Medical School(s)

On February 2, 1972 a letter was sent to all 101 degree granting medical schools in the United States inquiring whether or not they would be interested in the possibility of entering into a contractual agreement with us.

To date 71 schools (72%) have returned the questionnaire, in many cases taking time to enclose explanatory letters with the post card. Often the idea of entering into a contract with North Dakota was discussed with several members of a medical school's administration before a reply was sent.

Of the schools responding, 19 (19%) said they were definitely interested in the possibility of a contract with North Dakota to educate a student at their institution at North Dakota's expense. Two other schools (the University of Iowa and the University of Oklahoma) were unable to give a definite answer at this time, but did not rule out the possibility at a later date.

The number of students individual schools would be willing to accept ranged from one to twenty, with an average of about ten. The estimated cost per student ranged from $5,000 to $30,000, with most estimates falling into the $10,000-$15,000 range.

Six schools in the Midwest expressed interest in a contractual arrangement. They listed the following figures for number of students they could accept and the estimated cost per student:

School	Students	Estimated Cost per Student
University of Nebraska	10	$ 5,000
Creighton University	10-20	$ 5,000
University of Wisconsin	5	To be decided later
University of Illinois	20	To be decided later
University of Michigan	1-5	$20,000-$30,000

- Medical Schools unable to enter into contractual arrangement
- Medical Schools willing to consider possibility of contractual arrangement
- Medical Schools responding, but unable to give definite answer at this time

Many schools which said they would be unable to enter into a contractual arrangement made it clear that they are still willing to consider North Dakota students on an individual basis. The lack of clinical facilities caused by increased enrollment and low attrition rates usually was cited as the main reason a school was unable to consider a contract with North Dakota.

Responses indicated that no schools were able at this time to clearly indicate an ability to enter into a firm contract for a specific number of students at a specific cost figure. Any type of contracting would require prolonged negotiations with a number of institutions.

Regional Cooperation in Developing a Medical School

Regional cooperation, in theory, is a very exciting concept. Attempts have been made, but to date full implementation has never been realized.

WAMI (which takes it name from the first letter of the four participating states--Washington, Alaska, Montana, and Idaho) is a program to increase the capacity of the University of Washington School of Medicine by letting students take two quarters of basic science courses at a university within their own state. It will also expose students to outstanding private practices in rural areas. The funding for WAMI by Commonwealth Foundation provides an initial $1/2 million for a 5 year feasibility study. We will not know the future of the concept until the program evaluation at the end of the 5 years.[31]

WICHE (Western Interstate Commission for Higher Education) is now considering a plan to develop a regionalized medical school in the states of Montana, Idaho, and Wyoming. The idea assumes that each state would develop a school of medicine which would ally itself with a selection of community hospitals. A director of medical education would be necessary in each of these hospitals. The plan is still in the developmental phase.[32]

The Director of the study made an appointment and flew to Pierre to meet with two South Dakota legislators regarding the possibility of cooperation between North and South Dakota. Little interest in such an arrangement was shown by the South Dakota representatives.

We are in contact with the people in Montana. Our preliminary response from them has been one of interested indifference. We are at the present time making arrangements for a meeting in Montana. At the writing of this report we have been unable to do so.

Our conclusion is not that regional cooperation couldn't be done or shouldn't be done, but just that the people involved are unable to grasp all of the factors of the concept in order to implement a plan.

CONCLUSION

The future of the medical school will be decided by the physicians of the state at the annual convention of the State Medical Society in May. No doubt the reader will recognize that regardless of the position taken by the State Medical Society the final authority rests with the legislature.

The state legislature must recognize that at the present time it is inconceivable that North Dakota could move toward a degree granting institution without the cooperation and support of the practicing medical community. This cooperation must include their:

1. Interest in teaching medical students,
2. Willingness to allow the medical school the use of their facilities, and
3. Granting access to patient material.

From its inception the mandate of this study has been to consider expansion of the medical school within existing resources--personnel, clinics, hospitals, etc. It is anticipated that any program recommended by the North Dakota Medical Association or one adopted by the Legislature using the information contained will recognize this fact. Consideration of any other approach would require the development of other basic information.

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APPENDIX

NORTH DAKOTA REGIONAL MEDICAL PROGRAM
1512 CONTINENTAL DRIVE
GRAND FORKS, NORTH DAKOTA 58201

March 30, 1972

TELEPHONE: 701-775-5535

MEMORANDUM

TO: NORTH DAKOTA PHYSICIANS

FROM: R.S. LARSON, M.D., CHAIRMAN, COUNCIL OF THE STATE MEDICAL ASSOCIATION

SUBJECT: HEALTH MANPOWER STUDY REPORT AND COUNCIL RECOMMENDATION

The Council of the North Dakota State Medical Association met in Bismarck, Friday, March 24 and reviewed the North Dakota Health Manpower Study report prepared by Gary Dunn, M.A. For your information a copy is attached.

The Council voted unanimously to present the following recommendation to the House of Delegates of the North Dakota Medical Association:

"The Council by unanimous vote recommends that the North Dakota Medical Association supports the expansion of the School of Medicine into a degree granting institution, providing that the consultant can get additional information assuring us that a sufficient number of qualified physicians will be willing to teach."

This action is based on careful consideration of the following and other information contained in the report:

North Dakotans have supported a Medical School since 1905 and have benefited by:

1. Providing an opportunity for its residents to enter Medical School. The state is among the top three states in the nation in admissions per 100,000 of population.

2. 39% of the total present physician population and 50% of those in general or family practice are graduates of this school.

3. The medical school faculty is an integral part of the academic community providing quality education to over 800 students in the Bio-Sciences.

The School enjoys an excellent national reputation providing a strong basis for expansion.

There is a national trend towards the use of existing community resources for clinical teaching purposes. (e.g. in Indiana, Illinois, Michigan, and Missouri.)

There exists in North Dakota adequate resources for this purpose with perhaps the addition of some clinical teachers.

By using existing community resources costs can be held responsibly in check.

The decision of the Council also takes into consideration the following and related information contained in the report.

1. Transfer of all of our students is becoming increasingly difficult. Present indications are that the schools which in the past have accepted the majority of North Dakota graduates will not be able to do so after 1975.

2. Presently existing basic science schools are planning to or are in the process of converting to degree granting institutions.

3. Federal support for medical education and additional support for conversion is and will be available for the foreseeable future.

The entire report and recommendations of the Council will be considered by the House of Delegates at the annual meeting May 5-7.

Additionally, there will be an open meeting to provide an opportunity for general discussion of the entire subject. This will be a luncheon meeting on Friday, May 5.

The Study Group will develop further information concerning the approximate number of teaching hours that would be required and an indication of how much time individual physicians would be willing to devote to teaching. This will be done in so far as possible prior to the May meeting.

NOTE REGARDING THE FOLLOWING FRAME ON MICROFILM:

COMPLETE DOCUMENT IS AVAILABLE IN ORIGINAL FILES IN ALASKA STATE ARCHIVES. TITLE PAGE ONLY HAS BEEN FILMED.