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PROPOSAL

FOR THE

ESTABLISHMENT OF A
MEDICAL EDUCATION
PROGRAM

AT THE

UNIVERSITY OF MINNESOTA
DULUTH

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1970

UNIVERSITY OF MINNESOTA, DULUTH

Proposal for the Medical Education Program

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PROPOSAL TO THE HIGHER EDUCATION COORDINATING COMMISSION, STATE OF MINNESOTA
FOR THE ESTABLISHMENT OF A MEDICAL EDUCATION PROGRAM AT THE
UNIVERSITY OF MINNESOTA, DULUTH

I. INTRODUCTION

In recent years the emphasis in medical education has been generally oriented away from the instruction of the general or family practice physician. The need for additional primary physicians has been clearly demonstrated by a number of recent studies, and is recognized not only by medical educators and practicing physicians, but also by the recipients of health care, the people of the state.

In May of 1969, the Minnesota State Legislature, in direct response to this need, enacted enabling legislation which appropriated the sum of \$340,000 to establish a basic sciences program for a medical training curriculum at the Duluth campus of the University of Minnesota. Senate File 2386, as amended by conference committee and subsequently approved by the Legislature, reads as follows:

Senate File 2386

Sec. 5. (ESTABLISHING A BASIC SCIENCES PROGRAM FOR A MEDICAL TRAINING CURRICULUM AT THE DULUTH CAMPUS OF THE UNIVERSITY OF MINNESOTA.) For the furtherance of expanding medical education in the state of Minnesota, there is hereby appropriated from the general fund in the state treasury to the regents of the University of Minnesota, the sum of \$340,000. Such money is to be allocated to the Duluth Campus of the University of Minnesota, SOLELY FOR THE PURPOSE OF ESTABLISHING A SEPARATE BASIC SCIENCES PROGRAM AS A PART OF AN ADDITIONAL MEDICAL CURRICULUM IN THE STATE OF MINNESOTA. Such funds shall be used for THE EMPLOYMENT OF A MEDICAL COORDINATOR OR DEAN AND STAFF AND TO PAY THE RELATED EXPENSES, FOR PLANNING FOR THE DESIGN AND CONSTRUCTION OF A BASIC SCIENCE BUILDING, FOR FACULTY RECRUITMENT AND FOR CURRICULA PLANNING, TO THE END THAT THE FIRST CLASS OF STUDENTS IN THE BASIC SCIENCES PROGRAM MAY BE ENTERED AT THE DULUTH CAMPUS OF THE UNIVERSITY OF MINNESOTA IN THE FALL COMMENCING IN 1972. None of the moneys herein appropriated are to be used or expended by the regents of the University of Minnesota at any place except the Duluth Campus of the University of Minnesota, and for the purposes herein expressed, in order that a new medical educational capability in Minnesota may be achieved for the people of the state.

The monies to support the medical education program described in the Senate File 2386 were actually appropriated in House File Bill 3025, Sec. 4, Subdivision 5, Item (e):

House File 3025 - Section 4, Subdivision 5

(e) Basic Sciences Program for a Medical Training Curriculum
Duluth \$340,000

This appropriation is to be allocated to the Duluth campus of the University for the establishment of a separate basic sciences program as a part of an additional medical curriculum in the state of Minnesota. Such funds shall be used for the employment of a medical coordinator or dean and staff and to pay the related expenses, for planning for the design and construction of a basic science building, for faculty recruitment and for curricula planning.

The moneys appropriated in Subdivision 5, Item (e), are to be expended in the manner set forth in the act enacted by the 1969 legislature as Senate File 2386. Such moneys are in lieu of the appropriation contained in said enactment for this purpose. The moneys appropriated in Senate File 2386 for this purpose are not to be given effect.

Prior to this legislative action, a panel of medical school deans and medical economists had reported to the Minnesota Senate Subcommittee on Medical Education that:

The panel believes that the first priority for the location of a new medical school for Minnesota should go to Duluth for the following reasons:

- a. It is the site of a branch of the State University capable of developing the academic base directly in association with the new medical school. This academic base could also provide for effective affiliated programs to train much needed allied health professional workers.
- b. The two major local hospitals appear capable of supporting the clinical program of a medical school.
- c. The start of a new school in Duluth offers great potential for eventual growth to at least 200 students per class. Hence, an investment in a new school here can start a program capable of real expansion at a lower future marginal cost than the creation of additional smaller schools.

- d. That area of Minnesota would be aided greatly as regards new house staff and improved medical standards.
- e. More students might be expected to settle in nearby areas, spreading more physicians about the state. As a special case in point, the teaching programs of modern medical schools are becoming increasingly more involved with their neighboring communities. This should help attract new graduates into the rural areas of Minnesota by making them more familiar with rural medicine during the training phase of their career.
- f. The personnel of the University visited by the site team were impressive. Their plans, timetable, dedication and understanding of the problems involved were excellent.

A subsequent study and report conducted by the Carnegie Commission on Higher Education identified the Duluth-Superior area as one of nine locations in the entire nation where new university health science and medical education programs should be started. This study, completed and released in late October 1970, concerned all aspects of health education and many features of health care delivery. In addition to the Duluth-Superior area, the study indicated Wichita, Kansas; Tulsa, Oklahoma; Phoenix, Arizona; Norfolk-Portsmouth, Virginia; Springfield-Chicopee-Holyoke, Massachusetts; Jacksonville, Florida; Wilmington, Delaware; and Fresno, California as the eight other select sites. Since funds were appropriated by the 1969 legislature, significant progress has been made toward the establishment of the Medical Education Program on the Duluth campus. To date, a dean has been selected and approved by the University Board of Regents and has assumed his duties. In addition, active faculty recruitment has begun. Three of the sixteen projected initial positions have been committed. Departmental chairmen in the basic sciences in sixty of the nation's leading medical schools have been canvassed for suggestions, over three hundred

prospective faculty members suggested, and nearly one hundred expressions of interest or applications received.

Further steps toward implementation of this program have been taken by University authorities with the initiation of planning for permanent instructional facilities for the Medical Education Program. Initial discussions have been held with three leading national and state consulting firms in this regard.

To facilitate and augment this program of development, an invitational conference on medical curriculum design has been held, involving well-known medical, social science and scientific educators, together with state and local educators and physicians. The recommendations of this conference have been incorporated in the objectives of the program and in curricular development as indicated in a later section.

II.

PROGRAM OBJECTIVES

The objectives of this program are:

- A. To increase the number of physicians trained in Minnesota.
- B. To emphasize preparation for family practice (general practice-primary care) in this training.
- C. To emphasize preparation for rural, as opposed to urban practice, and
- D. To increase the likelihood that the students so trained will remain in Minnesota to practice in communities with the greatest need.

The following specific steps will be taken to make these objectives a reality:

- 1. The characteristics of successful family (general/primary) physicians in smaller urban and rural settings will be determined in a valid, scientifically designed sociological study.
- 2. Medical students possessing these characteristics will be selected in preference to other academically qualified applicants.
- 3. Preference will be given to students from the area where the school is located, specifically to Minnesota students. If out-of-state students are considered, preference will be given to those from the northern Wisconsin and upper Michigan peninsula areas.
- 4. The students' desire and capability to perform well in family and general medical practice in smaller communities will be specifically reinforced and supported in medical school.
- 5. Appropriate residency and postgraduate training in family medicine will be offered in community hospitals in the area as soon as possible.
- 6. Newly trained physicians practicing in the rural areas of the region will be supported professionally and psychologically with a supportive referral system, programmed retraining and return to the medical school environment as teachers during which times their patients may be covered by faculty colleagues.

The Duluth campus of the University of Minnesota, together with the community hospitals and practitioners, offers an excellent model for this type of training. Rural and small urban practice models can be used first-hand for student training, both in direct family medical care and in the use of a supportive referral system. The importance of such a proper teaching model has been stressed nationally on many occasions. The student, highly motivated to family medicine but shown only large-city specialty care, is apt to lose his original attraction to human values and service, to remain in large cities or their immediate suburbs and to become highly specialized in his practice. A genuinely new model must be used in teaching to accomplish the reverse, a student who will select and succeed in broadly based care in more rural settings.

III.

CONTENT OF PROPOSED PROGRAM

Introduction

The Duluth campus consists of over 200 acres with interconnected buildings and a total full-time equivalent faculty of 298. Of this number, 136 faculty members hold doctoral degrees, 133 masters degrees, and the remaining faculty hold bachelors degrees.

Temporary housing for the Medical Education Program will be provided in renovated portions of the former laboratory school building. This building is a sound structure of steel frame and concrete construction able to be modified for temporary use for all aspects of basic science instruction in the program. In the future it can also serve potentially as future surge or expansion space after permanent facilities have become available. The laboratory school building has approximately 20,000 square feet of space that can be assigned to the program with other support and animal facilities available in the "Old Main Building" immediately adjacent.

Library acquisitions will be located in the existing main library on the new campus.

Planning for permanent facilities to be located on the "new" campus is under way. This planning, which is being coordinated by the University Planning Office in Minneapolis, utilizes consultants for special areas as necessary, and is being conducted as follows:

1. Program development - outline of curricular, faculty and departmental structure.

2. Translation of program into schematics of a proposed physical structure.
3. Correlation and coordination of programs and schematic building structure with all existing UMD programs and structures.

Administrative Policies and Agreements

Pertinent administrative policies and procedures of the University of Minnesota will apply to this new program. The dean will report through the Assistant Provost and Provost of the Duluth campus to the Vice President for Health Science Affairs, and through this Vice Presidential office to the other vice presidential areas of cognizance as applicable.

Academic programs will be reviewed by the curriculum committee of the Duluth campus for undergraduate upper division courses, and by the appropriate committees of the University Graduate School where applicable.

Registration of students will be handled in the manner customary on the Duluth campus, and the tuition will be the same per quarter as that charged students on the Minneapolis campus for medical curriculum work. Special fees, health service charges, and other costs will be based upon Duluth campus experience and schedules.

Appropriate affiliation agreements will be worked out with the community hospitals in the Duluth area to provide the necessary clinical teaching opportunities for students. Such an agreement and joint program has already been discussed with the Miller Hospital and several joint projects between that unit and the University of Minnesota, Duluth implemented. The full cooperation of the community hospitals is anticipated.

Additional administrative policies and agreements include the following:

1. The University of Minnesota, Duluth is a fully approved institution of higher learning by the Regional Accrediting Agency.
2. The Medical Education Program will have the same departmental status and similar administrative channels as comparable graduate programs within the institution.
3. The Dean of the Medical Education Program will be responsible for preparing the annual operating budget and will be accountable to the business officer and the chief administrator of the campus for the disbursement of funds.
4. The University of Minnesota, Duluth Business Office will bill and collect student tuition and fees.
5. Student counseling services will be available to students.
6. The facilities and resources of the library will be available to Medical Education students.
7. Medical Education students will have the same obligations and the same rights and privileges as all other graduate students.

Curriculum Development

A curriculum specifically designed to emphasize family medicine will be employed. Its development is 50 per cent complete. A two-day conference of medical educational and general educational consultants, University personnel and physicians from the state and area was held on October 16-17, 1970 in Duluth. Principles determined in this conference were:

1. Preparation for family (general/primary) practice will be the major emphasis of the curriculum and of the new medical program.
2. Specific reinforcement of behavioral characteristics favorable to family practice and rural practice will be emphasized.

3. A multidiscipline teaching approach will be used with careful correlation of material between disciplines.
4. A quarter system will be employed with three-and-a-half quarters of instruction during the first year and three quarters of instruction during the second year.
5. Clinical teaching will begin in the first quarter of the first year and will continue throughout the entire two-year period.
6. The ratio between lecture, laboratory, clinical instruction and self-instruction/study will be

lecture/seminar	1
laboratory	1
clinical instruction	1
self-instruction/study	3
7. Students will be prepared to enter the terminal instruction period (last two years) of most medical schools in the upper midwest region and the nation, with the anticipation that they will enter the seventh quarter (fifth semester) level with adequate preparation and no delay in their progress to a degree.

Premedical course requirements were outlined in the curriculum conference and the following principles established:

- a. Three years of premedical work would be recommended, although exceptionally well-qualified students could be admitted after two years of preparation.
- b. Required courses in premedical work should include:
 1. Four quarters of chemistry
 2. Three quarters of physics
 3. Three quarters of biology
 4. Two quarters of mathematics
 5. Three quarters of behavioral sciences
 6. Three quarters of English and literature

An outline of the curriculum is presented on the following pages with the understanding that it is an outline and necessarily incomplete at this time.

QUARTER I Cells and cell function, normal subjects, growth and development

Weekly hours of instruction

biochemistry and cell chemistry	10
histology and cell biology	5
behavioral sciences - family structure, sociology and anthropology	5
clinical contact - history and information acquisition, the family unit	10
	<hr/>
Total	30 hours

QUARTER II Cells and cell function, normal subjects, growth and development

Weekly hours of instruction

biochemistry and cell chemistry	7
histology and cell biology	5
microbiology and virology	3
behavioral sciences - rural and urban social organization, community organization	5
clinical contacts - information acquisition and physical diagnosis	10
	<hr/>
Total	30 hours

QUARTER III Organ systems and organ function - normal subjects, maturity

Weekly hours of instruction

neuroanatomy	3
gross anatomy	3
microbiology	3
physiology	6
behavioral sciences - psychology of learning and response conditioning, development of personality	5
clinical contacts - nervous system and mental system function, interpersonal family relationships	10
	<hr/>
Total	30 hours

QUARTER IIIA SUMMER QUARTER - Clinical anatomy and physiology

Weekly hours of instruction

neuroanatomy	3
radiographic anatomy	3
surgical anatomy	2
embryology	3
clinical contacts - nervous system function, personality inventory, abnormal family emotional relationships	4
Total	15 hours

QUARTER IV Organ systems and organ function - normal subjects, aging

Weekly hours of instruction

gross anatomy	3
physiology	3
pharmacology	3
pathology	6
behavioral sciences - introduction to psychiatry and psychiatric syndromes	5
clinical contacts - normal and abnormal conditions in physical diagnosis	10
Total	30 hours

QUARTER V Illness and Principles of Care

Weekly hours of instruction

pathology	10
pharmacology	5
community medicine - impact of illness on the family unit, function of the health team	5
clinical contacts - disease syndromes	10
Total	30 hours

QUARTER VI Illness and Principles of Care

Weekly hours of instruction

pathology	5
pharmacology	10
community medicine and medical sociology - economic impact of illness, community resources	5
clinical contacts - disease syndromes	10
	<hr/>
Total	30 hours

EXAMPLE OF WEEKLY INSTRUCTION SCHEDULE - QUARTER I

Hour/Day	Monday	Tuesday	Wednesday	Thursday	Friday
8	cell structure and chemistry	clinical	cell structure and chemistry	cell structure	cell structure and chemistry
9	↓	↓	↓	↓	↓
10	↓	cell structure	↓	clinical	↓
11	↓	↓		↓	↓
12					
1	clinical	behavioral science	clinical	behavioral science	clinical
2	↓		↓		↓
3	behavioral science		behavioral science		behavioral science
4	↓		↓		↓

Expansion to a Four-Year Curriculum

Expansion to a four-year curriculum will be considered after the initial two-year program is developed and is functioning satisfactorily. It is desirable to delay decision on a move to a four-year or terminal program at this time. No problem is anticipated in placing our students in the terminal period of existing four-year schools. Evidence suggests that the total instruction period in many medical schools will be shortened in the next few years, possibly to a 36 to 42 month total. A commitment, therefore, to a four-year program would be unwise until the national trend becomes more clear.

IV.

NUMBER AND TYPE OF STUDENTS TO BE SERVED

The initial class will consist of twenty four students. When characteristics for successful general practice in rural settings have been identified, students showing these characteristics will be selected from an otherwise academically qualified pool. The sociological study to identify the characteristics is now being planned and will be implemented before January 1971.

In addition to this selection process and the customary intelligence and academic achievement analysis, comprehensive psychological testing will be carried out on the applicants most likely to be admitted, thus assuring emotionally stable students insofar as is possible with current testing methods. The conscious reinforcement of desired traits and behavior throughout the educational period will, of course, occur.

Expansion of freshman enrollment is projected as follows:

1971	Start-Up Year
1972	24
1973	24
1974	36
1975	36
1976	48

This schedule depends upon adequate faculty expansion and upon permanent facilities becoming available in the 1976 - 1978 period. Permanent facilities should be designed to accommodate 96 students entering the program each year, with a configuration which would allow additions in the long-term future to reach the two-hundred student level mentioned by the panel of medical educators and economists in their report to the Minnesota Senate Subcommittee

on Medical Education. Future expansion to a program of that size must be justified fully at the time it would be contemplated. The projection of classes of 96 entering students by the 1985-1990 period seems reasonable if present shortages continue.

As stated above, preference will be given to Minnesota residents and particularly those students with rural and regional heritage. If out-of-state students are considered, it is the current feeling that they also should come from the region to be served most directly by the new program.

No preference will be given, other testing characteristics being equal, to male students over female students, provided the conjugal family responsibilities of women students will not unduly influence their ultimate type and location of medical practice.

V. RELATIONSHIP OF PROPOSED PROGRAM TO EXISTING PROGRAM

The proposed program does not compete with any existing program in Minnesota or in our region. It supplements quality programs in the medical school on the Minneapolis campus and the graduate programs of the Mayo Foundation and Graduate School in Rochester. As a two-year or basic science program, it does not compete with the area of service of the North Dakota School of Medicine in Grand Forks or with the South Dakota School of Medicine in Vermillion, since students will come from distinctly different areas.

The proposed program does provide a new approach to an old and difficult problem, general physicians who will stay in rural Minnesota to practice. The approach is psychologically and educationally sound and carries a high likelihood of success if placed in an atmosphere such as exists in Duluth and on the University of Minnesota, Duluth campus. It could not function well if it were located in a large metropolitan area or in the clinical practice atmosphere geared totally to referral specialty medical practice.

Cost of any medical education program is made up of both the cost per student per year and the cost per student retained for practice in the desired area. As federal dollars in educational budgets decline, total cost per retained student becomes increasingly important, and attrition or loss of students to other areas represents the largest single factor in increasing the medical education costs for any state. Any step which minimizes this loss is economically sound.

Students from the program at the University of Minnesota, Duluth will be able to enter the seventh quarter (fifth semester) level in any one of a number of regional and national medical schools with

terminal programs. They should, however, be directed to those where a clear and supportive family (general/primary) practice pathway exists. Ideally, they should then return for postgraduate or residency training in the Duluth area. Steps are under way to provide that type of training through interested community hospitals.

Particularly attractive at this time is the new rural practice pathway at the medical school on the Minneapolis campus. A student from the Duluth program could enter the seventh quarter level on the Minneapolis campus, spend two quarters there, and then return to the Duluth area for a year of work with physicians and programs in this area. A final three quarters on the Minneapolis campus would complete degree requirements.

VI.

ADDITIONAL FACULTY MEMBERS NEEDED DURING THE FIRST YEAR OF OPERATION
AND FOR FIVE YEARS AFTER ITS INCEPTION

YEAR 1971 - 1972

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Dean and Professor (Biology/Anatomy)	A	1	\$ 37,000
Assistant Professor (Anatomy)	A	½	9,500
Associate Professor (Education/Psychology)	A	1	20,000
Assistant Professor (Psychiatry/Psychology)	A	1	26,000
Associate Professor (Biochemistry)	A	1	22,000
Associate Professor (Microbiology)	A	1	20,000
Associate Professor (Pharmacology)	A	1	22,000
Associate Professor (Physiology)	A	1	22,000
Professor (Pathology)	A	½	15,000
Executive Secretary	A	1	7,104
Secretaries (2)	A	2	9,984
Clerk-Typist	A	1	4,104
Laboratory Technicians (2)	A	2	10,382
	Totals	<u>14</u>	<u>\$225,084</u>

YEAR 1972 - 1973

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Dean and Professor (Biology/Anatomy)	A	1	\$ 37,000
Assistant Professor (Anatomy)	A	1*	18,000
Associate Professor (Anatomy)	A	1**	22,000
Associate Professor (Psychology/Education)	A	1	20,000
Assistant Professor (Psychology/Psychiatry)	A	1	26,000
Associate Professor (Biochemistry)	A	1	22,500
Assistant Professor (Biochemistry)	A	1**	18,000
Associate Professor (Microbiology)	A	1	20,000
Assistant Professor (Psychology)	A	1**	18,000
Associate Professor (Pharmacology)	A	1	22,000
Associate Professor (Physiology)	A	1	22,000
Assistant Professor (Physiology)	A	1**	20,000
Professor (Pathology)	A	1*	30,000
Executive Secretary	A	1	7,104
Secretaries (3)	A	3***	14,976
Clerk-Typist	A	1	4,104
Laboratory Technicians (5)	A	5****	25,980
	Totals	<u>23</u>	<u>\$347,664</u>

* ½ of position new for the 1972 - 1973 year

** complete new position for the 1972 - 1973 year

*** one secretarial position new for the 1972 - 1973 year

**** three laboratory technician positions new for the 1972 - 1973 year

YEAR 1973 - 1974

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Dean and Professor (Anatomy/Biology)	A	1	\$ 37,000
Associate Professor (Anatomy)	A	1	22,500
Assistant Professor (Anatomy)	A	1	19,500
Associate Professor (Psychology/Education)	A	1	21,000
Assistant Professor (Psychology/Psychiatry)	A	1	27,000
Assistant Professor (Psychology)	A	1	19,000
Instructor (Psychology)	A	1*	16,000
Associate Professor (Biochemistry)	A	1	23,000
Assistant Professor (Biochemistry)	A	1	19,000
Associate Professor (Microbiology)	A	1	21,500
Instructor (Microbiology)	A	1*	16,000
Associate Professor (Pharmacology)	A	1	23,000
Associate Professor (Physiology)	A	1	23,000
Assistant Professor (Physiology)	A	1	20,500
Professor (Pathology)	A	1	31,000
Clinical teaching assistants	various	5	60,000
Executive Secretary	A	1	7,500
Secretaries (3)	A	3	16,500
Clerk-Typist	A	1	4,500
Laboratory Technicians (6)	A	6**	33,000
	Totals	<u>31</u>	<u>\$460,500</u>

* complete new position for the 1973 - 1974 year

** one new laboratory technician position for the 1973 - 1974 year

YEAR 1974 - 1975

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Dean and Professor (Anatomy/Biology)	A	1	\$ 37,000
Associate Professor (Anatomy)	A	1	23,000
Assistant Professor (Anatomy)	A	1	20,000
Professor (Psychology/Education)	A	1	22,000
Associate Professor (Psychology/Psychiatry)	A	1	27,000
Assistant Professor (Psychology)	A	1	19,500
Assistant Professor (Psychology)	A	1	17,000
Instructor (Psychology)	A	1*	16,000
Professor (Biochemistry)	A	1	23,500
Assistant Professor (Biochemistry)	A	1	19,500
Instructor (Biochemistry)	A	1*	16,000
Associate Professor (Microbiology)	A	1	22,000
Assistant Professor (Microbiology)	A	1	17,500
Instructor (Microbiology)	A	1*	16,000
Professor (Pharmacology)	A	1	24,000
Assistant Professor (Pharmacology)	A	1*	20,000
Instructor (Pharmacology)	A	1*	18,000
Professor (Physiology)	A	1	23,500
Associate Professor (Physiology)	A	1	21,000

YEAR 1974 - 1975 (continued)

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Instructor (Physiology)	A	1*	16,000
Professor (Pathology)	A	1	31,000
Assistant Professor (Pathology)	A	1*	25,000
Clinical Teaching Assistants	various	8½**	90,000
Executive Secretary	A	1	7,500
Secretaries (5)	A	5***	27,500
Clerk-Typists (3)	A	3***	13,500
Laboratory Technicians (8)	A	8***	44,000
	Totals	<u>47½</u>	<u>\$657,000</u>

* complete new position for the 1974-1975 year

** three and one-half new positions for the 1974-1975 year

*** two new positions for the 1974-1975 year

YEAR 1975 - 1976

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Dean and Professor (Anatomy/Biology)	A	1	\$ 37,000
Professor (Anatomy)	A	1	23,500
Assistant Professor (Anatomy)	A	1	20,500
Instructor (Anatomy)	A	1*	17,000
Professor (Psychology/Education)	A	1	22,500
Professor (Psychology/Psychiatry)	A	1	27,500
Associate Professor (Psychology)	A	1	20,000
Assistant Professor (Psychology)	A	1	18,000
Instructor (Psychology)	A	1	17,000
Instructor (Psychology)	A	1*	16,000
Professor (Biochemistry)	A	1	24,000
Assistant Professor (Biochemistry)	A	1	20,000
Assistant Professor (Biochemistry)	A	1	17,000
Professor (Microbiology)	A	1	23,000
Assistant Professor (Microbiology)	A	1	18,000
Assistant Professor (Microbiology)	A	1	17,000
Professor (Pharmacology)	A	1	24,000
Assistant Professor (Pharmacology)	A	1	20,500
Assistant Professor (Pharmacology)	A	1	18,500
Professor (Physiology)	A	1	24,000
Associate Professor (Physiology)	A	1	21,500
Assistant Professor (Physiology)	A	1	17,000
Instructor (Physiology)	A	1*	16,000
Professor (Pathology)	A	1	32,000
Assistant Professor (Pathology)	A	1	25,000
Instructor (Pathology)	A	1*	20,000
Clinical Teaching Assistants	various	10***	100,000

YEAR 1975 - 1976 (continued)

<u>Faculty</u>	<u>Appointment</u>	<u>FTE</u>	<u>Salary</u>
Executive Secretary	A	1	7,500
Secretaries (6)	A	6**	33,000
Clerk-Typists (3)	A	3	13,500
Laboratory Technicians (9)	A	<u>9**</u>	<u>49,500</u>
	Totals	<u>55</u>	<u>\$760,000</u>

* complete new position for the 1975 - 1976 year

** one new position for the 1975 - 1976 year

*** one and one-half new FTE's for clinical teaching assistants for the
1975 - 1976 year

VII.

EQUIPMENT NECESSARY TO INITIATE PROGRAM AND FOR THE FIRST FIVE YEARS
YEAR 1971 - 1972 START-UP YEAR

Faculty office furnishings	
8 offices @ \$1,000 per office	\$ 8,000
Secretarial office furnishings	
4 offices @ \$1,800 per office	7,200
Equipment for 8 instructional laboratories	
benching, fixed and movable equipment	88,000
Microscopes	
8 binocular @ \$900 each	7,200
Motion picture projectors	
4 @ \$300 each	1,200
Unit film teaching projectors	
6 @ \$400 each	2,400
Slide projectors	
4 @ \$200 each	800
Microscope slide sets for teaching	
48 @ \$300 each	14,400
Multichannel recorders for teaching and demonstrations - 2 units	14,000
Caging and cage cleaning equipment for large and small teaching colony animals	21,390
Teaching models and charts	1,500
Teaching films and slides	<u>3,600</u>
Subtotal	\$169,690

OFFICE SUPPLIES AND RECURRING EXPENDABLE ITEMS

Travel, professional recruiting and attending scientific meetings	\$ 11,800
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YEAR 1971 - 1972 START-UP YEAR (continued)

Paper, postage, duplicating	2,200	
Telephone (basic costs and long distance allowance)	2,000	
Laboratory chemicals, glassware, and expendable teaching materials, including anatomical materials	<u>16,000</u>	
Subtotal	\$ 32,000	
	Total	<u>\$201,690</u>

YEAR 1972 - 1973

Faculty office furnishings		
5 @ \$1,000 each	5,000	
Secretarial office furnishings		
3 @ \$1,800 each	5,400	
Microscopes		
8 @ \$900 each	7,200	
Microtomes		
4 @ \$600 each	2,400	
Equipment for four 6-student multidiscipline teaching laboratories (benching, recording equipment, hoods, centrifuges)	93,600	
Equipment for one gross anatomy lab (dissecting tables, preparation and storage areas)	18,700	
Student study carrels, with tape players, files, small projector (24 @ \$800 each)	19,200	
Teaching models, charts and films	<u>4,800</u>	
Subtotal	\$156,300	

YEAR 1972 - 1973 (continued)

OFFICE SUPPLIES AND RECURRING EXPENDABLE ITEMS

Travel, professional recruiting and professional meetings	\$ 11,800	
Paper, postage, duplicating	3,800	
Telephone and long distance	3,000	
Laboratory chemicals, glassware, and anatomical materials	36,000	
Replacement and updating slide sets	<u>1,600</u>	
Subtotal	\$ 56,200	
		Total <u>\$212,500</u>

YEAR 1973 - 1974

Office equipment for new faculty

2 @ \$1,000 each	2,000	
Equipment for 2 new small teaching laboratories - benching, fixed and movable equipment	22,000	
Teaching models, charts, new projection equipment	2,500	
New teaching films and slide sets	<u>2,300</u>	
Subtotal	\$ 28,800	

OFFICE SUPPLIES AND RECURRING EXPENDABLE ITEMS

Travel, professional recruiting and attending scientific meetings	12,000	
Paper, postage, duplicating, supplies	2,500	
Telephone (basic instruments plus long distance)	3,000	
Laboratory chemicals, glassware, and anatomical materials	36,000	
Replacement and updating slide sets	<u>1,600</u>	
Subtotal	\$ 55,100	
		Total <u>\$ 83,900</u>

YEAR 1974 - 1975

EQUIPMENT

Office equipment for new faculty

7 @ \$1,100 each \$ 7,700

Office equipment for new secretaries

2 @ \$2,000 each 4,000

Equipment for four new small teaching laboratories - benching, fixed and movable equipment

4 @ \$12,000 each 48,000

Expansion of multidiscipline laboratory to accommodate 36 students - benching, recording equipment, hoods, centrifuges 51,000

Microscopes - demonstration

8 @ \$900 each 7,200

Microtomes

2 @ \$1,200 each 2,400

UV and Infrared spectrophotometers

2 each @ \$5,000 each 20,000

Gas chromatographs

2 @ \$4,000 each 8,000

Teaching models, charts and new projection equipment 2,500

New teaching slide sets and films 4,000

Subtotal \$154,800

RECURRING EXPENDABLE ITEMS

Travel, professional recruiting and attending scientific meetings 14,000

Telephone (basic instruments plus long distance) 4,000

YEAR 1974 - 1975 (continued)

RECURRING EXPENDABLE ITEMS (continued)

Laboratory chemicals, glassware, and anatomical materials	38,000	
Replacement and updating slide sets	<u>2,000</u>	
Subtotal	\$ 58,000	
		Total <u>\$212,800</u>

YEAR 1975 - 1976

EQUIPMENT

Office equipment for new faculty		
4 @ \$1,200 each	\$ 4,800	
Office equipment for new secretary	2,000	
Equipment for two new small teaching laboratories - benching, fixed and movable equipment		
2 @ \$12,000 each	24,000	
Teaching models, charts and new projection equipment	3,000	
New teaching slide sets and films	<u>4,000</u>	
Subtotal	\$ 37,800	

RECURRING EXPENDABLE ITEMS

Travel, professional recruiting and attending scientific meetings	15,000	
Telephone (basic instruments plus long distance)	4,000	
Laboratory chemicals, glassware, and anatomical materials	40,000	
Replacement of existing slide sets	<u>3,000</u>	
Subtotal	\$ 62,000	
		Total <u>\$ 99,800</u>

VIII. ADDITIONAL LABORATORY FACILITIES NEEDED TO INITIATE THE PROGRAM

During the 1971-1972 year, the program would be initiated with the renovation of approximately 10,990 assignable square feet as teaching and office space in the laboratory school building on the University of Minnesota, Duluth campus. This initial conversion and the equipment needed would accommodate twenty-four students in the pilot class in the fall of 1972. The equipment costs are included in the listings under Section VII. Cost of renovation will be borne by private or federal funds or both.

Additional expansion of teaching laboratories and classroom spaces can be done at essentially no costs for remodeling and for the fixed and movable equipment costs listed in the appropriate sections of the preceeding material.

IX. LIBRARY COSTS

No added library facilities will be required during the projected five-year period. Because of the available inter-library loan materials for biomedical subjects from the Minneapolis campus and other state resources, the materials obtained for the new program on the Duluth campus will be less than five years old. The best current estimate for the yearly cost of acquisition, processing and shelving necessary holdings, is \$55,000 per year.

X. TOTAL AND YEARLY COSTS FOR ESTABLISHING AND MAINTAINING PROGRAM

The following estimates for the cost of establishing the program and its maintenance and expansion during the five-year period are the best which can be made at the present time, considering the likely

inflation which will occur in salary structure and in the cost of supplies and equipment during this period.

COST ESTIMATES

COST CATEGORY	YEAR				
	1971-72	1972-73	1973-74	1974-75	1975-76
Faculty Costs					
Number	8	13	20	30½	36
TOTAL SALARY	\$193,500	\$295,500	\$399,000	\$564,500	\$656,500
Staff Costs					
Number	6	10	11	17	19
TOTAL SALARY	\$ 31,584	\$ 52,164	\$ 61,500	\$ 92,500	\$103,500
TOTAL PERSONNEL COSTS	<u>\$225,084</u>	<u>\$347,664</u>	<u>\$460,500</u>	<u>\$657,000</u>	<u>\$760,000</u>
Equipment	169,690	156,300	28,800	154,800	37,800
Consumable supplies	32,000	56,200	55,100	58,000	62,000
Library materials	55,000	55,000	55,000	55,000	55,000
TOTAL EQUIPMENT AND SUPPLIES	<u>\$201,690</u>	<u>\$267,500</u>	<u>\$138,900</u>	<u>\$267,800</u>	<u>\$154,800</u>
Number of students enrolled	-	24	48	60	72
TOTAL COST	<u>\$426,774</u>	<u>\$615,164</u>	<u>\$599,400</u>	<u>\$924,800</u>	<u>\$914,800</u>

The projected costs compare favorably for starting schools where initial expansion is relatively rapid. The next projected increase in students to 48 in the entering class can be done without added equipment or staff according to present predictions, thus reducing the final cost per student on an established basis to less than 10,000 dollars per

student per year. No federal funds are projected in this figure. If they can be obtained, the cost per student to the state would, of course, be substantially less.

XI.

SUGGESTED SOURCES OF ADDITIONAL FUNDS REQUIRED TO ESTABLISH NEW PROGRAM

The following sources of additional funds are suggested:

- A. Federal funds, through the basic and special improvement grant mechanism and through the physicians augmentation program of the National Institutes of Health.
- B. Private foundations, both regional, state and national.
- C. Gifts, bequests, and donations.

No estimate is currently available on the number of dollars available from each of these sources. However, at the present time, over \$460,000 has been raised through private subscription in the Duluth area to assist in establishing the school and for the purpose of renovation of necessary buildings or for new construction. A tentative commitment of \$160,000 from Upper Great Lakes Regional Commission for similar purposes has been obtained, contingent on administrative approval of a health facilities construction grant application now pending in the National Institutes of Health. Such approval is anticipated once a statement of reasonable likelihood of accreditation is obtained from the Joint Liaison Committee on Accreditation.

COST PER STUDENT INDEX
 MEDICAL EDUCATION PROGRAM
 UNIVERSITY OF MINNESOTA, DULUTH

<u>YEAR</u>	<u>COST</u>	<u>NUMBER OF STUDENTS</u>	<u>COST PER STUDENT</u>
1971-72	\$225,084 Salaries <u>201,690</u> Expenses \$426,774 Total	None	Start-Up expenses
1972-73	\$347,664 Salaries <u>267,500</u> Expenses \$615,164 Total	24	\$25,631
1973-74	\$460,500 Salaries <u>138,900</u> Expenses \$599,400 Total	48	\$12,487
1974-75	\$657,000 Salaries <u>267,800</u> Expenses \$924,800 Total	60	\$15,413
1975-76	\$760,000 Salaries <u>154,800</u> Expenses \$914,800 Total	72	\$12,705

APPENDICES

APPENDIX A

Enabling Legislation and Legislative Appropriation

	1970	1971
	\$	\$
<p>priation allocated by the board of regents to the center for urban and regional affairs. A full evaluation and progress report shall be submitted on or before November 15, 1970.</p>		
<p>Subd. 5. Medical</p>		
(a) Medical and Cancer Research . . .	160,000	160,000
(b) Psychiatric Research	140,000	145,000
(c) Control of Hypercholesterolemia	30,000	30,000
(d) Multiple Sclerosis and other Neurological Problems	162,000	172,000
(e) Basic Sciences Program for a Medical Training Curriculum—Duluth	340,000	

This appropriation is to be allocated to the Duluth campus of the university for the establishment of a separate basic sciences program as a part of an additional medical curriculum in the state of Minnesota. Such funds shall be used for the employment of a medical coordinator or dean and staff and to pay the related expenses, for planning for the design and construction of a basic science building, for faculty recruitment and for curricula planning.

The moneys appropriated in Subdivision 5, item (e), are to be expended in the manner set forth in the act enacted by the 1969 legislature as Senate File 2386. Such moneys are in lieu of the appropriation contained in said enactment for this purpose. The moneys appropriated in Senate File 2386 for this purpose are not to be given effect.

(f) Family Practice and Community Health	200,000	350,000
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From the appropriation made to the university of Minnesota by this act and from other sources all non-academic employees shall be paid a salary comparable to the salaries paid to state employees in the classified state civil service.

101st Day]

SATURDAY, MAY 24, 1969

(3) Status of discussions with the liaison committee on accreditation of the American medical association and the association of American medical colleges indicating that N.A.M.E. may expect reasonable assurance of accreditation.

(4) Detailed estimates of proposed operational and capital costs of a medical school to assist the legislature in arriving at a per capita formula on which to determine future financial support.

(5) Amounts of financial support contributed or pledged from private sources for both capital and operational costs of the school.

Sec. 5. [ESTABLISHING A BASIC SCIENCES PROGRAM FOR A MEDICAL TRAINING CURRICULUM AT THE DULUTH CAMPUS OF THE UNIVERSITY OF MINNESOTA.] For the furtherance of expanding medical education in the state of Minnesota, there is hereby appropriated from the general fund in the state treasury to the regents of the University of Minnesota, the sum of \$340,000. Such money is to be allocated to the Duluth campus of the University of Minnesota, solely for the purpose of establishing a separate basic sciences program as a part of an additional medical curriculum in the state of Minnesota. Such funds shall be used for the employment of a medical coordinator or dean and staff and to pay the related expenses, for planning for the design and construction of a basic science building, for faculty recruitment and for curricula planning, to the end that the first class of students in the basic sciences program may be entered at the Duluth campus of the University of Minnesota in the fall class commencing in 1972. None of the moneys herein appropriated are to be used or expended by the regents of the University of Minnesota at any place except the Duluth campus of the University of Minnesota, and for the purposes herein expressed, in order that a new medical educational capability in Minnesota may be achieved for the people of the state."

Strike the title and in lieu thereof substitute the following:

"A bill for an act relating to medical education and medical services; imposing duties in relation thereto on interim or standing committees of the house and senate; appropriating moneys to certain organizations."

We request adoption of this report and repassage of the bill in accordance therewith.

Senate Conferees: ROBERT V. LEISETH, HAROLD G. KRIEGER, and EARL W. RENNEKE.

House Conferees: RICHARD W. FITZSIMONS, ALFRED O. SCHUMANN, and RODNEY N. SEARLE.

Mr. Schumann moved that the report of the Conference Committee on S. F. No. 2386 be adopted and that the bill be repassed as amended by the Conference Committee. The motion prevailed.

APPENDIX B

The Regents' Statement
On Medical Education in Minnesota

The
REGENTS'
STATEMENT

on
Medical Education in
Minnesota

Northern Minnesota Council on Medical Education

**A Program For Expanding And Advancing
Education For The Health Sciences In The
State Of Minnesota**

*-The position of the Board of Regents of
the University of Minnesota*

The Regents of the University of Minnesota recognize the need for educating increased numbers of health science professionals. There is need for an increased number of physicians, and particularly for physicians who will practice family medicine in the State of Minnesota. There is an equal and perhaps greater need for increased numbers of dentists. There is a compelling need for increased numbers of professionals in allied health fields. In order to assure the most rapid and economical response to these needs, the Regents make the following recommendations:

I. The First Step

Implementation of the plan presented to and supported by the 1967 Legislature for developing health science facilities and staff on the Twin Cities Campus of the University of Minnesota.

This step will:

A. Develop a Department of Family Practice and Community Health. The Department will educate undergraduate medical students for family practice, provide residency training for physicians entering this specialty field, and explore new patterns for providing health care. These explorations will include the study of appropriate and effective use of technical personnel requiring less training than physicians.

B. Expand the entering medical class from 160 students to 200 students.

C. Increase the intake of third year

transfer students from the Dakota schools.

D. Develop an annual graduating class of approximately 225 physicians.

E. Expand the existing dental class from 110 to 150 students.

F. Expand total enrollments in the allied health science fields from 2000 to 3500 students.

G. Expand the use of clinical facilities in affiliated hospitals in the metropolitan area. Such expansion will make possible the program described above. It will also bring additional interns and residents from other medical schools into the state, thus increasing further the number of physicians likely to practice in Minnesota.

The Regents consider Step I essential to meeting the health profession needs of the state. It is the most promising rapid method for providing the numbers and types of health professionals required. It also provides the necessary basis for further development of clinical education and residency programs in the St. Paul-Ramsey Hospital under circumstances which could lead to the creation of a major Division of the University of Minnesota Medical School in St. Paul.

II. A Next Step

Establishment of a clinical training program in St. Paul-Ramsey Hospital for 100 undergraduate medical students and a like number of residents.

Given the concurrence of the appropriate St. Paul and Ramsey County authorities, the Regents will advocate the development of this program. They envision the development of a teaching hospital with visibility, identity, and substantial autonomy in the conduct of clinical education programs.

III. Additional Steps

The Regents recognize that the health manpower needs of the state in the late 1970's and 1980's are likely to grow larger than those which can be met by the steps proposed in Sections I and II. They therefore propose immediate attention to the potential of Duluth and Rochester as sites for additional developments.

In Duluth the Regents recommend:

A. Establishment of the graduate programs in chemistry and biology sufficient to provide the University base for medical school development.

B. Establishment of collegiate programs in medical technology, physical therapy, occupational therapy, nursing, and other allied health professions.

C. Planning toward development of a preclinical (first two years) program in medical education in Duluth in the decade of the 1970's.

D. Planning toward development in the 1980's of a clinical program in medicine.

In Rochester:

The Regents applaud the intensive discussions now under way in the Mayo Clinic Board of Governors in Rochester centering on the possibility of establishing a medical school, or some expansion of undergraduate medical training with continuing expansion of graduate education, research, and basic science programs.

Clearly, a decision on the pattern and program for expansion in Rochester should be a decision of the Mayo institutions. The Regents, however, would be pleased to join Mayo in a study to explore the feasibility of establishing a distinguished nationally oriented medical school in Rochester. Such a study should examine possible sources of

support for capital costs, and study the possible formulae for public support of Minnesota students.

Ever mindful of the significant contributions to graduate medical education long provided in Rochester, the Regents believe that development of a comprehensive program of medical education by the Mayo Institutions offers a major promise for meeting urgent state, regional, and national needs.

IV.

This statement stresses the means by which Minnesota can respond promptly, efficiently, and effectively to present health manpower needs. At the same time it urges developments designed to cope with continuously expanding demands of the state and nation.

The Regents reaffirm and take pride in the quality of Minnesota's programs for education in the Health Sciences. To maintain the quality of these programs and simultaneously provide new services to meet the urgencies of the hour will require substantial sums for additional staff and facilities. We earnestly believe the people of Minnesota will respond to the task at hand.

April 19, 1968

APPENDIX C

Official News Release by Carnegie Commission
on Higher Education regarding the Commission's Rec-
ommendations for the establishment of University
Health Science Centers.

Higher Education and the Nation's Health

POLICIES FOR MEDICAL AND DENTAL EDUCATION

A Special Report and Recommendations by
The Carnegie Commission on Higher Education

OCTOBER 1970

MCGRAW-HILL BOOK COMPANY

New York St. Louis San Francisco Düsseldorf

London Sydney Toronto Mexico Panama

Rio de Janeiro Singapore

programs, and (3) the establishment of a permanent commission on graduate medical education for the purpose of planning, coordinating, and periodically reviewing standards for graduate medical education (47). There is also a need for providing a broader educational experience for the resident. In the teaching hospital, he tends to see acutely ill individuals, frequently with unusual conditions. He also needs experience that would come from periods spent in community hospitals, neighborhood clinics, convalescent facilities, and, where feasible, in doctors' offices.

The Commission recommends that all university health science centers give serious consideration to curriculum reforms. Their admission policies should be made more flexible and their programs more responsive to the expressed needs of students. Greater emphasis should be placed on comprehensive medicine in both the M.D.-candidate program and in graduate medical education. In all phases of medical and dental education, including residency programs, there should be more careful integration of abstract theory and clinical experience. Residency programs should be planned and reviewed by the entire faculty, and residency training should include experience in community hospitals, neighborhood clinics, and other facilities, as well as in teaching hospitals.

THE
LOCATION OF
NEW
UNIVERSITY
HEALTH
SCIENCE
CENTERS

The Commission believes that there should be a university health science center in every metropolitan area with a population of 350,000 or more, except for those areas which can benefit from the impact of centers that already exist in other geographically convenient communities. The Commission has identified eight metropolitan areas of at least this size and an additional metropolitan area, Duluth-Superior, with a population falling somewhat below 350,000, in which we believe university health science centers should be established (Table 4). Duluth-Superior is located so far away from the nearest medical school (in Minneapolis-St. Paul) that its needs cannot be adequately served without a university health science center of its own. Moreover, a university health science center in the Duluth-Superior area would serve large parts of northern Minnesota, Wisconsin, and Michigan.

Not included in Table 4 are 27 communities, many of them with a population of 350,000 or more, that have medical schools in the development stage. These developing schools are included, along

TABLE 4
Carnegie
Commission
goals for new
university health
science centers
by 1980 (not
including
medical schools
in development
in 1970)

Standard metropolitan area	Estimated population, July 1, 1967 (in thousands)	Percentage increase in population, 1960-1967
Phoenix, Arizona	859	29.5
Norfolk-Portsmouth, Virginia	646	11.7
Springfield-Chicopee-Holyoke, Mass.*	557	4.6
Jacksonville, Florida	505	10.8
Wilmington, Del.-N.J.-Md.	481	16.0
Tulsa, Oklahoma	451	7.8
Fresno, California	416	13.6
Wichita, Kansas	396	3.7
Duluth-Superior, Minn.-Wis.	273	-1.4

*Metropolitan state economic area.

SOURCE: U.S. Bureau of the Census, *Current Population Survey: Population Estimates*, ser. P-25, no. 411, Washington, D.C., 1968; and American Medical Association, *Medical Education in the United States, 1968-1969*, Chicago, 1969. Information on medical schools that have begun development since publication of the latter volume has been supplied by the Council on Medical Education of the AMA.

with existing university health science centers and recommended new health science centers, on Map 1 and in Appendix B, Table 1.

The Commission recognizes that plans are being formulated for new medical schools in some of the communities in Table 4 as well as in other communities not included. However, we believe that, for communities with populations below 350,000, the area health education centers suggested in the following section would be a more appropriate solution.

The Commission also recognizes that local initiative is desirable, and usually essential, in planning for a new university health science center. In the absence of local initiative, it may be difficult to develop centers in the nine communities we have identified.

The Commission recommends the development of nine new university health science centers.

THE ROLE
OF AREA
HEALTH
EDUCATION
CENTERS

In some parts of the country the distances between university health science centers are likely to be very great, as in the sparsely populated mountain states. Elsewhere, concentration of people in congested urban areas would overwhelm the facilities of even the larg-

CARNEGIE COMMISSION ON HIGHER EDUCATION

Clark Kerr, Chairman

Ralph H. Bace

Joseph P. Casand

William Friday

Patricia Roberts Harris

David B. Henry

Theodore M. Hesburgh, C.S.C.

Stanley J. Heywood

Carl Kayson

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Katharine L. McBride

James A. Perkins

Clifton W. Phelan

Nathan H. Pusey

David Rieman

William W. Scranton

Norton Simon

Kenneth S. Tallett

1947 Center Street
Berkeley, California 94704
(415) 849-4474

October 23, 1970

SPECIAL MEMORANDUM TO NEWS EDITORS

The enclosed news release from the Carnegie Commission on Higher Education reports on our recommendation that a new university health science center be established in your vicinity. It is one of nine new centers recommended throughout the country to coordinate medical education and assist other agencies in improving systems of health care. Please note the October 29 release date.

Sincerely,



Verne A. Stadtman
Editor and Staff Associate

CARNEGIE COMMISSION ON HIGHER EDUCATION

Clark Kerr, Chairman

Ralph M. Beese

Joseph P. Coand

William Friday

Patricia Roberts Harris

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FOR RELEASE
After 10:30 a.m.
October 29, 1970

For Further Information
Mr. Verne A. Stadtman
Dr. Margaret S. Gordon

LOS ANGELES, CALIF., Oct. 29 Extensive reform of medical and dental education, development of nine new university health science centers, and establishment of 126 "area health education centers" across the nation were recommended today by the Carnegie Commission on Higher Education.

Action is needed now, the Commission said, to alleviate a crisis in health care in the 1970s. The most serious shortages of professional personnel in the United States today are in the health services, according to the report. They will become more serious if, as seems likely in the not too distant future, a comprehensive national health insurance program extending coverage to millions of additional citizens is adopted. It takes a long time to train health professionals, especially physicians and dentists.

-more-

Reducing the time required to educate doctors and dentists is a key recommendation of the Commission. It recommended that the time required to obtain an M. D. degree be cut from four years to three years after the bachelor's degree. This would create spaces in existing facilities for about 4,500 more medical students by 1976. The Commission also recommended that dental students be trained for three (instead of four) years for the D. D. S.; and that the number of years required for postdoctoral training of physicians be generally reduced from four to three. The total reduction for physicians would be two years, from eight to six.

A central theme of the Commission's report is that impending changes in medical and dental education must be geared to changes in patterns of health care. Physicians and dentists will increasingly provide their services through prepaid group practice plans and in such facilities as neighborhood health centers. They will delegate more of their activities to physicians' and dentists' assistants and other health workers. University health science centers should train their students to function effectively under these conditions and should conduct research for improving health care systems.

"But no matter how many health professionals are educated," Commission Chairman Clark Kerr said, "and no matter how adequately medical education facilities are distributed throughout the nation, Americans will not receive adequate health care unless a system is developed to deliver services to those who need them--regardless of

income, geographic location, age, or race."

The report was released at a special press conference held in conjunction with the annual meeting of the Association of American Medical Colleges now in progress at the Biltmore Hotel in Los Angeles. It was published by McGraw-Hill (\$2.95).

The world's most affluent society, Kerr said, lags seriously behind other industrial nations in the general health of its citizens. In 1967 the U.S. ranked sixth in female life expectancy and 19th in male life expectancy among 22 industrial nations. Infant mortality--higher than in several industrial countries--was 21.7 deaths per 1,000 live births in 1968.

The nation spent nearly 7 percent of its GNP on health care in 1969, but the health care dollar is buying less services because of rapidly rising costs.

To help bring essential health education services within an hour's driving time of most Americans, the Commission recommends developing 126 area health education centers as satellites of university health science facilities. Such centers usually would have a community hospital as a nucleus. They would be visited regularly by university medical school faculty. Selected patients throughout the surrounding area could be treated there. M.D. and D.D.S. candidates would receive part of their clinical instruction at the area centers, as would students in the allied health fields. The centers would also be responsible for the continuing education of practicing physicians and dentists. They would also be responsible for coordinating local health care training facilities in community colleges and comprehensive colleges.

The new area health education centers are proposed for regions without sufficient population to warrant full scale university medical centers or for densely populated metropolitan areas inadequately served by existing health care facilities. Although the report suggests 126 locations, it urges states and municipalities to proceed with development of them only after making regional studies.

Other highlights of the Commission report:

- The number of university health science centers should be increased to coordinate medical education and to assist other agencies in improving systems of health care. The goal should be a university health science center in or near every metropolitan area of 350,000. Locations for new centers recommended: Phoenix, Ariz., Norfolk-Portsmouth, Va., Springfield-Chicopee-Holyoke, Mass., Jacksonville, Fla., Wilmington, Del., Tulsa, Okla., Fresno, Calif., Wichita, Kans., and Duluth-Superior, Minn.-Wis.

- The number of medical school entrants should be increased from the estimated 1970 national total of 10,800 to 15,300 in 1976 and to 16,400 by 1978, an increase of about 50 percent.

- The productivity of doctors and dentists could be augmented if trained associates were available to work under their general supervision, and assistants to work under their specific direction. The Medex program of training medical ex-corpsmen with military experience as doctors' assistants was described as a promising effort of this kind. By the end of the present decade, at least 3,500

-more-

associates and assistants per year could be trained through this program.

A National Health Manpower Commission should be appointed to study shortages in all areas of health manpower.

- Many of the new medical and dental school entrants should be women and members of minority groups. (Only about 6 percent of U.S. physicians are women--in marked contrast to some Western European countries where women comprise up to 30 percent of all doctors. Significantly, American women make up four-fifths of all persons employed in nursing and other health services. Only 2 percent of physicians in the U.S. are black--compared to more than 11 percent of black citizens in the population.)

- A federal program should be established to provide grants of up to \$4,000 a year per student for low-income medical and dental students and for students enrolled in associate and assistant programs. An Educational Opportunity Bank should also be developed to provide student loans. Repayment would be excused during periods of service as a house officer or member of the armed forces.

- A Voluntary National Health Service Corps should be created, with partial loan forgiveness as an incentive for young doctors and dentists to participate.

- The federal government--which already supports most of the costs of medical research--should provide institutions with a cost-of-instruction-allowance-per-student supplement. It should make construction grants of up to 75 percent of total cost to universities

-more-

to build or expand health science facilities.

- Costs of all federal support, recommended by the Commission, would total \$785 million in current dollars by 1975; \$1 billion by 1980. In the first year, if the Commission's proposals were accepted, federal assistance would increase by \$225,000,000.

- The levels of support of medical schools by states should be more nearly equal. Since doctors move from state to state, some states exploit the investment of others. A uniform tuition should be charged, medical school requirements for state residence status should be abolished; and states should help support private medical schools.

- As an economy measure, training in the basic health sciences at specialized centers should be combined with science programs on general university campuses, thus reducing duplication of faculty and laboratories. The major economy measure, however, would be shortening the period of training by one-fourth.

- There is a strong case for 1) awarding a master's degree after completion of the basic science curriculum; and 2) enabling students with these master's degrees to work toward a Ph.D. in health sciences or toward the M.D. or D.D.S.

- Curricular reforms favored by students including more flexible admission standards and more training in community medicine should be seriously considered.

- The number of places for training dental students should be increased in the seventies by 20 percent.

APPENDIX D

SUPPORTING DOCUMENTS

Minnesota Academy of General Practice

214 East Main Street

Waterville, Minnesota 56096

Wallace E. Mathews, M.D.
President

John R. Holten, M.D.
Vice President

Chester A. Anderson, M.D.
Chairman, Board of Directors
President Elect

Richard E. Williams, M.D.
Treasurer

Miss Darlene Comstock
Executive Secretary

Edward P. Donatelle, M.D.
Speaker, House of Delegates

Robert W. Reif, M.D.
Vice Speaker, House of Delegates

Wallace E. Mathews, M.D.
President
530 Pleasant Street
Mankato, Minnesota 56001

April 25, 1970

Raymond W. Darland, Provost
University of Minnesota Duluth
Duluth, Minnesota 55812

Dear Ray:

I was extremely pleased to receive your letter indicating that Dr. R. H. Puumala was appointed to the membership on the Executive Committee of the Northern Minnesota Council for Medical Education. I am sure that Doctor Puumala will bring a very special area of dedication and expertise to this committee.

I am looking forward to the announcement of the appointment of a Dean to the new medical school. Naturally I have very strong hopes that this man will be well founded in a dedication to the family practice of medicine.

I can assure you that the Minnesota Academy of General Practice will cooperate in every possible way to make this a very successful venture. As you know, Drs. Ciriacy, Mac Lester, John Lester, Jim Cosgriff, Chet Anderson, and myself stand ready in any way to help you in the development of this project.

With the very extra special expertise that Dr. Herb Huffington can bring I feel that UMD has just an outstanding chance to develop a school that will be highly beneficial to the citizens of Minnesota and especially to the entire northern part of the state.

As an alumnus I am pleased with the progress to the present time. If there is any way in which I may be of help, please do not hesitate to call on me. The members of the Academy in Duluth also stand ready to help you in any possible way. We shall all be watching you with eager interest and follow the future developments of your department.

Very truly yours,



Wallace E. Mathews, M. D.

WEM/dc