

# MAINE STATE LEGISLATURE

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Report to the Legislative Research Committee on the first five months of a study on the Feasibility of establishing a Medical School in Maine -

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March 16, 1966

Introduction

This is a progress report. There are no conclusions or recommendations in its text. Only five of many aspects of the study have been selected for emphasis at this time. There is still more data to be studied, sources of information and opinion to consult and parts of the state to see first hand.

If I could wish for one accomplishment of this mid-term report, it would be an increasing appreciation by all concerned about the establishment of a medical school that feasibility involves more than academic, professional and fiscal possibility and likelihood of setting up and supporting a fully accreditable institution. Equally important, is whether this most expensive and complex of all educational investments will achieve what its many enthusiastic supporters so genuinely and properly want for this state: a substantial and steady increase in the number of practicing physicians, nurses and other health personnel and in the quality and availability of health services over the state.

Both aspects of feasibility will be emphasized today and will be presented in more detail in the final report to the committee.

Present Impression

The feasibility of establishing a medical school in Maine in the near future depends largely upon the speed and thoroughness of efforts which must be made in several areas which are fundamental to medical education and modern medical care.

Among these areas are: Graduate Education in the biological, physical and social sciences; Professional Education in the several hospital centers capable of sustaining strong internship and residency programs; and Regional Planning to maximize the value of a medical school to the practicing profession and ultimately to the citizens of Maine.

To these elements so essential to medical education, two others might be added which relate primarily to recruiting physician-graduates to practice in Maine. This is certainly the overwhelming presumption of the widespread public endorsement of a medical school today. In respect to recruitment, the importance of Elementary and High School Education as well as of Transportation cannot be over-emphasized.

In the progress report, each of these subjects will be discussed briefly, on the basis of the studies to date. I must emphasize, however, not only the tentative nature of some of these observations today, but also the fact that another study by the state in the field of higher education is presently underway. Its findings and conclusions will necessarily have an important bearing upon the feasibility of a medical school in the near future. Nowhere is this more apparent than in the field of Graduate Education.

### I Graduate Education

Graduate Education is education beyond the Bachelors Degree - it leads to the Master and Doctorate Degrees, and it is generally concentrated in a limited area of study. In most fields of graduate education, the ultimate earned degree is that of Doctor of Philosophy, or PhD, in the special subject. It represents achievement of a course of training over a period of three or more years in closest association with one or more professors throughout that time. This type of education cannot be carried on in large classes. It depends upon small discussion groups, individual attention, and a student-faculty ratio of not more than 3 to 1. It includes generally the accomplishment of original research and the composition of a thesis which the student must defend and discuss for many hours (sometimes days) with a select faculty committee.

Graduate Education is the door of greatest student opportunity. Moreover, it must be regarded as this nation's most urgent and untapped human resource. It is no longer merely vital to progress and to the advancement of human knowledge; it has become a necessity, if the people of the world are to benefit from these advances rather than be overwhelmed by them. Finally in respect to medical education, Graduate Education in the arts and sciences related to health and disease is absolutely basic. There are no two ways about it.

Modern medicine is based today upon human physiology in its broadest sense, and upon the study of human behavior. To treat a patient intelligently a doctor has to have considerable understanding of what can go wrong in order to begin to comprehend what is wrong and how to find out about it from the patient and from the laboratory. Accordingly a major portion of the medical student's first two years is concentrated in the basic medical sciences, the study of the nature of health and disease, and of the extent of our current knowledge about them.

Teachers and scholars of physiology and behavior can be assembled as a faculty of medicine only in an atmosphere of inquiry - of impatience to know more than we know; and of colleagues, and of facilities, equipment and funds to extend the bounds of human knowledge.

The basic sciences associated with medicine are rooted in the broad fertile fields of biology, zoology, chemistry, physics, mathematics, psychology, sociology and anthropology;

and they are nourished by exciting new disciplines such as genetics, marine biology, nuclear physics and bio-engineering. They describe the University base of an accreditable medical school in 1966. Their academic expression is in graduate education.

What is the picture of Graduate Education in the state of Maine today?

From 1921 through 1961 - a period of 41 years - 976 graduates of colleges in Maine earned PhD degrees; but only three of them in Maine, and these three just since the spring of 1960. By 1964 total PhD's earned in Maine had grown to 10; ranking us number 50 among the 51 states and the District of Columbia, for that year (and also over the 45-year period since 1921). More were added by the spring of 1965, but data from all states are not yet available for that year.

Only fifteen years ago, we were not alone among the states with no earned PhDs in our state. There were 10 other states (including Hawaii and Alaska) at the same level of inactivity. Nevada alone had still done nothing by 1964. Alaska had produced 14 compared to our 10; Idaho 15; South Dakota 53; Hawaii 58; New Hampshire 70; Montana 84; Mississippi 158; Arkansas 261; and Alabama 425.

There is action stirring in Maine in many areas today, however, and there is leadership committed to graduate education development - not only because this is a clear obligation of a great university, but also because graduate education programs are essential for recruitment of great teachers and scientists to the faculty, and for keeping the good ones we have.

There is another very practical consideration as well. A productive and imaginative Program of Graduate Education in this state is absolutely necessary if Maine is to receive our state's ample share of the great Federal Funds now available in Research and Development. Very specifically in this field of Research and Development, Uncle Sam helps only those who first help themselves. We have lagged far behind; we have a long way to go. Initial expense to the state might prove substantial, but it will repay itself many times.

Assuming each state has an obligation to provide graduate education opportunities for its citizens in proportion to its population of college-age, Maine's annual contribution in this year in relation to total U.S. doctorate production would have been 84 Doctors of Philosophy, in several major fields. Projecting Maine's college-age population to 1975, and U.S. doctorate production to that same date, our obligation should be 175 PhDs a year, only 10 years hence.

But such an obligation does not rest entirely on the State University - as it certainly never has in the history of our country - and there is not only merit it seems to me in the philosophy of pooling many available resources in the state of Maine to meet this challenge, there are also some very practical advantages.

One of the thoughts developing in my mind is the concept of a Graduate Education Campus related academically to several institutions of higher learning

in the area. It would be located within 30 minutes of a large commercial airport on an acreage sufficient to include several other major units - including sites for industrial and governmental research and development, and ideally the medical school and medical center. Several medical schools are now being built at the periphery of metropolitan areas adjacent to existing or planned circumferential highways.

Two opportunities just knocking at our door are of such great scope and national urgency that with appropriate planning and ingenuity, they might well be a major stimulus and financial resource to launch such a project -

I refer, of course, to the limitless challenges of hydro-space and of plant and animal biology.

Study of the oceans is in its relative infancy today - yet in only 10 years its implications to the very survival of man have become apparent to the leaders of the world - and this Last Frontier is literally at the front door of Maine.

You are probably aware of the fact that the Department of Economic Development, at the request of the Governor, is making a preliminary survey of Maine's potentials in the field of hydro-space, or oceanography, especially as this applies to the Gulf of Maine, pin-pointing Maine's strategic position in this new field of science, which has implications for developments in almost every other scientific discipline.

Study of plants and animals in their vastly expanding significance to human health and disease, offers infinite promise of major advances along many critical lines. Problems of health and nutrition among experimental animals are increasingly plaguing the efforts of medical investigators today. There appear to be substantial increases in the spread of diseases between animals and man. Drug testing on animals must now be greatly expanded, but the problem remains to find animals for whom drug effectiveness and drug toxicity are most comparable to man. As world population, increasingly freed from the scourges of flood, famine and disease, marches perhaps inexorably from some 3 billions today to 6 billions by 1985 and 7.5 billions in the year 2000, will not food be a major determinant to any prospects for peace at all?

Where in the world is a better place to live and to work on such problems as these than the state of Maine with its stimulating climate, its freedom from urban pressures, its summer-wealth of great scientific minds who would prefer to stay here the year around - if there were modern facilities and equipment, and easy access to the world outside?

How better not only to stem the outmigration of brains which has characterized our history for so long, but also to call many to return and others to come here to live?

This is more than the brevity I promised in respect to Graduate Education - but there is so little chance of an accredited medical school in Maine without a major effort in this basic area of Graduate Education. Graduate Education will be a major chapter of the Higher Education Study Report - and when the time comes for specific and detailed recommendations, I am confident our thinking will be along parallel, if not identical lines.

## II Professional Education

The amazing advances of medical knowledge have over the past 30 years placed an increasingly important responsibility upon large community hospitals, for advanced and for continuous medical education. The atmosphere of inquiry and self-criticism in the course of medical education and medical practice is neither easily nor inexpensively achieved in the busy lives of our practicing profession today. Increasingly, those hospitals with the most notable and valuable teaching services over the nation are taking on two or more full-time faculty members charged with inspiring and administering educational programs for interns, residents and practicing physicians - Of equal importance is their guidance in establishing complex diagnostic and treatment centers for the benefit of both doctors and patients over a considerable regional area.

In a questionnaire sent to all medical doctors in Maine - from which there has been a remarkable 82% response - there has been overwhelming endorsement of a medical school "as soon as possible" or "within ten years." It is quite clear that one of the major hopes from such a school would be its stimulus to development of regional hospital programs in medical education and research.

Now this might be a very reasonable hope if there were at least a few such programs in full operation. But several operational programs are almost essential to establishment of the medical school itself; and there is only one worthy of the name, in all of Maine today.

In this connection, I am about to explore with the staff, and governing bodies of several regional hospitals in the state the possibility of developing a small nucleus of full-time faculty whose assignments would include house-staff training, clinical programs for practicing physicians, and expansion of referral services around the regional-hospital concept of the Heart-Cancer-Stroke legislation which offers such great opportunities for medical services in Maine. It must be understood that full-time appointees such as this may have research interests in either the laboratory or the community. But, appropriate space, equipment, job descriptions and salaries can achieve amazing results in just a few years, particularly if the state were to provide sufficient seed money in the early future - which can be matched many fold as the years go by.

A closely related problem still under study is the increasing costs of training programs for schools of nursing, medical and x-ray technology, borne by certain hospitals in the state, but financed largely by increased patient charges. Rather specific recommendations in this whole area are likely to be formulated over the next few months.

## III Regional Planning

Reference has already been made to the subject of Regional Planning; but it deserves a few more specific comments.

Although the advances of medical knowledge have been repeatedly impressed upon the public in recent years, there has been little said about the stunning impact they are having upon some patterns of medical practice and upon the philosophy of health education and of health services.

More and more physicians along with the general public are concerned about getting the benefits of these advances more effectively to more people. So many of the most important developments require expensive equipment and complex teamwork skills. These can be justified in regional centers. They are beyond reason for most communities; but the real problem is still how best to bring together the patient and these modern diagnostic or therapeutic procedures. There are human relations in effective health services no less vital than technical skills - and the patient referred to the regional center must have assurance of prompt and personal attention and return to the care of the referring physician; while the busy doctor, through continuous education and communication with the regional center staff, must have a sense of participation at the forefront of advancing knowledge.

More than any state with which I am familiar, Maine has developed a philosophy of regional health and medical services and as this continues to establish visible patterns it cannot fail to have a major influence upon the recruitment of physicians to practice in the state, and upon the prospects of a medical school with really contemporary operational policies and a curriculum identified with medical practice.

Opportunity for Maine to achieve national leadership in this effort now appears so promising, there are likely to be specific recommendations forthcoming in the final report.

The two other subjects to be discussed in this report, Public Education and Transportation, relate particularly to the better distribution of health personnel and health services. Many problems in these areas cannot - and indeed need not - be completely resolved to assure the feasibility of establishing a medical school in Maine. They have implication to a medical school development, however; and their resolution at best is a long range prospect. So there may be no better time than the present to keep thinking about them.

#### IV Elementary and High School Education

A few years ago, there was undertaken one of the most comprehensive statistical studies of American education to ascertain (as of the fall of 1963) the numbers of students entering college, by state of high school graduation, state of college admission, and by type of college and high school, for all 50 states and the District of Columbia. Maine ranked number 51 in the percentage of high school graduates going on to any type of further education. Only 31 of every 100 high-school graduates went on to college, junior college, technical or vocational or professional training. This is a figure, of which many of you are fully aware.

While it is a little risky to combine two sets of figures - and very risky to generalize from a set of statistics relating to the progress of only one age-group of students through their educational experience - let's take a look at the evidence we do have about this class of Maine students graduating from high school in the spring of 1963.

This same class entered the 5th grade in the fall of 1955. Of every 100 in that class in 1955 (assuming state-wide population stability in that age group) 89 entered high school in the fall of 1959; 60 graduated in the spring of 1963. Only 19 of the original 100 (state-wide only) were enrolled in any higher educational experience in the fall of 1963 - about half of the national average. I have not yet found studies of college retention rates and graduations for further comparisons.

In order to enter any of the health professions today a high school diploma is prerequisite. A passing grade on college entrance examinations is increasingly demanded; and the courses themselves (depending upon the health field) are one to four years in college work; and, for medicine, osteopathy, dentistry and veterinary medicine, another three to four years in professional school.

It is heartening to note the substantial progress made in the past two years in this state in facing up to this problem of quality in our elementary schools and high schools. Legislative appropriations last year and departmental leadership and dedication have resulted in notable advances. But Maine's relative advances in one biennium can be wiped out in the next unless we are prepared to face our competitive lag and the awful responsibility we have to our young people.

All this is related to the feasibility of establishing a medical school in Maine not only in respect to the equipment of youngsters in larger numbers for training in the health professions. It is a vital consideration in the selection of a Maine community by young doctors starting their practice, and in the recruitment of a competent medical faculty for a medical school.

A major factor in the decision of these highly educated men and women to settle in a community today is a school system designed to encourage and equip their children for admission to college. This is a problem nationally - and it is severest in states of relatively low per-capita income and relatively high rural population distribution. But when 15 new medical schools are well advanced in their programs of construction and operation, and 8 to 10 more are knocking at the door to ascertain the likelihood of accreditation, and finally, when there are today 955 budgeted but unfilled full-time faculty positions and by 1975 an estimated 1,680, Maine's assets must be well mobilized to beat this competition in all critical areas. Another of these is transportation.

#### V. Transportation

In relation to the world of science, health and education, a modern medical school must be located near a commercial airport with convenient and frequent access to a major center of national and international flights.

In relation to the public which a medical school hospital center will serve, the institution must be easily accessible by highway and helicopter from population centers, regional medical centers, smaller communities and isolated areas. The critical factor in such accessibility is time; and in this connection I want to make two or three assertions which represent, I believe, the best



contemporary thinking about the increasing importance of health considerations in the planning of new roads and the improvement of others.

Even in crowded metropolitan centers today it is virtually impossible to plan health and medical services which, for a majority of city residents, are less than a half an hour from the physician, the emergency ward or the clinic. This is true even though there has tended to be a concentration of physicians in the larger cities and towns.

Now, half an hour describes a road distance between patient and service in smaller towns and rural areas of 20 to 25 miles or more, if the road is reasonably straight and safe for a constant speed.

The important significance of this may best be expressed by quoting the well-informed opinion of the President of the Academy of General Practice, Dr. Amos N. Johnson, of Garland, North Carolina, a town of 642 people. Modern medical practice and future health services, he has stated many times, require a minimum of three physicians in a town or cluster of towns. The day of the lone practitioner is rapidly disappearing. As an earnest to these words, Dr. Johnson, after three decades as the lone practitioner in Garland has urged his devoted friends and patients to start now getting used to traveling to Clinton some 14 miles away for their medical care.

What has all this to do with a medical school in Maine?

Well, perhaps the most interesting finding of the study thus far is the remarkable correlation of population, physicians and hospital beds at this time. This will undoubtedly surprise many of you, but there are fewer than 20,000 of Maine's 990,000 population today living more than 20 air-miles (not road miles) from an approved hospital; and there are fewer than 50,000 of Maine's total population living more than 20 air-miles from less than 3 practicing physicians. About one-fifth of Maine's practicing physicians are doctors of osteopathy. I have no doubt that further analysis of our questionnaires will show that considerable numbers of all practicing physicians in the small towns and isolated communities of Maine are in the older age groups.

What greater effect will a medical school in Maine have than medical schools elsewhere in New England upon the maintenance and strengthening of this pattern of distribution, unless efforts are also made to think of highways to hospitals and to regional medical centers? What an opportunity this would make possible for a truly modern medical school to serve the practicing profession and people of the state, while training new generations to serve and to settle in areas they know will be served by the best in modern medicine?

In summary, it seems to me the challenges facing this state are great, and in many ways unique. I believe the timing for an accreditable medical school rests in the hands of those who accept these challenges, but will put first things first. I sincerely hope that our further studies and final report will prove helpful to deliberations which I am confident will result in wise decisions for Maine.