

WAMI, a Decentralized Medical Education Program In Washington, Alaska, Montana, and Idaho

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SPARSELY POPULATED AND MOUNTAINOUS, with desert and maritime regions, the States of Washington, Alaska, Montana, and Idaho are not only geographically similar, they also have common industrial and demographic characteristics. Their industries generally reflect the wealth of the States' natural resources—petroleum, lumber, grazing land, farm land, minerals, and the fruits of the ocean. Highly technical industry is largely limited to construction of aircraft and ships. The population centers are clustered in a few major areas; the remaining regions are remote, sparsely settled, and lack adequate numbers of physicians.

In 1971, the University of Washington School of Medicine in Seattle began a decentralized program for medical education with the cooperation of universities and physicians in four States. Called WAMI—an acronym for Washington, Alaska, Montana, and Idaho—the program's goals are to enable more students from these States to attend medical school, without building more schools or expanding the teaching facilities at the University of Washington School of Medicine; to increase the number of primary care physicians in the region; to diminish the maldistribution of physicians; and to bring the resources of the school of medicine, especially continuing medical education, to the communities in the WAMI States.

WAMI has two phases—the university phase that is intended to enable more students to attend medical school, and the community phase that is intended to help increase the number of physicians in the region's physician-poor localities.

The University Phase

The University of Washington School of Medicine is the only medical school in the four States. Since 1969, the total number of applicants to the school has increased dramatically—from 653 in 1969 to 1,794 in

1974, an increase of 170 percent—and the class size rose from 84 to 135 students. During the same years, the number of applicants from the WAMI States alone increased as follows:

State	1969	1975	Increase	
			Number	Percent
Washington	248	434	186	75
Alaska	10	29	19	190
Montana	24	83	59	245
Idaho	30	59	29	98
Total	312	605	293	96.5

As a State-supported institution, the school of medicine must give preference to applicants from Washington. Residents of the other three States therefore are at a disadvantage in competing for entrance. None of the four States at present has the necessary estimated \$60 to \$100 million to devote to construction of new medical schools. Moreover, expansion of the facilities at the University of Washington medical school would cost an estimated \$30 to \$50 million.

In 1969, faculty members and administrators of the school of medicine developed a plan that would allow more students in the WAMI States to enter medical school. These planners visualized a program of decentralized medical education in which facilities and faculty members of other universities would be used for teaching basic sciences to freshmen medical students. In 1971, the Commonwealth Fund of New York awarded the university a 3-year grant to test the concept of regionalizing medical education in the WAMI States. And in 1972 the medical school received Federal funds for the program from the Bureau of Health Resources Development of the Health Resources Administration. Four universities eventually participated in the program—the University of Alaska, the University of Idaho, Montana State University, and Washington State University.

From September to December 1971, nine first-year medical students studied basic sciences at the University of Alaska in Fairbanks; most of these students graduated from the medical school in June 1975. Their courses in Alaska, coordinated by faculty members of

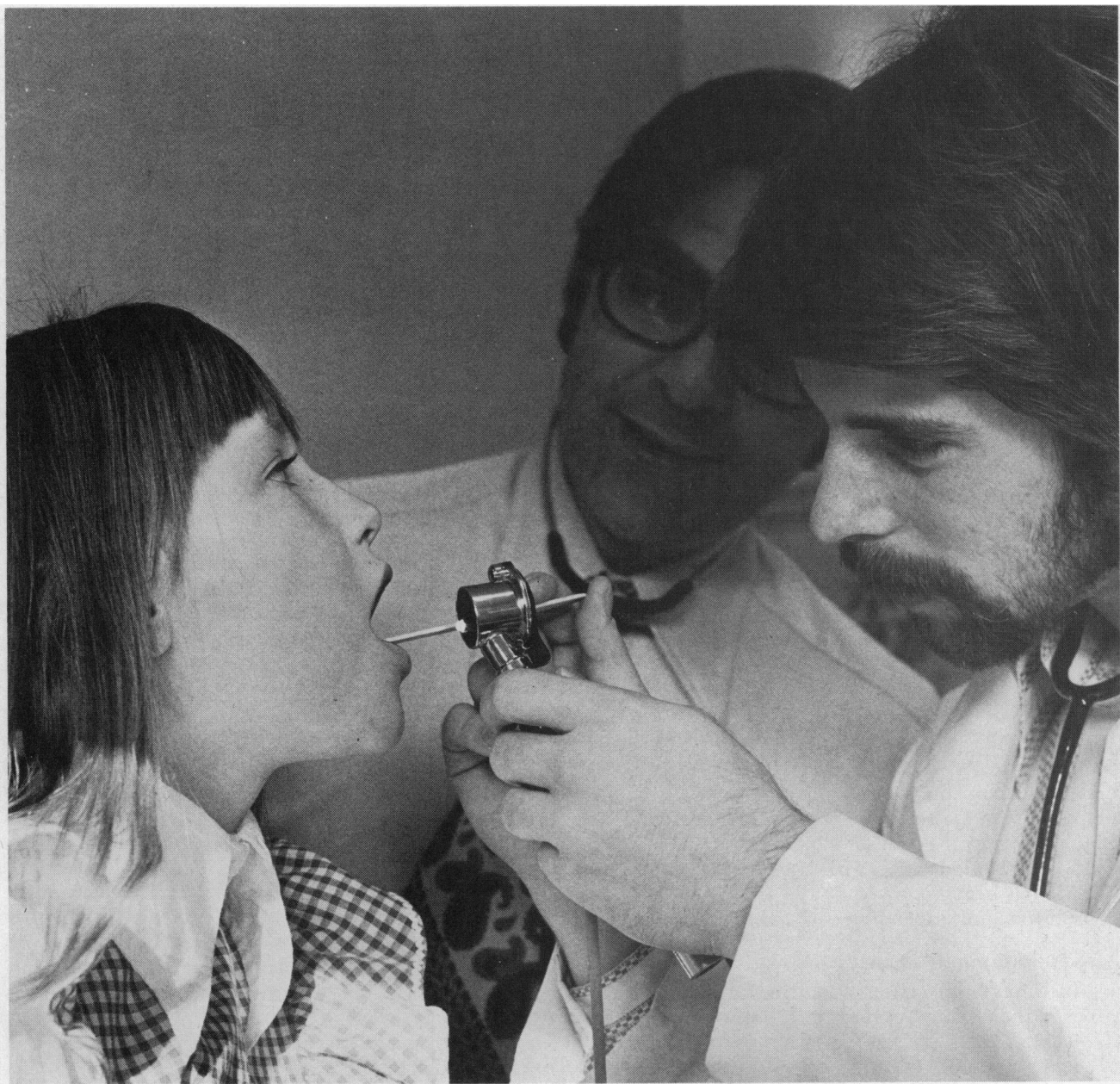
the universities of Washington and Alaska, were essentially the same as those taught the freshmen who began their studies at the medical school in Seattle. In January 1971, the nine students left Fairbanks to join their classmates in Seattle. The results of a common test given to the Fairbanks and Seattle students indicated that both groups had been taught and had retained the same basic information.

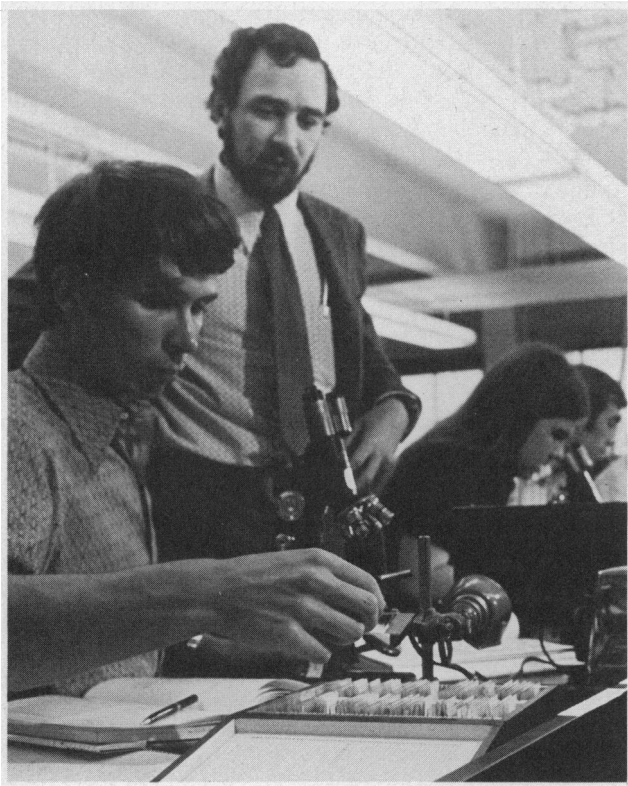
Two more universities and 30 more students entered the WAMI program in the autumn of 1972. Nine students attended basic science classes at the University of Idaho in Moscow, 10 at Washington State University

in Pullman, and 11 at the University of Alaska. In January 1973, these 30 students continued their studies in Seattle. In the autumn of 1973, Montana State University joined WAMI, and in that year the four WAMI schools taught a total of 40 first-year students, all of whom entered the medical school in Seattle in January 1974.

Each year, the students at the medical school and those taught at the other WAMI universities have scored essentially the same on the common tests. In some courses, students who were taught at the outlying schools scored slightly better than those at the medical

Third-year medical student Fred Kimball examines a young patient, under the supervision of Dr. Roger Boe, at the Community Clinical Unit in Pediatrics in Pocatello, Idaho





Medical students studying at Washington State University and the University of Idaho under the WAMI program

school; however, no continuing differences have distinguished the test scores of the two groups.

In September 1974, the WAMI program took another step—at the University of Alaska, the curriculum was extended to a full academic year. A total of 42 students began their studies in 1974, 10 each at the universities of Idaho, Montana State, and Washington State and 12 at Alaska. All but the 12 in Alaska joined their classmates in Seattle in January 1975; those in Alaska will enter the medical school at the beginning of their second year in September 1975.

By September 1975, it is hoped that all four WAMI universities will be teaching freshman medical students for a full academic year. If this hope is realized, WAMI will have effectively expanded classroom space for an additional 40 to 50 students each year, without having built new facilities. The full-year program, however, depends upon the financial support of each participating State—both the private and Federal funds that supported the WAMI experiment ended in June 1975. Legislation allocating money for support of WAMI has been approved by the Idaho and Montana legislatures and is pending in Alaska.

The Community Phase

Much has been written about the health manpower needs of the nation, but there is little consensus on how many physicians are needed, what their roles should be, and what types of health care delivery systems will

work best. It is generally agreed, however, that the country needs more primary care physicians. In addition, although the overall ratio of physicians to population in a State may be sufficient, too many practitioners are clustered in one area while the remaining areas are medically underserved.

The four WAMI States constitute 861,375 square miles, approximately 22 percent of the land mass of the United States. About 6 million persons live within the boundaries of these predominantly rural States, but almost one-fourth of these persons live in the clustered Puget Sound region. As mentioned earlier, large sections of the States are sparsely settled and lack sufficient numbers of physicians.

According to 1973 statistics from the American Medical Association, Alaska had 114 physicians to 100,000 population, Montana had 115, and Idaho had 104; the U.S. average was 170 physicians to 100,000 population. Although the ratio in Washington equaled the U.S. average, a number of areas in the State lacked adequate numbers of physicians because of maldistribution.

To encourage more students and resident physicians to set up practices in outlying, nonurban areas of the States, WAMI established “community clinical units.” Each unit is basically a teaching site where a group of physicians, who applied and were accepted as teachers for the WAMI program, teach advanced medical students and work with medical residents.

The community phase of WAMI was established in 1971 with family physicians in Omak and Grandview, Wash. Omak is a community of 4,000 persons in north central Washington, across the Okanogan River from the large Colville Indian Reservation. Grandview, population 3,400, is in the south central part of the State, about 30 miles from the Oregon border.

Since 1971, 12 additional community clinical units have been established as follows: for family medicine, 1 each in Oak Harbor and on Whidbey Island, Wash., Kodiak, Alaska, and Whitefish-Kalispell, Mont.; for pediatrics, 1 each in Great Falls, Mont., Pocatello, Idaho, and Spokane, Wash.; for internal medicine, 1 each in Billings and Great Falls, Mont., and Wenatchee, Wash.; for obstetrics-gynecology, 1 in the Treasure Valley of Idaho (Boise, Nampa, and Caldwell); and for psychiatry, 1 in Anchorage, Alaska.

The physician-teachers at the 14 community clinical units provide residents and advanced medical students an opportunity to observe and participate in a kind of medical practice not often seen in a large university medical center or its teaching hospitals. Under the supervision of the physicians, the students have more contact with and responsibility for patients than they would have at a medical center. They see patients with the physicians in their offices, at the hospital, and during house calls, and they attend local medical meetings with the physicians. The students also have a greater opportunity to follow up patients by seeing them in repeated office visits.

The students study with the physicians at each unit for 6 weeks, and the residents work in the units up to 3 months. The clerkships are structured jointly by the community physicians and the departments at the medical school that have clerkship programs—family medicine, internal medicine, obstetrics-gynecology, pediatrics, and psychiatry. The community clerkships are optional for the medical students, except for those who are majoring in family medicine.

The training in the small communities is offered to

the students and residents in the hope that they will be attracted to these areas when they enter into practice. Their exposure to small-community practice allows them to test the kind of professional, social, and community life they would lead. If their families accompany them on the clerkships, as many do, they also can see what their lifestyles would be.

The physicians who teach at the units report that they enjoy the stimulation of working with students and establishing closer ties with the medical school. The

Satellite broadcast in a television studio at the University of Washington—faculty members are holding a meeting with their counterparts teaching first-year medical students at the University of Alaska in Fairbanks



units also serve as a focus for continuing medical education for physicians and other health professionals practicing in the communities. The resident physicians often bring new information from the university medical center to the remote teaching sites. Additionally, physicians from the medical school frequently visit the units to review the students' progress, to give lectures to the physicians, medical residents, and students, and to serve as consultants for the community physicians regarding patients.

The lectures are often attended by physicians, nurses, and other health care workers from the community and surrounding areas who do not participate as teachers in the WAMI program. To improve their skills in the care of patients, in teaching, or for personal satisfaction, many of the community physician-teachers take clinical and research preceptorships with faculty members at the medical school.

The WAMI faculty members at the various university and community teaching sites and the faculty members and administrators at the medical school meet frequently, hold conferences, write reports, and make personal visits and telephone calls to establish rapport and maintain coordination in the program.

WAMI also participated in a 1-year study to determine the feasibility of satellite communications for teaching medicine and for consultation about patients. WAMI was 1 of 23 users of the ATS-6 satellite launched in May 1974 by the National Aeronautics and Space Administration (see *Public Health Reports*, September-October 1974, page 489). The satellite relayed audiovisual programs once a week between the University of Washington and the University of Alaska and between the University of Washington and the community clinical unit in Omak, Wash. The broadcasts consisted of live classroom lectures and discussions, consultations about patients among physicians at the sites, presentations of patients by the students, and administrative conferences.

Progress to Date

At present, achievements of WAMI's two primary goals are more visible and more easily documented in the university phase of the experiment. As shown in the following statistics on enrollment in the medical school 4 years before the program and 4 years after, student admissions have increased.

State	Number students		Average per year		Percent increase
	Before	After	Before	After	
Washington	293	396	73	99	36
Alaska	2	20	.5	5	900
Montana	7	24	1.8	6	236
Idaho	7	27	1.8	6.8	286

No significant differences have been seen in the common test scores of the freshman medical students in the five universities. The courses at the five universities are essentially the same; however, the learning atmosphere at the four peripheral universities differs from that at

the medical school. At the outlying universities, the freshman is 1 of a small group—12 at the most thus far—and his teachers and administrators generally are more accessible for individual attention and for informal meetings. At the medical school, the freshman is 1 of 100 or more. Yet, his teachers are experienced medical educators—some are among the nation's outstanding researchers in their fields. Also, the magnitude and sophistication of the medical school's facilities for education, research, and care of patients are unavailable anywhere else in the WAMI States.

All the freshman medical students at the five universities are given the course "Introduction to Clinical Medicine." The medical school freshmen generally see patients at the University of Washington's hospitals and affiliated institutions in Seattle, whereas the freshmen at the other WAMI universities see patients in the offices of community physicians at least one-half day a week.

In the community phase of WAMI, the primary goal is to increase the number of primary care physicians in rural areas of the four States. The first students to enter the community phase were in their third and fourth years of medical school. Only a few of these students are now entering into practice—the majority are still serving as interns or residents. Thus, it will be a number of years before the success of this phase of WAMI can be determined.

It is evident that more students are choosing to major in family medicine when they finish their basic science studies—usually in their second year. An average of 43 percent of the students in each class at the school of medicine now choose a family medicine major, in contrast to 12 percent who did so before the program began. However, only part of this shift may be attributed to the WAMI program, because around the same time the program began a change was made in the curriculum that placed more emphasis on family medicine.

A followup of the older students who participated in the community phase showed some encouraging results. Three of the first group have returned to the communities where they received training to begin practices with their former WAMI teachers. Of the first 14 residents to specialize in family medicine, 6 are practicing in rural or semirural areas in the Northwest, 2 are military physicians, and 6 have faculty posts in family medicine departments of medical schools.

WAMI, therefore, appears to be a solution to at least some of the problems of medical education and health care delivery in Washington, Alaska, Montana, and Idaho. While the early results of the program are encouraging, final answers in terms of statistical data are still to come.