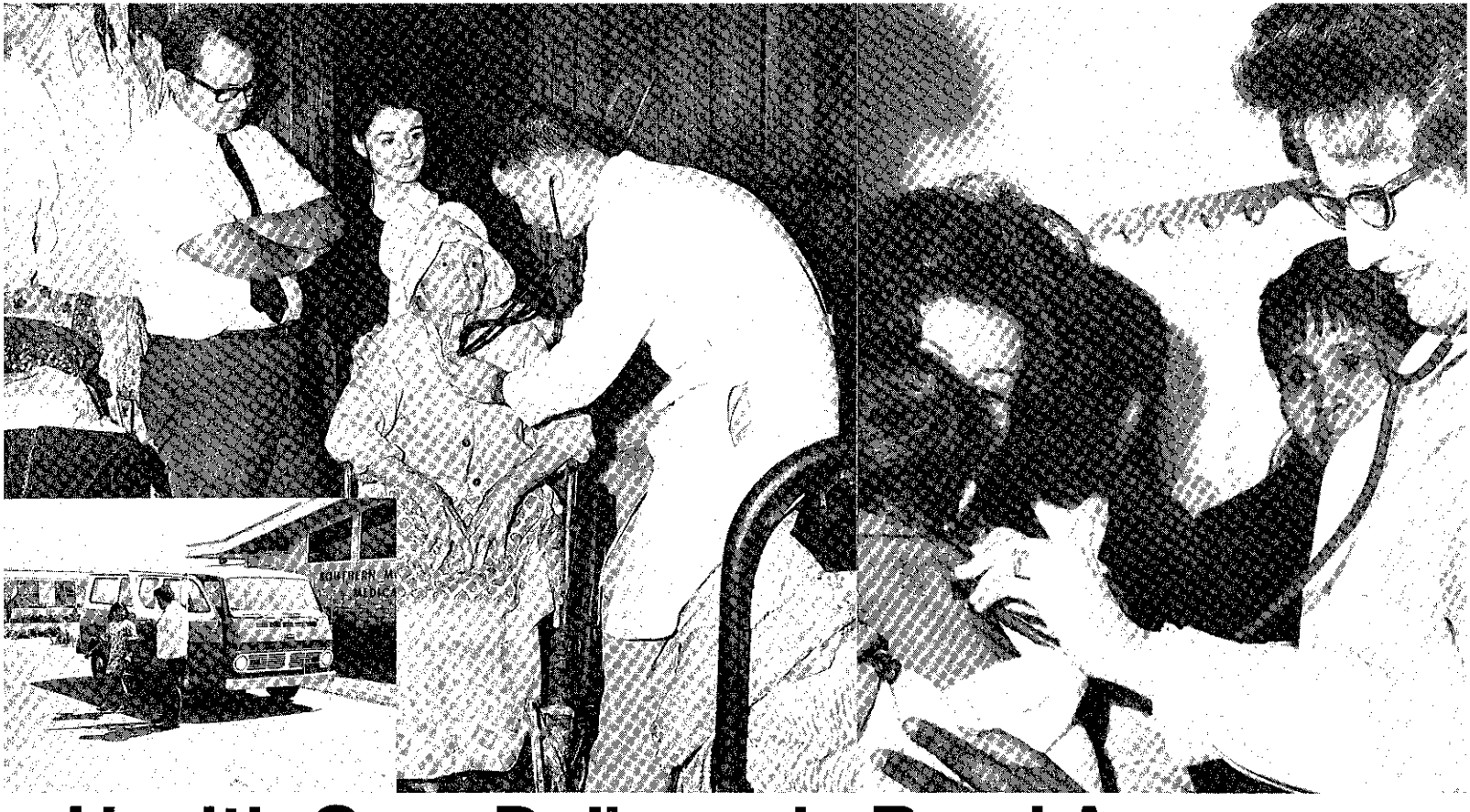

Health Care Delivery in Rural Areas

Selected Models

FOREWORD

This pamphlet is written for those who are concerned with the delivery of health services to all people living in rural areas. Its purpose is to present an overview of the problem as well as selected plans and models for delivery of health services in certain rural areas of the nation. It is hoped that from such experimental models a number of plans will evolve which can be adapted and utilized by local health planning groups for their specific needs.

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CONTENTS

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Selected Models

Fifty-four million Americans (27%) live in rural areas. Trends in the U. S. toward urbanization and specialization in medical practice have resulted in a concentration of physicians in larger cities. A resulting maldistribution of physicians in certain areas leaves some rural communities without immediate access to medical care. In addition to the problems in communication and transportation imposed upon rural dwellers by the distances separating them, we find that rural people in the more sparsely populated areas have only about one-half the access to physicians, dentists, nurses, hospital beds, and other health resources when compared with the rest of the nation. The health problems of rural areas are further compounded by environmental hazards, an aging population, and a high degree of poverty. In addition, an increasing number of patients, greater demand for services, more difficult patient problems, more complex diagnostic and therapeutic procedures, and a greater need for continuing medical education are all placing increasing demands upon the physician's time and skill.

CHANGING PATTERNS OF RURAL LIVING

If one word typifies the present rural community, that word is *change*. Social and technological changes and the problems of adjustment to them are the underlying phenomena which most characterize society and social action today, both rural and urban. Among the changes affecting rural living are these:

- Declining population in outlying rural areas as a result of tremendous population shifts to urban, suburban, and rural fringe areas;
- A decline in the number of farm families;
- Rising technology and mechanization in all fields of endeavor;
- Industrialization in rural areas, especially on the fringes of metropolitan centers;
- Health care service area evolution;
- A trend toward larger units of action—school consolidation, church consolidation, multiple county and county-city organization, and joint action;
- Growing dependence on services beyond the immediate locality;
- Larger and more complex institutions;
- Growth of special interest organizations with specific programs and approaches; and
- Maladjustments of community services and local governments.

There is great diversity of the rural population in the pres-

ent day rural community. The occupational structure is changing—increased intermingling of non-farm rural residents with farm people—increased numbers of farmers working off their farms—more women employed outside the farm home—greater mobility of all people.

The urbanizing and broadening influences of modern communication media and transportation such as radio, television, newspapers, highways, automobiles, and airplanes touch even the most remote rural family and tend to gradually reduce rural-urban differences in health attitudes, needs, demands, and behavior. Nevertheless, differences still exist in availability of resources and facilities for human services in rural communities of America as compared with metropolitan centers.

Future trends and outlooks indicate that the changes affecting rural life will continue, and in some instances, at an accelerating rate. The shift out of farming will continue, as well as technological advances in agriculture. Much of rural America will become "mixed income" communities.

The school and education will assume an increasingly important role. Adult education will increase. The role of institutions serving the rural community will change, but not decrease in importance.

VARIATIONS IN PATTERNS OF LIVING

Feedback from community study leaders in the 21 community action study groups of the National Commission on Community Health Services points up one major conclusion—that there is no single blueprint for study and solution of health problems that is applicable to all communities in all situations. The cultural base of any community is important in determining how human and natural resources are treated.

The uneven distribution of population creates important differences throughout the nation. In 1960, two-thirds of the population of the U.S. were found to live in 212 standard metropolitan statistical areas (SMSA's) and the counties clustered about cities of 50,000 or more inhabitants. There were about 2,700 or 90% of the 3,043 counties in the U.S. identified as predominantly rural. Of the 2,700 counties, 250 have less than 5,000 inhabitants each. These statistics illustrate the problem of density of population vs. space.

Continuing regional disparities appear when data on the distribution of physicians, dentists, and nurses per 100,000 population are examined by year and region. The South's supply of physicians, dentists, and nurses was at a lower level than that of any other geographical region from 1921 to the present.

That the concept of region is often applicable to the development of health facilities is borne out by past regional developments in the Southwest, Northwest, and Far West.

Wide variations in patterns of living in rural areas are evidenced. About 14,000,000 rural people continue to live at a depressed level. Some may live in the midst of relative prosperity, but are bypassed by economic and social change. Rural America accounts for 27% of our total population, but 40% of the poor.

Some communities have become stranded where farmland has been depleted or forests and mines have been exhausted. In such places, people have little access to health or other community services. The greatest concentration of the deteriorating rural communities is in the Southeastern and Southwestern states. Others are scattered throughout the country. Rural people of the Great Plains share in general rural economic and social improvements, but suffer a growing handicap in their efforts to maintain adequate community health services as the population of the counties continues to decrease. Ease of transportation compensates to some degree for the greater distances to community services. The lack of arrangements to meet unexpected health emergencies affects all families in the Great Plains region.

Health care for migrant farm workers poses difficulties in all areas of the U.S. Working in isolated communities, uncertain income, lack of resident status, and limited availability of health services, are problems generally faced by migratory farm families.

SUITABLE MODELS ARE IMPORTANT

With the changing patterns of life—demographically, economically, socially—different models for the delivery of health care services are needed. Such suggested designs will provide directions and guidelines for rural community health planning groups to consider and, hopefully, to be able to revise and adapt to meet their local requirements.

Physicians and health workers have long recognized the need for community health planning to prevent fragmentation of services, needless duplication of services, and waste of money. They are also conscious of the need for efficient utilization of currently available health manpower and facilities.

Physicians are not needed in every hamlet, village, or township. Today's modern transportation makes it unnecessary for a physician to have an office in each area where relatively few people reside. In our educational system, the one-room rural school has given way to larger multi-room consolidated schools with modern facilities and adequate resources. The same trend applies to medical services for the rural population. In some areas of the nation where rural and small urban communities are contiguous, health resources and efforts can be combined in larger and more functional groupings which will comprise a population base large enough to support a full range of efficient and high quality health services and facilities.

Today's family physician locates himself so that he can do the most good for the greatest number of people. More patients are able to reach him in less time than his "horse and buggy" predecessor. A patient who is 15 or 20 miles away from his physician today is actually closer in terms of time than a patient 2 miles away was 50 years ago.

Patients and families can more easily come to the physician and his supporting staff than in the past. Increasingly, physicians' offices are clustering around community hospitals in the larger towns. Often, the newer hospitals contain office facilities for group practice, so that the emergency room, clinical diagnostic laboratory, and radiology facilities can be jointly used for ambulant outpatients as well as inpatients. Wherever it is not possible for dispersed rural populations to come to a town because of age, infirmity, or depressed economic conditions, techniques can be used to take a mobile office with allied health professionals and a simple laboratory to the people. In some very isolated rural areas it might prove more feasible to develop small permanent satellite health centers with a well-designed clinic building staffed by a physician's assistant in residence who could serve in a similar role to that of a corpsman in an isolated military post or on a ship. Other allied health professionals could be added as needed. The problem of ready communication with the physician is soluble by techniques developed for transmission of data in the space program.

The dimensions of a health service area within which residents should join to carry out integrated planning for delivery of health services are likely to be already marked by the trading or community patterns that have been drawn

by rural and city residents together as they drive to work, to shop, to college, to visit, and to recreational and cultural facilities.

The models described here are not to be construed as predictions, but as concepts. A description of a model does not imply endorsement of a particular method for the delivery of rural health services. With our changing times, other models will be conceived and developed as local conditions may dictate. It is hoped that from such experimental models a number of plans will evolve which can be adapted and utilized by local health planning groups for their specific needs.

Each community needs to make a critical appraisal of its situation to determine the most feasible arrangement for delivery of its health care. Some questions to consider are: 1) Is there sufficient population base at various age levels to warrant patient demand for one or more physicians? 2) Is the community capable of providing necessary financial resources to support personnel and facilities? 3) Where do people travel for medical care at present? 4) Are there readily accessible major health centers available in the larger community area?

SOME MODELS AVAILABLE

A Solo Practice Model carried out by the individual practitioner plays a basic role in the delivery of health services in all areas of our nation. The solo practitioner provides adequate, integrated medical care for many people. For a number of years, the physician practicing in a rural environment has utilized his resources to the best advantage. He delivers good medical care for a large number of people. He often trains his own medical assistants. He helps to provide sufficient health manpower to take care of the health needs of the people of his community. He functions with, and has access to, expert specialists. He serves as a personal physician, oriented to the whole patient, who practices both scientific and humanistic medicine. Quality health care ultimately depends on the caliber and conscience of the individual physician. Throughout our nation's history, the individual practitioner has carried on as one of the vanguards of medical care for the American family.

Many general practitioners and specialists provide their services through an individual practice arrangement. In a recent survey of a random sample of 1,837 physicians practicing in non-metropolitan areas of the U.S., 58% were engaged in solo practice.

A Community Health Program in Lafayette County, Florida is under the supervision of the Division of Ambulatory Medicine and Community Programs of the Department of Medicine at the University of Florida's College of Medicine. The program started on January 6, 1969, as a community-oriented, comprehensive health care service for the residents of Lafayette County, Florida.

Lafayette County is in north central Florida, 60 miles from Gainesville. The Suwanee River is its easternmost border and most of the 3,000 residents live along the River bottomland. The County seat and only community of any size is Mayo, a village of 800 people. The major industry is farming—cattle, dairy, and tobacco. There is a small boat building factory in Mayo. Six hundred people work for a pulp mill in an adjacent county, the source of major employment. This is a sparsely settled, economically poor, southern rural County. There are 400 Negro residents who live in Mayo in an area referred to as the "quarters." Although the one high school and kindergarten are integrated, two completely segregated grammar schools still exist. There has been no private physician practicing in Lafayette County for 10 years.

In Mayo there is a recently constructed County health clinic which has ample space for the ambulatory care of all County residents. It houses the office of the County health nurse and serves as the base of operations for the Lafayette County Health Center.

The purposes of the clinic are threefold: 1) To provide a teaching and training experience for medical and nursing students and house staff in community medicine. It was felt this experience would have to be some distance from a medical center. Then the students could live and participate in a community and see firsthand how people identify their own needs and how medicine may begin to meet these needs. 2) To furnish medical service to a community where it has not been readily available. 3) To establish for the College of Medicine a facility where the problems of getting health care to people and getting people in need of health care to health professionals may be critically studied.

Citizens of Lafayette County comprise the Community Advisory Committee which was formed to help in the planning and operation of this health center. They insisted upon a fee for service for those able to pay. This has helped to make the clinic self-supporting and has emphasized that this is not a project directed primarily at indigents but to all residents regardless of their ability to pay. The clinic is demonstrating the potential of being self-supporting. Since opening, they have averaged approximately 25 patients a day and slightly less than 100 house calls a month.

One resident in medicine and 3 or 4 medical students live in Mayo. They are paid a small stipend to cover their additional living expenses. They staff the clinic which has liberal hours from 8:30 a.m. to 9:00 p.m. They are available, however, 24 hours a day, 7 days a week. All medical students will rotate through this clinic experience. In addition to providing care in the clinic or at home, the resident and students write a health column for the local weekly newspaper, and participate in the community by assisting the science teachers in high school and giving talks to local service clubs and church groups.

There were two initial goals of the project. First, it had to be a successful teaching and training experience for the medical student. Second, the citizens of Lafayette County had to be receptive to this concept of health care. Both of these goals have been met. At the present time this program in the delivery of rural health services is working well.

Oklahoma's Project Responsibility provides a plan which involves a cooperative effort between the University of Oklahoma's Medical Center, the Oklahoma State Medical Association, and other related medical organizations. Basically, it is a four-phase program, with each phase running concurrently. The plan provides for: 1) a state-wide inventory of the health science personnel now serving the State of Oklahoma; 2) a projection of current and anticipated health needs based on step 1 and in consideration of public and professional demands; 3) a reevaluation of the medical school curriculum and its hospital training program in family medicine with a strengthening of the allied health programs in relation to social needs; and 4) the initiation of a pilot study program in the delivery of health services in a community of need. For the pilot study program, the community's health center will be considered as an integral part of the University of Oklahoma's Medical Center teaching program. The physicians in the health center—an internist, pediatrician, and general practitioner—will have active teaching appointments at the University. They will have a group practice arrangement on a fee-for-service basis. Residents in family practice and preventive medicine, as well as medical students and other health professionals from the University of Oklahoma Medical Center, will serve on a rotation system at the community health center.

The town of Wakita, located 135 miles northwest of Oklahoma City, population 450, has been selected as the site for the first pilot program. The citizens of Wakita have built a modern community health center which was dedicated on September 14, 1968.

Wakita is one of five small towns in Grant County. About 8,500 people live within a 25-mile radius of Wakita. The population has been relatively stable for the past decade. No other physicians or medical facilities are available within 40 miles. The County is predominantly an agricultural area with a few oil wells. The Wakita clinic includes 7 beds for acute illness, 20 beds for extended care, and 24 beds for nursing home patients in addition to offices for 3 physicians, and a pharmacy.

A Pilot Project in Rural Medical Care in New Mexico is in operation at the Hope Medical Center in Estancia, population 800. The project was developed by the chairmen of the Departments of Community Medicine and Epidemiology and Pediatrics at the University of New Mexico School of Medicine. It is being supported by Sears-Roebuck Foundation and the New Mexico Regional Medical Program.

The Hope Medical Center was originally built for a family physician with consultation from the Sears-Roebuck Foundation's Community Medical Assistance Plan. However, it had not been staffed for several years.

The project provides a rural-urban link for the delivery of health care by a specially trained nurse and a receptionist-technician working as part of a team under rigorous medical supervision and consultation from the University.

The plan for the project involves these steps:

1) A comprehensive survey of the people was made to collect data on the present health status of the population.
2) A designed pattern of preparation for the nurse was developed by heads of various departments of the medical school, and included some instruction in nurse midwifery. A very careful selection of the scope of practice for the nurse was determined by the panel of physicians relative to providing care, health maintenance, services in selected illnesses, and emergency care. It was agreed that at no time would the nurse make a decision which might be considered as medical diagnosis, but she would make observations of signs and symptoms for the supervising physicians to consider. In selected instances, predetermined standing orders would be instituted.
3) The health center has x-ray as well as laboratory facilities. All x-rays which the nurse is asked to take are sent by bus to the medical school for the physicians to review in preparing for subsequent telephone discussion with the nurse on any patient requiring further assistance from the physician. The physicians are available by telephone at all times, and the two physicians in charge of the project give one-half day a week in the center, at which time patients needing their particular attention are seen.
4) The nurse is required to cover the health center 5 days a week from 8:30 a.m. to 5:00 p.m., with the exception of Wednesday morning. At this time each week, she travels to the medical school to a) attend weekly pediatric rounds; and b) discuss specific problems with other department heads, and secure reading materials. These weekly visits are considered her planned continuing education.
5) The office nurse, who had helped to staff the center when the family physician was in charge, was interviewed and met the qualifications and experience desired for the position. She participated in a six-month concentrated preparation program designed by the panel of physicians at the medical school.
6) The respective medical and nursing practice acts were reviewed with the attorney general of the State in order to determine that the scope of planned practice was consistent with current requirements.

The clinic was opened on February 10, 1969, and the program as planned is working effectively. The staff is composed of a receptionist-technician, and a clerk. The program is operating on a fee system basis. The hope is that eventually it will be self-supporting.

The project will be under periodic evaluation to determine its future.

The area served by the Hope Medical Center is in the Estancia Valley, Torrance County, near the geographical center of the State and embraces the villages of Willard and Moriarty, the town of Estancia, and several small mountain communities. The trade area population is 6,000 with one physician available elsewhere in the County. The principal industries are farming and ranching.

Lawrence County, Alabama - An ideal Appalachian county in which to test innovations in the delivery of comprehensive health care is Lawrence County in northwest Alabama. The number of health personnel in the County has been rapidly decreasing without replacements. There are only six physicians serving a County of more than 30,000 persons.

The Tri-County Appalachian Regional Health Planning Commission in Alabama has achieved encouraging results in bringing together local medical, public health and community leaders working in concert with University of Alabama officials in Birmingham to seek solutions to the overall health care problems in the County.

Project goals include development and establishment of a model system for delivering comprehensive health care services to a rural community, establishment of evaluation, criteria, and identification of an effective financial supporting mechanism. The project will be funded by the Appalachian Regional Commission beginning September 1, 1970.

The model has two components of patient contact: first, a family care unit and second, an "out-reach" team. The outreach teams introduce families to the community health service personnel who initiate the history-taking process and refer the family to the family care unit.

The procedure for delivering primary care is functionally designed to best meet the needs of families within the community. The principles of family practice, including emphasis on outpatient service and preventive health care, will receive first priority. An advisory board from Lawrence County will assist in implementation of the program.

The University of Alabama School of Medicine is giving full support to the project. The University will assume responsibility for recruiting former medical corpsmen to work as physicians' assistants with the physicians of Lawrence County.

Demonstration in Organization of Community Health Resources is a project sponsored by the Pennsylvania Department of Health and funded through the U.S. Public Health Service in a five-county area in rural Pennsylvania. The project aims are: 1) to develop local community organization in a rural area in order to identify and coordinate existing community health services as well as to plan and implement supplementary programs; 2) to demonstrate local committee participation in community health education programs; and 3) to test a demonstration system in the delivery of health services to rural areas based on self-supportive community action.

To accomplish these objectives a behavioral scientist, a community organization specialist, and a secretary will be available to serve in an advisory capacity within the project area. This team, backed up by consultants from the central office of the Pennsylvania Department of Health, will collect and assemble data on health resources and utilization of health facilities in the five-county area.

The population of the five-county area is 236,400 with the bulk of the labor force in manufacturing or service industries. There are 6 general hospitals in the area with 104 extended care beds. A total of 37 ambulances operate in the area. Three of the five counties have only limited home health services. A variety of clinics for preventive services are sponsored by the Pennsylvania Department of Health. There were 277 physicians in the area in 1966, 123 of whom were located in Montour County where Geisinger Medical Center is located.

Interviews have been completed in 964 households randomly selected to provide a representative sample of the population of the project area. Survey data will be analyzed to determine knowledge of, attitudes toward, and utilization of, local health resources.

The field staff has provided the stimulus for the formation of a committee of local health leaders including representation of medical societies, hospitals, and nursing associations. This group is providing additional information on local resources and major health needs.

The advisory committee provides the nucleus of a larger committee composed of a more diversified representation of the area. This larger committee includes representatives of a variety of agencies and groups, both lay and professional. This group will, from its firsthand knowledge of the area and supported by reports from the project staff and professional committee, establish priorities for health planning for the project area.

As recommendations are formulated, appropriate remedial steps will be planned. It is anticipated that many activities will fall within the capabilities of the local area. Hopefully, the involvement of the community in program planning will provide the impetus for self-supportive local action. Through consultation, the field staff and state committees will assist local communities in securing state and federal support when community resources prove inadequate.

The Rural Health Project in Southern Monterey County (California) is an attempt by a private group of physicians to demonstrate that, with the collaboration of the county medical society, they can responsibly and efficiently conduct a program to provide comprehensive medical care to indigent patients. Within the purposes of PL 89-749, The Rural Health Project is an experiment concerned with developing a new way of organizing indigent care and at the same time providing the basis for comprehensive health planning at the local level.

The basic objective of the overall program is to provide comprehensive, high quality medical care to all eligible residents, including migrant farm workers. This care is provided in the same facilities and by the same staff as are utilized by the self-sustaining residents of the area. There is no segregation of care. A thorough medical evaluation of each patient is attempted, as well as the establishment of a continuing relationship with the physician and other members of the health team. In this manner, not only treatment for current medical problems is provided, but also education of the patient in the proper utilization of routine preventive care.

The grantee for the *Rural Health Project* (RHP) is the Monterey County Medical Society. The Southern Monterey County Medical Group is the delegate agency and provides physician services under a grant from the Office of Economic Opportunity. It is a private group practice operating a major clinic in King City, and two smaller offices in Greenfield and Soledad. There are 10 physicians in the group covering internal medicine, surgery, and general practice. A number of visiting staff provides specialized services. The George L. Mee Memorial Hospital and the Pioneer Hacienda Nursing Home are collaborating agencies in the project.

Physician services provided at the clinics, and laboratory and x-ray services at the hospital, are offered from 9:00 a.m. to 5:30 p.m., 5 days a week. The King City clinic is also open 5 nights a week to accommodate RHP patients who cannot come to the office during the day. The only charge for services rendered for beneficiaries of the project is a $1.00 fee for each prescription filled. This fee is waived on request. All medical services provided under the OEO grant are on a fee-for-service basis.

Transportation from all sections of the project area to the clinics and to the hospital is provided. Two station wagons and one small van, equipped for wheelchair patients, are

used. This service is available to all grant patients on request.

A research component is also embodied in the project plan. The use of public health and social welfare professionals in a private group and the feasibility of offering careers in the health field to members of indigent families are being demonstrated. "Health Aides" have been recruited from the eligible population itself and are being used to establish communication with the target population. Public health professionals added to the group's staff under the grant include a public health physician, a public health nurse, and a health educator.

The population of the project area is about 17,000. An additional seasonal influx of 6,000 migrant farm workers from March to October will run the total to 23,000. King City is a town of 4,000 people. The primary industry in the area is agriculture.

A total of 4,500 patients are seen monthly by the 10 full-time physicians and 15 days a month of specialists at the three group clinics. There are an average of 6,500 OEO eligible patients in the area. Together, the clinics and the Rural Health Project have a total of about 80 supporting (non-physician) staff members. The project has been in operation since June 11, 1967.

MEDEX. In Seattle, the University of Washington Medical School and the Washington State Medical Association's Education and Research Foundation have set up a program to train former medical corpsmen, who are brought into the Medical School for a three-month refresher course on civilian medical procedures.

The purpose of the MEDEX (from a French term meaning "physician extension") Project is to develop an extension of the physician, a person trained by and for a specific physician, working under his supervision and available to help him 24 hours a day. MEDEX is a model of non-physicians extending primary care transferable to rural or urban settings.

Upon completion of the three-month training period, these MEDEX are sent out across the state to work in offices of physicians who agree to act as their preceptors and to employ them after 12 months of on-the-job training. The physicians selected are general practitioners with a knowledge of the experience of military corpsmen and who express an obvious need for help in their medical practice.

Special attention is paid to the selection of the corpsmen, the matching of the MEDEX and preceptors, psychologic adaptation to the civilian medical scene, and the development of the MEDEX's self-image, identity, and status. Based upon present experience, any large-scale attempts to utilize former military corpsmen in civilian settings should pay particular attention to these areas.

The first 14 MEDEX are now on the job, mostly in rural communities, and are sharply boosting physician productivity and morale. They seem to have gained the respect of nurses and other staff in physicians' offices and hospital staffs and are very well accepted by patients.

MEDEX is not a radical innovation in health manpower, nor is it a new training program being developed within a university. It is a joint project of potential uses of the MEDEX personnel and the developers-trainers-evaluators of the MEDEX program. It is an overdue effort resulting from a global perspective to pull together existing resources to meet a growing need in community health.

The AMA Council on Rural Health, in cooperation with the Washington State Medical Association and the Washington State Medical Education and Research Foundation, is currently exploring the feasibility of developing a project in delivery of comprehensive health care to the citizens of a two county rural area in Washington which will involve utilizing the health team efforts of allied health personnel, including MEDEX.

The "Cross-Road Medical Center," which involves the establishment of a multiple physicians' center, is sponsored by the Committee on Rural Medical Service of the Medical Society of the State of New York. The Committee has just finished a pilot study in three rural areas, composed of 30,000 people who are without a physician. Results from the study will be utilized in planning for the medical centers. The centers would embrace a geographical area, which is without a physician, of possibly four or five adjoining communities or towns cooperating to provide a population base which could support quality medical care, (approximately 10,000 to 30,000). Each center would be staffed by physicians from the surrounding area on a part-time basis, until permanent physicians can be obtained. The communities will provide a well-equipped facility, with a modern laboratory and staffed with trained personnel. These centers would be related to the hospitals and other medical centers in nearby cities, and the physicians would have staff appointments at these hospitals. The staffing of the centers may include specialists as well as family physicians. The determination of the type of specialist can best be ascertained by size, age, and general composition of the surrounding population. The Medical Society will utilize all resources available in the recruitment of physicians for the designated centers.

The Maine Coast Regional Health Facilities Plan is a unique method for delivery of rural health care. The Plan was conceived as a comprehensive medical care program to provide quality care, consisting of a central hospital with hospital-based specialists and outlying satellite clinics staffed by family physicians. The concept grew and evolved over two decades and was launched with the opening of a community hospital in Ellsworth. Three satellite clinics have been established and specialists travel to the clinics for afternoons of consultations. The organizational aspects of the plan are still in the process of development with the physicians and the institution.

Even though there have been many obstacles in the growth of the Plan, medical care has been provided for the patients on a continuous, comprehensive and quality-controlled basis.

Preschool and school clinics have been established and finally a contract for a school physician was obtained. Talks by physicians were given to civic clubs, professional groups, and church organizations. A weekly radio program was established and maintained for educational purposes.

Ellsworth is a city of less than 5,000 people, centrally located in the downeast area of coastal Maine. The two counties of Hancock and Washington contain fewer than 70,000 people and cover an area of approximately 3,000 square miles. Ellsworth is the largest town in the two Counties. Public transportation is practically non-existent.

The people of the area are primarily lobstermen, clam and worm diggers, wood cutters, blueberry rakers, sardine packers, boat builders, artists and writers, out-of-doors people, all seasonal workers, and all individualists.

In the two County areas, there are about 50 physicians and 7 hospitals, 3 of which are accredited. Initially, all of the physicians were in solo practice. Efforts have been made to develop a group plan for medical practice.

In the development of the Plan there has evolved a close relationship with State health projects. Physicians in the health center provide care to patients under the various programs on a fee-for-service basis as well as the usual contractual arrangement for a full day's clinic.

There is also an attempt being made to participate in the Regional Medical Program, comprehensive health planning, and mental health planning as well as the programs in education and Head Start.

Another aspect of the Plan has been the relationship with Harvard Medical School with fourth year students coming to Ellsworth on an elective basis to participate in a program titled "rural pediatrics."

In summary, the important aspects of the Plan are: 1) concern with the health needs of the people; 2) planning for comprehensive health care; 3) quality control; 4) continuing health education—for physicians, nurses, students, and the public; 5) interrelationship of private, public, and civic (volunteer) enterprises; 6) involvement of multiple disciplines; and 7) use of local talent and resources.

"A Physician-Monitored Remote Area Health Program" is a proposal prepared by the New Mexico Health and Social Services Department and NASA Manned Spacecraft Center. The proposal is under demographic study and review as to feasibility by State officials and agencies. The New Mexico Medical Society has a task force committee of physicians involved in the study and review process.

The program revolves around NASA-sponsored physician-monitored remote health centers which call for a system of facilities equipped with sensors like those used on astronauts in space that send back medical information to physicians on the ground.

An individual living in a remote area could go to one of these health centers where health service personnel, persons trained in health care but not as highly trained as a physician, could attach the electronic sensors which would transmit heartbeat, respiration, blood pressure, and other information to a computer-controlled center where a physician could monitor the patient's symptoms and advise the allied health personnel about treatment. The allied health personnel could also talk to the physician by radio or television.

As currently visualized, a healthy patient would be enrolled in the remote health program during a regular visit to his physician or by a mobile survey unit. Medical history and other information would be recorded and stored in a computer.

The remote centers would be staffed by nurses and other allied health personnel, would be located at schools, and would be served by mobile units.

If a patient became ill, he could travel to the nearest remote center, if able, or be called upon by a mobile unit. The sensors could be attached to the patient and his life signs transmitted to the control center. A physician on duty at the control center would request the patient's file from the computer and the nurse and patient could talk to the physician by radio.

The physician could then prescribe medication or other treatment until the patient could be removed to a hospital.

If started, the first phase would involve the southwest corner of the State which includes 50,000 square miles of wilderness area, high mountain ranges, and portions of the Chihuahuan and Sonoran deserts. There are 95,000 persons in the area, served by fewer than 30 physicians.

The Iowa Medical Society Task Force on Health Manpower in Cooperation with the University of Iowa College of Medicine and the Health Planning Council of Iowa are working toward the improvement of delivery of health care services on a state-wide basis. A major project in 1968 was the sponsorship of meetings in the 16 functional economic areas delineated in the State. These meetings were designed to inform physicians about the medical manpower situation in Iowa, and to suggest ways to improve health care delivery through community planning.

A similar arrangement for meetings is scheduled for 1969. These sessions will involve physicians, other allied health personnel, and representatives from various other segments of the community. The purpose of the meetings is to explore the problem of what can be done at the local and area level to improve the availability of quality health care in the State.

The Task Force developed a general statement outlining the Medical Society's interest and involvement in medical manpower studies and projects as well as offering ideas and suggestions to alleviate existing inadequacies in the provision of health care. The Task Force also proposes that an increasing number of allied health personnel be utilized on the health team to assist physicians to make more effective use of their time and energy in dealing with the increasing burden of health problems.

One project conducted during the winter of 1968-69 was a series of informal meetings at each of the University of Iowa's several medical fraternities. These meetings afforded medical students an opportunity to visit with private practitioners and to discuss the advantages of practicing medicine in Iowa.

The preceptorship program has been reevaluated and updated to provide medical students with a valuable oppor-

tunity to observe the private practice of family medicine.

The Iowa Medical Society's House of Delegates in 1969 approved resolutions recommending selection of medical students most likely to remain in Iowa, tuition forgiveness program for physicians remaining in Iowa after graduation, an approach to the solution of adequate medical manpower through emphasis on the challenge of general practice of medicine, and a program to sell the wives of physicians on life in the smaller towns, such as county seats.

COMMUNITY INVOLVEMENT

The number of models developed and in the process of development is quite lengthy. It is not the intention of this paper to include an exhaustive summary of all plans.

This brief review of selected models of health care delivery clearly illustrates that the search for rural health manpower must generally be geared to an area-wide health care system. Nowhere can this be done better than in the small towns with which we are most concerned. They can identify their own nurses, active or retired, technicians, teachers who have health skills, or others who can be trained to perform relatively simple, but nonetheless critical, services. A nurse with special training or other specifically trained assistants can relieve the physician of many time-consuming professional activities and allow him to use his professional skills much more productively.

The focus in these endeavors is on community consciousness. The greatest investments will be in deliberate planning based on a belief in the rights of all its citizens to have access to good health care. With modest expenditure, small communities can establish efficient emergency care through the use of everything from a pool of private automobiles to well-equipped ambulances or (with greater expense), helicopters.

With prudent screening in each locality, advance arrangements can be made to have groups of patients seen with the least possible loss of time at the physician's office.

It seems especially important for organizations concerned with the delivery of health care to rural people to be deeply involved with comprehensive health planning groups at all community levels. It is essential for rural leadership to be represented on community health planning councils so that they can speak for rural people and ensure good planning for future health care programs in their communities.

The elements of planning for the delivery of rural health services have only been sketched. What is most urgently required is a strategy for its development and implementation, an entirely local responsibility if it is to be successful.

CRITERIA FOR EVALUATION

Communities must establish measures or criteria for evaluating a proposed model for the delivery of health care services which may be adaptable to the local situation. Evaluation procedures should be built into each step in the total process encompassed in planning and implementing the health care system.

Logically, the process begins with an analysis of the local situation or medical service area. Such an area may include several communities and towns and may be multi-county in size, depending upon the population density and trading area. Facts are needed with regard to the health experiences and health needs of the people in the area. An inventory of the health manpower and health facilities available in the area should be made as well as health resources which may be called upon beyond that area. Consideration must also be given to the relationship of any new plan or model for health care delivery to the existing methods available.

Criteria for measurement of ideal community health services may be summarized as follows: 1) methods must be devised to utilize physicians and allied health personnel in the most efficient and economical way; 2) there must be adequate facilities in the medical service area—hospitals, laboratories, extended care facilities, and nursing homes—to provide needed services; 3) there must be an effective organizational and delivery pattern of services so that professional personnel and facilities are efficiently utilized to provide high quality health care; 4) there must be adequate funds or sound financing mechanisms to permit construction of needed facilities and utilization of services; and 5) the community itself must recognize the advantages of excellent health care, should seek to secure these advantages by establishing requisite facilities, and by attracting needed physicians and other health professionals where feasible or combining with other communities in an enlarged medical service area.

UTILIZATION OF RESOURCES

Education for health is a fundamental aspect of community health services and is basic to every health program. It should stimulate each individual to assume responsibility for maintaining personal health throughout life and to participate in community health activities. The community has a responsibility for developing an organized and continuing educational program concerning health resources for its residents. Each individual has a personal responsibility for making full use of available resources.

The objectives for health education, then, are to interest each individual in his own health and the means to improve it; to teach him where health services are available; to motivate him to use these services intelligently; and to enable him to discriminate between scientific health care and quackery.

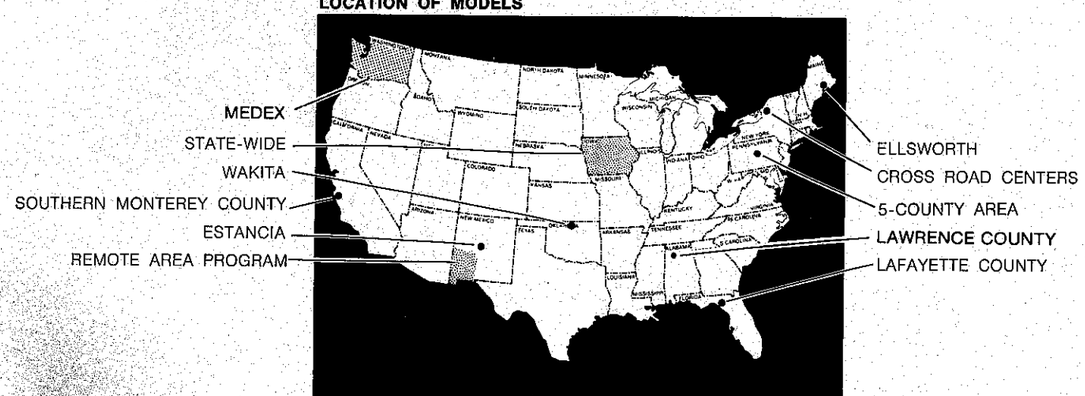
The widespread concern about health manpower has extended beyond that of the growing need for physicians. We are now equally concerned with the preparation and effective utilization of those professions and services supportive to the physician in providing health care. To utilize the services of the physician most efficiently, a nucleus of appropriate people in the community can provide valuable assistance. The concept of the health team is not new, only the size of the team is being enlarged. Th physician-nurse arrangement has today been augmented with a cadre of additional allied health personnel. Problems are found in both the availability of personnel and in the manner in which they are utilized. However, the trend is certain that an increasing number of trained, responsible members can effectively assume their respective roles on the health team that is, in truth, a team.

In conclusion, we can say that the way for each person to attain the goal of optimum personal health care lies within his community and its resources. Ultimately, the power is found within the people themselves. As Thomas Jefferson said, "I know no safe depository of the ultimate powers of society but the people themselves; and, if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education."

SUMMARY OF MODELS

PLAN	SPONSOR	LOCATION	DESCRIPTION	CONTACT PERSON
Solo Practice	Individual physician.	Nationwide rural and urban areas.	Individual physician carries on medical care for his patients.	
Community Health Program	University of Florida College of Medicine with community advisory committee.	Lafayette County, Mayo, Florida.	Medical and nursing students with resident deliver health services under supervision of College of Medicine.	R. C. Reynolds, MD Division of Ambulatory Medicine & Community Programs Univ. of Fla. Coll. of Med. Gainesville, Fl. 32601
Oklahoma's Project Responsibility	University of Oklahoma Medical Center with state medical association and citizens of Wakita.	Wakita, Oklahoma.	State-wide program with pilot project in rural Wakita.	Thomas N. Lynn, Jr., MD, Chmn. Department of Community Health 800 N.E. 13th Street Oklahoma City, Ok. 73104
Pilot Project in Rural Medical Care	University of New Mexico School of Medicine, RMP, Sears, and local community.	Estancia, New Mexico.	Nurse practitioner specially trained delivers services under direct supervision of School of Medicine.	Robert Oseasohn, MD Department of Community Medicine and Epidemiology 915 Stanford Drive, N.E. Albuquerque, N.M. 87106
Lawrence County Alabama Plan	Tri-County Regional Health Planning Commission in Alabama.	Moulton, Alabama	Delivery of comprehensive health care services through health team approach.	Robert H. Rhyne, MD Box 217 Moulton, Al. 35650
Demonstration in Organization of Community Health Resources	Pennsylvania Department of Health and Public Health Service with local community advisory committee.	Five county area in rural central Pennsylvania.	Develop community organization, involve local groups, and test health care delivery system.	A. L. Chapman, MD Bureau of Planning, Evaluation & Research Pa. Dept. of Health Harrisburg, Pa. 17120
Rural Health Project	Monterey County Medical Society, Southern Monterey County Medical Group and OEO Grant.	King City, California.	Provides comprehensive medical care to all residents including migrant farm workers.	Noel Guillozet, MD 210 Canal Street King City, Ca. 93930
MEDEX	University of Washington Medical School and Washington State Medical Association's Education and Research Foundation.	Washington	Train returning corpsmen to serve as physician assistants.	Richard A. Smith, MD MEDEX 444 N.E. Ravenna Blvd. Seattle, Wa. 98115
Crossroad Medical Center	State medical society's Committee on Rural Medical Service and local citizens.	Upstate rural counties in New York.	Plans to establish medical centers in service areas with appropriate MD staff.	Edward C. Hughes, MD 325 University Avenue Syracuse, N.Y. 13210
Maine Coast Regional Health Facilities Plan	Physicians and community citizens.	Downeast area of coastal Maine.	Comprehensive medical care program with central hospital and outlying satellite clinics.	Morris A. Lambdin, MD Maine Coast Regional Health Facilities Ellsworth, Me. 04605
Physician-Monitored Remote Area Health Program	New Mexico Health and Social Services Department, NASA Manned Spacecraft Center and local citizens.	Southeast corner of New Mexico.	Remote health centers equipped with NASA sensors and other devices in direct contact with MD at control centers.	Julius L. Wilson, MD 924 Canyon Road Santa Fe, N.M. 87501
Iowa State-wide Plan	Iowa Medical Society in cooperation with College of Medicine and State Health Planning Council.	State-wide planning.	Considering delivery and accessibility of plan for all of Iowa.	Donald L. Taylor Iowa Medical Society 1001 Grand Avenue West Des Moines, Ia. 50265

LOCATION OF MODELS



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