FOREWORD

Under the sponsorship of the Southern Rural Development Center several teams of researchers and educators throughout the southern region have devoted the past few years to a synthesis of timely and practical research in selected areas of interest.

These Functional Networks, each under the leadership of a Center Associate, have prepared both an annotated bibliography of important citations uncovered in their investigations and these synthesis papers. The intent of the synthesis papers is to relate the useful applications to be derived from their work with the Networks.

More than just summary documents or reports, these synthesis papers can serve as a starting point for rural development planning and projects from the national to the local level. They assess the current state of knowledge and pinpoint techniques and methods for application of these findings.

This paper was prepared by the Network on Rural Health Care under the leadership of Dr. R. David Mustian of North Carolina State University. The Network's bibliography and additional copies of this paper are available from the Southern Rural Development Center.

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RURAL HEALTH CARE

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TABLE OF CONTENTS

INTRODUCTION

Health Care System 1
Health Care Delivery Perspectives 2
Health Care Delivery Problems 3
Health Care and Society 4
Health Care and Community 5
Objectives of Synthesis 7

DELIVERY OF HEALTH CARE AND THE RURAL COMMUNITY

Health Needs and Utilization of Services 8
Health Status 8
Where Does the Community Fit In? 9
Rural Economic Development 12
Major Models of Delivery Systems 13
Organization of Health Care Systems 14

FACILITIES AND PERSONNEL

Availability of Services 15
Accessibility to Services 17
Location of Practice 19
Attitudes Toward Paraprofessionals 22
Role of Professional Nurse 25

RURAL HEALTH PERSPECTIVES

Attitudes Toward Health Care 27
The People's View 30
Communication, Transportation, and Technology 32

CONCLUDING COMMENTS

SELECTED BIBLIOGRAPHY 36
SELECTED BIBLIOGRAPHY
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RURAL HEALTH CARE

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INTRODUCTION

Health Care System

While the American health care system has become one of the nation's largest industries, it is beset with problems of fragmentation. Differentiation of labor, responsibility, accountability, and power abounds among multiple individuals, agencies, and institutions. Each differentiated unit has its purpose, means, and goals. Little attention appears to be focused on integrated and coordinated policies.

One fragmentation of the system involves differentiating between urban and rural health care systems. While the rural health care delivery system is a part of the total system, there are several factors and/or problems which led to identification of a rural health system. Consider some of the major problems of rural Americans:

(1) Approximately one-half of all substandard housing is in rural areas,

(2) More than 30,000 rural communities lack safe water systems and adequate waste disposal systems,

(3) Almost one-half of those living below the poverty line are rural residents,

(4) The poverty rate of the black population in rural areas is twice that of the black metropolitan population, and

(5) Approximately three-fifths of persons defined to be without adequate medical care are living in rural areas.
Traditionally, responsibility for rural health services has been a concern because of limited resources in rural areas. Let us turn our attention to general societal perspectives on health and try to understand how traditional approaches to rural health problems have brought only partial success in delivery health care services.

**Health Care Delivery Perspectives**

One of the basic beliefs of this society is that all Americans, regardless of social status and earning capacity, are entitled to the best health care that is available. Over the past several decades, attitudes toward health have shifted from an emphasis on treatment and avoidance to one on prevention. Individuals, regardless of their position in life or physical or mental problems, are treated in conjunction with their environment rather than as isolated organisms. Increasing attention is being accorded to the concept of positive health whereby health is both a function of well-being as well as the absence of disease.

Two problems emerge with respect to the delivery of health care. First, what behavior is encompassed in the concept of health? The goals of health care systems seem to be to promote health, but in reality, action seems to be concentrated on reaction to a disease state in an individual. Mankind has expressed an interest in health back to antiquity. Health care services have come to be viewed as consisting of personal and community factors such as maintenance of health, control of illness, solid waste disposal, immunization programs, etc., while medical care generally refers to care provided by a physician with particular emphasis on pathophysiological and social problems.
Secondly, is health care a right or responsibility? While there is some question as to whether quality health care is available for all individuals, there appears to be some evidence that this country is committed to the concept of health care as a basic right. On the other hand, concerted efforts, at least philosophically, are challenging health care as a right and suggesting that responsibility on the part of the individual should be emphasized.

Thus, the application of the basic belief of health care entitlement expressed above has not been well received nor adopted throughout society. Attitudes toward health, availability and accessibility of facilities, location of medical personnel and the acceptance or rejection of individuals as patients vary quite markedly from region to region. Historically, even the incidence and prevalence of certain diseases have varied by region.

**Health Care Delivery Problems**

There are four basic issues which may place health care under the rubric of "problem." The first issue involves the delivery of health services to individuals. The delivery system may become problematic in terms of distribution of personnel and facilities, and thus problematic in terms of availability of services and access to those services.

A second issue is the style of life of individuals. Is health or lack of health perceived to be an integral part of daily life? The basic value system of the individual is fundamental for the individual decisions that: (1) he has a problem, (2) he needs help, (3) he needs to get to a help source, (4) he receives help, and (5) he responds to the help source. Different life styles and attitudes produce varying definitions of health, means of help, and cooperation in the venture.
Technology may be another way of viewing health care as problematical. Not all health problems are a function of the delivery system or the values of individuals. Manifest and latent by-products of technological development include deaths from motor vehicle accidents, deaths from cancer that are exacerbated by technological growth, and environmental problems accompanying unconstrained technological growth.

Social and economic issues also produce problems of health care. Many improvements in health status may have resulted from changes in life style, e.g., from nutrition rather than from medical intervention. Shifts in allocation of money could produce different life styles and attitudes, and in turn, lead to good health.

Needless to say, health care in our society is a multifaceted problem requiring both general and specific responses from both providers and consumers.

**Health Care and Society**

The health care industry or institution and society are in a situation of reciprocity, i.e., they mutually act-react to each other. Let's take for instance the distribution of population in society. Concentration of population in large, urban areas has brought concomitant concentration of facilities and personnel. What happens when the trend reverses -- a turnaround of population from urban to rural areas? The maldistribution of facilities and personnel in rural areas is further aggravated, and the economic base for urban areas diminishes. In other words, shifts in population pose problems of location for personnel and facilities.

How does a population "age"? Interestingly, a population ages through a declining birth rate. As the younger ages constitute a smaller proportion of the total population, the proportion of older persons grows. Implications
for the health care system include (1) shift in specialty areas for physicians, (2) alteration of hospital services, and (3) increase in community services such as nursing homes. Needless to say, shifts in the economic system are felt in the health care system. Periods of inflation mean higher health costs, and perhaps more evaluation of the need to seek health care by individuals experiencing low monetary means. Increasing levels of educational attainment means more positive attitudes toward health care and enlightened consumers. Shifts in power, administratively and financially, means more consumer involvement and intensified searches for financing and controlling health costs.

Finally, technological development in the health care industry has equalled the technological progress in the total society. Screening, diagnostic, and treatment procedures have been enhanced by technological innovations. This technological development is an inherent part of the costs problem. Similarly, procurement and location of sophisticated innovations becomes a problem. Should every health care delivery system invest in the latest equipment, or should location be dictated by a policy of integration and coordination?

**Health Care and Community**

Obviously, need for health care varies over time. Control and treatment of contagious diseases have been effected in most areas with the result the need to focus attention on degenerative diseases and mental problems. And yet a significant question remains -- what are viable indicators of health and/or lack of health among the population of an area? For some time a relationship between number of health personnel and health status
has been posited. Now evidence seems to suggest no relationship between health status and number of personnel.

For some time, location and size of place of residence have been identified as major influences on health care. Rural residents usually experience greater difficulty of access to medical personnel and facilities than do urban residents. In addition, the decision of a medical practitioner to locate in an area or an agency's decision to build a facility are influenced by town size and population density. Communities experiencing rapid growth or decline face similar problems with health care. These communities must find some solution to the problem of how to recruit personnel and build facilities in a growth period or how to retain personnel and maintain facilities with a loss of population. The major population shift of the 70's has encouraged development and utilization of preceptorship programs, Area Health Education Centers, and the National Health Service Corps.

One of the most important things for all of us to realize and recognize is that health does not exist in a vacuum. Health, in its true essence, is but one aspect of the quality of life which includes all of the socioeconomic, ecological, and educational factors which make for a satisfactory living situation. The health care system is but one part of the total community system. To effect a change in the quality of health care and thereby effect a change in the quality of life, not only for those needing the care, but for those who are doing the caring, is the overall concern of us all.

To be sure, there is a direct link between the development and delivery of health care services and other community services. The health care delivery system as a part of the total social system of a community must function to meet the needs of people. Health care, as any other service,
requires organization, manpower, financing, and facilities. Organization involves both structural and processual factors. Primary interest from a sociological perspective on the structural factors involves the provider-consumer relationships. The processual factor is the means by which health care delivery systems function.

The development, structure, and delivery of health care services are influenced by various community constraints. For example, recruitment of medical personnel seems to be related to community facilities, but other community variables such as median income, median education, or degree of "ruralness" may be more important in influencing location decision.

Objectives of Synthesis

The primary objective of this synthesis has been to review major findings of research concerning the delivery of health services to rural populations. The delivery of health services is influenced by many issues. Specific foci were:

(1) To ascertain how community organization and structure influence the delivery of health services,

(2) To determine how location of facilities and recruitment of personnel affect the delivery of health services, and

(3) To explore attitudes of rural populations toward health and to determine if consensus exists between health professionals and the general population concerning health needs.

The major goal of this bibliographic compilation was to systematically assemble published works, project descriptions, and unpublished manuscripts which reflected the foci and objectives previously described. The compilation period for the bibliography was 1965 to 1976. Computerized and manual
searches of literature sought references which reported empirical evidence and related to the South as a region. In some cases, literature from other areas is included to present or expand information about the major objectives of the bibliography.

DELIVERY OF HEALTH CARE AND THE RURAL COMMUNITY

Health Needs and Utilization of Services

There is a plethora of literature which documents health status differentials and utilization rates between urban and rural populations. Traditionally, residents of rural areas have experienced lower levels of health status, lower rates of facility utilization, less knowledge of available services, more emphasis on treatment, and limited access to health professionals (Anderson et al., 1972; Appalachian Regional Commission, 1966; Aycock, 1970; Bertrand, 1974; and Brachtitt, 1967).

Health Status

Is there a relationship between health status and health services? Allison (1969) concluded that good health through good health services is a good economic investment for communities to make. Bertrand (1974) found that health facilities and personnel in Louisiana were below the national average. However, are there standards that must be met in order to ensure acceptable health statuses for an area? Levine (1972) found no relationship between the number of physicians and health status. Utilizing demographic factors such as death rates, Miller and Stokes (n.d.) concluded that health services had made no impact on health status of rural Pennsylvania areas over a thirty year period. Stoevener (1974) suggested that since there was no
relationship between the number of physicians and hospital beds that communities stop adding hospital beds and address the misallocation of physicians. Continued interest will be expressed in this area in attempting to understand the relationship between health status and health services.

Where Does the Community Fit In?

With rapid growth in the health care industry and a blurring of community identification, what role can community residents assume in the delivery of health care services? Bible (1972) pointed out that every community is unique, and attention would have to be directed not only to the number of health personnel but to community location, needs, and resources. The Council on Rural Health (1971) proposed a set of guidelines for communities to follow based on their unique configuration of needs and resources.

For more than a decade, consumers have played a role in the delivery of health care services in rural areas. Local health associations have functioned to review and set policy for health centers (Hatch, 1969). In 1971, Dalcy indicated that local communities be involved in comprehensive planning for their areas. Bible, in two different presentations in 1972, called for consumer participation and an activated citizenry. Estes (1973) suggested that communities supply local workers on a part-time basis in the health system. With great knowledge of the community, the extension county agent has a tremendous role to play in acquainting rural residents with services and in serving as a change agent (Hansen, 1972).

While numerous writers call for area-wide, multi-county, or coordinated planning for health care (Albrecht and Miller, 1973; Bible, 1973; and Eddleman 1972), Edwards (1975) maintains that any planning effort must call for the
local community's inputs. Where does the community fit in? Galiher (1975) saw the community and its residents making a valuable input through the involvement and utilization of its leadership structure.

The leadership of the community can alleviate frustrations of both community residents and health professionals. The need for rapid placement of health personnel in rural areas has led to suggestions that personnel be obtained through the National Health Service Corps (Bible, 1975) or through some configuration of Area Health Education Centers (Bible, 1975; and Coleman, 1976). Numerous writers suggest that rural communities recruit young physicians to become part of rural group practices (Busch, 1976; Cordes, 1974; Phillips, 1972; and Ritchey, 1975). Community leadership can facilitate the alleviation of problems of rural practice and at the same time help rural residents to understand changes in the health care industry and how they have changed the image of the personal doctor-client relationship, (e.g. group practices, prepaid health plans, etc.). Ritchey (1975) even suggests that a group practice arrangement be geographically organized to give the consumer the imagery of solo practice.

Community leaders must be aware of and avoid political games that deter or reduce health care for local residents (Bazell, 1971). The individual consumer loses when local health advisory groups neglect good community organization and coordination principles. Insistence on a traditional approach, e.g., the centralized local health center, may decrease participation and quality of care. In fact, Maki (1975) concluded that the traditional health care delivery system has to change.
The philosophy of medical schools which influences the student's choice and location of practice and the entry of HEW policies tend to keep rural-urban differentiations alive and well. The emphasis placed upon choosing a specialty other than family practice and federal guidelines for regionalization alter the location of practice, type of practice, and availability of health care for the rural resident (Margolis, 1975). How can the community respond to such large systemic pressures? Howe and Warren (1976) contend that part of the answer lies in how communities plan for the delivery of health services in each area where people, needs, and resources are different.
Rural Economic Development

Allison (1969) proposed that rural development processes could be augmented by investment in humans and that health facilities provide a basis for improved health which would facilitate economic growth. Numerous projects have been undertaken to evaluate the economic consequences of alternative ways of financing public facilities and services, alternative levels of operation of current facilities and programs, and alternative facility and program design (Bryant et al., 1974). Results indicate that not all rural areas can support a total health delivery system (Daberkaw and King, 1977).

Gessaman and Baker (1974) proposed that rural community viability may be a product of proximity to large urban areas and that lack of federal categorical and programs could be a barrier to community development. On the other hand, Bailey (1975) proposed that health care could be delivered with local funding. The issue then becomes one of whether rural residents will pay the costs of a health delivery system. Albrecht and Miller (1973) found that rural people were more willing to pay increased taxes. Hassinger and Hobbs (1973) concluded that rural residents would use scarce economic resources to receive medical care. Christenson and Hamilton (1974) found that not rural residents but rather all individuals reported a willingness to allocate more tax monies to health services. Obviously, care must be taken in drawing conclusions from the above material. There is no evidence that rural residents have experienced increases in taxes for new health services and that low-income groups which pay limited taxes are concentrated in rural areas.
Major Models of Delivery Systems

Various models have been proposed for the delivery of health care services. The first model described is the current, dominant, and historical model of record. It is based generally on the free enterprise model whereby providers of a service operate in the market to provide services that will be obtained and purchased by a group of private consumers. Regulation is minimal from the societal level, and internal control is affected through professional affiliation. Minimal control of economic factors (i.e., fees and charges) is exerted from systems external to the medical one.

A second model is based on the idea that organization of services with a regional or area focus can best affect the delivery of health care services. This model requires considerable bureaucratic organization, and a major setback seems to be in administration of the program due to the need for cooperation and coordination between administrative, service and consumer systems (Bible, 1972; Busch, 1976; Ball, 1970; and Bazell, 1971).

A third model, perhaps still in the testing phase, is the development of competitive health care systems. The fundamental issue is whether areas have the population and economic bases that would support several health systems. In rural areas, economic support may be difficult. Joint or co-operative ventures may be the needed form of organization (Edwards and Doherty, 1971; and Singh, 1976).
Organization of Health Care Systems

The major point to be made here is that health care in the future is most likely to originate within area or regional systems. Major assets of the regional emphasis are 1) coverage of areas of sparse populations -- the concept of availability, 2) deletion of duplicate programs, 3) provision of specialties, 4) sharing of economic ventures, and 5) professional support systems (Albrecht, 1974; Albrecht and Miller, 1973; Easter and Jensen, 1974; Eddleman, 1972; Powers and Bierman, 1970; and Rovetch and Gaskie, 1969).

The physician as an isolated medical system presents many problems. He cannot be all things to all people. Coverage cannot possibly be complete. Professional colleagueship is missing. Group or joint practices provide a minimal professional setting.

Leaders in small rural communities need to consider alternative solutions in terms of facilities and equipment. Providing basic care with the support of specialized facilities and equipment of nearby urban areas may be the most viable alternative for sparsely populated areas (Goedeke, 1973; Phillips, 1972; and Carter, 1973).
Availability of Services

Availability refers to whether or not services exist. In our large urban areas, it is proposed that we do not have a problem of availability of either medical personnel or facilities. However, for the approximately one-in-four Americans who live in rural areas, the availability of doctors, allied health personnel, and facilities is a major problem which has current and long-term effects on the health status of our people.

Approximately one-half million persons live in rural counties which had no physicians in the mid-1970's. A major factor for this situation was the lack of a population base to support a physician. It is even more difficult to make specialized services available in rural areas.

Two factors have been generally accepted by both professional and lay persons. First, the distribution of personnel and facilities in rural areas is not even with urban areas. Secondly, rural-urban utilization rates are different, with the urban population in the favored position.

When the issue of distribution of medical personnel is raised, the general response has been that we need to recruit and train more professionals for service in rural areas. A basic question needs to be addressed: Do we know the necessary ratio of medical personnel to consumers? Bible (1972) addresses the issue of a maldistribution of physicians between rural and urban areas. Stoevener (1974) concluded that we have enough physicians but the problem is one of misallocation by areas. Singh (1976) concluded from a survey of rural residents that there was not enough manpower in rural areas.
According to Christenson and Hamilton (1974) rural residents are more concerned about the availability of health services than are urban residents. In North Carolina, medical and allied health services were directly related to population density and county per capita income (Lester, 1971). However, results of the North Carolina Citizens Survey (1977) not only indicated a scarcity of personnel and facilities in rural areas but also led to the conclusion that utilization rates were not related to scarcity of services.

Fahs and associates (1971) concluded that personnel needed in an area is a function of professionals/population ratio, the number needed in terms of economic factors, and the geographical distribution of personnel and facilities. Willis et al (1974) found that in rural areas with hospitals there were no differences among income groups in obtaining health care services. However, they found a high variation among income groups when the rural area did not have a hospital. Shannon et al (1969) concluded that when individuals have personal choice in seeking health care services, economic and convenience factors are not the major influences. What we have then is a willingness of some rural residents to avail themselves of personnel and facilities outside their communities.

What can we conclude about the availability of health care services?

(1) There is a maldistribution of personnel and facilities between rural and urban areas;

(2) availability of services does not imply utilization; and

(3) there is little consensus regarding the proper ratio of personnel and facilities to consumers.
Accessibility to Services

Accessibility refers to the ability or opportunity to obtain services for a perceived health problem. Accessibility is a universal problem for all areas of the country. The major problem for the urban resident may be locating a facility or health professional that is accessible, for example, after midnight. For the rural resident, the major problem may be the location of the facility or professional and means of transportation to access the service.

In sparsely populated rural areas, is distance to health facility or personnel a deterrent to seeking help? Results of the reviewed literature reveal that distance is not a major factor in the decision to seek help for a health problem. In fact, there is latitude in the location of the health facility in that individuals report that they are willing to travel to obtain health care that they evaluate as quality care (Hassinger and Hobbs, 1973; Kane, 1969; Shannon et al, 1969; and McCoy et al, 1972). Distance is often translated in terms of inconvenience, and individuals do not perceive inconvenience as a deterrent to seeking care (Luft et al, 1976). Perkinson (1974) did find that race was related to willingness to travel and also that willingness to travel was correlated with the population size of the perceived destination. Kane (1969) found that socio-demographic factors, such as age, sex, and race, and organizational factors such as previous contact with health personnel were not related to individuals' willingness to travel to obtain health services.

For several decades, all of us have seemed to conclude that accessibility to health care is a function of the ability to pay for services. Proceedings of the Southern Rural Health Conference (1976) included the conclusion that the ability to pay is a major factor of accessibility. This same conclusion
was reported by Carlton (1973), Grinstead et al (1977), and Harshburger et al (1973). On the other hand, Luft et al (1976), Barkley and Holland (1974), and Shannon et al (1969) concluded that cost is not a factor in seeking health care. Coltrane (1974) and Doherty (1971) found that individuals were willing to travel further and pay more for services in urban areas and in large hospitals because they implicitly assumed a higher level of quality care than in rural, nearby health facilities.

Negative reactions to travel were found among county residents who were forced by organizational structure to obtain services in the centralized county hospital rather than utilizing satellite centers or health facilities in contiguous counties (Bazell, 1971). This negativism seems to be a function of a bureaucratic decision rather than a function of individuals' decisions.

Accessibility does seem to be related to the availability of facilities and health professionals. Obviously, if health services are not available, then individuals are forced to travel some distance and pay higher costs for services. The disparity in the findings of the literature concerning willingness to travel and to pay for services may be a product of the way costs/income were measured. Those studies with cost/income as an influence on seeking care tended to measure income in an objective manner, i.e., annual family income. On the other hand, when people are asked to report whether they would pay more, subjectively indicated that the benefits outweighed costs and inconvenience.

Major conclusions with respect to accessibility to health facilities and personnel include:

(1) both rural and urban area residents have problems of accessibility;
(2) accessibility is influenced by level of economic status or ability to pay;
(3) willingness to pay and to travel is related to individuals' perceptions of quality care; and
(4) accessibility may be a sociological issue. ¹

The most important factor in understand accessibility may be the individual's way of life and his attitudes about the health care industry. Accessibility problems may be alleviated through health education and information programs which influence residents' attitudes.

**Location of Practice**

What prompts a physician to choose a practice site? There appears to be some site inertia among physicians as a majority of physicians remain in their first practice site through their careers. Therefore, if communities are to attract medical personnel, then community leaders need to be cognizant of relevant factors that influence location choice. Bailey (1975) concluded the rural areas can attract necessary professionals.

The size of the place in which the physician was reared is related to size of place for practice location (Bible, 1970; Cooper et al., 1972; Parker et al., 1967; Taylor et al., 1973; and Trigg, 1973). Admission committees for medical schools have utilized this factor in recruiting students for future practices in rural areas (Mattson et al., 1973; and Crandall, 1969).

The decision to locate in a rural area is also influenced by the previous residence of spouses. Physicians whose spouses were reared in rural areas

¹ Community Development Staff, MS Cooperative Extension Service, "Budgeting for Community Services: Health Care and Related Needs," Workshop sponsored by the Rural Health Care Functional Network of NC State Univ. and Southern Rural Development Center, MS State, MS, June 2-4, 1980.
are more likely to establish rural practices (Taylor et al, 1973; Bible, 1970; Enroth, 1967; and Cooper et al, 1972). Bible (1970) and Enroth (1967) suggest that families and friends also exert considerable influence on practice site location.

The perception of opportunities in a community for spouses and families is very important in site selection. Favorable factors were community activities for children and educational opportunities for spouses (Barnette, 1976; 1976; Charles, 1971; and Enroth, 1967).

For a site to be attractive for the physician, he must perceive opportunities for continuing education (Barnette, 1976; Eisenberg and Cantwell, n.d.; and Kosa et al, 1966) and economic security couples with opportunities to enjoy the economic security (Cooper et al, 1972; Eisenbert and Cantwell, n.d.; and Trigg, 1973). Physicians have expressed a fear of professional isolation in rural areas (Cooper et al, 1972) and thus are attracted to areas where group or team practices can be established (Barnette, 1976; Cooper et al, 1972; Enroth, 1967; Phillips, 1972; and Trigg, 1973). Some physicians identify heavy workloads (Cooper et al, 1972) and lack of career flexibility (Kosa et al, 1966) as major deterrents to rural practices.

The availability of facilities is also a major factor in selection of practice site (Bible, 1970; Champion and Olsen, 1971; Enroth, 1967; Trigg, 1973; and Wacht, 1973). Physicians express a desire not to practice in areas where support services are not available. Wacht (1973) found that support services rather than number of hospital beds was the issue considered by a physician.

While the desire for economic security is expressed, there is some confusion as to income differentials between physicians who practice in rural and urban areas. The differentials are small but urban physicians
are perceived to have higher income levels than rural counterparts. Wacht (1973) concluded that insurance coverage of residents became an attractive feature.

Location of medical schools, opportunities to observe rural practices, and year in medical school are related to the decision to practice in rural areas (Breisch, 1970; Crandall, 1969; Mattson et al., 1973; and Taylor et al., 1973). The individual usually voicing a desire to practice in a rural area is attending a medical school in a small urban town, is in the early years of training, and has been exposed to rural practices. The longer the student postpones his location decision, the more likely he will decide to specialize and route himself to an urban area.

To summarize, the choice of location of practice results from a combination of the following factors:

1. residence/size of place of origin or physician and spouse,
2. continuing education opportunities,
3. cultural and educational opportunities for spouses and families,
4. opportunity for group practice,
5. perception of community as attractive and producing economic security,
6. support services to complement practice,
7. location of medical school, and
8. professional colleagueship.
Attitudes Toward Paraprofessionals

There seems to be a general consensus that a critical issue in the quality of health care is the need for more physicians. Various programs have been implemented to augment the training of physicians in medical schools. In addition, major efforts have been implemented to aid the personnel issue through the development and training of new medical professionals such as physicians' assistants and nurse practitioners.

How has the paraprofessional been received by the medical professionals and by consumers? For the most part, physicians have reported positive attitudes toward physicians' assistants but also expressed concern about consumers' acceptance of the paraprofessionals and about legal issues that might arise (Joiner and Harris, 1974). The entry of the paraprofessional in the health hierarchy has raised issues concerning the interrelationship of the role of the paraprofessional with traditional health care roles. Primary attention has been focused on the authority of this position and regulation or supervision of the role. Ball (1974) suggested that the paraprofessional role would be accepted but that considerable attention needed to be directed to regulation of this role. A major concern in the traditional institutional setting is the hierarchical location of the physician's assistant or the nurse practitioner. Does the entry of this paraprofessional, say into a hospital structure, produce a new layer between the physician and the nurse? In general, the reaction to this situation has been positive with a call for continued study of the inter-relationship between nurses' roles (Lee, 1971).
A second major concern on the entry of the paraprofessional centers around the issue of whether the physician's assistant or the nurse practitioner can assume a leadership role in rural primary care centers. Regulations concerning the functions of the paraprofessional vary from state to state, and care has been taken to define the paraprofessional's role in keeping with the Medical Practice Act and the Nursing Practice Act (Dayani, 1975).

As mentioned previously, physicians have expressed positive attitudes toward paraprofessionals. While there is concern about the acceptance of the physician's assistant, the physician sees the paraprofessional as an asset in reducing heavy caseloads, particularly in rural areas (Joiner and Harris, 1974). In fact, physicians in rural areas reported a greater willingness to delegate tasks to physicians' assistants than did their urban counterparts (Parker and Delahunt, 1972).

Because of the maldistribution of medical personnel in rural areas, there has been a call for greater utilization of paraprofessionals (Busch, 1976). Bible (1972) also suggests utilization of more allied health personnel to meet the health needs of the rural population. Bailey (1975) and Borsay (1970) report that the general population has accepted the physician's assistant and the nurse practitioner.

The health status of rural populations is usually described as being at a lower level than the health status of urban populations. Even with available health services, many rural residents have not utilized existing services. In fact, in some rural areas, individuals were found to be more likely to use the non-professional health worker (Mynko, 1974). Steinman
(1970) suggests that the health care team be expanded to include "home-front" workers in order to meet health care needs of rural areas.

A final issue in the utilization of paraprofessionals by physicians has been in terms of cost benefits. McCormack and Miller (1972) utilized a computer simulation model with data from rural areas to assess the benefits of introducing a nurse practitioner into a group practice setting. They concluded that the addition of a nurse practitioner reduced financial risks and the professional workload.

Early evidence suggests that consumers have accepted medical para-professionals. Emphasis now should be turned to coordinating these roles with traditional roles. Of equal importance is the need for legislative bodies to carefully examine these roles and to enact the necessary legislation so that these new practitioners can perform their function as members of the total health care team.
Role of Professional Nurse

The shift in academic training of nurses from diploma schools of nursing to associate arts degrees from community college systems and the entry of paraprofessionals such as physicians' assistants and nurse practitioners have produced role ambiguity for the professional nurse in traditional institutional settings. The ambiguity stems from lack of clarity about the interrelationships between traditional nurse roles and those of the paraprofessionals and from a shift of greater responsibility for the daily care of patients to the nurse.

In 1968 Smith suggested that the professional nurse needed to become a more viable part of the health care team. In the following year, a Training Program for Development of Frontier Nurse Practitioners was introduced and raised the issue of how to shift partial responsibility for health care from the physician to the nurse. Looff (1969) concluded that the Public Health Nurse had greater skills at establishing rapport with young consumers than any other middle class health professional.

While Borsay (1970) found that the local consumers accepted the nurse as a viable health professional, the study results also indicated that there was much concern with legal issues when the nurse assumed the leadership role. Borsay also found that physicians and nurses did not have a high degree of consensus concerning the role of nurse in the delivery of health care to individual patients.

The issues of what role can the nurse play on a health care team (Kirk et al, 1971) and how to interface the various roles of nurses (Lee, 1971) continue to be dilemmas. Identification of needed competencies and designation
of professional and technical nurse roles have led to some role clarification.

Legal issues and regulations influence the role of the nurse and paraprofessional in primary care centers. Again, while the consumer has accepted the role of nurse, most legislative bodies have not moved to assign leadership responsibility to the nurse. Thus attention has been focused on keeping the role of the nurse and paraprofessional in tune with both the Medical Practice Act and the Nursing Practice Act (Dayani, 1975).
Attitudes Toward Health Care

What does the individual know, feel, or tend to do with respect to health care services or personnel? In 1969, Edgerton and Bentz found that in viewing sickness and disease rural residents were increasingly adopting a preventive philosophy and moving from a treatment perspective. At the same time, rural persons were expressing more positive attitudes toward health professionals than they had previously.

Smith and Kane (1970) proposed that not enough credit had been given to isolated rural residents with respect to their knowledge of health and symptoms. They found that there were few differences between rural and urban residents with respect to their health knowledge and recognition of various symptoms. Funk (1970) reported that rural residents held positive attitudes toward health services but that these attitudes did not imply utilization of these services when they were available. Phillips and Pugh (1970) discovered that rural residents were least likely to have positive attitudes toward preventive care. Coleman (1975) concluded that nonwhite rural residents had more favorable attitudes than whites toward health services, but again, favorable attitudes did not imply utilization.

Attitudes of community leaders and of lay persons toward mental health were found to be similar by Bentz and Edgerton (1970). When asked what community services were most desired, rural North Carolina residents responded that the third most desired feature for quality of life was medical facilities (Christenson, 1974). Perhaps, because of scarce rural health facilities, rural North Carolina residents were more concerned about facilities than were their urban counterparts (Christenson and Hamilton, 1974).
With sparse populations and few facilities in rural areas, how do rural people feel about means of transportation to reach help? Kane (1969), in a rural Kentucky sample, found no clear referents for a willingness to travel to obtain health care. Age, sex, education, and income did not produce barriers to expressed willingness to travel.

Experiences in a health care setting have produced conflicting results concerning attitudes of rural residents. Farrier and Wentworth (1974) found that low-income rural mothers and infants who participated in a nutrition program experienced health gains above the norms of their referent groups. On the other hand, Jolly et al (1971) concluded that low-income rural people were troubled by large staffs of health clinics, expressed confusion over whom they were to see, and felt impersonal treatment by staffs of large clinics.

How do rural residents know about available services? Stojanovic (1972) concluded that radio and television were major vehicles of communication concerning health resources. Rural residents are aware of health needs but seem to express a more general attitude or concern over rising costs than over specific problems (Richardson and Scutchfield, 1973).

Do rural residents seek care when services are available? Hill (1972) discovered that many low-income rural people still consulted local folk healers rather than obtaining professional help at available centers. Lee and associates (1974) found rural residents to be unsure of available services and to infrequently utilize health centers. Social and economic reasons were not given for refusing to participate in a health testing procedure, but health problems or religious convictions were most often
cited by rural residents (Nickerson and Hochstrasser, 1970). Among indigent populations, young urban residents were found to have the most negative attitudes toward hospitals (Perkins, 1972). With respect to attitudes toward paraprofessionals, individuals perceiving limited access to health services were most likely to accept paraprofessionals. Individuals perceiving limited access were rural, black, young, and from large households (McCoy et al., 1974).

Major conclusions about health attitudes or rural residents include:

1. There are few differences between rural and urban residents with respect to knowledge of health and symptoms;
2. rural residents have limited knowledge of available services and low utilization rates;
3. rural residents tend to seek help in terms of treatment rather than prevention; and
4. low-income, rural people are often confused by large-scale, impersonal bureaucratic health care centers.
The People's View

With an increase in the quality of life, individuals generally focus greater attention on their health status. To ensure the quality of our survival, each individual will have to turn his attention to a perspective of prevention and maintenance. With an expanding population, we must direct our energies at prevention programs rather than responding to crisis situations. While we can do much through education programs, ultimately the individual actor must assume increased awareness and responsibility. Each individual needs to be informed (Bible, 1972), and each must be willing to be an active participant, e.g., community board member (Immershein and Miller, 1977; and Bazell, 1971). With increased awareness, each consumer will monitor his health state and seek care. Getting consumers to seek care from a health care team rather than from folk healers (Hill, 1972) may be a result of informing consumers of services available and of what to expect when treated by an agency (Jolly et al, 1971).

Sears (1974) proposes that health education is fundamental to the development of rural health services. Galiher (1975) feels that public education programs concerning comprehensive health centers are needed to ameliorate rural health problems. In developing health care systems, people of an area must have an input into the process (Edwards, 1975). The evaluation of the rural program where a citizens' advisory council decided how to utilize revenue sharing funds for the delivery of health care (Packard, 1972) will provide interesting data for utilization of consumer groups.

The greatest influence on attitudes toward and the seeking of health care may be the style of life of groups of individuals. Where individuals perceive sickness to be a normal part of daily life, attitudes toward
preventive care will be negative; individuals will express dissatisfaction with facilities; hold low opinions of health professionals; and whether real or not, hold that the lack of money prohibits obtainment of health care (Carlton, 1973; and Grinstead et al, 1976).

In the future, the quality of health care can be enhanced by the consumer's acceptance of paraprofessionals and cooperation in the best possible use of available and accessible facilities. The recognition that health and health care systems are but parts of total lives and total systems will bring positive results in terms of quality of health care and quality of survival.
Communication, Transportation, and Technology

Communication systems and technological innovations will play increasingly important roles in the delivery of health services, and in some instances they may be the basis for the survival of many individuals. A communication network, particularly in rural areas, permits professional exchange, specialty consultation, and health team cooperation. Some of the feeling of isolation from colleagues is removed with communication, and the primary care physician has the means of interacting with specialists when the need arises.

Because of sparsely distributed populations in rural areas, location of services may be negatively influenced in that it is economically infeasible to locate services in some rural areas (Daberkow and King). Poor transportation systems in rural areas requires greater flexibility of institutions in meeting health care needs (Jolly et al, 1971). Since distance traveled by rural residents to obtain health care is directly related to population size of destination (Perkinson, 1974), rapid transportation, when coupled with communication, provides a rudimentary degree of availability and accessibility to our smallest communities (Bierman and Powers, 1970). Planning and implementing emergency services are viable means of providing help in rural areas. Communication and transportation innovations make facilities and specialized personnel accessible to the majority of all residents.

Let us consider the impact that computer technology can have on our survival. Today's computer systems enable us to store massive amounts of material, synthesize data bits, create data profiles, and produce outputs
rapidly. A computerized filing system gives the physician the capacity to compile symptom profiles and identify patients who may be high risks for given health conditions. Such use has tremendous potential for preventive health care.

CONCLUDING COMMENTS

Various forces and issues will bring changes to the rural health care delivery system in the future. With respect to publication of results and ideas, this writer hopefully anticipates increased reporting of empirically-based studies. There is a plethora of literature describing problems and needs which are based on armchair-based philosophies, individual experiences, and sketchy data sets. We anticipate also increasing synthesis of knowledge through multidiscipline clearinghouses.

Based on the literature, we found:

(1) Each community is unique with its own needs and resources which influence:

(a) utilization of services is lower for rural areas,
(b) health status is perceived to be less in rural areas,
(c) cooperation and coordination of services is needed across multi-county areas or regions because of sparse populations and scarce resources,
(d) a greater reliance on rural leadership to interface with urban leaders and systems is called for, as is
(e) comprehensive planning of services for rural areas.
(2) The supply of facilities and personnel is not the crucial issue; the critical issue is the maldistribution or misallocation of facilities and personnel in rural areas. Thus:

(a) availability of services does not imply utilization;
(b) there is limited consensus regarding the proper ration of personnel/facilities to consumers;
(c) accessibility is influenced by level of economic status;
(d) willingness to pay or travel for health services is related to perception of quality of care;
(e) location of professional practice is related to attractiveness of community, opportunities for family, professional colleague-ship, and opportunity for group practice;
(f) location of facilities is related to size of place, density of population, and community resources;
(g) paraprofessionals have been accepted for the most part by consumers and physicians; and
(h) the role of the traditional, professional nurse is experiencing a condition of ambiguity.

(3) For changes to occur in our pervasive treatment-type care of health system, we must recognize the importance of the attitudes of the individual consumer:

(a) the rural resident's knowledge of health and symptoms does not differ markedly from that of the urban resident;
(b) rural residents do have limited knowledge of and utilization of health services;
(c) rural residents tend to seek treatment rather than pursue prevention;
(d) the low-income, rural resident is often frustrated by the large-scale, bureaucratic health industry;
(e) to enhance the quality of life in rural areas, we must foster attitudes of prevention, self-care, and individual responsibility; and
(f) advances in communication, transportation, and technology should be utilized to reach the largest possible audiences in order to increase their awareness of the potential benefits of positive attitudes and benefits of the health care system.
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