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TOWARD A MEASUREMENT OF THE ADEQUACY OF
HEALTH SERVICES IN RURAL UTAH

by

Michael K. Miller

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Sociology

Social Work and Anthropology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1972

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Michael K. Miller

ABSTRACT

TOWARD A MEASUREMENT OF THE ADEQUACY OF
HEALTH SERVICES IN RURAL UTAH

by

Michael K. Miller, Master of Science

Utah State University, 1972

Major Professor: Dr. Stan L. Albrecht
Department: Sociology, Social Work, and Anthropology

The research reported in this thesis was of an exploratory nature undertaken for the purpose of developing a measure of the adequacy of health services in three rural counties in Utah. The three counties included in the study area were Beaver, Piute, and Wayne.

Adequacy of health services in the three-county area was measured on the basis of (1) the general population's, or consumer's, perception of the adequacy of the existing services, (2) the professional's, or provider's, perception of the adequacy of the existing services, and (3) adequacy of the existing services determined by a comparison with an established standard.

The findings showed that major differences in the general population's perception of adequacy are present when controlling for county with the vast majority of the respondents in Piute and Wayne counties perceiving the existing services as poor, but with a large majority of those in Beaver County considering their services as good or excellent.

With regard to the professional's perception of adequacy of existing services, it was found that the majority of the medical doctors perceived the services as adequate, but the doctors of dental surgery generally perceived the adequacy of service as somewhat less than desirable.

With regard to the last measure, that of adequacy of existing services as determined by a comparison to an established standard, the services in the study area were found to be inadequate in all respects with the single exception of number of hospital beds per 1,000 population in Beaver County.

It was concluded that there is a large degree of consensus between the perceived inadequacy of the health services of the general population in Piute and Wayne counties and the inadequacy demonstrated by the comparison of existing services to an established standard. In Beaver County the reverse is true with the perception of the general population and that of the physician population being very similar, both considering the services adequate but both being in disagreement with adequacy as measured by an established standard.

The findings suggest that more detailed research in the area is needed if a standard of adequacy acceptable to everyone is to be developed.

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CHAPTER 1

INTRODUCTION

The concern with the measurement of health services in the past has been almost entirely dependent on the negative aspects of health, i.e. death rate and morbidity (Lee, 1967). Although these negative aspects are still important, it has become increasingly evident that they no longer yield enough, or perhaps even the best type of, information on which goals can be established and policy determined. In addition to the emphasis on negative aspects of health, it appears that major concern, until recently, has been focused on the problems which people in large overcrowded urban areas face. While it cannot be denied that serious problems do exist in these urban areas, it should not be denied that people in rural areas of the United States are also confronted with problems of a similar magnitude and with a consequence which is just as adverse.

These rural people to whom reference is made constitute approximately 27 percent of the entire population of the United States. While these fifty-four million Americans carry on vital functions in society, such as the production of food, they do not appear to be receiving the benefits which should accompany these functions. Though the lack of benefits are many and varied, this research will be devoted exclusively to a study of health services, or a lack of health services, available to rural residents.

Specifically, the research will concern itself with various measures of the level of adequacy of health service available in rural Utah. The state contains approximately 208 thousand persons classified as rural, or 19.6 percent of the total population (United States Bureau of the Census, 1971). Data for the research were collected in three counties of southern Utah, Beaver, Wayne, and Piute, all of which are classified by the census as being totally rural.

Approximately 54 million Americans live in rural areas. However, because of a multitude of factors such as trends toward urbanization and specialization, these people do not appear to be receiving either the quantity or quality of health services that the remaining 73 percent of the United States now enjoy (Bible, 1970).

Garceau (1966) views the major problem of the medical profession, with regard to service delivery, as an ethical one stemming from the extraordinarily high value placed on life, well being, and freedom from pain in our culture. He goes on to say that the profession has fought a noble battle and with some large degree of success, at least on most fronts. There seems, however, to be some question as to the satisfactory answer to the difficult problem of maintaining quality (Garceau, 1966).

A maldistribution of physicians, dentists, nurses, hospital beds, and other health resources leaves some rural communities without immediate access to medical care. Bible (1970) acknowledges the problem while reviewing an American Medical Association survey conducted in 1966 showing that rural communities have much less access to health resources than the rest of the country. The

aforementioned study pointed out that in isolated communities the access is less than half what it is for other areas.

These well known health problems of rural America are further heightened by an aging population, an above average degree of poverty--the great majority of the poorest counties in the United States are rural--(Wilson, 1971), and a geographic location characterized by a low to sparse population density.

With specific reference to Utah, it can be demonstrated that all of the aforementioned aspects of the problem are present. It appears that the problem of sparse population density is increasing. The United States Bureau of the Census, 1970, released a publication showing that 13 of Utah's 29 counties had a decrease in population between 1960 and 1970. The decrease ranged from a low of -0.5 in Juab County to a high of -42.8 in Daggett County (Bureau of Economic and Business Research, 1972). This phenomenon of sparse population density implies that there is an existence of "too much space" for man's wants to be satisfied to the optimum degree possible. Kelso (1963), in his paper entitled "Costs of Space in the West," focuses attention on the fact that this spaciousness which exists in rural areas has many problems associated with it. To quote Kelso,

Although persons are concentrated at village spots, such villages are too small to support private and public services at costs equal to those in urban areas, yet the several village units are so widely dispersed that they cannot cooperate toward the common rendering of such service. (Kelso, 1963, p. 75-76)

When the above situation is present, the existing services are either very few per capita (at comparable cost) or very expensive per capita (for comparable quality). Concerning the above area, Kelso makes

the specific hypothesis: "The cost per capita for health and medical care will be high, or the number of physicians and hospital beds per capita will be low, or both." (Kelso, 1963, p. 156)

With regard to the age distribution of Utah residents, the 1970 census shows that from 1960 to 1970 the changes demonstrated in Table 1 occurred.

Table 1. Population of Utah residents by age, 1960 and 1970*
(number in thousands)

| Age in years | 1960 | 1970 | Percent change |
|--------------|------|------|----------------|
| 75+ | 21 | 29 | +42.9 |
| 70-74 | 17 | 21 | +22.8 |
| 65-69 | 22 | 27 | +21.9 |
| 60-64 | 27 | 35 | +30.4 |

*United States Bureau of the Census. 1971. United States Census of Population: 1970, General Population Characteristics. Final Report PC(1)-B46, Utah. United States Government Printing Office, Washington, D. C.

With special reference to the study area the aged population, those over 65 years, followed the percentages in Table 2.

Tables 1 and 2 demonstrate that the basic problem of an aging population has increased substantially in the past decade thus further heightening an already serious problem.

The data in Table 3 demonstrate that there has been a veritable increase of families at both extreme ends of the income scale and

that the median family income has increased a minimum of \$2,000 in the decade of the fifties.

Table 2. Percent population 65 years and over by county*
(given in percent)

| County | 1960 | 1970 | Percent of change |
|--------|------|------|-------------------|
| Beaver | 8.4 | 11.6 | +3.2 |
| Piute | 8.1 | 13.2 | +5.1 |
| Wayne | 7.5 | 10.2 | +2.7 |

*United States Bureau of the Census. 1971. United States Census of Population: 1970, General Population Characteristics. Final Report PC(1)-B46, Utah. United States Government Printing Office, Washington, D. C.

The figures presented in Table 3 would seem to indicate that with regard to single family incomes, the situation in rural Utah has improved, or at least is keeping pace with the increased cost of living. The figures do not, however, give any indication as to whether or not the community as a whole has increased its ability to provide adequate services. This is a question which will be dealt with to some extent in this thesis.

To this point three "basic" problems affecting availability and quality of health services have been mentioned: poverty, sparse population density, and an aging population. While these three are deleterious in their own right, they combine to prevent rural areas from competing effectively in the medical marketplace. In view of

Table 3. Number of families included in selected income ranges for 1959 and 1969*

| Family income | Beaver | | Piute | | Wayne | |
|----------------------|--------|-------|-------|-------|-------|-------|
| | 1959 | 1969 | 1959 | 1969 | 1959 | 1969 |
| Under \$1,000 | 17 | 30 | 8 | 12 | 40 | 6 |
| \$1,000-\$1,999 | 62 | 117 | 54 | 10 | 66 | 17 |
| \$2,000-\$2,999 | 111 | 65 | 46 | 20 | 64 | 47 |
| \$3,000-\$3,999 | 148 | 57 | 67 | 28 | 52 | 40 |
| \$4,000-\$4,999 | 176 | 60 | 52 | 17 | 28 | 51 |
| \$5,000-\$5,999 | 156 | 60 | 64 | 23 | 54 | 58 |
| \$6,000-\$6,999 | 99 | 119 | 20 | 23 | 33 | 41 |
| \$7,000-\$7,999 | 69 | 45 | 24 | 37 | 21 | 43 |
| \$8,000-\$8,999 | 69 | 75 | 4 | 34 | 10 | 32 |
| \$9,000-\$9,999 | 48 | 89 | 4 | 25 | 8 | 16 |
| \$10,000-\$14,999 | 111 | 232 | 20 | 61 | 29 | 51 |
| \$15,000-\$24,999 | 13 | 76 | 0 | 6 | 5 | 10 |
| \$25,000+ | 3 | 17 | 0 | 6 | 5 | 7 |
| Median family income | 5,173 | 7,289 | 4,125 | 7,486 | 3,721 | 5,836 |

*United States Bureau of the Census. 1961 and 1971. United States Census of Population: 1960 and 1970 General Statistics. Final Reports PC(1)-C46. United States Government Printing Office, Washington, D. C.

the aforementioned characteristics of rural areas, it is not surprising to find that many of the rural areas, especially the isolated areas, have very little industry and an extremely limited tax base. Alluded to earlier in this paper is the fact that health care

problems of the rural areas reflect the trend toward specialization and urbanization which has left many rural areas poor, both economically and culturally. This is not, however, a one-way problem. The problem is dramatically intensified by the fact that the rapidly expanding urban-oriented medical technology requires vast amounts of complex and expensive equipment. This poses extensive economic as well as other types of obstacles, particularly for rural areas (Doherty, 1970).

It is evident that the rural environment, with the characteristics normally associated with it, tends to discourage the location of physicians. At the same time, the urban environment, with its extensive drawing power, i.e. cultural advantages, higher income, etc., tends to encourage the location of physicians. In addition to the original settlement of physicians in urban areas, there is an increased tendency for the once rural doctor to gravitate toward the urban areas. To demonstrate this tendency, Doherty (1970) in a review of a study conducted by Steele and Rimlinger points out that in isolated rural areas (defined as a county which does not have a township as large as 2,500 inhabitants) between 1950 and 1959 the number of physicians decreased about six times as fast as the population decreased.

A brief review of several factors relating directly to the magnification of the health care problems in rural areas would include, at a minimum, the following:

1. Rural family incomes are lower than urban family incomes and a greater proportion of rural people live below the poverty line.

2. The rural population is characterized by the two extremes, aged persons and youth, with a noticeable deficiency of adults of working age.

3. Rural people generally have a lower level of education.

4. Rural people must travel longer distances to obtain health services. This adds to costs both in terms of time and money.

Taken alone, the above mentioned characteristics encompass a problem, but when they are coupled with the following findings, the problem becomes very manifest.

1. The United States Public Health Service defines heart conditions, arthritis, rheumatism, high blood pressure, and visual impairments as the chronic health conditions lending themselves to the greatest loss of time from productive work and the greatest drain on family finances. Even when adjusting for age, the incidence of such illnesses increases with rurality (Doherty, 1970).

2. Education seems to influence the use of health services, as distinct from the need of services. Given this fact, it becomes clear that rural people are less likely than more highly educated people to utilize the existing service. In fact, Straus (1965) implies that fatalism and despondency may reach a point among poor rural families where formal medical attention is sought only as a last resort.

3. Although emergency ambulance service is most desperately needed in rural areas because of the distance to existing facilities, it is precisely in these areas where ambulances, because of their low case load and the expense of long runs, operate on a very low level of efficiency and with personnel who are not fully qualified

(Doherty, 1970). This has important implications when you consider that farming, as an occupation, ranks third high in accident fatality rate preceded only by mining and construction.

The above mentioned factors, combined with a host of others, have helped to focus attention on the health service provision, or lack of provision, available to rural America in 1970; a time when the United States enjoys the highest per capita income in the world, but, according to the World Health Organization, does not have the highest level of health and health services.

Although medical services are concentrated in urban areas--high income areas--and while quantitative differences discussed above are very important, there is still the area of qualitative differences to which many serious problems are related but to which very little attention and research has been directed. It is in response to the need to study the area of quality or adequacy of services to which this research is devoted.

This study is part of a research project conducted by Dr. Stan L. Albrecht. The overall objectives of the larger study were to identify the configurations of institutional structures and service unit organizational characteristics which affect the provision and delivery of various community services such as government, health, education, etc. In addition, the study was designed to identify the policies, alternative patterns of organization, and the conditions which are requisite to effective planning and coordination for the delivery of community services.

The portion of the larger project with which this study is concerned deals with a development of objective measures (indices) of

adequacy of the community services and a determination of the existence and adequacy of community services provided in the study area.¹ Specifically, this study deals with the development of a measure of adequacy, quantitative and qualitative, of health services in rural Utah with major emphasis being given to the perception of adequacy from the "consumer," or public, point of view. In addition, adequacy will also be examined from the professional, or "provider," point of view and from the point of view of the United States Public Health Service, Division of Public Health Methods.

To the author's knowledge, there has been no previous study comparing the three aforementioned perceptions of adequacy. It is to this end that this research is directed.

¹The research reported in this thesis was supported by Utah State University Agricultural Experiment Station Project No. 819 in cooperation with the Western Agricultural Experiment Station's Regional Project W114. The aforementioned grant entitled "Institutional Structures for Improving Rural Community Services" was obtained by Dr. Stan L. Albrecht of Utah State University. Dr. Albrecht, in the position of project leader, directed the research process throughout.

CHAPTER II

LITERATURE REVIEW

As was mentioned in the introduction, there has been an increasing recognition of the fact that the rural areas of America are not being served by either the quantity or quality of health services as are the remaining portions of the United States. In this section, the germane literature concerning cognizance of and causes of lack of services will be reviewed.

Acknowledgement of the Problem

Supported by the "back to nature" philosophy as expounded by Thoreau a century ago, the notion has long prevailed that the rural landscape was in the past and is in the present the site of all things good for the health of body and mind. Many of the advantages, i.e. fresh air, sunshine, vigorous exercise, etc., are exaggerated, greatly in some cases, for the majority of the rural population. Even if this was not the case and the advantages were valid, it appears, when viewed rationally, that they would tend to be counteracted by lacks in those amenities of the American civilization which play a direct role today in the promotion or preservation of health. As far back as 1948, Mott and Roemer realized the existence of the aforementioned situation when they stated,

. . . the generally low income levels of the rural areas mean not only great lacks in medical personnel and facilities but also deficiencies in other technical resources

and cultural advantages which, in turn, exert a profound influence on the public health. (Mott and Roemer, 1948, p. 31)

As alluded to above, the unavailability of and the inadequacy of health services in rural areas has been acknowledged, at least by some individuals, for several decades. In the recent past, this area has been of growing concern to sociologists, politicians, medical personnel, and others (Amoss, 1968; Ellenbogen and Lowe, 1968; Bible, 1969, 1970; Wilson, 1971; Snyder, n.d.). The United States Department of Health, Education, and Welfare, Public Health Service, acknowledge the problem when they state, "Despite the rapid advance of medical science and our annual national investment in health (currently estimated at \$70 billion), millions of Americans are denied access to quality health services." (United States Department of Health, Education, and Welfare, 1971, p. 1)

The inadequacies of health services that exist in rural areas have been attributed to many different factors. Bible (1970) and Doherty (1970) attribute the inadequacies to trends in the United States toward urbanization and specialization.

Bible (1970) bases his conclusions on the results of a study conducted by the American Medical Association which showed that nearly one-half of the physicians responding to a questionnaire (a total of 1,853) practiced in counties adjacent to metropolitan areas while only six percent located in isolated rural counties. The same study inquired as to what factors influenced doctors' choice of location. The reasons most commonly mentioned were the best opening available and geographic location. Involved in the perception of the best opening was the availability of medical facilities in the

community area. The two above mentioned considerations accounted for about one-half of the responses. The assumption that increase in specialization influenced location was based on the fact that 48 percent of the physicians sampled stated that lack of opportunities for professional growth and limited access to continuing medical education programs were two major liabilities of practicing in a rural area. Bible asserts that,

With the increasing number of patients, greater demand for services, and more complex diagnostic and therapeutic procedures, the need for easy access to continuing medical education programs is of paramount concern to all physicians. (Bible, 1970, p. 15)

Financial status, geographic location, population density, and a limited tax base of rural communities have all been cited by various individuals as contributing substantially to the existing lack of services (Mott and Roemer, 1948; Kelso, 1963; Doherty, 1970; Wilson, 1971). For example, Doherty states that, "the supply of medical facilities and personnel is greatest in counties with the highest population densities and the highest household incomes." (Doherty, 1970, p. 5)

To lend credence to her argument, Doherty presents the information found in Table 4 showing the relationships between income levels and population densities and the distribution of medical doctors and hospital facilities in United States counties.

Table 4. Medical doctors and hospital facilities per 100,000 population, United States and county groups, 1966*

| Personnel and facilities | United States | County Group** | | | | |
|--|---------------|----------------|------|------|------|-----|
| | | 1 | 2 | 3 | 4 | 5 |
| Physicians in patient care | 125 | 171 | 123 | 73 | 81 | 43 |
| General practice | 33 | 34 | 28 | 35 | 36 | 33 |
| Specialists plus hospital based physicians | 92 | 137 | 95 | 38 | 46 | 8 |
| Hospitals | 2.9 | 1.8 | 1.9 | 4.0 | 5.3 | 6.3 |
| Hospital beds | 381 | 401 | 381 | 323 | 412 | 209 |
| Percentage of population | 100 | 35.8 | 30.6 | 15.7 | 14.7 | 3.2 |

* Data taken from an article entitled "Rurality Poverty and Health--Medical Problems in Rural Areas," United States Department of Agriculture, Economic Research Service, Agricultural Economic Report Number 172, February, 1970.

**The county group classifications are defined by the United States Public Health Service as follows: Group 1, Greater Metropolitan, counties with one million or more inhabitants; Group 2, Lesser Metropolitan, counties with 50,000 to one million inhabitants; Group 3, Adjacent, counties contiguous to metropolitan areas; Group 4, Isolated Semirural, counties containing at least one township with 2,500 or more inhabitants; Group 5, Isolated Rural, counties not included in the above four groups.

It is with counties of the Group 5 classification with which this study is mainly concerned and it is apparent from the data in Table 4 that it is these counties that have the most severe problems, at least quantitatively.

The existence of the problem with which this research is concerned is further evidenced by Lerner and Anderson (1963) where they show

that it is among small children and aged persons that illness strikes most often, and it is these groups that predominate in rural areas. These findings were given support by the 1970 study of the Economic Development Division of the United States Department of Agriculture.

Mott and Roemer (1948) have shown that frequency of illness disabling for seven days or more followed this relation to annual family income: \$3,000 and over, 146 cases per 1,000 persons per year; \$2,000 to \$3,000, 145.9 cases; \$1,000 to \$2,000, 152.3 cases; under \$1,000, 180.3 cases; relief groups, 238.4 cases.

The above figures have been given recent support by Doherty (1970) who suggests that the percentage of persons with activity-limiting chronic health conditions show a relationship to family income as summarized in Table 5 below.

Table 5. Percentage of persons with activity-limiting chronic health conditions, by family income, July, 1962-June, 1963*

| Income | <u>Unadjusted for age</u> Percent |
|-----------------|--------------------------------------|
| All incomes | 12.4 |
| Under \$2,000 | 28.6 |
| \$2,000-\$3,999 | 16.0 |
| \$4,000-\$6,999 | 8.9 |
| Over \$7,000 | 7.9 |

*Health Characteristics by Geographic Region, Large Metropolitan Areas, and Other Places of Residence. NCHS, Series 10, Number 36, United States, July, 1963-June, 1965, U.S. Department of Health, Education, and Welfare, Public Health Service, 1964. In Rural Poverty and Health, Medical Problems in Rural Areas, U.S. Department of Agriculture, Economic Research Service, Agricultural Economics Report Number 172.

The data in Table 5 demonstrate that regardless of age, low family income is associated with a greater amount of health-related chronic limitation of activity than are families with middle to high incomes.

Even though both sets of data utilize incomes which would not be indicative of the incomes of 1972, the fact remains that it is in the rural areas that income is lowest. The above data suggest that people from rural areas tend to have more frequent illnesses of longer duration than other segments of the population.

Combine the above facts, that people in rural areas have more frequent illnesses of longer duration than other segments of the population, with the fact that rural areas tend to have a smaller and less effective force for all types of medical and related personnel than the cities (Mott and Roemer, 1948; Doherty, 1970), and the rural problem is elevated to a level beyond denial.

In addition to the aforementioned, it has been shown that the effectiveness of a physician declines by 75 percent in terms of patients handled per week, from the period of peak effectiveness at 35-44 years of age to age 75 (Ciocco and Altman, 1943). On the basis of the above mentioned decline rate, a physician 65 years of age or over is equivalent to "one-third" of a full-time doctor.² At the time of the above mentioned study, the average age of rural practitioners was considerably above that of urban practitioners; and, according to Bible (1970), this situation still exists today.

²The present author is not suggesting that the decline rate mentioned here necessarily occurs in every case. Evidence does suggest, however, that it does occur "on the average."

It becomes evident that the lack of health facilities is a problem of major concern and one with far reaching significance. Evidence of this concern is demonstrated in two of the goals of the United States Department of Agriculture and the State Agricultural Experiment Station: (1) to raise the level of living of rural people and (2) to improve community services and environment. The President's Task Force for Rural Development (1970) was formed because of the recognition of the importance of rural problems. On December 15, 1971, an article appeared in the Lincoln, Nebraska Daily Newspaper which suggested that although the United States has about 320,000 practitioners, among the highest rate of all industrial nations in the world, there are at least 5,000 rural communities with no doctors.

Upon examination of the above literature it becomes evident that quantitative issues have been given considerable emphasis both in the recent and not so recent past. There is, however, in addition to the question of whether or not rural areas are being served by an adequate number of doctors, dentists, hospital beds, etc., another question of increasing concern dealing with the question of the quality of overall adequacy of services received by rural people and how to measure or assess this adequacy. The following section will be devoted to a review of the literature in the area of adequacy of service.

Adequacy of Service, Its Importance and Problems with Measurement

As mentioned in the above section, there has been an increasing tendency to devote more attention to the area of quality of service.

This tendency is evidenced in the writings of Crawford (1971), Dillman (1971), Gessaman and Rose (1971), Jones (1971), and Williams (1971). The importance of this relatively unexplored area is demonstrated by the fact that the improvement of the quality of life in rural America was one of the areas given major emphasis by the National Goals Research Staff (1970) in its report, "Toward Balanced Growth: Quantity with Quality."

This expressed concern on the part of national figures bears witness to the fact that this is a problem which is important not only to the people who reside in rural America but also to the nation as a whole. It would appear that the lack of services, including health services, in rural areas is a factor which is contributing substantially to the migration of people, especially the young, into the already troubled urban centers of the country. This must be stemmed because, as suggested by the National Manpower Conference, in pressing to solve problems of our cities, we must look toward the rural areas and small towns for both immediate and long range answers. Johnson (1971), in her paper entitled "Toward Balanced Development," is in agreement with the above mentioned proposition. She notes that there is a growing consensus that rural and urban problems are inter-related and that the problem in the United States dealing with population is not one of over-population but rather one of maldistribution geographically. She goes on to suggest that, "The thrust toward balanced development, in terms of the population factor, would involve strategies to encourage growth of non-metropolitan areas away from the major urban regions." (Johnson, 1971, p. 1) Allocation of special funds to build and staff

better hospitals was included among Johnson's more powerful means to guide growth of the community.

Along this same line McLean and Carroll (1971), in a paper entitled "A Provisional Paradigm for Rural Development," suggest that the existing services in a community are indicative of the current living standards of the area's residents. They further suggest that the adequacy of such services serves as an index of attractiveness of the area for potential residents. It follows, logically, that investment in the service area would be beneficial since people who are healthy are able to accept and retain jobs; hence, they will be more productive during their working years.

It is apparent that the area of health services is very complex and that some of the more easily researched areas, i.e. number of hospitals and doctors per standard number of population, have been studied extensively. It appears, however, that the area of quality, which is a very important aspect of any service, has been passed over by past researchers, possibly because of the difficulty in measuring such a concept. It is to the area of problems of measurement to which the remainder of this section will be directed. The literature dealing with measurement of adequacy of service has recently been given renewed attention. Concern in this area has been expressed by Crawford (1971), Dillman (1971), Gessaman and Rose (1971), and Williams (1971).

Anne S. Williams, in her paper, "Adequacy of Community Services: A Measurement Problem," (1971) sets forth a brief outline and gives a brief discussion of what may be included in a measurement of adequacy and then points out some of the measurement problems involved.

She asserts that the existence of a standard, based on value judgments, as to what constitutes "adequate" services is inherent in any measure of adequacy. She further states that the determination of standards of adequacy involves a two-fold process. One is concerned with a determination of the relevant dimensions of the service, and the other involves developing a conception of what constitutes "good" service for each dimension. After the standards have been set, the next step is to develop procedures for measuring adequacy of service in relation to the set standards. Williams goes on to suggest two possible criteria upon which service adequacy may be based. One is "expert judgment" and the second is "public judgment." In the case of health services, the physician could provide the expert judgment, and the general populace could provide the public judgment. The measurement problems involved with this are complex since the research design would rely heavily upon evaluative judgments which Williams claims are likely to involve extreme variance between informants.

The major problem here seems to be the fact that all opinions given are value judgments, each one based on a somewhat unique frame of reference and each encompassing somewhat different expectations of what service adequacy should be.

Also included in the Williams paper is a discussion of efficiency and effectiveness as means of reflecting service adequacy. Included in the measurement of efficiency is (1) presence of available technology, (2) presence of an organized structure to deliver the service, and (3) the cost of providing the service.

Effectiveness includes (1) service outcome, (2) goal choice, and (3) distribution or the degree to which the service is available to all.³

In the latter section of her paper, Williams develops a typology for measuring service adequacy. Included as the major analytical foci are (1) determination of established standards, (2) description of existing service, (3) determination of individual standards, (4) assessment of how well the individual standard is met, (5) determination of community standard, and (6) assessment of how well the community standard is met.

With regard to number 2, objective information regarding existing services, measurement problems would include (1) a possible measurement error in the analysis of existing services and (2) differential record keeping and differential access to information, both of which would compound the error.

Some measurement problems with regard to number 3, individual standards, would include (1) standard variation from person to person, (2) the fact that any individual standard is value laden and a subjective judgment, and (3) the frame of reference of the individual, with regard to judgment of adequacy, is usually not known to the researcher.

Measurement problems encountered with respect to number 4, assessment of how well the individual standard is met; number 5, determination of community standard; and number 6, assessment of

³For a detailed discussion of efficiency and effectiveness, the reader should consult Williams (1971) and Dillman (1971).

how well the community standard is met, are essentially the same as those alluded to above.

The paper by Gessaman and Rose (1971) is concerned with how to view the community. They use a very simple model which assumes that goods and services are produced by a public (tax supported) sector as well as a non-public (private) sector. Given this model, the consumer is viewed as receiving goods and services from both sectors (public and private). They assume under this model, which has a functioning economy, that the consumer is the person whose needs and desires should be met to his satisfaction; thus, he, the consumer, becomes the final judge as to the adequacy of service. From this point forward, Gessaman and Rose are in essential agreement with Williams concerning efficiency of services and what must be considered in setting standards and what should be taken into consideration when attempting to measure adequacy of service. They do, however, make reference to one further problem of measurement. They contend that, "Considerations of adequacy are further complicated by the condition we call, for lack of a better name, dynamic disequilibrium." (Gessaman and Rose, 1971, p. 7) They describe this as a "situation in which expectations change continuously as conditions change resulting in constant obsolescence of community services--especially delivery systems." (Gessaman and Rose, 1971, p. 7-8)

The point of major interest is, however, the way in which they view community, specifically that the consumer should be the final judge of the adequacy of a service or a good.

Papers by Dillman (1971) and Crawford (1971) concerning measuring adequacy of service deal with many of the problems alluded to

by Williams and by Gessaman and Rose and no further elaboration will be given at this point.

It is very ostensible after reviewing the above mentioned literature that there are many problems involved in attempting to measure adequacy of service but, at the same time, it is clear that research in this area is badly needed and sadly lacking. It would seem that to continue to avoid this area of measurement of adequacy simply because it is a highly value laden and complex task would be a serious error on the part of the sociologist. Therefore, the major objective of this research is to develop a measure to determine (1) if rural Utah is lacking adequate health services and (2) if the existing health services are not adequate, to determine the extent of the inadequacy. A discussion on the ways in which adequacy will be measured will follow in the chapter on methodology.

CHAPTER III

METHODOLOGY

As mentioned in the previous section, the major emphasis of this research is to determine the perceived level of adequacy of health services available to rural Utahns and if the existing health services are not perceived as adequate, to determine the extent of the perceived inadequacy.

The initial step called for in this study is to determine how adequacy will be measured. After a review of the literature in the field, it was decided to measure adequacy in three different ways, and then to make a comparison of the results of the three measures to see to what extent there was agreement or disagreement with regard to the adequacy of the existing health services.

Data Collection

The three measures of adequacy to be employed in this research are: (1) gaining the general populace perception of adequacy of existing services, (2) gaining the professional person's perception of the adequacy of existing services, and (3) measuring the level of adequacy of existing services determined on the basis of what the United States Public Health Service, Division of Public Health Methods, considers adequate with respect to number of physicians, medical doctors and doctors of dentistry, and hospital beds per thousand population, compared with what is physically present in the study area.

Data collection procedures relating to each of these will now be discussed.

Public perception of adequacy

It was determined that an interview schedule would best allow for the accumulation of data necessary for this aspect of the research. The schedule was developed by first outlining a broad list of topics which the research team felt may be beneficial to include. Then a decision was made as to the best possible order of the topics.⁴ After the order or sequence was determined, beginning with a question which provoked no anxiety and moving to the more emotion filled questions, the schedule was then delimited to include only those questions which related directly to the study. Several drafts of the interview schedule were developed and submitted to different members of the staff in the Department of Sociology at Utah State University for their critical evaluation and suggestions. After it had been developed to the satisfaction of the research team, it was then administered to individuals living in the study area but who were not included in the actual sample. After the pretest, the schedule was revised somewhat to correct some of the wording of several questions.

The schedule was composed of two essentially different sections. The first section consisted of twenty-eight questions concerning peoples' feelings toward various aspects of their community.⁵ While

⁴For a detailed discussion on questionnaire development see Selltitz, Johoda, Deutsch, and Cook, Research Methods in Social Relations, with special reference to their section on questionnaires.

⁵The reader can refer to Appendix A for questions included in the interview schedule.

this section of the interview schedule dealt with many aspects of the general community as a whole, it also included several questions relating directly to health services. For example, questions were included which collected data on how people rated the lack of services as a problem compared to other things such as lack of employment opportunity for young people. In this respect, the data collected in the first section were very critical for this research. There were 14 questions dealing specifically with the perception or attitude of the interviewee with reference to adequacy of health services in the area. It is the responses obtained with regard to these 14 questions with which this research is mainly concerned. The reason for major emphasis being given to this portion of the data can be explained by making reference to the paper by Gessaman and Rose (1971) where they assume that services occupy a position in a functioning economy in which the consumer should be considered the final judge as to whether a service is adequate or inadequate. This author is in essential agreement with the above contention; hence, analysis of data will be carried out with regard to this frame of reference.

In addition to the attitude questions, section two included a variety of fact questions related to health services. For example, there were questions such as approximately how often a physician is visited and how far the interviewee must travel in order to receive what he feels is adequate medical service. The data obtained from this set of questions will be important in future analysis of the data in instances when it is desirable to determine what character-

istics are portrayed by those individuals who perceive the services either adequate or inadequate.⁶

The interview schedule was concluded with 15 demographic questions. The decision as to which questions to include in this section was reached after discussion with several individuals on the staff of the Department of Sociology as to what characteristics they felt may influence the perception of adequacy of service.

As discussed above, this research is concerned with a measurement of the adequacy of existing health services in rural Utah. To accomplish the stated objective, it was decided to administer the completed interview schedule to selected individuals in three counties in the southern Utah area. The counties included in the study were Wayne County, Piute County, and Beaver County.⁷ The selection of the counties to be interviewed was based on the fact that the three above mentioned counties were among those in Utah which lost substantial percentages of population during the interim of 1960-1970. Beaver, Piute, and Wayne lost -12.3, -18.9, and -14.2 percent of their populations, respectively. In addition to the aforementioned reason, it was felt that the selected area would allow for substantial comparisons of attitudes between persons living in a county which had health facilities immediately accessible (Beaver County) and those living in

⁶The above mentioned analysis will not be included in this particular research, but the author is planning to write his dissertation from the data gathered in this study and, in that event, data such as this will be very valuable.

⁷In addition to these three counties there was a sample of approximately 200 drawn from the Valley West area of Salt Lake County, Utah. This area includes Granger, Hunter, Kearns, and Taylorsville. The data collected from this sample are not used in this research.

a county which did not have health facilities available, at least in the immediate vicinity (Piute and Wayne counties).

It was decided to interview the counties on a quota basis; hence, there were 54 persons or 17.8 percent of the total sample interviewed from Piute County, 69 persons or 22.8 percent from Wayne County, and 180 persons or 59.4 percent from Beaver County.

The initial sample to be included in the study was selected at random from the telephone listings for every community in the study area. This was accomplished by giving a number to each person listed in the various telephone directories and then selecting a desired number of cases from each county by the use of a table of random numbers.

Dillman (1970) points out that there are possible biases which result from this type of procedure: (1) the omission of residents with unlisted phone numbers who are likely to be of middle or upper income status, and (2) omission of persons without telephones who are likely to be of lower income status. It should be noted, however, that 91 percent of the households in Utah had telephone service in 1969 (United States Bureau of the Census, Statistical Abstract of the United States, 1971). It would appear that income status may have a substantial effect on perception of health service since those in the upper echelons could more easily afford to travel to other locations to acquire desired service. These possible biases appear very relevant to this study. The study did, however, collect data from all levels of the economic scale as evidenced by the information in Table 6.

Table 6. Number of families included in each category of income for sample and total population of study area*

| | Less than \$3,000 | \$3,000- \$4,999 | \$5,000- \$6,999 | \$7,000- \$9,999 | \$10,000+ |
|--------------------|----------------------|---------------------|---------------------|---------------------|-----------|
| Sample | | | | | |
| Absolute frequency | 63 | 40 | 42 | 62 | 88 |
| Relative frequency | 20.8 | 13.2 | 13.9 | 20.5 | 29.0 |
| Total population | | | | | |
| Absolute frequency | 324 | 253 | 324 | 396 | 466 |
| Relative frequency | 18.3 | 14.3 | 18.3 | 22.4 | 26.4 |

*United States Bureau of the Census. 1971. United States Census of Population: 1970, General Social and Economic Characteristics. Final Report PC(1)-46C. United States Government Printing Office, Washington, D. C.

Table 6 also illustrates that the percentage of families included in various income categories for the sample approximates that of the entire population of the study area with the maximum difference of 4.4 percent occurring in the \$5,000 to \$6,999 category and a minimum difference of 1.1 percent in the \$3,000 to \$4,999 category. The figures presented above lend support to the fact that the sample, even though not a true simple random sample, is quite representative, at least economically, of the total study area.

It can be seen that there are at least 40 persons in the least represented category; hence, for purposes of this research, the biases mentioned by Dillman (1970) appear to have been adequately handled.

Two basic problems developed which affected the initial randomness of the sampling design: (1) the large out-migration from the rural areas and (2) the large number of deaths of the elderly people in the study area. The two aforementioned occurrences became very apparent after the interviewers were in the field and, because of a misunderstanding, the interviewers in Piute and Beaver counties, to satisfy the number requirement in each community, interviewed, in several instances, the next-door neighbor of the person initially designated at the interviewee. This occurrence did not take place in Wayne County which was a strictly random sample. In light of the above occurrence, true randomness of the sample cannot be claimed in two of the counties of the study area. Despite the failure to achieve a purely random sample, it is still apparent that the people interviewed were consumers of a service and, from the frame of reference of this research, this is all that is required since one consumer is no more able than any other to testify to his or her perception of adequacy. Given the above mentioned frame of reference, randomness loses some of its importance and it becomes possible to say the data which were collected are germane to the present study.

As mentioned earlier in this section, a total of 303 interviews were conducted throughout the study area. The data were gathered by trained interviewers in the homes of the respondents. The

training of the interviewers was conducted by members of the research team. The interviewers were instructed in such techniques as probing as a means to acquire answers to open-ended questions. In addition, a research team member went through the entire interview schedule with the interviewers in order to clarify any question they may have had.

In Wayne County the interviewers were asked to go into the field and complete several interviews while the researcher waited. Upon completion, the interviews were checked to assure completion of all questions in the desired manner. Since the interviewers in Piute and Beaver counties had worked on another project a short time before, it was felt that this section of training could be dispensed with. The interviewers who collected data in Piute and Beaver counties were hired from a community in Garfield County. Those collecting data in Wayne County were hired from Wayne County, but they interviewed people in communities other than where they reside.

Throughout the data collection period, every effort was made to prevent the interviewer from interviewing personal acquaintances because of the many biases which may occur in this type of a situation.

As mentioned above, the data were collected in the homes of the respondents. The interviewer read the question and the possible responses to the respondent. When an answer was given, the interviewer recorded it directly on the interview schedule. If a response to an open-ended question was desired but the respondent

hesitated to answer, the interviewers were instructed to probe until a response had been obtained.

To insure that the interviewers were performing satisfactorily, telephone calls were made to various selected respondents.

After the interviewing had been completed and the schedules returned to the research team at Utah State University, the data handling process was begun by examining the open-ended questions in order to formulate categories for the code. After this had been accomplished, a formal code sheet was developed for the entire questionnaire. Several individuals were employed and trained to code the interview schedules. After the coding was complete, the data were punched on computer cards in order to facilitate data analysis.

Professional perception of adequacy

The procedure necessary for collection of data for determining the perception of adequacy by professional persons was somewhat different from that discussed in connection with the general population's perception of adequacy.

Again it was determined that it would be necessary to develop a questionnaire which would allow for collection of desired information. To accomplish this various questions which seemed to be getting directly at the desired information were extracted from the larger interview schedule previously administered to the general population. These questions, altered slightly in some cases, were combined with several additional questions not included in the

initial schedule to form a questionnaire to be mailed to a selected group of physicians in southern Utah.⁸

The sample of physicians, medical doctors and doctors of dentistry, to be included in the study was selected on the basis of the responses of the general populace as to which physician they normally visited. In other words, it was desirable to have the professional perception emanating from the same geographical areas as the general sample in order to make valid comparisons.

On this basis 23 physicians were selected from telephone directories in the vicinity of the study area as the professional sample to be included in the research. At that point a cover letter was developed explaining the general scope of the research project and asking the physicians if they would answer the questionnaire.⁹ This letter, along with a self-addressed stamped envelope, was attached to the questionnaire and sent to the 23 aforementioned physicians. After one week nine questionnaires (approximately 39 percent) had been returned. At that time a follow-up letter and an additional questionnaire were mailed to those physicians who had not returned the initial questionnaire.¹⁰ At the end of the second week five additional questionnaires had been returned for a return rate of approximately 60 percent. One week later those who had still not returned the questionnaire were contacted

⁸The revised questionnaire to be mailed to the physicians can be found in Appendix B.

⁹Refer to Appendix C for the initial cover letter.

¹⁰Refer to Appendix D for the follow-up letter.

by telephone to inquire as to the possibility of obtaining the completed questionnaire. The above procedures resulted in 16 questionnaires (approximately 69.5 percent of the total) being returned.

After the return of the questionnaires the data handling process followed closely that discussed in the section on public perception of adequacy and no further elaboration will be made in this section.

Adequacy as determined by United States Public Health Service,
Division of Public Health Methods

Data concerning this measurement of adequacy was very scarce. It was initially hoped to acquire an adequacy standard as set by the professional body of the American Medical Association. Contact was made with the President of the Utah Chapter of the American Medical Association who suggested contact be made with the national office in Chicago. Upon contacting the Chicago Central Office it was determined that the American Medical Association did not set formal standards of adequacy. Therefore, the adequacy standard to be employed was determined by searching the literature to find a reputable organization that had at some time in the past established a standard. The literature search revealed one standard that had been established by the United States Public Health Service, Division of Public Health Methods in 1942.

Since the established standard was dated somewhat, the research team felt it necessary to obtain more recent data pertaining to adequacy standards. To accomplish this contact was again made with the American Medical Association Central Office in Chicago,

specifically with Henry R. Mason, M.P.H. Dr. Mason indicated that he had just completed a study dealing with manpower needs by speciality¹¹ and consented to furnish the research team with a full copy including all tables not published in the Journal article.

Upon receipt and analysis of the study it was determined that the aforementioned 1942 standard was still very applicable; hence, that standard is employed in this research.

At this point the second step involved in this particular measure of adequacy was begun which involved an analysis of secondary data to ascertain exactly what services were available in the areas of rural Utah selected for analysis. Specifically, this was accomplished by gaining access to the latest (1969) available Health Profiles for the various counties of the State. The Health Profiles are prepared by the Salt Lake Area Community Services Council for the Utah State Comprehensive Health Planning Program. The Profiles contain rather extensive data relating to demographics, vital statistics, and local health needs and services.

A detailed comparison of the established standard with what physically exists will be undertaken in the following chapter on data analysis.

Statistical Design

In large part, the design of the study, the objective of the study, and the type of data gathered determine the type of statis-

¹¹The article is entitled "Manpower Needs by Speciality," by Henry R. Mason, M.P.H. Journal of the American Medical Association, March 20, 1972, Volume 219, Number 12, p. 1621-1626.

tical procedures to be used in the analysis of data. As has been noted several times throughout the text of this thesis, the objective of the present research is to measure the adequacy of health services in a rural area in Utah.

It is ostensible from the stated objective that this research is of an exploratory descriptive nature; this being so because there has been, to the author's knowledge, no previous research attempting to compare different measures of adequacy. Further, the research design is not set up either as a causal model or a model predicting from an independent variable to a dependent variable. Rather, it is a model to describe several alternative models of a measurement of adequacy and the consensus or non-consensus of the different measures.

After reviewing the objective of the study, it is clear that complex statistical procedures are unnecessary for this research. Therefore, the statistical method of major concern is percentages. These percentages will be employed to demonstrate the different degrees of consensus on the questions of the interview schedule which are indicative of perception of adequacy of the existing health services.¹²

¹²Future analysis of this data may require statistical measures of association; hence, a statistical package including a raw Chi Square, Cramer's V, Contingency Coefficient, Gamma, and Eta was run on the data.

CHAPTER IV

ANALYSIS OF DATA

Demographic Characteristics of the Subjects

As discussed earlier in this thesis, the subjects selected for study were drawn from telephone directories which included all of the communities in three rural counties in southern Utah: Wayne, Piute, and Beaver. The subjects totaled 303 in number with 69, 54, and 180 coming from Wayne, Piute, and Beaver counties, respectively. Sixty-two percent of the respondents had lived in the study area 26 years or longer with the average length of residence being approximately 30 years.¹³

There were 105 or 35 percent males and 198 or 65 percent females interviewed. Eighty-six percent of those interviewed were married and 10 percent were widowed with only three percent never having been married.

Ninety-three percent of the respondents had one or more children with the average number of children being 3.6.

The average age of the subjects was approximately 45 years with 64 percent being 46 years of age or older.

Thirty-seven percent had completed high school and an additional 25 percent had completed some high school. Twenty-one

¹³Percentages given in the text of the thesis are approximations rounded to the nearest whole percent.

percent had some college with six percent having completed a college degree. Two individuals or 0.7 percent had one graduate degree.

One hundred and thirty-three or 44 percent of the respondents were employed either full or part time. Thirty-nine percent were housewives. Fourteen percent were retired and three percent were unemployed. Of those employed, 102 or 34 percent were farmers or ranchers with 22 percent being professionals, technicians, or managers and 28 percent being employed as operatives, miners, laborers, or service workers. Table 7 summarizes some of these selected social characteristics of the respondents.

It can be seen from looking at the table that when controlling for county there was little difference in ages with the exception that Wayne County had fewer people under 35, 10 percent as compared to Piute, 19 percent, and Beaver was highest with 26 percent. The difference was accounted for in the 36-55 age bracket with Wayne having 48 percent as compared to 35 percent for Piute and 32 percent for Beaver.

Looking at education, it can be detected that again Wayne County has a higher percentage, 43 percent, of persons having less than a high school education as compared to 30 percent for Piute and 33 percent for Beaver. It is clear from looking at the distributions of the various educational groups that Piute tends to have a higher educational level followed by Beaver and then Wayne.

Concerning occupation, let it suffice to say that farming accounts for approximately one-half of the employment in Wayne and Piute but for slightly less than one-fourth in Beaver.

Table 7. Percentage of respondents with selected social characteristics (percentage by total and county)*

| | Total N303 | Wayne N69 | Piute N54 | Beaver N180 |
|----------------------------------|---------------|--------------|--------------|----------------|
| Characteristic | | | | |
| Age | | | | |
| Less than 35 | 21.1 | 10.1 | 18.6 | 26.1 |
| 36-55 | 36.0 | 47.8 | 35.2 | 31.7 |
| 56+ | 42.9 | 42.0 | 46.3 | 42.2 |
| Education | | | | |
| Less than high school graduation | 34.7 | 43.5 | 29.7 | 32.8 |
| High school graduation | 54.4 | 52.2 | 63.0 | 59.5 |
| College graduation | 6.9 | 4.3 | 7.4 | 7.9 |
| Occupation | | | | |
| Farmer-rancher | 33.7 | 53.6 | 44.4 | 22.8 |
| Operatives, miner, laborer | 22.4 | 14.5 | 20.4 | 26.1 |
| Foreman or craftsman | 10.2 | 5.8 | 7.4 | 12.8 |
| Clerical service, sales | 10.6 | 5.8 | 11.1 | 12.3 |
| Proprietor, manager | 13.5 | 14.5 | 7.4 | 15.0 |
| Professional, technical | 8.6 | 5.8 | 7.4 | 10.0 |
| Family income | | | | |
| Less than \$3,000 | 20.8 | 21.7 | 16.7 | 21.7 |
| \$3,000-\$6,999 | 27.1 | 43.5 | 31.5 | 19.5 |
| \$7,000-\$12,999 | 36.3 | 21.7 | 40.8 | 40.6 |
| \$13,000+ | 13.2 | 8.7 | 7.4 | 16.6 |

*Ideas for categories were obtained from an Experiment Station Bulletin, Washington State University, authored by Don A. Dillman.

Beaver has the highest income levels followed by Piute and Wayne, with the major differences appearing in the \$3,000-\$6,999 bracket where Wayne has 43 percent as compared to 31 percent in Piute and 19 percent in Beaver; and in the \$7,000-\$12,999 bracket

where Wayne has 22 percent compared to 41 percent for both Piute and Beaver counties.

Research Findings Concerning Attitudes Toward
Available Health Facilities

Perception of adequacy of the general sample

As mentioned earlier, the data to be analyzed in this section were collected by trained interviewers in the homes of 303 residents of Beaver, Piute, and Wayne counties.

When the subjects were asked to respond to the question of how their community would rate as a place with adequate medical and health facilities, the responses followed the pattern presented in Table 8.

Table 8. Rating of community as a place with adequate medical and health facilities (percentage in each category)

| County | N | Excellent | Good | Fair | Poor |
|--------|-----|-----------|------|------|-------|
| Wayne | 68 | 0 | 0 | 0 | 100.0 |
| Piute | 54 | 0 | 0 | 3.7 | 96.3 |
| Beaver | 180 | 33.3 | 51.0 | 7.8 | 7.8 |
| Totals | 302 | 19.8 | 30.4 | 5.3 | 44.2 |

The above table shows very clearly that there is a large discrepancy between attitudes on the basis of county with 152 persons (84 percent) of the Beaver County sample rating their facilities as

either good or excellent whereas Piute and Wayne counties had no respondents in these two categories. At the other end of the continuum there were 100 percent of those interviewed in Wayne County who rated the services as poor. Piute County was similar with 96 percent giving a poor rating and the other four percent rating the facilities as fair. Contrast this with Beaver County who had eight percent of their respondents in each of the two categories--fair and poor.

At this time it is necessary to point out that neither Piute County nor Wayne County has a hospital or a doctor in the county whereas Beaver County has two hospitals, one in Beaver and one in Milford. Thus, 88 percent of the respondents in Beaver drive less than 25 miles to visit a physician whereas 98 percent of those from Wayne drive more than 25 miles to visit a doctor. Table 9 gives a complete breakdown of distances travelled to receive medical care with county controlled.

Table 9. Miles travelled one way to receive adequate medical service (given in percent)

| County | N | 0-25 | 26-50 | 51-100 | over 100 |
|--------|-----|------|-------|--------|----------|
| Wayne | 69 | 0 | 7.2 | 56.5 | 36.2 |
| Piute | 54 | 1.9 | 61.3 | 22.3 | 14.8 |
| Beaver | 180 | 88.3 | 7.8 | 1.1 | 2.2 |
| Totals | 303 | 52.8 | 17.1 | 17.4 | 12.2 |

While the time and distance factor which is evident from the above figures may appear to account for some of the negative attitudes of the people in Piute and Wayne counties, it should be pointed out that these two factors accounted for only four percent of the responses to the question: What are the main factors which determine frequency of visitation?¹⁴ Need, alone, accounted for 94 percent. This points to the fact that people are not inhibited by time and distance factors, but instead visit a physician whenever they feel it is necessary. Since there is no difference between counties on this aspect, it appears that Piute and Wayne respondents perceive the facilities which they visit most often as being inadequate, whereas Beaver County respondents perceive their services as substantially more adequate. It has, however, been conjectured that the perception of when it is necessary to visit a physician varies according to availability of service with those individuals with services more readily available perceiving necessity of visitation at an earlier stage of illness than individuals who must travel substantial distances to reach a physician. Confirmation of the above hypothesis is beyond the scope of this thesis, but it would seem to be an important variable to consider when attempting to measure adequacy in more detail than is possible in an exploratory study such as the present one.

¹⁴The reader should be made cognizant of the fact that this particular question elicited a somewhat inadequate response. Therefore, even though the data suggest that time and distance factors accounted for only about four percent of the responses, there is reason to believe that had this issue been handled more effectively time and distance would have been more important.

Table 10 shows that the dissatisfaction with the available health services does not generalize to the community as a whole.

Table 10. Satisfaction with living in the community, by county (given in percent)

| County | N | Not at all satisfied | Not very satisfied | Pretty much satisfied | Very much satisfied |
|--------|-----|----------------------|--------------------|-----------------------|---------------------|
| Wayne | 69 | 1.4 | 0 | 21.7 | 76.8 |
| Piute | 54 | 1.9 | 0 | 24.1 | 74.1 |
| Beaver | 180 | 1.7 | 3.3 | 13.3 | 80.0 |
| Totals | 303 | 1.7 | 2.0 | 17.2 | 78.2 |

The data in Table 10 attests to the fact that while residents of Wayne and Piute counties may feel very dissatisfied with their health services, they are not significantly less satisfied with their community than are the respondents from Beaver County. The fact that people in Wayne and Beaver counties are quite satisfied living where they are is further demonstrated by the portion of people who picked their own area as the place they would most like to live. Ninety-three percent of the respondents in Wayne County and 83 percent of those in Beaver County stated they want to remain in their present location. Piute County, however, had only 52 percent wishing to remain in the area. However, most of those selecting another area selected a neighboring rural location. In all three counties, there was a general consensus (at least 50

percent in all three counties) that Salt Lake County was the place they would least like to live. These findings are interesting in that they contradict the findings of many recent studies which suggest that rural residents want to migrate to the city. An analysis of this seemingly unexpected response is, however, beyond the scope of this thesis.

The extent to which the residents in the study area perceive lack of adequate health services as a disadvantage of living in their particular area can be seen from the data presented in Table 11.

Table 11. Comparisons of rankings of community problems by county according to most often mentioned

| Problem | Wayne | Piute | Beaver |
|---|-------|-------|--------|
| Lack of adequate health services | 1 | 1 | 9 |
| Lack of good jobs for the young | 2 | 2 | 1 |
| Availability of good shopping facilities | 4 | 3 | 2 |
| Opportunity for cultural refinement | 5 | 4 | 3 |
| Opportunity for earning a liveable income | 3 | 5 | 4 |

The above table clearly demonstrates that the people in Piute and Wayne counties are vitally concerned about the lack of adequate health facilities while the people in Beaver County are less concerned about this aspect of their community than any other.

These findings are again contradictory to what Dillman (1970) discovered in a study of Washington residents where adequate medical care ranked from eighth to twelfth (depending on region) in a list of fourteen problems indicated.

This brings to the surface the question of how well rural Utah is being served with regard to health services as compared to other states in the United States. Further research should be undertaken to answer this question.

While Table 11 tells us that Beaver County residents do not perceive their health services as inadequate, or at least as a major disadvantage, it does not indicate whether or not they perceive their services as a major advantage. Additional data which were collected showed that 44 persons (24.4 percent) in the Beaver County sample mentioned health-related services as an advantage of their area. There were no people in the Wayne or Piute sample that mentioned this as an advantage. This could be interpreted as meaning that the people, since they have facilities, are rather unaware of the advantage of having such services in rural Utah. It would be interesting to see, if there was to be a hospital built and staffed in Piute or Wayne county, whether or not they would perceive the service as an advantage after having been deprived of what they consider adequate facilities.

It is the basic tenet of this thesis that the consumer of a service should be the judge of adequate of that service. It has been made very manifest that the consumers of the health service in Piute and Wayne counties already perceive the service as extremely inadequate. When this fact is combined with the fact that

70 percent of the Wayne County sample and 65 percent of the Piute County sample believe the situation is getting progressively worse, it becomes apparent that new policy should be implemented to improve conditions if the goals of the United States Department of Agriculture to raise the level of living of rural people and to improve community services and environment are to become realities in the foreseeable future.

After considerable discussion between members of the research team, it was concluded that since people are generally opposed to paying taxes this would be one criteria as to the extent of perceived inadequacy of a service or a good. In other words, if people are willing to pay more taxes to improve a certain good or service, then the present good or service must be considered inadequate. Table 12 depicts which services the people of the various counties would be willing or unwilling to pay more taxes for.

The data in Table 12 give support to the assumption that people in rural Utah perceive the lack of adequate medical facilities as one of the most, if not the most, serious problems facing their communities today.

As in the earlier findings, Beaver County residents did not acknowledge the problem to the same extent as did Piute and Wayne county residents. It is, however, interesting to note that even Beaver County was willing to pay more taxes to provide better health and medical facilities than to improve any other service.

The same set of services were presented a second time to the respondents only the second time they were asked if they would be in favor of the State or Federal government spending more money to

Table 12. Percent of persons willing to pay increased taxes for selected services

| Service | Total (N303) | | Wayne (N69) | | Piute (N54) | | Beaver (N180) | |
|---|--------------|------|-------------|------|-------------|------|---------------|------|
| | Yes | No | Yes | No | Yes | No | Yes | No |
| To provide better health and medical service | 73.9 | 25.7 | 85.5 | 14.5 | 92.6 | 7.4 | 63.9 | 35.6 |
| To improve schools and other educational facilities | 62.0 | 37.3 | 72.5 | 27.5 | 48.1 | 51.9 | 62.2 | 36.7 |
| To provide more jobs for local residents | 67.0 | 32.0 | 73.9 | 26.1 | 68.5 | 29.6 | 63.9 | 35.6 |
| To develop local industry | 68.3 | 30.7 | 78.3 | 21.7 | 72.2 | 27.8 | 63.3 | 35.0 |
| To improve recreational opportunities | 51.8 | 47.9 | 55.1 | 44.9 | 42.6 | 57.4 | 53.3 | 46.1 |
| To upgrade law enforcement | 52.5 | 46.5 | 65.2 | 33.3 | 40.7 | 59.3 | 51.1 | 47.8 |
| To train local government officials | 46.2 | 53.1 | 50.7 | 49.3 | 33.3 | 64.8 | 48.3 | 51.1 |
| To provide better housing | 53.5 | 45.5 | 52.2 | 46.4 | 44.4 | 53.7 | 56.7 | 42.8 |
| To help clean up pollution | 43.2 | 55.8 | 44.9 | 55.1 | 31.5 | 68.5 | 46.1 | 52.2 |
| To help provide opportunities for cultural refinement | 52.8 | 46.2 | 58.0 | 42.0 | 33.3 | 63.0 | 56.7 | 42.8 |

improve them. The results are shown in Table 13. While it is apparent that medical services still receives very high priorities in both Piute and Wayne counties, it lost some support in Beaver County.

If careful attention is given to Tables 12 and 13, a phenomenon has occurred that cannot be mistaken. In every instance except one, number 9 concerning cleaning up pollution, Beaver County is less willing to have the Federal or State government spend money than they are to pay individual taxes. The exact opposite is true for Piute and Wayne counties with Piute County willing in only two cases, number 1--improve health services and number 4--develop local industry, to personally pay more taxes than to have the State and Federal government spend more. In Wayne County the respondents in every case were more willing to have Federal and State governments spend more money that they were to pay individual taxes. The difference was as high as 27.6 percent in the case of improving local law enforcement.

On the basis of the above findings, it might be hypothesized that both Piute and Wayne counties are aware of their inability to improve their communities by themselves. Nevertheless, they do want community improvements, and they have consigned themselves to the fact, especially in Wayne County, that the Federal and State governments must be brought in to help improve the existing conditions.

In addition to the previously discussed indicators of the inadequacy of services, i.e. willingness of people to pay taxes to improve health services, another indicator was employed. Each sub-

Table 13. Percent of persons willing to have State or Federal government spend more money to improve selected services

| Service | Total (N303) | | Wayne (N69) | | Piute (N54) | | Beaver (N180) | |
|---|--------------|------|-------------|------|-------------|------|---------------|------|
| | Yes | No | Yes | No | Yes | No | Yes | No |
| To provide better health and medical service | 71.3 | 25.7 | 91.3 | 8.7 | 90.7 | 7.4 | 57.8 | 37.8 |
| To improve schools and other educational facilities | 63.0 | 33.7 | 87.0 | 13.0 | 64.8 | 31.5 | 53.5 | 42.2 |
| To provide more jobs for local residents | 65.7 | 31.4 | 88.4 | 11.6 | 74.1 | 24.1 | 54.4 | 41.1 |
| To develop local industry | 65.7 | 31.4 | 88.4 | 11.6 | 70.4 | 27.8 | 55.6 | 4.0 |
| To improve recreational opportunities | 54.5 | 42.6 | 82.6 | 17.4 | 50.0 | 48.1 | 45.0 | 50.6 |
| To upgrade law enforcement | 59.1 | 38.0 | 92.8 | 7.2 | 55.6 | 42.6 | 47.2 | 48.3 |
| To train local government officials | 53.5 | 43.6 | 79.7 | 20.3 | 48.1 | 50.0 | 45.0 | 50.6 |
| To provide better housing | 59.4 | 37.6 | 82.6 | 17.4 | 57.4 | 40.7 | 51.1 | 44.4 |
| To help clean up pollution | 54.5 | 42.6 | 78.3 | 21.7 | 46.3 | 51.9 | 47.8 | 47.8 |
| To help provide opportunities for cultural refinement | 54.1 | 42.9 | 76.8 | 23.2 | 50.0 | 48.1 | 46.7 | 48.9 |

ject was asked to respond to the statement: The quality of health services available to this community is good enough as it is. Responses to the statement could vary from strongly agree to strongly disagree.

Table 14 shows the responses to the above statement when controlling for county. The table indicates that 80 percent, 65 percent, and three percent for Wayne, Piute, and Beaver counties, respectively, strongly disagreed with the statement. Let it suffice to say that the next high commitment came in response to the statement: I feel very much that I belong here. Fifty-one percent, 35 percent, and 21 percent of the respondents for Wayne, Piute, and Beaver counties, respectively, strongly agreed with the statement.

Table 14. Responses of persons by county to the statement: The quality of health services available to this community is good enough as it is. (given in percent)

| County | N | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|--------|-----|----------------|-------|---------|----------|-------------------|
| Wayne | 69 | 0 | 2.9 | 0 | 17.4 | 79.7 |
| Piute | 54 | 0 | 1.9 | 0 | 33.3 | 64.8 |
| Beaver | 180 | 1.1 | 38.9 | 2.2 | 54.4 | 2.8 |
| Totals | 303 | 0.7 | 24.1 | 1.3 | 42.2 | 31.4 |

As a final step in attempting to measure the perception of adequacy of health service, we decided to ask the respondents the

direct question as to how serious a problem they felt the lack of health services was in their area. Of 303 respondents, 121 or 40 percent thought it was a serious problem; 52 or 17 percent, a moderate problem; 100 or 33 percent, a minor problem; and 30 or 10 percent, no problem. Once again, if one controls for county, the reoccurring trend appears with Piute and Wayne county residents perceiving the problem as more serious than Beaver County residents.

At this point the findings pertaining to the objective of measuring the perception of adequacy of medical service of the consumer will be terminated and data relating to measurement of perception of adequacy of the professional or provider will be undertaken.

Perception of adequacy of the physician sample

As discussed in Chapter III on methodology, the data for this section of the research were collected by using a questionnaire and a cover letter mailed to a sample of 23 physicians in rural Utah. These 23 physicians were selected on the basis of the fact that they were the ones most often visited by the general sample.

In view of the limited sample size, it will be necessary to speak of perception of adequacy of the physicians both as percentages of respondents as has been done for the general population and also as actual numbers of physicians responding to various germane questions included in the aforementioned questionnaire.

Again, because of the limited size of the sample, the only control will be for Medical Doctor versus Doctor of Dentistry. With this brief introduction, an analysis of data will be undertaken.

Table 15 below is concerned with how well satisfied the physicians are with practice in their various locations.

Table 15. Satisfaction with practice in community
(in actual numbers and percents)

| | N | Very Satisfied | | Generally Satisfied | | Dissatisfied | |
|---------------------|----|----------------|------|---------------------|------|--------------|-----|
| | | N | % | N | % | N | % |
| Medical Doctor | 9 | 6 | 66.6 | 3 | 33.3 | 0 | 0.0 |
| Doctor of Dentistry | 7 | 5 | 71.4 | 2 | 28.5 | 0 | 0.0 |
| Totals | 16 | 11 | 68.7 | 5 | 31.2 | 0 | 0.0 |

As can be seen from Table 15, the physicians are satisfied, as a group, with the practice in their own community even though most of the respondents mentioned that the income in the area was low. If the figures in Table 15 are compared to those of Table 10 presented earlier in this section, it is evident that there is very little difference between degree of satisfaction with the community for the general population and the physician population.

The data presented in Table 15, according to Coon (1969), are to be expected since high community satisfaction has been

found to be related to older age and physicians practicing in rural areas tend to be older than those practicing in urban areas.¹⁵

Table 16 below deals specifically with the perception of the provider of the health services as to whether or not they believe there is a problem with regard to availability of the service.

Table 16. How serious is the problem of availability of adequate medical service in the area? (in actual numbers and percents)

| | N | Serious Problem | | Moderate Problem | | Minor Problem | | No Problem | |
|---------------------|----|-----------------|------|------------------|------|---------------|------|------------|------|
| | | N | % | N | % | N | % | N | % |
| Medical Doctor | 9 | 1 | 11.1 | 3 | 33.3 | 3 | 33.3 | 2 | 22.2 |
| Doctor of Dentistry | 7 | 3 | 42.8 | 3 | 42.8 | 1 | 14.2 | 0 | 0.0 |
| Totals | 16 | 4 | 25.0 | 6 | 37.5 | 4 | 25.0 | 2 | 12.5 |

The data presented in the table above helps bring into focus an interesting problem given the basic premise of this thesis that the consumer should be the judge of the adequacy of a service or a good. The situation present is that of the general populace in the study area of southern Utah perceiving health facilities as basically very poor as demonstrated by the data in tables 8, 11, 12, 13, and 14 presented earlier in this section and a professional-provider

¹⁵The author acknowledges a weakness in the findings pertaining to satisfaction of physician with practice in the community due to the fact that it was impossible to control for age of physician in the present study.

populace perceiving the services as basically adequate as evidenced by the data in table 16 above and tables 17 and 18 below.

Table 17. Rating of community as a place with adequate health facilities by physicians (in actual numbers and percents)

| | N | Excellent | | Good | | Fair | | Poor | |
|---------------------|----|-----------|------|------|------|------|------|------|------|
| | | N | % | N | % | N | % | N | % |
| Medical Doctor | 9 | 4 | 44.4 | 3 | 33.3 | 1 | 11.1 | 1 | 11.1 |
| Doctor of Dentistry | 7 | 0 | 0.0 | 4 | 57.1 | 2 | 28.5 | 1 | 14.2 |
| Totals | 16 | 4 | 25.0 | 7 | 43.7 | 3 | 18.7 | 2 | 12.5 |

Table 18. Rankings of community problems by physicians according to most often mentioned (in actual numbers)

| | Medical Doctor | Doctor of Dentistry |
|---|---------------------------|------------------------|
| | Number of times mentioned | |
| Availability of jobs for young people | 8 | 4 |
| Opportunity for cultural refinement | 5 | 1 |
| Availability of suitable housing | 3 | 1 |
| Opportunity for earning a liveable income | 2 | 1 |
| Good shopping facilities | 2 | 1 |
| Adequacy of medical facilities | 1 | 3 |
| Effectiveness of county government | 0 | 2 |

Table 17, in addition to illustrating that the medical doctor population perceives the services as adequate, also illuminates another problem concerned with the degree of objectivity with which the physician population can evaluate their own service provision. The problem becomes a reality when seven of nine medical doctors rate the health services as excellent or good but at the same time three of seven dentists, also members of the provider staff, rate the services as fair or poor.

The data presented in Table 18 further emphasize the problem. In this case, when the physicians were requested to choose from a list of 15 items three which they considered to be major disadvantages of living in their community, adequacy of medical facilities was mentioned only once out of a total of 21 responses; thus demonstrating that medical doctors perceive the lack of adequate medical facilities as almost no problem.

The results obtained from the dentists are, however, substantially different with lack of adequate medical health facilities being mentioned as a problem more often than any other with the single exception of availability of jobs for young people.

Adequacy of existing services as determined by
a comparison to an established standard

At this point we turn to a final measurement of adequacy--the existing facilities compared to an established standard of adequacy.

All of the evidence suggests that national agencies such as the American Medical Association are unwilling to commit themselves to establishing a standard below which services would necessarily be considered inadequate. An extensive review of the literature in

the field led to only one established standard of adequacy. The aforementioned standard was espoused by Maxwell E. Lapham in his testimony before a Sub-Committee of the Committee on Education and Labor, United States Senate, in 1943. Lapham suggested that a ratio of one physician per 1,500 persons would represent the upper limit of safety beyond which physician resources would have to be considered seriously inadequate.

With regard to the above mentioned standard, Mott and Roemer (1948) suggest that,

There is much to indicate, however, that while this war-time standard may have been a realistic adjustment to the national emergency, it is defeatist for normal times and is scarcely geared to a conception of good medical service. (Mott and Roemer, 1948, p. 155)

As an alternative to the ratio of one physician per 1,500 persons, a Committee on the Costs of Medical Care estimated that on an average one physician per 742 persons is required if an optimal standard of medical care is to be reached.¹⁶

The United States Public Health Service, Division of Public Health Methods, seemed to think this ratio was rather utopian; hence, they suggest a practical benchmark of one physician per 1,000 persons.

If 1:1,000 is a somewhat realistic standard for adequate physician supply, then, as suggested in previous sections of this thesis, there are several reasons to suggest that a lower ratio

¹⁶Mott and Roemer suggest that an optimal standard of physician supply should be based on an examination of the average incidence of illnesses of all types, and a consideration of the professional time required for proper diagnosis and treatment, as well as for essential preventive services.

would be required in rural areas. Some of the reasons alluded to throughout this thesis include a higher volume of sickness and physical impairment in rural areas. This situation is accompanied by a greater need for preventive services, a larger volume of maternity cases, and probably most important, an ostensible lack of auxiliary persons and specialists which would, if present, lessen the load of the general practitioner normally found in rural areas.

Given the above situation in rural areas, H. T. Robb-Smith¹⁷ has commented that it would appear appropriate to expect a supply increase of 25 percent in rural areas. This would be a ratio of one physician per 750 persons, to match the adequacy in urban areas with a ratio of 1:1,000.

Since the figures referred to are dated, it would seem fair to say that increases in procedural efficiency has allowed for improvement in adequacy. In addition, some cases are referred to specialists located in urban areas. Therefore, for purposes of this study, an adequacy ratio in rural areas of one physician per 800 persons will be used. The same ratio will be employed for dentists.

While it may seem inappropriate to the reader to use an established standard over two decades old, this author feels justified in doing so after reviewing a 1972 article published in the Journal of the American Medical Association entitled "Manpower

¹⁷Smith's discussion can be found in Mott and Roemer, 1948, p. 156.

Needs by Speciality" (Mason, 1972). The article deals with what various prepayment groups such as Health Insurance Plan (HIP) and Kaiser-Permanente consider to be an optimum physician population ratio.

Table 19 gives a complete breakdown of the six large prepayment groups.

It can be seen that the optimum physician-population ratios vary from a low of 1:978 to a high of 1:1,118 with the average for all six groups being 1:1,061.

The article points out some distinctive features of the self-contained health service systems which are important when determining an optimum ratio. Mason (1972) states that,

On close scrutiny, one finds that five of the six plans are not as self-contained as one at first believes. Two of the groups, which do not provide hospital care as part of their benefit structure, do not have anesthesiologists on their staffs; two groups purchase dermatologists' services from specialists outside their group. . . ." (Mason, 1972, p. 1625-1626)

What Mason is referring to is the fact that if the units were truly "self-contained," they would probably have to lower the optimum physician-population ratio below what it is now.

Mason also states in his article that, "It is generally accepted that the elderly (over 65) utilize medical services at a much higher rate than other segments of the population." (Mason, 1972, p. 1625) In fact, the critical concern of the different plans when establishing optimum ratios was the percentage of members over 65 years of age. Table 19 indicates that of the six various plans the one with the highest percent of persons over 65 was Health Insurance Plan (HIP) with 9.6 percent. Compare this

Table 19. Membership size, percent age distribution, and optimum physician population ratios for six large prepayment groups, 1970*

| Plan | Membership Enrollment | Age Distribution (percent) | | | Optimum physician population ratio |
|---------------------------------|-----------------------|----------------------------|-------|---------|------------------------------------|
| | | Under 19 | 19-64 | Over 65 | |
| Health Insurance Plan (HIP) | 780,000 | 38.0 | 52.4 | 9.6 | 1:1,000 |
| Kaiser-Permanente (Portland) | 145,091 | 39.1 | 54.3 | 6.6 | 1:1,200 |
| Kaiser-Permanente (Oakland) | 962,000 | 40.4 | 55.4 | 4.2 | 1:978 |
| Kaiser-Permanente (Los Angeles) | 900,000 | 41.1 | 54.8 | 4.1 | 1:1,000 |
| Puget Sound | 136,000 | 38.0 | 54.3 | 7.7 | 1:1,070 |
| Group Health Association | 75,500 | 39.6 | 56.5 | 3.9 | 1:1,118 |

*Information taken from Mason, 1972, "Manpower Needs by Speciality." Journal of the American Medical Association.

figure with that of the study area where 23.1 percent of the respondents were over 65 years of age and credence is provided for the optimum standard in rural areas of 1:800.

The ratio of hospital beds presumed to be adequate was set by the Committee on the Costs of Medical Care at 4.62 per 1,000 population for urban areas. This Lee-Jone standard has been established separately for rural areas at 2.0 or 3.0, an average of 2.5 per 1,000. This standard was set in recognition of lower rural usage of hospitals.¹⁸

It should be evidenced that a double standard is present in the above standard. The standard did, however, take into consideration actual hospital bed usage in the past and factors contributing to such usage. Since there is some evidence (Mott and Roemer, 1948) to suggest that the utilization of hospital care is associated closely with purchasing power, it seems evident that rural people will not, at least in the near future, increase usage; hence, the separate standard of 2.5 per 1,000 will be used as a minimum standard of adequacy, at least for the present study.¹⁹

¹⁸This standard was based on the incidence of illness found to occur in a general population group and an estimate of the volume of hospitalization required to handle it.

¹⁹The requirement of facilities for convalescent care, as well as for the general care of chronic disease cases, has led some rural provinces in Canada, i.e. Saskatchewan, to plan for ratios of 6.0 or 7.0 beds per 1,000 persons. It is significant also that the National Hospital Survey and Construction Act (see Chapter 28 in Mott and Roemer, 1948) authorizes state plans in the states with low population density to provide for ratios of 5.0 and 5.5 beds per 1,000 persons, compared with an overall ratio of 4.5 per 1,000 in other states.

With the above mentioned established standards, we now turn to an examination of what actually exists in the three-county study area of Piute, Wayne, and Beaver counties.²⁰

Beaver County with a land area of 2,587 square miles had a 1970 population of 3,800 and an approximate population density of 1.4 persons per square mile. The County has three practicing physicians, all general practitioners, one in Beaver City and two in Milford City; and two practicing dentists, one each in Beaver and Milford.²¹

With regard to hospitals and hospital beds, Beaver County has two hospitals. The Beaver Valley Hospital has 10 beds and the Milford Valley Memorial Hospital has 26 beds with 47.6 percent and 61.0 percent utilization, respectively. The utilization rate is not surprising when it is learned that Beaver County has a hospital bed-patient ratio of 1:105 which is far above the minimally adequate standard of 2.5:1,000.

When the aforementioned standards of adequacy are used it becomes evident that Beaver County is inadequate with regard to physician-patient ratio with an existing ratio of approximately 1:1,260 compared to an adequate ratio of 1:800. Concerning dentists the situation is even worse with an existing ratio of 1:1,900 compared to an adequate ratio of 1:800.

²⁰Adequacy will be figured on a county basis.

²¹This thesis will deal exclusively with doctors, dentists, and hospital beds. If the reader wishes to know about other auxiliary personnel and particular facilities, he is referred to the various Health Profiles for each county published by the Office of Comprehensive Health Planning, 888 South 200 East, Salt Lake City, Utah 84114.

When attention is turned to the two remaining counties of the study area the situation changes considerably. Wayne County with a land area of 2,489 square miles had a 1970 population of 1,483 for an approximate population density of 1.6 per square mile. In contrast to Beaver County, Wayne County has no doctors, no dentists, nor any hospital beds. The situation in Piute County is synonymous to that in Wayne County. Piute County has a land area of 735 square miles and a 1970 population of 1,164 for an approximate density of approximately 6.3 persons per square mile. Again, Piute County has no doctors, no dentists, nor any hospital beds. Table 20 gives a summary of the above data.

Table 20. Established adequacy standards for rural areas compared to existing facilities by county (ratio)

| | Doctors | Dentists | Hospital Beds |
|------------|---------|----------|---------------|
| Standard | 1:800 | 1:800 | 1:400 |
| Wayne | 0:1,483 | 0:1,483 | 0:1,483 |
| Piute | 0:1,164 | 0:1,164 | 0:1,164 |
| Beaver | 1:1,260 | 1:1,900 | 1:105 |
| Utah State | 1:1,043 | 1:1,754 | 1:230 |

Given the above figures it is ostensible that the entire study area has an inadequate level of health services when compared to an established standard.

If one recalls an earlier section of this chapter where it was demonstrated that the people in Beaver County felt they were being adequately served with regard to health services, it is clear that there is a wide discrepancy between the measure of the existing adequacy on an established standard basis and the measure of perceived adequacy of the consumer in Beaver County. An explanation for this phenomenon can be found in reference group theory, more specifically in the concept of relative deprivation. Merton (1964) in discussing the use of the concept of relative deprivation as utilized in The American Soldier suggests that it is always used for the same theoretical purpose, that is as an interpretive intervening variable. It is in this sense that it is used in this thesis.

In its present context the concept of relative deprivation will be used with emphasis being placed on relative deprivation rather than on relative deprivation. Its major function, as Merton (1964, p. 229) suggests, is, ". . . that of a provisional after-the-fact interpretative concept which is intended to help explain the variation in attitudes expressed. . .," in this case by occupants of various, geographically proximate counties in southern Utah.

It could be hypothesized that the people in Beaver County consider themselves to be of similar status, in many respects, as the people in the other two counties of the study area (Wayne and Piute). In essence, the people in Beaver County are using the people of Wayne and Piute County (as well as other rural Utah people) as their reference group (social interaction between them not being

implied); and one would conjecture that this would be the case in many other respects such as education, law enforcement, etc.

It follows, given the aforementioned frame of reference, that the residents in Beaver County feel they are less deprived, relatively, or relatively advantaged with regard to health-related services, as compared to many other rural Utah areas.

This appears to be what is taking place since the people in Beaver County generally agree that the services are adequate, but when asked if they would be willing to spend money to improve the facilities, thus touching on absolute deprivation, they are generally willing.

It could be hypothesized that if the situation was altered and the residents of Beaver County were asked to compare their existing services with those of urban areas as opposed to rural areas the antithesis would be found; or, in other words, the Beaver County residents would perceive themselves as more deprived (relative) to the reference group of urban areas. Further research in this area could be used to help document the validity of reference group theory.

CHAPTER V

SUMMARY AND CONCLUSIONS

The American Medical Association has posited that a maldistribution of physicians, dentists, nurses, hospital beds, and other health resources leaves some rural communities without immediate access to medical care. The problems faced by the residents of these rural areas tend to be heightened by an aging population, an above average degree of poverty, and a geographic location characterized by low to sparse population density.

The above paragraph implies that various organizations are vitally concerned about problems faced by the 54 million Americans living in rural areas in 1972. It is also apparent that while some degree of concern has been expressed about the various health hazards facing rural America, most of the actual attention in the past has been focused on the negative aspects, i.e. death rate, morbidity rate. While this attention to negative factors may have been a necessary starting point for development of policy in the past, it now appears that something in addition to it should be taken into consideration in order to develop standards acceptable to an industrialized nation in the latter part of the twentieth century.

In line with the thinking above, various individuals (Garceau, 1966; Lee, 1967; Bible, 1970) have suggested that a measure of adequacy other than simply one of number of beds per given number

of population should be developed if conditions requisite to effective planning of health service delivery systems are to become a reality.

While many have voiced major concern about the lack of a realistic measure of adequacy for health services, few, if any, have undertaken the task of developing such a measure. It appears to this author that a continued procrastination in attempting to develop an adequacy measure would be an error of major proportion on the part of the sociologist, particularly proponents of applied sociology. Therefore, this research was undertaken with three major objectives in mind. The first objective was to develop a measure to determine if the residents of rural Utah perceive themselves as lacking adequate health services and in the event that the existing services are perceived as inadequate, the second objective was to determine the extent of the perceived inadequacy. The third objective dealt with a comparison of the perceived perception of adequacy of the general population to that of the professional population and to that of the established standard of the United States Public Health Service in order to determine what degree of consensus exists between the various measures of adequacy.

The methodology for obtaining the data necessary for development of the three above mentioned measures of adequacy involved three separate procedures. For the first measure of adequacy, that of the general population, it was necessary to develop an interview schedule which would allow for collection of germane information from a selected sample of 303 individuals in three

southern Utah counties, Piute, Wayne, and Beaver. The interviews were administered by trained interviewers in the home of the respondents. It is the data obtained from the above mentioned sample with which this thesis is most concerned.

The data gathering process for the second measure, that of the professional population, required the development of a questionnaire to be mailed to a selected sample of physicians. The sample was chosen on the basis of the responses of the general population to the question: What is the location of the physician you most often visit? Through the above mentioned procedure it was possible to gain access to information from 16 physicians, 69.5 percent of the initial sample, which would allow for comparisons of perception of adequacy between professional physicians and the clientele whom they serve.

The information necessary for development of the third measure, an established standard set by a recognized organization, required an extensive review of the literature in the field of health services. This secondary data analysis procedure resulted in an established standard set by the United States Public Health Service, Division of Public Health Methods in 1942. More recent data (Mason, 1972) lent credence to the old standard; hence, an established standard of one physician per 800 population was used as an optimum physician-population ratio for purposes of this research. After the data collection and processing had been completed an analysis of the data was undertaken, and the results were presented in Chapter IV. A summary of these findings will be presented below.

Findings of the Research

Perception of adequacy of the general sample

With regard to the perception of adequacy of the general population, the research demonstrated clearly that there were major differences when controlling for county. The vast majority of respondents, 100 percent in Wayne County and 96 percent in Piute County, perceive the quality of available services as poor as opposed to Beaver County respondents where over 80 percent perceived their services as either good or excellent.

The data suggested that the extreme variance in the perceptions of adequacy between the various counties could not be explained by time and distance factors. This appears to be the case because a large majority of the subjects mentioned necessity as the factor which determined the frequency with which a physician is visited. Approximately 94 percent of the subjects mentioned this as a primary factor. It is possible, however, that the above figures are misleading to the extent that the perception of necessity varies according to availability of service. In other words, what one person perceives as warranting a visit to a physician would tend to be different in Piute and Wayne counties as compared to Beaver County with the person in Beaver County visiting a physician more frequently and at an earlier stage of illness than those persons in the other counties with less available services. Research which would validate or invalidate such an assumption should, in the author's opinion, be given serious thought.

While the above data acknowledge the perceived existence of a problem with regard to availability of adequate health facilities in rural Utah, they do not lend much insight into the degree of seriousness with which the problem is perceived. In an attempt to facilitate a ranking of perceived problems, the respondents were asked to identify the three major disadvantages of living in their particular community. Results showed that the people in Wayne and Piute counties were vitally concerned about the lack of adequate health services mentioning it most often as a major disadvantage followed closely by lack of jobs for the young people of the community. The results in Beaver County, on the other hand, demonstrated the relative satisfaction with the existing services evidenced by the fact that lack of adequate health services ranked ninth among 15 possible disadvantages.

The results presented above were explained by reference group theory, more specifically by the theory of relative deprivation. It would appear that the residents of Beaver County--having access to two hospitals, three physicians, two dentists, and various other health-related personnel--feel relatively advantaged when using as their reference group various other southern Utah communities which are far less fortunate, having limited or in some cases no access to health services in their own communities. Once again, further research in this area is long overdue.

The above data confirm the fact that residents of Piute and Wayne counties are dissatisfied with available facilities but, at the same time, it appears as if Beaver residents are generally satisfied with what now exists. This would, however, seem to be

an unwarranted assumption when account is taken of the fact that in all three counties of the study area people are more willing to pay increased taxes to provide better health and medical services than any other service.

Along the same lines, respondents in Beaver and Piute counties were more willing to have the State or Federal government spend more money to improve health and medical service than any other service. In Wayne County approximately 91 percent were willing to have the State or Federal government spend money on health services, but it placed second with approximately 92 percent expressing a willingness to have the State or Federal government spend more to upgrade law enforcement.

The author believes that the above findings may be among the most important of the research, this being the case since people in Piute and Wayne counties appear to be cognizant of their inabilities (economically) to deal effectively with the array of problems which they face. With regard to community services, this author posits that the research presented here demonstrates that the people in Piute and Wayne counties, and conceivably those in most other rural Utah communities, are asking for help in developing adequate services. The challenge to contribute to such development should not be bypassed by the social scientists.

Perception of adequacy of the physician sample

The data summarized above attest to the fact that the residents of Piute and Wayne counties perceive their health services as substantially less adequate than they desire them to be; and while

Beaver County residents are less negative than those in Piute and Wayne counties, there is also some evidence to suggest that the adequacy of the existing services in that County is below what some residents desire it to be. When attention is turned to a perception of adequacy of the physicians in rural Utah, there is a reversal in findings. When the physicians were asked how serious the problem of availability of adequate medical services is in their area, five of nine said there was a minor problem or no problem at all with only one recognizing it as a serious problem. Similarly, when the physicians were asked to rate their community as a place with adequate health facilities, seven of nine rated the services as either good or excellent with the remaining two rating the services as either fair or poor. The same tendency for the physicians to perceive the services as adequate was further evidenced by the fact that lack of adequate health facilities was mentioned only once as a community problem placing it well down the line of problems facing the various communities.²²

It is ostensible from the review of findings that there are vast differences between the perception of the general population and the physicians with regard to adequacy of services. It has been argued (mainly by professionals) that the lay individual is

²²When reviewing the findings of the research, account should be taken of the fact that the physicians were responding to the situations in their own area and not necessarily Piute and Wayne counties. Had the physicians been asked to rate the services in these two counties, the responses may have been very different. There is reason to believe, however, given the responses of the dentist sample, that the doctors of medicine may perceive the existing services as substantially more adequate than the recipients of the services, even in their own immediate area.

not qualified to judge adequacy of service and that they, the professional in the field, should, given their knowledge and expertise, be the ones to judge whether or not a populace is being served effectively. The findings presented in this thesis would seem to raise some question as to the objectivity with which a professional, at least a medical doctor, is capable of evaluating himself and his colleagues. The question is further heightened by the fact that the doctors of dental surgery included in the sample tended to perceive the adequacy of service as somewhat less than desirable. For example, six of seven dentists rated the problem of availability of adequate medical service as either a moderate or serious problem. One rated it as a minor problem. As opposed to the medical doctors, three of seven dentists rated the services available to the various communities as either fair or poor. The remaining four rated the service as good.

Finally, the dentists mentioned the problem of adequate medical facilities as a problem facing their communities more often than any other problem with the single exception of availability of jobs for young people.

The discrepancy between the medical doctor and the dentist population might be explained several ways, but it seems logical to suggest that (1) either the dentist population is more objective about the quality of service being offered than is the medical doctor population, or (2) the dentists do not consider themselves as being included in the health services to the same degree as do the medical doctors; hence, they are less inclined to be on the defensive.

Due to the fact that there is a discrepancy not only between the medical doctor population and the general populace, but also between the medical doctors and the dentists with regard to perception of adequacy of service, it would seem appropriate to research the problem further to determine whether or not other knowledgeable people in the health field, i.e. nurses, perceive the existence of the problem similar to that of the general population or more similar to the medical doctor perception.

Adequacy of existing services as determined by a comparison to an established standard

The final measure of adequacy was to compare what physically exists in each county of the study area with an established adequacy standard set by a recognized organization. The standard used for purposes of the research reported in this thesis was 1:800 (physician-population ratio). The aforementioned ratio is unique in the sense that it is an optimum, rather than a minimum ratio; and an optimum physician-population ratio has, to the author's knowledge, never been used in research of this nature.

The data presented in Table 14 do, as the saying goes, "speak for themselves." It is obvious that Piute and Wayne counties with no doctors, no dentists, and no hospital beds, are being inadequately served.²³ Therefore, the question becomes: What can be

²³The reader is referred to an article by Merl Coon (Florida State University, 1969) entitled "Inadequacies and Inequalities in Medical Services: A Review and Critique," p. 8-9, for a discussion of some of the problems encountered in using various political units as units of analysis.

done to help rectify a serious situation such as the one existing in the two counties mentioned above?

The data of most interest in this section deal with the fact that Beaver County has a medical doctor-population ratio of 1:1,260 and a dentist population ratio of 1:1,900. This is obviously far below what was used as an optimum ratio for this study; but, nevertheless, a ratio which seems to satisfy the residents of Beaver County in most cases.

Conclusions

The findings summarized in this chapter indicate that there is a large degree of consensus between the perceived inadequacy of the health services of the general population in Piute and Wayne counties and the inadequacy demonstrated by the comparison of existing services to an optimum supply of physicians necessary for a population of the size present in the study area. The physician population serving the two counties perceive the existing services as excellent or good in most cases. There is some question, however, as to whether or not the physicians were including Piute and Wayne counties as areas being served by adequate services. With regard to Beaver County the opposite situation is present with the perception of the general population and that of the physician population being very similar, with both sectors perceiving the services as satisfactory. When the existing services are compared to the optimum ratio used for this research, the situation is reversed and the services are no longer adequate

except with regard to number of hospital beds per one thousand population.

Given the basic premise of this thesis that the consumer of a service should be the final judge of the adequacy of a service, it must be concluded that the services available to Beaver County residents are at least minimally adequate while those available to Piute and Wayne counties are inadequate to no small degree.

In light of the above findings, it would seem that, at a minimum, services available to Piute and Wayne counties should be upgraded to the extent that the clientele in the area consider themselves adequately served.

While many would say the sociologist has no place in helping to establish adequate medical facilities in a community, the present author takes the opposite position. This view was expressed by Stensland (1965) when he posited,

. . . that health is the core of the steadily changing human community. The crucial difference in the future will be the extent to which the science of medicine can be effectively used in the community. For this reason. . . the effective use of the science of medicine depends on the extent to which the medical scientist can work productively with the social scientist whose task it is to explore and understand the human community. (In Coon, 1969, p. 25-26)

The implications the above quote have for sociologists involved in community development research are clear. The data presented in this thesis could be used as a starting point for involvement of sociologists into the health service field.

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APPENDIXES

Appendix A

Interview Schedule Administered to Rural Sample

INTERVIEW SCHEDULE ADMINISTERED
TO RURAL SAMPLE

1. How many years have you lived in this community? _____
(number of years)
2. How well satisfied are you with living in this community?
(Circle number)
 1. Not at all satisfied
 2. Not very much satisfied
 3. Pretty much satisfied
 4. Very much satisfied
3. Suppose you could live anywhere you wanted in Utah or even outside of the State. Please look at the map and indicate where you would most like and where you would least like to live. (Circle number of one choice in each column.)

| <u>Most like to live</u> | <u>Least like to live</u> | |
|--------------------------|---------------------------|---|
| 1 | 1 | 5-County area of Beaver, Iron, Washington, Kane, and Garfield |
| 2 | 2 | 4-County area of Carbon, Emery, Grand, and San Juan |
| 3 | 3 | 6-County area of Wayne, Piute, Sevier, Sanpete, Juab, and Millard |
| 4 | 4 | Northeastern Utah area of Duchesne, Uintah, and Daggett |
| 5 | 5 | Central Utah area of Utah, Wasatch, and Summit |
| 6 | 6 | Salt Lake-Tooele area |
| 7 | 7 | 3-County area of Davis, Weber, and Morgan |
| 8 | 8 | Northern Utah area of Box Elder, Cache, and Rich |
| 9 | 9 | Outside of State |

3. a. Within the area you chose, which county or community would you most like to live in? _____

(ASK THE FOLLOWING THREE QUESTIONS TO RESPONDENTS WHO SELECT AN AREA OTHER THAN WHERE THEY NOW LIVE:)

4. What is it that makes the area selected more attractive than where you now reside?

1. _____
 2. _____
 3. _____

5. What sacrifices would you be willing to make in order to live in the area selected?

1. I would go there only at a level of living equal to or better than I now have.
 2. I would be willing to take up to a 10 percent cut in my level of living if I could live there.
 3. I would be willing to take over a 10 percent cut in my level of living if I could live there.

6. What are the reasons you have not made the move?

1. _____
 2. _____

7. Now, would you rate your community on each of the following:

| | Excellent | Good | Fair | Poor |
|---|-----------|------|------|------|
| 1. As a place to raise a family | () | () | () | () |
| 2. As a place with adequate medical and health facilities | () | () | () | () |
| 3. Quality of schools and other educational facilities | () | () | () | () |
| 4. Recreational opportunities (parks, etc.) | () | () | () | () |
| 5. Opportunities for cultural refinement (theatre, art, etc.) | () | () | () | () |
| 6. Friendliness of the people | () | () | () | () |
| 7. Quality of religious life | () | () | () | () |
| 8. Availability of good jobs for young people | () | () | () | () |
| 9. Opportunity for earning a liveable income | () | () | () | () |
| 10. Availability of suitable housing | () | () | () | () |
| 11. Adequacy of law enforcement | () | () | () | () |

7. (Continued)

| | <u>Excellent</u> | <u>Good</u> | <u>Fair</u> | <u>Poor</u> |
|---|------------------|-------------|-------------|-------------|
| 12. Access to outdoors and wide-open spaces | () | () | () | () |
| 13. Absence of a polluted environment | () | () | () | () |
| 14. Availability of good shopping facilities | () | () | () | () |
| 15. Effectiveness of local and county governments in meeting community problems | () | () | () | () |

8. Now, look over the above list and indicate which three of the 15 items are the most positive characteristics or the major advantages of living in your community.

Major advantages

- _____
- _____
- _____

9. Which three are the most negative characteristics of your community or the major disadvantages of living here?

Major disadvantages

- _____
- _____
- _____

10. Concerning each of the items we have discussed, would you say the situation in your community is: getting better, about the same as it has always been, or getting worse?

| | <u>Getting better</u> | <u>About the same</u> | <u>Getting worse</u> |
|---|-----------------------|-----------------------|----------------------|
| 1. As a place to raise a family | () | () | () |
| 2. As a place with adequate medical and health facilities | () | () | () |
| 3. Quality of schools and other educational facilities | () | () | () |

10. (Continued)

| | <u>Getting better</u> | <u>About the Getting</u> | |
|---|-----------------------|--------------------------|-------|
| | | same | worse |
| 4. Recreational opportunities (parks, etc.) | () | () | () |
| 5. Opportunities for cultural refinement (theatre, art, etc.) | () | () | () |
| 6. Friendliness of the people | () | () | () |
| 7. Quality of religious life | () | () | () |
| 8. Availability of good jobs for young people | () | () | () |
| 9. Opportunity for earning a liveable income | () | () | () |
| 10. Availability of suitable housing | () | () | () |
| 11. Adequacy of law enforcement | () | () | () |
| 12. Access to outdoors and wide-open spaces | () | () | () |
| 13. Absence of a polluted environment | () | () | () |
| 14. Availability of good shopping facilities | () | () | () |
| 15. Effectiveness of local and county governments in meeting community problems | () | () | () |

11. Below is a list of services which frequently require taxes to support and maintain. Would you be willing to pay more taxes for these services if you knew that money would be spent in your area?

| | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 1. To provide better health and medical services | () | () |
| 2. To improve the quality of the schools and other educational facilities | () | () |
| 3. To provide more jobs for local residents | () | () |
| 4. To develop local industry | () | () |
| 5. To improve recreational opportunities such as parks, swimming pools, etc. | () | () |
| 6. To upgrade law enforcement | () | () |
| 7. To support better training for local government officials | () | () |
| 8. To provide opportunities for better housing | () | () |
| 9. To help clean up pollution | () | () |
| 10. To provide opportunities for cultural refinement (theatre, art, etc.) | () | () |

12. Would you be in favor of the federal or state government spending more public funds for any of these services?

| | YES | NO |
|--|-----|-----|
| 1. To provide better health and medical services | () | () |
| 2. To improve the quality of the schools and other educational facilities | () | () |
| 3. To provide more jobs for local residents | () | () |
| 4. To develop local industry | () | () |
| 5. To improve recreational opportunities such as parks, swimming pools, etc. | () | () |
| 6. To upgrade law enforcement | () | () |
| 7. To support better training for local government officials | () | () |
| 8. To provide opportunities for better housing | () | () |
| 9. To help clean up pollution | () | () |
| 10. To provide opportunities for cultural refinement (theatre, art, etc.) | () | () |

I WOULD NOW LIKE TO READ A SERIES OF STATEMENTS TO YOU AND WOULD LIKE FOR YOU TO TELL ME IF YOU AGREE OR DISAGREE WITH THAT STATEMENT. FOR EACH STATEMENT I READ WOULD YOU TELL ME IF YOU STRONGLY AGREE, DIS-AGREE, OR STRONGLY DISAGREE WITH THAT STATEMENT. (SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree)

- | | |
|---|-----------|
| 13. This community is good enough as it is without starting any new community improvement programs. | SA A D SD |
| 14. This used to be a better community to live in. | SA A D SD |
| 15. The schools in this community are good enough as they are. | SA A D SD |
| 16. People won't work together to get things done in this community. | SA A D SD |
| 17. I feel very much that I belong here. | SA A D SD |
| 18. The quality of health services available to this community is good enough as it is. | SA A D SD |
| 19. We should do all we can to actively promote more industry for this community. | SA A D SD |
| 20. Community improvements are fine if they don't increase taxes. | SA A D SD |
| 21. A good citizen should be willing to assume leadership in a community improvement program. | SA A D SD |
| 22. Generally speaking, people in this community tend to be receptive to changes and new ideas. | SA A D SD |

23. People who question the old and accepted way of doing things usually end up causing trouble. SA A D SD
24. Most old fashioned ideas hinder a person's chance of being successful. SA A D SD
25. The old ways of doing things create more problems than they solve. SA A D SD
26. People do not pay enough attention to the good things of the past. SA A D SD
27. Modern ways of doing things are better than the ways of the past. SA A D SD
28. A person should always be willing to try new ideas and new ways of doing things. SA A D SD

NOW, WE WOULD LIKE TO TALK MORE SPECIFICALLY ABOUT HEALTH SERVICES IN THIS AREA.

29. Concerning the question of lack of health services, how serious would you say the problem is now in this area? (Circle one)
1. Serious problem
 2. Moderate problem
 3. Minor problem
 4. No problem
30. Do you believe the problem of adequate medical services has: (Circle one)
1. Worsened
 2. Stayed about the same
 3. Improved
31. Do you feel the situation will: (Circle one)
1. Worsen
 2. Stay about the same
 3. Improve in the future (say five years)
32. What is the reason for your answer to number 31? (Why do you believe this will be the case?)
1. _____
 2. _____
 3. _____

33. What do you believe to be the most important reasons for the lack of medical services in this area?
1. _____
 2. _____
 3. _____
34. In your opinion, what do you think should be done to help alleviate the problem of lack of adequate health services?
1. _____
 2. _____
 3. _____
35. Would you be willing to patronize a person such as someone who has had experience in the Medical Corps of the Army but does not hold the M.D. degree as a means to help alleviate the problem of lack of doctors?
1. Yes
 2. No
36. Do you believe that a person must hold the M.D. degree before he is allowed to work with people to help alleviate the problem of lack of doctors?
1. Yes
 2. No
37. Would you be willing to accept industry moving into the community, even if it brought pollution and some undesirable people, if it also brought medical services with it?
1. Yes
 2. No
38. Would you be willing to accept a tax levy of up to two mills being placed on the community as a means to get money to help build and staff a hospital?
1. Yes
 2. No
39. Would you be willing to contribute to a scholarship fund which would send someone through medical school with the understanding that he would, upon completion, return to this community to practice medicine for five years.
1. Yes
 2. No

40. Approximately how often do you visit a physician? (Circle one)
1. Once every six months
 2. Six months to one year
 3. One-two years
 4. Over two years
41. What are the main factors which determine how frequently you visit a physician?
1. _____
 2. _____
 3. _____
42. Have you ever experienced a need for medical services or care that you were not able to receive?
1. Yes
 2. No
- a. If yes, why were you unable to receive the necessary service? (Circle answers)
1. Trained medical personnel were not available.
 2. Time and distance factors were too great.
 3. The financial cost would have been too great.
 4. Other (list) _____
 5. Other (list) _____
43. Approximately how many miles must you travel in order to receive what you feel is adequate medical service?
- _____ miles
44. What is the location of the doctor you most often visit?
45. Would you visit a doctor more often if one was more available?
1. Yes
 2. No
46. Would you say that you visit a general practitioner more often than a specialist?
1. Yes
 2. No
47. If you have ever visited a specialist, were you sent to him by a general practitioner?
1. Yes
 2. No

48. Would you consult a specialist more often if there was one closer to this community?
1. Yes
 2. No
49. Which of the following best describes at what stage you most often consult a doctor? (Circle one)
1. As soon as a problem is suspected.
 2. After using non-prescription medicines to try and remedy the problem.
 3. After consulting a druggist and friends and using non-prescription medicines.
 4. Only when it is absolutely necessary.
50. How often do you normally visit a dentist? (Circle one)
1. Once every six months
 2. Six months to one year
 3. One-two years
 4. Over two years
51. Approximately how many miles must you travel in order to receive what you feel is adequate dental service?
- _____ miles
52. What is the location of the dentist you most often visit?
- _____
53. Would you visit a dentist more often if there was one practicing in this community?
1. Yes
 2. No
54. Would you be in favor of a more lenient standard for licensure as a means of acquiring a greater supply of doctors, dentists, and registered nurses?
1. Yes
 2. No
55. Which of the following do you believe should be responsible for providing adequate health services for this area? (Circle one)
1. Local community
 2. State government
 3. Federal government

56. Why do you feel this way? _____

57. Sex of respondent: (Circle one)
1. Male
 2. Female
58. Your present marital status: (Circle one)
1. Never married
 2. Married
 3. Divorced
 4. Separated
 5. Widowed
59. Number of children in each age group:
- _____ under 5 years of age
 _____ 5-13
 _____ 14-18
 _____ 19-24
 _____ 25 and older
60. What is your present age? _____ (years)
61. If married, what is the present age of spouse? _____ (years)
62. What is the highest level of education that you have completed?
 (Circle one)
1. No formal education
 2. Some grade school
 3. Completed grade school
 4. Some high school
 5. Completed high school
 6. Some college
 7. Completed college (specify major) _____
 8. Some graduate work (more than 4 years of college)
 9. Graduate degree (M.S. or Ph.D.--specify degree and major)

63. What is the highest level of education that your spouse has
 completed? (Circle one)
1. No formal education
 2. Some grade school
 3. Completed grade school
 4. Some high school
 5. Completed high school
 6. Some college
 7. Completed college (specify major) _____

63. (Continued)

8. Some graduate work (more than 4 years of college)
 9. Graduate degree (M.S. or Ph.D.--specify degree and major)
-

64. Are you presently: (Circle one)

1. Employed full time
2. Employed part time
3. Unemployed
4. Retired
5. Full time homemaker

65. Is your spouse presently: (Circle one)

1. Employed full time
2. Employed part time
3. Unemployed
4. Retired
5. Full time homemaker

66. Please describe the usual occupation of the principle wage earner in your household. If retired, describe the usual occupation before retirement.

Title: _____

Kind of work you do: _____

Name of company or business: _____

67. How satisfied are you with your job as a way of life?
(Circle one)

1. I am completely satisfied.
2. I am quite satisfied.
3. I am not really satisfied with what I am doing.
4. I am completely dissatisfied with what I am doing.

68. What was your approximate family income from all sources before taxes in 1971? (HAND CARD TO RESPONDENT) (Circle one)

1. Less than \$3,000
2. \$3,000 to \$4,999
3. \$5,000 to \$6,999
4. \$7,000 to \$9,999
5. \$10,000 to \$12,999
6. \$13,000 to \$15,999
7. Over \$16,000

69. What is your religious preference? (Circle one)

1. L.D.S.
2. Catholic
3. Protestant (specify denomination) _____
4. Other (specify) _____
5. None

70. Do you consider yourself to be: (Circle one)

1. Republican
2. Democrat
3. Independent
4. Other (specify) _____

71. Which of the following best describes your usual stand on political issues: (Circle one)

1. Conservative
2. Middle-of-the-road
3. Liberal
4. Radical

Appendix B

Questionnaire Submitted to Physician Sample

QUESTIONNAIRE SUBMITTED TO

PHYSICIAN SAMPLE

1. How many years have you been practicing in this community?
_____ years
2. How well satisfied would you say you are with your practice here? Please circle the answer that best describes your feelings?

1. I am very satisfied with my practice here and would not want to leave.
2. I am generally satisfied but would move if the right opportunity came along.
3. I am dissatisfied and would prefer to practice elsewhere.

3. What would you say are the major advantages of a medical or dental practice in this area?

4. What are the major disadvantages?

5. Concerning the availability of adequate medical services in this area, would you say there is a:

1. Serious problem
2. Moderate problem
3. Minor problem
4. No problem

6. What do you consider to be the most serious health problem this area faces (i.e. inadequate medical facilities, distance, attitudes of the people, etc.)?

7. Do you believe the availability of adequate medical services in the last five years has:
1. Worsened
 2. Stayed about the same
 3. Improved
8. Do you believe the situation in the next five years will:
1. Worsen
 2. Stay about the same
 3. Improve in the future
9. What is your reason for your answer to no. 8?
1. _____
 2. _____
 3. _____
10. If the availability of adequate health services is a problem, what, in your opinion, are the reasons for this?
1. _____
 2. _____
 3. _____
11. In your opinion, what do you think should be done to help alleviate the problem of lack of adequate service?
1. _____
 2. _____
 3. _____
12. Do you believe that a person must hold the M.D. degree before he is allowed to work with people to help alleviate the problem of lack of doctors?
1. Yes
 2. No
13. Do you feel people in this area would visit a doctor or dentist more often if one were more readily available?
1. Yes
 2. No

14. What do you feel the most important variables are that affect the frequency with which people in this area visit a physician? (Please list factors in order of their importance.)
1. _____
 2. _____
 3. _____
15. Would you be in favor of a more lenient standard for licensure as a means of acquiring a greater supply of doctors, dentists, and registered nurses?
1. Yes
 2. No
16. Which of the following do you believe should be responsible for providing adequate health services for this area?
1. Local community
 2. State government
 3. Federal government
17. Why do you feel this way? _____

18. Some people feel that the Federal Government should provide for a national health insurance plan something like medicare (covering surgical fees, doctors' fees, emergency care and hospital bills, etc.) that would cover all age and income groups in the United States. How do you feel about this idea?
1. Very good
 2. Good
 3. Fair
 4. Poor
 5. Very poor
19. Suppose that the Federal Government provides such a health insurance program. Some people have made the following statements concerning such a proposal. Will you tell us the extent to which you agree or disagree with these statements about such a program.
- | | Strongly
Agree | Agree | Disagree | Strongly
Disagree |
|--|-------------------|-------|----------|----------------------|
| A. National Health Insurance would make it easier for people to obtain all types of health care service. | () | () | () | () |

- | | <u>Strongly</u>
<u>Agree</u> | <u>Agree</u> | <u>Disagree</u> | <u>Strongly</u>
<u>Disagree</u> |
|---|---------------------------------|--------------|-----------------|------------------------------------|
| B. National Health Insurance would interfere with the right of each doctor to treat his patients as he sees fit. | () | () | () | () |
| C. National Health Insurance is necessary because private health insurance companies have not done an adequate job. | () | () | () | () |
| D. National Health Insurance would be too restricting of the right of people in choosing doctors, hospitals, dentists, etc. | () | () | () | () |
20. Some people have suggested that private companies could provide the national health insurance instead of the Federal Government. The government might help the private companies get it started, but they would not control the companies. How do you feel about this idea?
1. Very good
 2. Good
 3. Fair
 4. Poor
 5. Very poor

The next few questions deal more specifically with your attitudes toward your community as a place to live.

21. Overall, how well satisfied would you say you are with living in this community?
1. Not at all satisfied
 2. Not very much satisfied
 3. Pretty much satisfied
 4. Very much satisfied

22. Suppose you could live anywhere you wanted in Utah or even outside of the state. Please circle from the following list the number corresponding to the area where you would most like and where you would least like to live.

| <u>Most like to live</u> | <u>Least like to live</u> | |
|--------------------------|---------------------------|---|
| 1 | 1 | 5-County area of Beaver, Iron, Washington, Kane, and Garfield |
| 2 | 2 | 4-County area of Carbon, Emery, Grand, and San Juan |
| 3 | 3 | 6-County area of Wayne, Piute, Sevier, Sanpete, Juab, and Millard |
| 4 | 4 | Northeastern Utah area of Duchesne, Uintah, and Daggett |
| 5 | 5 | Central Utah area of Utah, Wasatch, and Summit |
| 6 | 6 | Salt Lake-Tooele area |
| 7 | 7 | 3-County area of Davis, Weber, and Morgan |
| 8 | 8 | Northeastern Utah area of Box Elder, Cache, and Rich |
| 9 | 9 | Outside of State |

23. Within the area you chose, which county or community would you most like to live in? _____

24. If you selected an area other than where you now reside, what is it that makes that area more attractive to you?

1. _____
2. _____
3. _____

25. Now, would you rate the community where you now live on each of the following:

| | Excellent | Good | Fair | Poor |
|---|-----------|------|------|------|
| 1. As a place to raise a family | () | () | () | () |
| 2. As a place with adequate health facilities | () | () | () | () |
| 3. Quality of schools and other educational opportunities | () | () | () | () |
| 4. Recreational opportunities (parks, etc.) | () | () | () | () |
| 5. Opportunities for cultural refinement (theatre, art, etc.) | () | () | () | () |
| 6. Friendliness of the people | () | () | () | () |
| 7. Quality of religious life | () | () | () | () |
| 8. Availability of good jobs for young people | () | () | () | () |
| 9. Opportunity for earning a live-able income | () | () | () | () |
| 10. Availability of suitable housing | () | () | () | () |
| 11. Adequacy of law enforcement | () | () | () | () |
| 12. Access to outdoors and wide-open spaces | () | () | () | () |
| 13. Absence of a polluted environment | () | () | () | () |
| 14. Availability of good shopping facilities | () | () | () | () |
| 15. Effectiveness of local and county governments in meeting community problems | () | () | () | () |

26. Now, look over the above list and indicate which three of the 15 items are the most positive characteristics or the major advantages of living in this community (list numbers of desired responses).

1. _____
2. _____
3. _____

27. Which three are the most negative characteristics of this community or the major disadvantages of living here (list numbers of desired responses)?

1. _____
2. _____
3. _____

28. Concerning the items listed below, would you say the situation in this community is: getting better, about the same as it has been, or getting worse?

| | <u>Getting better</u> | <u>About the same</u> | <u>Getting worse</u> |
|---|---------------------------|---------------------------|--------------------------|
| 1. As a place to raise a family | () | () | () |
| 2. As a place with adequate medical and health facilities | () | () | () |
| 3. Quality of schools and other educational facilities | () | () | () |
| 4. Recreational opportunities (parks, etc.) | () | () | () |
| 5. Opportunities for cultural refinement (theatre, art, etc.) | () | () | () |
| 6. Friendliness of the people | () | () | () |
| 7. Quality of religious life | () | () | () |
| 8. Availability of good jobs for young people | () | () | () |
| 9. Opportunity for earning a liveable income | () | () | () |
| 10. Availability of suitable housing | () | () | () |
| 11. Adequacy of law enforcement | () | () | () |
| 12. Access to outdoors and wide-open spaces | () | () | () |
| 13. Absence of a polluted environment | () | () | () |
| 14. Availability of good shopping facilities | () | () | () |
| 15. Effectiveness of local and county governments in meeting community problems | () | () | () |

Appendix C

Cover Letter to Physician Sample



UTAH STATE UNIVERSITY · LOGAN, UTAH 8432

COLLEGE OF HUMANITIES, ARTS AND SOCIAL SCIENCES

DEPARTMENT OF SOCIOLOGY
AND SOCIAL WORK
801-752-4100

Dear Dr.:

The Department of Sociology at Utah State University, in cooperation with Western Regional Agricultural Experiment Stations, is conducting a research project dealing with availability of health services in the Western States. We are particularly interested in the opinions of informed professionals in the health field on the delivery of health services in their own areas as well as their attitudes toward the community where they practice.

We would very much appreciate it if you would take a few minutes and complete the enclosed questionnaire for our study. A stamped, addressed envelope is included for your convenience in returning the questionnaire to us.

Please feel free to make any additional comments you would care to on the questionnaire. It is not necessary that your name be included as complete anonymity is assured all of our respondents.

Once the data have been tabulated, we would be most happy to make them available to you or other interested persons involved in health planning in your area.

Your cooperation is very much appreciated.

Sincerely,

Appendix D

Follow-up Letter to Physician Sample



UTAH STATE UNIVERSITY · LOGAN, UTAH 8432

COLLEGE OF HUMANITIES, ARTS AND SOCIAL SCIENCES

DEPARTMENT OF SOCIOLOGY
AND SOCIAL WORK
801-752-4100

Dear Dr.:

Approximately two weeks ago a questionnaire was mailed to some fifty physicians throughout the state of Utah. Your name was selected at random to be included in the sample.

In the event that you did not receive the first questionnaire, let me briefly explain that the research project is being conducted by the Department of Sociology at Utah State University, in cooperation with Western Regional Agricultural Experiment Stations. The project is concerned with availability of health services in the Western States. Particular emphasis is being given to the opinions of informed professionals in the health field on the delivery of health services in their own area as well as their attitude toward the community where they practice.

Since anonymity is assured all respondents, we have no way of knowing if you have responded to the first questionnaire. If this is the case, please disregard this request. If for some reason the first questionnaire did not reach you, or if you did not complete the first questionnaire, we would appreciate it if you would take a few minutes and complete the enclosed questionnaire. A stamped, addressed envelope is included for your convenience in returning the questionnaire to us.

If you have additional comments not covered in the questions, please feel free to include them on the questionnaire.

Your cooperation is very much appreciated.

Sincerely,

VITA

Michael K. Miller

Candidate for the Degree of

Master of Science

Thesis: Toward a Measurement of the Adequacy of Health Services
in Rural Utah

Major Field: Sociology

Biographical Information:

Personal Data: Born at Panguitch, Utah, December 3, 1948,
son of Bern and Lyle Dodds Miller; married Elaine
Farnsworth September 7, 1968.

Education: Attended elementary school in Panguitch, Utah;
graduated from Panguitch High School in 1967; received
the Bachelor of Science degree from Utah State University,
with a major in sociology, in 1971; completed requirements
for the Master of Science degree, specializing in sociol-
ogy, at Utah State University in 1972.