A DESCRIPTIVE STUDY OF PRESENT HEALTH PRACTICES IN SELECTED RURAL OKLAHOMA COMMUNITIES: IN CONJUNCTION WITH A SERIES OF STUDIES RELATING TO A PHYSICIAN'S ASSISTANT PROGRAM

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CHAPTER I

INTRODUCTION

The purpose of this paper is multi-dimensional. It is an attempt to determine present health practices in rural communities which do not have a doctor, and at the same time offer suggestions which might strengthen a proposal for a "physician's assistant" program.[1]

This project was designed to investigate the feasibility of placing a "physician's assistant" in towns which are isolated from adequate medical personnel. Previous research, by Fred L. Fry and Douglas Allen, on the acceptability of the former military independent duty corpsman as a medical resource in rural Oklahoma communities was completed in May, 1970, and Edward Rousselot completed a study in January, 1971, on general practitioners acceptance of a "physician's assistant." Together with past research, it is anticipated that this study will provide certain insights in determining what kind of communities offer favorable situations for a "physician's assistant" program.

Studies in this area are crucial because the United States is facing a critical shortage in all areas of the Health Manpower field. Rural communities are being hit especially hard because of the increase

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[1]This study is being partially funded by the Manpower Research Center, Oklahoma State University, under a grant from the U. S. Department of Labor. Professor John C. Shearer, Economics Professor, is head of the Center.

in the number of specialists and because doctors are, for the most part, no longer willing to make after - hour calls except in emergencies. According to Dr. Thomas A. Points, formerly of the Oklahoma University School of Medicine, the physician - to - patient ratio in Oklahoma is approximately 1/1200 compared to 1/865 nationwide. "In many rural areas of the state, this relationship is far worse. For example, one county in western Oklahoma with a population of 6,000 has no licensed Medical Doctor (M.D.)."[2]

The Health Manpower Commission has stated, after considerable investigation, that "were it not for the presence of foreign physicians within our medical care system, our critical shortage of physicians would be much more evident."[3] Moreover, Professor Rayack, in his study entitled "Professional Power and American Medicine," utilizes conventional price theory to offer rather convincing proof of a shortage of physicians' services in the United States. He states:

> That...a useful definition of shortage, i.e., one that makes it possible to test for its presence, is that a shortage exists when the quantity of physicians' services supplied increases less rapidly than the quantity demanded at income received by physicians in the recent past. As the relative incomes of physicians rises, there will be attempts to substitute less costly services for the services of physicians. There...has been a persistent marked rise in the

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[2]Fred L. Fry, "A Study of the Acceptability of the Former Military Independent Duty Corpsman as a Medical Resource in Rural Communities," Unpublished Thesis, Oklahoma State University, May, 1970.

[3]Report of the National Advisory Commission on Health Manpower, Volume II, Washington, D.C.: U. S. Government Printing Office, 1967.

> relative income of physicians and...the pressures of unsatisfied demand have been channeled into a search for less costly substitutes; i.e., they show that a shortage does currently exist.[4]

Professor Rayack provides a qualitative answer in economic terms with respect to the "direction of effect" that implies the necessity for a greater growth in the supply of physicians' services. Acknowledging that elasticity of demand "over the range of medical prices relevant to the problem cannot be constructed from any of the data available to us," he concludes that "for such large segments of the demand curve, point elasticity is not applicable and out elasticity is subject to much too great an error to be useful."[5] He asserts that the microanalysis employed in his study "does not depend upon the precision with which a quantitative demand curve for medical services can be derived," and quotes Professor Friedman in that the "major value (of the concept of the demand schedule) is as a means of organizing knowledge and thinking about a problem, and as a "guide to qualitative answers about the direction effects."[6] In the summary of its report, the Health Manpower Commission found: (1) no clear statement of national purpose regarding the objectives of the medical education system.[7]

Dr. John Cooper, President of the Association of American Medical Colleges, has a possible answer concerning why this shortage persists:

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[4]Elton Rayack, "Professional Power and American Medicine: The Economics of the American Medical Association." (Cleveland: The World Publishing Company, 1967), p. 108.

[5]Ibid., pp. 128-29.

[6]Ibid., p. 129.

[7]Report of the National Advisory Commission on Health Manpower, Volume II, Washington, D.C.: U. S. Government Printing Office, 1967.

> People expect more from the medical profession because they know it can do more for them. People have more money to spend on health. We have an elaborate system of private and public health insurance and government benefits that make it possible for more people to pay for medical care. That increases the demand for services.[8]

If the demand for health services appears serious nationwide, it is critical for rural areas. As the older physicians retire or die there is no longer a supply available to replenish the loss. As the cost for attending medical school continues to increase, more and more young doctors are finding the metropolitan areas attractive for establishing their practice. Many communities in Oklahoma have a hospital and clinic without a doctor to run them. In the community where the writer was raised the city is furnishing to the doctor, free of charge, both the clinic and hospital; and even then they are unable to attract another physician.

The literature supports the conclusions that the United States has faced and continues to be confronted with a critical shortage of physicians' services, partly as a result of a lack of competent planning in the health manpower area since the end of World War II, partly as the demand for health services has increased more rapidly than the supply of these services and to a large degree as a result of restrictive practices employed by the American Medical Association and other organizations influenced by this association. Moreover, the emphasis on medical specialization seems to have contributed to the shortage of general physicians' services in this country.

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[8]"Growing Crisis in Health Care," U. S. News and World Report, November 3, 1969, p. 70.

With the preceding generalizations in mind, the need for finding suitable substitutes in the health field is of paramount importance. The shortage of medical services in rural areas might be reduced considerably by utilizing the already trained, independent military duty corpsman. As Mr. Fry states:

> The independent-duty specialist, as opposed to the aid man or medic is trained while in the service to competently perform services ranging from routine physicials to traumatic surgery. Because of his wide range of capabilities, the individual is here referenced as a Medical Care Technician--a term connoting wide knowledge of aspects of medical care although not a licensed physician. Although the Medical Care Technician is not perceived as a replacement for the Medical Doctor, he is seen as a third hand, reaching specifically into the rural area to provide in-community medical care.[9]

This possible solution to the demand for medical services serves a dual purpose. First, the rural community would be provided with adequate medical care. Secondly, the use of the former military medical corpsman in the rural community would provide career area employment for many servicemen who desire to remain in the medical field upon the termination of their military service. At the present time, these highly trained personnel are, with the exception of a few menial tasks, not in the labor force. In addition to pursuing a less desirable occupation, there is considerable cost to the individual and to society for retraining them for another specialty.

Collins and Bonnyman offer positive support for implementation of a "physician's assistant" program:

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[9]Fred L. Fry, "A Study of the Acceptability of the Former Military Independent Duty Corpsman as a Medical Resource in Rural Communities," Unpublished Thesis, Oklahoma State University, May, 1970.

> The Armed Forces of the United States have long trained corpsmen to assist in the delivery of health services to both members of the military and to their dependents. During each of the last four years about 32,000 men have gone through the combined basic schools for corpsmen of the Army, Navy, and Air Force. A smaller but still significant number go on for further training which has direct applicability to delivery of primary care. Of those some become quite highly trained. For example, the Army Special Forces and Navy "B" Corpsmen receive 1,400 to 1,600 hours of formal medical training. The fact that in every recent year over 30,000 Corpsmen leave the service, 3,000 to 6,000 of whom have had significant independent duty or primary care experience, has prompted a great interest in the possibility of channeling these men into civilian health careers. In response to this interest the National Academy of Sciences has produced an informative study on the subject, and the Department of Health, Education, and Welfare has developed Operation MEDIHC to coordinate activities with the Department of Defense's Project Transition in order to place corpsmen in civilian health jobs or training programs leading to such jobs.[10]

Even though discharged corpsmen will probably not be able to meet the total demand for services in the Health Manpower area, they offer a potential source of supply which has yet to be utilized to any large extent. This paper, by providing a descriptive analysis of three doctorless communities in Oklahoma, will be an attempt to shed new light into the possibilities of a "physician's assistant" program. In analyzing the data, special attention will be directed towards identifying characteristics of communities which make them more desirable locations for this type of program, and furthermore to provide clues into what the community thinks would be desirable characteristics of a "physician's assistant"; thus enhancing the probability to successfully perform primary medical care in said communities.

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[10]Clagett M. Collins and G. Gordon Bonnyman, "Physician's Assistants and Nurse Associates: A Review," January, 1971 (The Institute for the Study of Health and Society, 1050 Potomac Street, N.W., Washington, D.C.)

The methodology which was used in the study is discussed in Chapter II. The two succeeding chapters are devoted to interpretation of the data, with Chapter III dealing with general demographic data of the communities and Chapter IV containing a discussion of health practices in these communities. The final chapter will discuss the implications of the study, with respect to a proposed "physician's assistant" training program.

CHAPTER II

METHODOLOGY

Three towns were selected for the study, Mulhall, Leedey, and Lamont. None of the communities had a full-time physician, although Leedey does have a part-time doctor (one who holds clinic one afternoon per week). The towns were selected according to their geographic location, size, and because they were previously sampled in Fry's study concerning the potential acceptance of a "physician's assistant."[11] The geographic location was hypothesized by the writer as being one of the major variables in determining towns which should be selected for the study. Factors such as the nearest doctor from the community, the number of doctors in that city, whether or not a hospital was available in the nearest city, and the number of cities, with doctors, approximately the same distance from the community to be selected.

The towns range in population from 300 to approximately 600. Mulhall is located 13 miles from the nearest city, Guthrie, which has several doctors and a hospital. The next closest cities with physicians are both 20 miles from Mulhall, and are equipped with hospitals. Leedey is 35 miles from Elk City, where the nearest physician and hospital are located; whereas the next closest town with a doctor and hospital is

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[11]Fred L. Fry, "A Study of the Acceptability of the Former Military Independent Duty Corpsman as a Medical Resource in Rural Communities," Unpublished Thesis, Oklahoma State University, May, 1970.

Clinton which is a distance of 42 miles from Leedey. Lamont is 14 miles from Tonkawa which has two doctors, one nearing retirement, but does not have a hospital. Blackwell, with a hospital and several doctors, is 23 miles from Lamont.

Since these towns are too small to have their own municipal power companies, it was difficult to obtain a complete listing of all residents of the given communities (community being defined as those people who live within the city limits). To circumvent this problem a map of each town was obtained from abstract companies located in the county seats. The maps were laid off in blocks, but the individual houses were not identified. The writer visited the towns and plotted the houses, in their proper location, on each of the maps. Each house was then numbered. A predetermined "N" of fifty households was selected for each town. The sample was selected by consulting a table of random numbers, drawing 50 numbers between one and the total number of houses for each town. Ten additional numbers were selected for each town to allow for houses which were unoccupied and for people who refused to answer. In Mulhall there was a total of 119 houses, thus the sample contained 42% of the houses. Leedey, however, contained 239 houses, resulting in a 21% sample, while in Lamont there were 243 houses which also represented 21% of the population. Across all communities, the sample consisted of 25% of the total number of households.

From the sample of 150 households, only four people refused to be interviewed. Six people were in rest homes; and eleven houses which had originally been plotted on the maps were vacant. Thus 86% of the initial households to be interviewed were sampled with the remaining 14% being taken from the list of additional numbers.

Questionnaires were used for obtaining the information, (see Appendix A) which were administered in a personal interview by the writer and a co-worker. The co-worker had assisted the writer in the pilot study and was quite familiar with the research project, as well as the methodological procedure which was to be employed. The respondents were not permitted to fill out the questionnaire by themselves. In order to obtain a greater degree of acceptance from the community, a letter which briefly explained the project (see Appendix B) was passed out to all residents in each town. In each of the towns people from the community were used to pass out the letters. In Leedey and Lamont boys who delivered the local newspaper were used to disseminate the information. In Mulhall a lady who worked at the bank, along with her son, passed out the letters. The writer also distributed letters in each community to the bank, post office, and grocery store, leaving approximately fifty letters at each place. During the process of interviewing both the writer and co-worker asked the people if the letter was beneficial in terms of their being accepted. Without a single exception they were told that it was; and several people indicated that had the letters not been used they would not have allowed themselves to be interviewed.

The interviewing was conducted after April 15, 1971, the deadline for the 1970 income tax to be paid, in order that more accurate answers could be obtained on the questions concerning income and medical expenditures. The interviewing was done over a three week period, with one week being devoted to each town. The letters were passed out on Monday of each week with the interviewing being conducted on Thursday and Friday.

The interview schedule was pretested in December, 1970 (see Appendix C). From this study it was possible for the writer to pre-code several items which had previously been open-ended; for example the question concerning the reason for not always going to a physician when ill was pre-coded into eight categories. In other instances certain categories were added to allow for a more complete analysis; e.g., the question on types of family illnesses was reworded to make a distinction between children and adult illnesses, while certain other items, that were redundant, were eliminated.

The principal method used for statistical analysis will be percentages and frequency counts. Since the study is primarily descriptive, each town will be analyzed separately and then collapsed and analyzed together. Certain "key" variables will be analyzed using the chi square goodness of fit test and gamma.

CHAPTER III

RESULTS AND INTERPRETATIONS: GENERAL DEMOGRAPHIC DATA

The purpose of this chapter is to analyze the communities in terms of general demographic patterns. It was anticipated that these towns would be representative of many other small communities which are found throughout Oklahoma. All of the variables in this chapter, with the exception of family income and the number of children presently living at home, will be analyzed by looking only at characteristics of heads of households within each town.

A breakdown of marital status for each town is presented in Table I. The percentage of heads of household in each category of marital status is quite similar in each town. As expected, a majority of the heads of household are currently married (66% in Mulhall, 58% in Leedey, and 62% in Lamont). Typical of small, Midwestern communities, the next highest category of persons in each town are the widowed, with 26% of the households being headed by a widowed person in Mulhall, 38% in Leedey, and 30% in Lamont. Only a very small percentage of persons in any of the towns are single or divorced; i.e., only 7% of the total sample is single or divorced.

Although the marital status was quite similar in all three communities, some interesting differences between towns are observable regarding education (Table II). In Mulhall 42% of the sample was high school graduates or above, in Lamont 48%, but in Leedey only 30% was in

TABLE I

AN ANALYSIS OF MARITAL STATUS; BY TOWN
(IN PERCENTAGES)

Marital Status	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
Married	66.0	58.0	62.0	62.0
Widowed	26.0	38.0	30.0	31.3
Single	4.0	2.0	6.0	4.0
Divorced	4.0	2.0	2.0	2.7

this category. As expected, a high percentage of people had an eighth grade education or less (54% in Leedey, 46% in Mulhall, and 30% in Lamont). While none of the communities had a high proportion of people with at least college educations, there did appear to be some noticeable differences; i.e., Mulhall had only 4% in this category, whereas Leedey and Lamont had 12%. A possible reason for this might be due to the fact that Leedey and Lamont both have high schools in the town but Mulhall does not, and the major portion of those interviewed with degrees, were teachers. From the above discussion, one might conclude that people in Lamont tend to have more formal education than those in Mulhall or Leedey.

The three towns were remarkably similar when age was analyzed (Table III); i.e. more than 67% of the entire sample, with little variation between communities, were over 56 years of age and even more astounding was the fact that 46% were over 65 years. At the same time, the proportion of young people was consistent in all of the towns. The over-all average included 14.7% who were under 35 years of age and only

2% under 25. Thus the age distribution in these towns appears to be somewhat typical of other rural communities (Cf. census data) with a large proportion of older people and an extremely small number of young household heads.

TABLE II

A DESCRIPTION OF EDUCATION; FOR HEADS OF HOUSEHOLD (IN PERCENTAGES)

Education	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
Some grade school	28.0	14.0	6.0	16.0
Eighth grade graduate	18.0	40.0	24.0	27.3
Some high school	12.0	16.0	22.0	16.6
High school graduate	26.0	14.0	22.0	20.7
Some college	12.0	4.0	14.0	10.0
College graduate	4.0	4.0	6.0	4.7
Post graduate	0.0	8.0	6.0	4.7

After having analyzed age in the preceding paragraph, the results in Table IV (number of children residing at home) were not too surprising. The major finding appears in category number one where, for all towns, 68% no longer have children living at home. No one had more than five children living at home and only 11.3% had three or more children.

For occupations, the ten categories which appeared on the questionnaire, were collapsed into seven (Table V). The rationale for doing this was to allow for a more logical breakdown. The writer collapsed service workers with semi-skilled workers (category number 2). The two professional categories were collapsed into one because many of the

TABLE III

AN ANALYSIS OF AGE; BY HEADS OF HOUSEHOLD
(IN PERCENTAGES)

Age	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
25 or under	2.0	2.0	2.0	2.0
26-35	20.0	10.0	8.0	12.7
36-45	8.0	10.0	6.0	8.0
46-55	8.0	10.0	12.0	10.0
56-65	18.0	24.0	22.0	21.3
66-75	22.0	32.0	28.0	27.3
76 or above	22.0	12.0	22.0	18.7

TABLE IV

NUMBER OF CHILDREN IN THE FAMILY WHO ARE PRESENTLY
RESIDING AT HOME (IN PERCENTAGES)

Number of Children	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
None	62.0	66.0	76.0	68.0
One	14.0	8.0	8.0	10.0
Two	14.0	10.0	8.0	10.7
Three	6.0	10.0	6.0	7.3
Four	2.0	6.0	0.0	2.7
Five	2.0	0.0	2.0	1.3

people who were interviewed, and had a bachelor's degree, were school teachers who also had a master's degree. Housewives were added to the retired category because, after closer investigation, the writer found that all of the questionnaires which had this category checked, consisted of women who were over 65 years old. One of the major findings in this table appeared in the retired category which contained 38% of the total sample. Thus over one-third of the population in these communities are not in the labor force. As one would expect, from the discussion of education and income, a rather large percentage of the 150 heads of household interviewed were unskilled or semi-skilled workers; i.e., when the retired category was removed from the table, leaving only those in the labor force, Leedey had 37.5%, Lamont 44.4%, and Mulhall 47.1%. Typical also, was the small proportion of people in the professional classification; from a low of 4% in Mulhall to a high of only 12% in Leedey.

TABLE V

A DESCRIPTIVE ANALYSIS OF OCCUPATION; FOR HEADS OF HOUSEHOLD (IN PERCENTAGES)

Occupation	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
Retired	32.0	36.0	46.0	38.0
Semi-skilled	24.0	4.0	18.0	15.3
Small businessmen	10.0	20.0	10.0	13.3
Skilled	22.0	6.0	10.0	12.7
Unskilled	8.0	20.0	6.0	11.3
Professional	4.0	12.0	10.0	8.7
Large businessman	0.0	2.0	0.0	0.7

There did appear to be differences between communities when family income was analyzed (Table VI). Mulhall had 52% who were earning $5,000 or above, while Leedey and Lamont had only 40%. The combined average, across all towns, showed that 56% were earning less than $5,000 per year. Over 39% were making less than $3,000, which probably indicates a high proportion of people drawing social security benefits or who are on welfare. Also noteworthy was the small proportion of families who were earning over $10,000 per year; i.e., 16% in Leedey, 14% in Mulhall, and 12% in Lamont.

TABLE VI

TOTAL FAMILY INCOME FOR 1970
(IN PERCENTAGES)

Income	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
$1,000 or under	6.0	6.0	0.0	4.0
$1,001-$3,000	28.0	34.0	44.0	35.3
$3,001-$5,000	14.0	20.0	16.0	16.7
$5,001-$7,500	18.0	12.0	16.0	15.3
$7,501-$10,000	20.0	12.0	12.0	14.7
$10,001-$15,000	12.0	10.0	12.0	11.3
Over $15,000	2.0	6.0	0.0	2.7

The three towns used in this study appear to exhibit few dramatic differences regarding demographic patterns. Although some differences were noted, it would seem that the communities have many more common characteristics than they have differences; and their common characteristics tend to be similar to those of many rural, Midwestern communities.

CHAPTER IV

RESULTS AND INTERPRETATIONS OF COMMUNITY HEALTH PRACTICES

This chapter will analyze variables which relate to present health practices in those communities surveyed. The variables have been analyzed by using percentages and frequency counts for describing medical practices, while tests of significance have been used to determine relationships between medical practices and demographic variables.

A breakdown of the approximate number of times families consulted a doctor in 1970 is presented in Table VII. Although the percentage of people who had not consulted a doctor was quite similar among communities, (Mulhall 8%, Leedey 6%, Lamont 8%), there was a major difference for those households who had seen a physician 13 or more times; i.e., in Mulhall 34%, Lamont 54%, and Leedey 66%. The highest percentage in any single category was those people who had been to a doctor between two and six times, (24%); the next highest percentage, surprisingly, was those who had seen a doctor over 31 times (22.7%). This becomes rather hard to explain since one would assume a more regular progression through the various categories.

In order to analyze family illnesses more carefully, children were segregated from adults and illnesses were broken down into three categories: minor, major, and accident (appendix C shows a breakdown of all reported illnesses). Minor and major illnesses were primarily divided according to their degree of severity; e.g., a cold or the flu

TABLE VII

THE APPROXIMATE NUMBER OF TIMES FAMILY CONSULTED A DOCTOR IN 1970 (IN PERCENTAGES)

Number of Times	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Average (N=150)
None	8.0	6.0	8.0	7.3
Once	2.0	0.0	8.0	3.3
2-6	34.0	20.0	18.0	24.0
7-12	22.0	8.0	12.0	14.0
13-20	12.0	28.0	18.0	19.3
21-25	0.0	8.0	6.0	4.7
26-30	2.0	4.0	8.0	4.7
Over 31	20.0	26.0	22.0	22.7

was considered minor; cancer or heart attacks would be major; accidents included such problems as broken legs and burns. Although many illnesses such as arthritis or infection were problematic for classification, they were categorized according to the researchers' subjective interpretation at the time of the interview, according to degree of severity.

A breakdown of children's illnesses is presented in Table VIII. Only 48 households, of the 150, had children living at home; i.e., 19 in Mulhall, 17 in Leedey, and 12 in Lamont. As was expected, minor illnesses were more prevalent than either major or accidental and injurious illnesses; i.e., 77% had at least one minor illness, 25% had a major illness, while 23% were involved in an accident or injury. Since such a large proportion of all children's illnesses are of a minor nature, a great deal of the doctors' time is spent on cases which do not require

the level of training required of an M.D. These findings lend support to the research by Silver which found that in more than three fourths of all visits to the physician the assistant was able to perform the required tasks.[12]

Although no major differences among towns are noted in Table IX which shows the number of times a doctor was visited for children's illnesses, there were some notable similarities. Thirty-three percent had not been to a doctor for a minor illness; however, of the remaining 77%, nearly 50% had seen a physician between four and ten times. Seventy-five percent had not been to a doctor for a major illness, and 77% had not been to one for an accident.

Table X shows an analysis of adults who had illnesses in 1970. The table suggests that people in Leedey are having more illnesses than either those in Mulhall or Lamont; i.e., in Mulhall 48% of the sample had at least one minor illness, in Lamont 52%, but in Leedey 68% of the households had one or more minor illnesses. Leedey was also slightly higher for major illnesses with 58% having at least one, followed by Lamont with 52%, and Mulhall with 50%. Whereas Leedey had more minor and major illnesses, Lamont had the most accidents and injuries with 12% having one or more, Leedey having 10%, with Mulhall having only 6%. Typical of what one would expect, adults had fewer accidents than did children; i.e., across all towns, only 10.6% of the adults had been in an accident; while for children, 23% were involved in an accident or injury.

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[12]H. K. Silver and J. A. Hecker, "The Pediatric Nurse-Practitioner and the Child Health Associate: New Type of Health Professionals," Journal of Medicine, ed. 45, 1970, pp. 171-76.

TABLE VIII

NUMBER OF HOUSEHOLDS WITH CHILDREN'S ILLNESSES IN 1970 (THE "N" FOR EACH TOWN REPRESENTS ONLY THOSE FAMILIES WITH CHILDREN)

	Mulhall (N=19)	Leedey (N=17)	Lamont (N=12)	Average (N=48)
Minor				
None	6 (31.6)*	6 (35.3)	4 (33.3)	16 (33.3)
One	8 (42.1)	2 (11.8)	6 (50.0)	16 (33.3)
Two	4 (21.1)	6 (35.3)	1 (8.3)	11 (22.9)
Three	1 (5.2)	3 (17.6)	0 (0.0)	4 (8.3)
Four	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Five	0 (0.0)	0 (0.0)	1 (8.3)	1 (2.1)
Major				
None	14 (73.7)	13 (76.5)	9 (75.0)	36 (75.0)
One	4 (21.1)	4 (23.5)	3 (25.0)	11 (22.9)
Two	1 (5.2)	0 (0.0)	0 (0.0)	1 (2.1)
Accident and/ or Injury				
None	14 (73.7)	13 (76.5)	10 (83.3)	37 (77.1)
One	5 (26.3)	4 (23.5)	1 (8.3)	10 (20.8)
Two	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Three	0 (0.0)	0 (0.0)	1 (8.3)	1 (2.1)

*The number in parenthesis is the percentage.

TABLE IX

NUMBER OF TIMES A DOCTOR WAS VISITED FOR CHILDREN'S ILLNESSES (BY HOUSEHOLDS)

	Mulhall (N=19)	Leedey (N=17)	Lamont (N=12)	Total (N=48)
Minor				
None	6 (31.6)*	6 (35.3)	4 (33.3)	16 (33.3)
1	1 (5.3)	1 (5.9)	0 (0.0)	2 (4.2)
2	1 (5.3)	0 (0.0)	1 (8.3)	2 (4.2)
3	3 (15.8)	0 (0.0)	0 (0.0)	3 (6.0)
4	4 (21.0)	1 (5.9)	3 (25.0)	8 (16.7)
5-10	4 (21.0)	7 (41.2)	4 (33.3)	15 (31.3)
11-20	0 (0.0)	1 (5.9)	0 (0.0)	1 (2.1)
21-30	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
31-40	0 (0.0)	1 (5.9)	0 (0.0)	1 (2.1)
Major				
None	14 (73.7)	13 (76.5)	9 (75.0)	36 (75.0)
1	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
2	1 (5.3)	1 (5.9)	0 (0.0)	2 (4.2)
3	1 (5.3)	0 (0.0)	1 (8.3)	2 (4.2)
4	1 (5.3)	1 (5.9)	0 (0.0)	2 (4.2)
5-9	0 (0.0)	0 (0.0)	1 (8.3)	1 (2.1)
10	1 (5.3)	2 (11.8)	1 (8.3)	4 (8.3)
11-20	1 (5.3)	0 (0.0)	0 (0.0)	1 (2.1)

TABLE IX (Continued)

	Mulhall (N=19)	Leedey (N=17)	Lamont (N=12)	Total (N=48)
Accident and/ or Injury				
None	14 (73.7)	13 (76.5)	10 (83.3)	37 (77.1)
1	1 (5.3)	0 (0.0)	0 (0.0)	1 (2.1)
2	0 (0.0)	2 (11.8)	0 (0.0)	2 (4.2)
3	0 (0.0)	1 (5.9)	1 (8.3)	2 (4.2)
4	1 (5.3)	1 (5.9)	0 (0.0)	2 (4.2)
5-7	2 (10.5)	0 (0.0)	0 (0.0)	2 (4.2)
8-10	1 (5.3)	0 (0.0)	1 (8.3)	2 (4.2)

*The number in parenthesis is the percentage.

A breakdown of the number of times a doctor was visited for adult illnesses is presented in Table XI. As the data in Table X suggested, households in Leedey saw a doctor more often for minor and major illnesses than did households in Mulhall or Lamont; i.e., 48% had seen a doctor at least once for a minor illness in Mulhall, 52% in Lamont, but 68% in Leedey. For minor illnesses, across all towns, 28% had seen a doctor between 5 and 10 times. Although the percentage of people who had not had a major illness in 1970 was about the same as for minor illnesses, (46% compared to 44%), people were going to a doctor more times per illness; e.g., across all communities, only 2.7% had been to a doctor for a minor illness more than 11 times and no one had been more than 50 times. In sharp contrast, 25% had seen a doctor 11 or more times for a major illness, some as many as 99 times. One explanation lies in the fact that people tend to be hospitalized more often for

TABLE X

NUMBER OF ADULTS WITH ILLNESSES IN 1970
(BY HOUSEHOLDS)

	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Minor				
None	26 (52.0)*	16 (32.0)	24 (48.0)	66 (44.0)
One	13 (26.0)	25 (50.0)	21 (42.0)	59 (39.3)
Two	11 (22.0)	8 (16.0)	3 (6.0)	22 (14.7)
Three	0 (0.0)	1 (2.0)	1 (2.0)	2 (1.3)
Four	0 (0.0)	0 (0.0)	1 (2.0)	1 (0.7)
Major				
None	25 (50.0)	21 (42.0)	24 (48.0)	70 (46.7)
One	15 (30.0)	19 (38.0)	18 (36.0)	52 (34.7)
Two	9 (18.0)	7 (14.0)	8 (16.0)	24 (16.0)
Three	1 (2.0)	2 (4.0)	0 (0.0)	3 (3.3)
Four	0 (0.0)	1 (2.0)	0 (0.0)	1 (0.7)
Accident and/ or Injury				
None	47 (94.0)	45 (90.0)	44 (88.0)	136 (90.7)
One	1 (2.0)	5 (10.0)	5 (10.0)	11 (7.3)
Two	2 (4.0)	0 (0.0)	1 (2.0)	3 (3.3)

*The number in parenthesis is the percentage.

major illnesses than for minor ailments, thus seeing a doctor at least once for each day of hospitalization. Only 9% of the sample had seen a doctor for an accident, with the majority (6.6%), going between 1 and 10 times and none more than 50 times. In summary, as previously stated, adults in Leedey tend to have more illnesses, in turn requiring them to see a doctor more often than those adults in Lamont or Mulhall. Unlike the other towns however, a doctor comes to Leedey one afternoon a week which may account for the higher number of times they are seeing a physician.

A major premise for choosing the towns in this study was based on the idea that geographical distance from the nearest doctor would be a primary determined in deciding whether or not a family would consult a doctor for an illness. Table XIIa and XIIb is a comparison of those who had an illness and didn't consult a doctor but indicated they would have gone had one been available. A breakdown of those who had an illness but did not go to a doctor is presented in Table XIIa, showing 99 households (62% of the sample) having such an illness; thirty-five of these households being in Mulhall, 31 in Leedey, and 27 in Lamont. Table XIIb utilizes the above information to determine those who would have gone if a doctor had been located in their town. Across all towns, 77.4% who had illnesses indicated they would have seen a doctor if one had been available in their town. There did appear to be a slight difference between towns; i.e., in Mulhall and Leedey 80% said yes to the above question, while in Lamont only 70% gave a positive response. Thus one is led to believe that people in communities which are relatively isolated from a physician, do not see a doctor nearly as often as they would if one were practicing in their town.

TABLE XI

NUMBER OF TIMES A DOCTOR WAS VISITED FOR ADULT ILLNESSES (BY HOUSEHOLDS)

	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Minor				
None	26 (52.0)*	16 (32.0)	24 (48.0)	66 (44.0)
1	2 (4.0)	7 (14.0)	8 (16.0)	17 (11.3)
2	7 (14.0)	4 (8.0)	3 (6.0)	14 (9.3)
3	3 (6.0)	4 (8.0)	4 (8.0)	11 (7.3)
4	3 (6.0)	5 (10.0)	2 (4.0)	10 (6.7)
5	3 (6.0)	1 (2.0)	0 (0.0)	4 (2.7)
6-10	4 (8.0)	11 (22.0)	9 (18.0)	24 (16.0)
11-20	1 (2.0)	2 (4.0)	0 (0.0)	3 (2.0)
21-50	1 (2.0)	0 (0.0)	0 (0.0)	1 (0.7)
Major				
None	25 (50.0)	21 (42.0)	24 (48.0)	70 (46.7)
1-5	8 (16.0)	6 (12.0)	6 (12.0)	20 (13.3)
6-9	5 (10.0)	4 (8.0)	2 (4.0)	11 (7.3)
10	6 (12.0)	11 (22.0)	7 (14.0)	24 (16.0)
11-20	4 (8.0)	1 (2.0)	3 (6.0)	8 (5.3)
21-40	1 (2.0)	3 (6.0)	3 (6.0)	7 (4.7)
41-70	0 (0.0)	2 (4.0)	2 (4.0)	4 (2.7)
71-99	1 (2.0)	2 (4.0)	3 (6.0)	6 (4.0)

TABLE XI (Continued)

	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Accident and/ or Injury				
None	47 (94.0)	45 (90.0)	44 (88.0)	136 (90.7)
1-4	1 (2.0)	2 (4.0)	2 (4.0)	5 (3.3)
5-10	1 (2.0)	1 (2.0)	3 (6.0)	5 (3.3)
11-20	1 (2.0)	1 (2.0)	0 (0.0)	2 (1.3)
21-40	0 (0.0)	1 (2.0)	1 (2.0)	2 (1.3)

*The number in parenthesis is the percentage.

The reasons for not going to a doctor when ill are presented in Appendix D. Although seven categories appear in the appendix, for analytical purposes, the researcher collapsed them into three areas (Table XIII); i.e., an illness not considered serious, too expensive, and inconvenient. The latter category included such reasons as the following: too far to drive, no way to get to the doctor, and unable to see a doctor. Two categories, not necessary for colds, and can cure myself, were added to "not serious enough" to form a single classification. Although some minor differences are observed between towns, the most surprising result occurred when totals of Table XIII were compared with the three town averages in Table XIIb; i.e., 59 respondents (63.4%) indicated that the reason they did not see a doctor was because the illness was not serious enough, 26 respondents (28%) indicated inconvenience, and 8 (8.6%) said it was too expensive; 72 respondents (77.4%) however, indicated they would have consulted a doctor had one been available. Thus a discrepancy exists which strongly suggests that

TABLE XIIa

THOSE WHO HAD AN ILLNESS BUT
DIDN'T CONSULT A DOCTOR

Did you have an illness	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Yes	35 (70.0)*	31 (62.0)	27 (54.0)	93 (62.0)
No	15 (30.0)	19 (38.0)	23 (46.0)	57 (38.0)

*The number in parenthesis is the percentage.

TABLE XIIb

HAD THERE BEEN A DOCTOR AVAILABLE WOULD YOU
HAVE GONE TO HIM FOR THIS ILLNESS

Would you have gone	Mulhall (N=35)	Leedey (N=31)	Lamont (N=27)	Total (N=93)
Yes	28 (80.0)*	25 (80.6)	19 (70.4)	72 (77.4)
No	7 (20.0)	6 (19.4)	8 (29.6)	21 (22.6)

*The number in parenthesis is the percentage

many of those people whose responses indicated that the illness was not serious enough or too expensive would, none-the-less, have gone to a doctor had one been available.

A breakdown of the number of respondents who have a family physician is presented in Table XIV. All but 7 households, of the 150, had a family doctor.

One of the primary concerns of this study, was to ascertain information about what doctor is consulted, how far they drive to see that doctor, and in what city the doctor has his practice. Furthermore, for the success of a "physician's assistant" program, it was hoped that the

TABLE XIII

PRIMARY REASON WHY PEOPLE DO NOT GO TO A DOCTOR FOR AN ILLNESS (BY HOUSEHOLDS)

Reason	Mulhall (N=35)	Leedey (N=31)	Lamont (N=27)	Total (N=93)
Not serious enough	21 (60.0)*	18 (58.0)	20 (74.0)	59 (63.4)
Inconvenient	9 (25.7)	10 (32.3)	7 (26.0)	26 (28.0)
Too expensive	5 (14.3)	3 (9.7)	0 (0.0)	8 (8.6)

*The number in parenthesis is the percentage.

TABLE XIV

THE NUMBER OF RESPONDENTS WHO HAVE A FAMILY PHYSICIAN (BY HOUSEHOLDS)

Do you have a family physician	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Yes	49 (98.0)*	48 (96.0)	46 (92.0)	143 (95.3)
No	1 (2.0)	2 (4.0)	4 (8.0)	7 (4.7)

*The number in parenthesis is the percentage.

residents in communities which did not have a physician would be going to a doctor in the nearest city, with a high proportion going to the same doctor. The implications from this would be two-fold; by going to the nearest city with a doctor, one would assume that geographical distance is a major factor in choosing a family physician, and secondly if a high percentage of the residents in a given community were going to a particular doctor, it would be easier to get that physician, or possibly two or three doctors, to undersign the "physician's assistant."

Although the communities are similar in many of their health practices, there appeared to be a major difference regarding their family physician and the city where he is located. Table XV shows the differential use of primary doctors in rank order percentages. By looking at the first five doctors in each town, a large discrepancy is noted; i.e., in Mulhall this would account for 83.6% of the sample, in Leedey 83.2%, but only 63.1% in Lamont. Furthermore all five of the doctors, in both Mulhall and Leedey, are located in the same cities, Guthrie and Elk City respectively, and are the nearest doctors to those communities. In contrast, the five doctors which are used most often in Lamont are located in four different cities, and only 37% of the residents are going to a doctor in the nearest town (see Appendix E for a complete listing of doctors and where they are located). Also noteworthy in Table XV is the percentage of people who are going to the same doctor; e.g., in Mulhall 38.8%, Leedey 45.8%, but only 28.3% in Lamont. Twenty-one different doctors are being consulted in Lamont, while only twelve are being seen in each of the towns of Mulhall and Leedey. Based on the variables of distance and using the same doctor, the research indicated that Leedey and Mulhall would be more favorable communities, for a "physician's assistant" program, than Lamont.

A breakdown of the primary reason for choosing a family doctor is presented in Table XVI. The percentages, for all towns, are quite similar throughout the table with the exception of the category nearest doctor; i.e., 16% of the respondents in Lamont gave this as the reason for choosing a family doctor, 12% in Leedey, but none of the respondents in Mulhall indicated this as a reason. A discrepancy was also noted in the category, like him; in Mulhall 38% gave this reason, in Leedey 28%,

TABLE XV

DIFFERENTIAL USE OF PRIMARY DOCTORS BY FAMILY
(IN RANK ORDER PERCENTAGE)

Rank	Mulhall (N=49)	Leedey (N=48)	Lamont (N=46)
1	38.8	45.8	28.3
2	16.3	14.6	13.0
3	12.2	10.4	8.7
4	12.2	8.3	8.7
5	4.1	4.1	4.4
6	4.1	4.1	4.4
7	2.0	2.1	2.2
8	2.0	2.1	2.2
9	2.0	2.1	2.2
10	2.0	2.1	2.2
11	2.0	2.1	2.2
12	2.0	2.1	2.2
13	0.0	0.0	2.2
14	0.0	0.0	2.2
15	0.0	0.0	2.2
16	0.0	0.0	2.2
17	0.0	0.0	2.2
18	0.0	0.0	2.2
19	0.0	0.0	2.2
20	0.0	0.0	2.2
21	0.0	0.0	2.2

but only 16% in Lamont. Across all towns 30% said that their family doctor was recommended by a friend or relative, 34% said they liked him or that he does a good job, and 12% indicated that he was easy to get in to see. Thus convenience, quality of care, personality, and recommendations from a trusted source tended to be the major influences in the choice of a family doctor.

TABLE XVI

PRIMARY REASON FOR CHOOSING A FAMILY DOCTOR

Reason	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Recommended by a friend or relative	16 (32.0)*	13 (26.0)	16 (32.0)	45 (30.0)
Like him	19 (38.0)	14 (28.0)	8 (16.0)	41 (27.3)
Easy to get in to see	7 (14.0)	7 (14.0)	4 (8.0)	18 (12.0)
Nearest doctor	0 (0.0)	6 (12.0)	8 (16.0)	14 (9.3)
Does a good job	4 (8.0)	2 (4.0)	4 (8.0)	10 (6.7)
Company doctor	4 (8.0)	2 (4.0)	4 (8.0)	10 (6.7)
Specialist recommended by a doctor	1 (2.0)	3 (6.0)	4 (8.0)	8 (5.3)
Used to live here	2 (4.0)	2 (4.0)	1 (2.0)	5 (3.3)
Only doctor they know	2 (4.0)	1 (2.0)	1 (2.0)	4 (2.7)

*The number in parenthesis is the percentage.

The number of households who use the nearest doctor for their family physician is presented in Table XVII. A large difference is noted in Lamont; that is, in Lamont only 37% are going to the nearest doctor, while in Mulhall 81.6% are going and in Leedey 85.4% are seeing the nearest doctor.

TABLE XVII

THE NUMBER OF HOUSEHOLDS WHO USE THE NEAREST DOCTOR

	Mulhall (N=49)	Leedey (N=48)	Lamont (N=46)	Total (N=143)
Yes	40 (81.6)*	41 (85.4)	17 (37.0)	98 (68.5)
No	9 (18.4)	7 (14.6)	29 (63.0)	45 (31.5)

*The number in parenthesis is the percentage.

A breakdown of the number of people who use the nearest doctor, only under particular circumstances, is presented in Table XVIII. Some interesting characteristics are noted in the table. Even though this was an open-ended question, only four different reasons were given: (1) for minor illnesses (52.1%); (2) in emergencies (39.1%); (3) when their family doctor was not available (4.3%); and (4) under no circumstances (4.3%). Although the sample is small (N=23), it would appear that a majority of the people will go to a doctor other than their family physician for minor illnesses and emergencies. Since 48% of all households sampled had adult minor illnesses and 68.4% had children's minor illnesses, the research indicates there is a reasonable demand for the type of medical services which a physician's assistant is qualified to perform.

TABLE XVIII

THE NUMBER OF HOUSEHOLDS WHO ONLY USE THE NEAREST DOCTOR UNDER PARTICULAR CIRCUMSTANCES (FREQUENCY COUNT)

Circumstance	Mulhall (N=4)	Leedey (N=7)	Lamont (N=12)	Total (N=23)
Minor illness	1	3	8	12 (52.1)*
Emergencies	2	3	4	9 (39.1)
Under no circumstances	1	0	0	1 (4.3)
Family doctor was not available	0	1	0	1 (4.3)

*The number in parenthesis is the percentage.

Lamont was the only community who was not using the nearest doctor a majority of the time, therefore Table XIX lists only those reasons they gave for not going to the nearest doctor. The reasons given were: (1) have doubts about his ability (17.3%); (2) don't have a hospital (17.3%); (3) go where their son and daughter live (13%); (4) specialist recommended by doctor (13%); and (5) they are not acquainted with the nearest doctor (8.7%). As noted, the other reasons given were by single households. Here again the sample is small (N=23) but the data indicate that factors such as a physician's ability, along with convenience to the patient, play major roles in the choice of a family doctor.

A breakdown of the various ways a family would pay for a medical expense of $500 or more is shown in Table XX. The towns were remarkably similar, especially in the categories of private or group insurance, medicare, and medicaid. Forty-eight percent of the sample, across all towns, had private or group insurance, 44% had medicare, and 3.3%

TABLE XIX

THE REASONS FOR NOT USING THE NEAREST DOCTOR (IN RANK ORDER)

Reason	Lamont (N=23)
Have doubts about his ability	4 (17.3)*
Don't have a hospital	4 (17.3)
Go where their son & daughter live	3 (13.0)
Specialist recommended by doctor	3 (13.0)
Don't know the nearest doctor	2 (8.7)
Like their family doctor	1 (4.4)
Difficult to get an appointment	1 (4.4)
Wife has worked for family doctor	1 (4.4)
Have always doctored there	1 (4.4)
Not as well equipped	1 (4.4)
Won't go to a Catholic hospital	1 (4.4)
No particular reason	1 (4.4)

*The number in parenthesis is the percentage.

indicated medicaid. The writer strongly suspects that the actual figure for medicare should be somewhat lower, with the difference being added to medicaid. Medicare is available to those people on social security, while medicaid is for people who are retired or disabled and quality for welfare. Because of the stigma attached to welfare and because medicare was mentioned first on the questionnaire probably account for the large difference. Only 4.7% of all families in the sample failed to have some type of insurance which would cover a major medical expenditure.

TABLE XX

PRIMARY MEANS A FAMILY WOULD PAY FOR AN ILLNESS INVOLVING AN EXPENSE OF $500 OR MORE

Ways they would pay	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
Income	3 (6.0)*	0 (0.0)	1 (2.0)	4 (2.7)
Savings	0 (0.0)	0 (0.0)	1 (2.0)	1 (2.7)
Insurance (private of group)	25 (50.0)	23 (46.0)	24 (48.0)	72 (48.0)
Medicare	21 (42.0)	25 (50.0)	20 (40.0)	66 (44.0)
Medicaid	1 (2.0)	1 (2.0)	3 (6.0)	5 (3.3)
Would have to borrow	0 (0.0)	1 (2.0)	1 (2.0)	2 (1.3)

*The number in parenthesis is the percentage.

In Table XXI the total medical expenses for 1970, per household, are presented. The towns were very similar, with the exception of Mulhall in the category of $2,001 and over; 18% of the people in Leedey had more than $2,000 in medical expenses, 16% for Lamont, but only 8% in Mulhall. Across all towns, only 3.3% of the households had no medical expenses, while 37.3% had over $1,000 in medical bills for 1970.

The preceding has described community medical practices. The analysis of data will focus upon identifying relationships between demographic characteristics of people and their medical practices. Income was compared with total medical expenses per household (Table XXII). The variables were both divided by using the median of the distributions. For income, below $5,000 was low and high income was anything above $5,000. Medical expenses of less than $500 was

TABLE XXI

TOTAL MEDICAL EXPENSES BY FAMILY, FOR 1970, EXCLUDING DENTAL OR EYE WORK

Expenses	Mulhall (N=50)	Leedey (N=50)	Lamont (N=50)	Total (N=150)
None	3 (6.0)*	1 (2.0)	1 (2.0)	5 (3.3)
Less than $100	8 (16.0)	3 (6.0)	7 (14.0)	18 (12.0)
$101-$250	13 (26.0)	10 (20.0)	10 (20.0)	33 (22.0)
$251-$500	10 (20.0)	11 (22.0)	10 (20.0)	31 (20.7)
$501-$750	6 (12.0)	7 (14.0)	6 (12.0)	19 (12.7)
$751-$1,000	0 (0.0)	2 (4.0)	1 (2.0)	3 (2.0)
$1,001-$1,250	2 (4.0)	1 (2.0)	3 (6.0)	6 (4.0)
$1,251-$1,500	3 (6.0)	3 (6.0)	0 (0.0)	6 (4.0)
$1,501-$2,000	1 (2.0)	3 (6.0)	4 (8.0)	8 (5.3)
$2,001 and over	4 (8.0)	9 (18.0)	8 (16.0)	21 (14.0)

*The number in parenthesis is the percentage.

considered low, over $500 was high. The chi square value was 14.13 and the probability was less than .005 that it occurred by chance. Phi, a measure of association, was .31. Thus the conclusion follows that people with higher incomes tend to have more medical expenses. These same variables, income and medical expenses, were analyzed holding each town constant (Table XXIII). No major differences were noted from the original relationship for collapsed totals. The chi square values in all three communities were significant at the .025 level. In Mulhall, Leedey, and Lamont, phi was .32, .33, and .35 respectively. Therefore in all three towns, as income increases medical expenses tend to increase.

TABLE XXII

THE RELATIONSHIP BETWEEN INCOME AND MEDICAL EXPENSES

Medical Expenses	N=150 Income	
	Low	High
High	24 (29)*	39 (59)
Low	60 (71)	27 (41)
	$\chi^2 = 14.13$	$p < .005$
	$\Phi = .31$	

*The number in parenthesis is the percentage.

TABLE XXIII

THE RELATIONSHIP BETWEEN INCOME AND MEDICAL EXPENSES (BY TOWN)

Medical Expenses	Mulhall (N=50)		Leedey (N=50)		Lamont (N=50)	
	INCOME					
	Low	High	Low	High	Low	High
High	4 (17)*	12 (46)	11 (37)	14 (70)	9 (30)	13 (65)
Low	20 (87)	14 (54)	19 (63)	6 (30)	21 (70)	7 (35)
	$\chi^2 = 5.42$	$p < .025$	$\chi^2 = 5.34$	$p < .025$	$\chi^2 = 5.98$	$p < .025$
	$\Phi = .32$		$\Phi = .33$		$\Phi = .35$	

*The number in parenthesis is the percentage.

In Table XXIV, education was compared with medical expenses. Here again the median was used to determine low and high education. Low education included those heads of household who were not high school graduates, whereas high education included those with high school diplomas and beyond. The chi square value was 8.84 which is significant at the .005 level and phi was .24. Thus the research indicates that as the amount of education increases medical expenses also increase. This relationship does not appear to hold constant when partialed by towns (Table XXV); i.e., it does in Mulhall and Leedey but not in Lamont. In Leedey and Mulhall the chi square value is significant at the .05 level, while in Lamont it is not significant, even at the .10 level. Phi is also higher in Mulhall and Leedey (.28 and .31) respectively, decreasing to .20 in Lamont. In conclusion it appears that in Mulhall and Leedey, as education increases medical expenses increase, while for Lamont the relationship is not significant even though the direction, as indicated by phi, remains positive.

TABLE XXIV

THE RELATIONSHIP BETWEEN EDUCATION AND MEDICAL EXPENSES

Medical Expenses	Education (N=150)	
	Low	High
High	29 (32)*	34 (57)
Low	61 (68)	26 (43)
	$\chi^2 = 8.84$	$p < .005$
	$\Phi = .24$	

*The number in parenthesis is the percentage.

TABLE XXV

THE RELATIONSHIP BETWEEN EDUCATION AND MEDICAL EXPENSES (BY TOWN)

Medical Expenses	Mulhall (N=50)		Leedey (N=50)		Lamont (N=50)	
	EDUCATION					
	Low	High	Low	High	Low	High
High	6 (21)*	10 (48)	14 (40)	11 (73)	9 (35)	13 (54)
Low	23 (79)	11 (52)	21 (60)	4 (27)	17 (65)	11 (46)
	$\chi^2 = 4.07$	$p < .05$	$\chi^2 = 4.67$	$p < .05$	$\chi^2 = 1.93$	$p > .10$
	$\Phi = .28$		$\Phi = .31$		$\Phi = .20$	

*The number in parenthesis is the percentage.

The relationship between age and medical expense is presented in Table XXVI. The median was used to distinguish between young and old age. Thus low age consisted of all heads of household who were less than 56 years old, and high included those 56 years and above. The chi square value was 13.52 and the probability was less than .005 that it was due to chance variation. Phi was a negative .30 which indicates that older people have lower medical expenses than young people. From this relationship an interesting discrepancy was observed. In the pilot study,[13] comparing the same variables, the measure of association, gamma, was a positive .41 with a significance level of .10. This resulted in a completely different interpretation; i.e., older people tend to have higher medical expenses. One possible explanation lies in

[13]Terry Bixler, "A Descriptive Study of Present Health Practices In Two Rural Oklahoma Communities," unpublished report, Oklahoma State University, December, 1970.

the way medical expenses were calculated for the two different studies. In the present study the amount of money spent for medical insurance was included as a medical expenditure, while it was not included in the pilot study. A high proportion of people in the "old" category are covered by medicare or medicaid which, depending on individual circumstances, involves little or no cash outlay. In the "young" category however, a majority of the households were covered by private or group insurance which involves an expenditure of approximately $200-$400 annually. This would naturally cause many of the people to be included in a category of high medical expense, while in the pilot study, which excluded the cost of insurance, they would have been in the "low" category.

When the same two variables, age and medical expenses, were analyzed by individual towns (Table XXVII) some differences were notable. In Leedey and Lamont the chi square values were significant at the .025 level with phi being a negative .34 for both towns. However in Mulhall the chi square value was only significant at the .10 level and phi was negative .24. Thus while the relationship between age and medical expenses is similar; i.e., there is a negative relationship between age and medical expenses, this relationship appears to be somewhat stronger in Leedey and Lamont than in Mulhall.

Table XXVIII shows the relationship between education and the number of times a household consulted a physician. The median was used to distinguish between high and low numbers of consultations; i.e., low included those families who had been to a doctor less than 13 times while high was 13 or more. The chi square value was 1.97 which was not significant at the .05 level. Phi was a .11 which indicates a weak

TABLE XXVI

THE RELATIONSHIP BETWEEN AGE AND MEDICAL EXPENSES

Medical Expenses	Age N=150	
	Low	High
High	31 (63)*	32 (32)
Low	18 (37)	69 (68)
	$\chi^2 = 13.52$	$p < .005$
	$\Phi = -.30$	

*The number in parenthesis is the percentage.

TABLE XXVII

THE RELATIONSHIP BETWEEN AGE AND MEDICAL EXPENSES (BY TOWN)

Medical Expenses	Mulhall (N=50)		Leedey (N=50)		Lamont (N=50)	
	AGE					
	Low	High	Low	High	Low	High
High	9 (47)*	7 (23)	12 (75)	13 (38)	10 (71)	12 (33)
Low	10 (53)	24 (77)	4 (25)	21 (62)	4 (29)	24 (67)
	$\chi^2 = 3.33$	$p < .10$	$\chi^2 = 5.88$	$p < .025$	$\chi^2 = 5.93$	$p < .025$
	$\Phi = -.26$		$\Phi = -.34$		$\Phi = -.34$	

*The number in parenthesis is the percentage.

positive relationship between education and the number of times a family sees a doctor. This relationship was not constant among towns when the same variables were compared in Table XXIX. In Leedey and Lamont the relationship held constant; i.e., the chi square values were not significant at the .10 level and phi was .10 in Leedey and .08 in Lamont. However in Mulhall a significant relationship appeared to exist. The chi square value was 2.75, which was significant at the .10 level, and phi was .24. Thus in Mulhall the research indicates that more education results in people seeing a doctor a higher number of times, while in Leedey and Lamont there is not a significant relationship.

TABLE XXVIII

THE RELATIONSHIP BETWEEN EDUCATION AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED

Consultations	(N=150) Education	
	Low	High
High	42 (47)*	35 (58)
Low	48 (53)	25 (42)
	$\chi^2 = 1.97$	$p > .10$
	$\Phi = .11$	

*The number in parenthesis is the percentage.

The association between education and the number of times a physician was consulted, holding age constant, is presented in Table XXX. The chi square values were not significant in either partial at the .10 level; and phi was .05 in both the partials. Thus there tends to be no

significant difference between education and the number of times a family goes to a doctor when age is held constant.

TABLE XXIX

THE RELATIONSHIP BETWEEN EDUCATION AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED (BY TOWN)

Consul-tations	Mulhall (N=50)		Leedey (N=50)		Lamont (N=50)	
	EDUCATION					
	Low	High	Low	High	Low	High
High	7 (24)*	10 (48)	22 (63)	11 (73)	13 (50)	14 (58)
Low	22 (76)	11 (52)	13 (37)	4 (27)	13 (50)	10 (42)
	$\chi^2 = 2.75$	$p < .10$	χ^2 (cor.) $= .63$	$p > .10$	$\chi^2 = .35$	$p > .10$
	$\Phi = .24$		$\Phi = .10$		$\Phi = .08$	

*The number in parenthesis is the percentage.

TABLE XXX

THE RELATIONSHIP BETWEEN EDUCATION AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED (AGE HELD CONSTANT)

Consultations	EDUCATION			
	Young (N=150)		Old	
	Low	High	Low	High
High	10 (71)*	23 (66)	32 (42)	12 (48)
Low	4 (29)	12 (34)	44 (58)	13 (52)
	χ^2 (cor.) $= .25$	$p > .10$	$\chi^2 = .26$	$p > .10$
	$\Phi = .05$		$\Phi = .05$	

*The number in parenthesis is the percentage.

Table XXXI shows the relationship between income and the number of times a doctor was consulted. The chi square value of 4.07 was significant at the .05 level. Phi was .16 indicating only a slight relationship. When the variables were partialed by town (Table XXXII) the relationship becomes specified; i.e., in Leedey and Lamont the relationship almost disappears, the chi square value not being significant at the .10 level. However in Mulhall a much stronger one is apparent. The chi square value in Lamont is 9.75 (significant at the .005 level) and phi increases to .44. Thus there appears to be a significant relationship only in Mulhall; i.e., people in Mulhall, who have higher educations, tend to go more often to the doctor. This would also indicate in Table XXXI that the town of Mulhall is probably accounting for the significant chi square in the collapsed table.

TABLE XXXI

THE RELATIONSHIP BETWEEN INCOME AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED

Consultations	Income (N=150)	
	Low	High
High	37 (44)*	40 (61)
Low	47 (56)	26 (39)
	$\chi^2 = 4.07$	$p < .05$
	$\Phi = .16$	

*The number in parenthesis is the percentage.

TABLE XXXII

THE RELATIONSHIP BETWEEN INCOME AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED (BY TOWN)

Consul-tations	Mulhall (N=50)		Leedey (N=50)		Lamont (N=50)	
			INCOME			
	Low	High	Low	High	Low	High
High	3 (13)*	14 (54)	19 (63)	14 (70)	15 (50)	12 (60)
Low	21 (87)	12 (46)	11 (37)	6 (30)	15 (50)	8 (40)
	χ^2 (cor.) = 9.75	$p < .005$	$\chi^2 = .25$	$p > .10$	$\chi^2 = .50$	$p > .10$
	$\Phi = .44$		$\Phi = .07$		$\Phi = .10$	

*The number in parenthesis is the percentage.

The relationship between income and the number of times a doctor was consulted, holding age constant, is presented in Table XXXIII. The chi square values were not significant at the .10 level and phi for both young and old people was .09 and .07 respectively. Therefore there does not appear to be a significant difference between income and the number of times a doctor is consulted when age is held constant. The relationship is not specified by age; i.e., income and the number of times a doctor is consulted, is significantly related independent of age.

This chapter has attempted to analyze the various health practices in three small communities in Oklahoma. The results will be used as the basis for the discussion in Chapter V of the results of this study and its implications for a "physician's assistant" program.

TABLE XXXIII

THE RELATIONSHIP BETWEEN INCOME AND THE NUMBER OF TIMES A PHYSICIAN WAS CONSULTED (AGE HELD CONSTANT)

Consultations	INCOME (N=150)			
	Young		Old	
	Low	High	Low	High
High	4 (80)*	29 (66)	33 (42)	11 (50)
Low	1 (20)	15 (34)	46 (58)	11 (50)
	χ^2 (cor.) = .09	p> .10	χ^2 = .47	p> .10
	Φ = .09		Φ = .07	

*The number in parenthesis is the percentage.

CHAPTER V

RESULTS AND CONCLUSIONS OF DATA ANALYSIS INTEGRATED WITH A PROPOSED PHYSICIAN'S ASSISTANT PROGRAM

The focus of the concluding chapter is on the application of the findings discussed in the previous chapters integrated with prior research. Furthermore, certain questions will be answered in the form of recommendations for establishing a physician's assistant program.

Before attempting to establish a physician's assistant program, the question of legal status must be dealt with effectively. Leff states that "The greatest danger in the use of paramedicals lies in their unlicensed status,"[14] or, at least, when not legally sanctioned. In the case of a physician's assistant, certain tasks will have to be legally specified before he can be utilized effectively. Forgotson and Roemer state with respect to delegation in general, that without this specification, "No over-all effective strategy for the production and use of manpower can be implemented. . . ."[15] Thus, in many ways, the complexities of the physician's assistants legal status reflect the legal complexities which might affect any type of new manpower program.

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[14] A. A. Leff, Medical Devices and Paramedical Personnel: A Preliminary Context for Emerging Problems. Washington U.L.Q. 332: 1967, p. 395.

[15] E. H. Forgotson and R. Roemer, Government Licensure and Voluntary Standards for Health Personnel and Facilities. Medical Care 6: 1968, pp. 349-350.

A major difficulty in determining the legal status of a physician's assistant is largely due to the newness of this type of program. There are no guidelines which might serve as a precedent to establish a general legal code. Ballenger and Estes speak of this in the following:

> Until the use of (physician's assistants) became sufficiently widespread to be regarded as ordinary practice, there is no "custom and usage" and therefore no protection. However, to establish a custom and usage defense, it is not necessary that all or even a majority of the physicians in an area actually employ to [sic] use this type of assistant. As long as a respectable group does so, this protection could exist. It should be noted that the physician is often judged against a "locality" standard. At present, the number of physician's assistants is small, and they are widely dispersed around the country. Such concentrations as there are, are primarily in large medical center communities, and the ordinary practice in a large training hospital may afford little protection to the rural doctor in a different set of circumstances. Although it is forecast that improvements in travel and communication may end the "locality" approach, this is uncertain as yet and may give rise to non-innovational pockets in precisely the areas most in need of this new type of manpower.[16]

Many discussions have centered around licensure of a physician's assistant. One of the reasons for licensing is that it would allow for standardization which in turn would involve less risks legally as well as making it easier to obtain liability insurance. This writer is very strongly opposed to the idea of licensure. The traditional method of licensure in health manpower is one of the major reasons the United States has a critical shortage throughout all health occupations; i.e., with few exceptions the American Medical Association and the American Nursing Association, in accord with state medical associations, have

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[16] M. Ballenger and E. H. Estes, Model Legislation Project for Physician's Assistants. Durham, Department of Community Health Sciences, Duke University (contract no. HSM 110-69-242), p. 4-5.

served as powerful political forces to maintain the status quo in health manpower. In so doing, many measures, such as increasing the size and number of medical schools and reducing the years which a doctor must spend in school, have been stymied by said vested interest groups. This view is supported by Ballenger in regard to licensure, but for different reasons:

> The physician's assistant functions in a personal relationship with the physician. Although the assistant receives a core of basic background knowledge and skills through participation in the formal training program, it is intended that his education should continue throughout his work experience under his physician's supervision. New skills would certainly be acquired over time and new understandings gained as the assistant becomes more familiar with the practice of his particular physician. A scope of practice specified for the recent program graduate might impose an unjustified ceiling on the graduate with a number of years' experience. Similarly, the skills taught one assistant by his employing physician might be very different from those taught another assistant whose employing physician practiced a different specialty or simply chose to use his assistant in another way. In other words, if defined by the sets of functions performed (scopes of practice), there could be as many types of physician's assistants as employing physicians. Training programs are even permitting a measure of concentration in particular areas, which may result in an assistant's having greater expertise in his area of concentration even at the time of graduation than do most of his contemporaries. This diversity of experience and the consequent diversity in capability would pose a realistic definition of a scope of practice for physician's assistants.[17]

This licensure would tend to impose those very restrictions which have been instrumental in creating the need for physician's assistants. Furthermore the writer believes that licensure would lead to the same restrictive tendencies which are presently being imposed by similar groups throughout the medical profession.

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[17] Ibid., p. 17-18.

Six states have enacted general exception clauses in regard to licensure of a physician's assistant; i.e., Colorado, Florida, Arizona, Kansas, and Oklahoma. Oklahoma's exemption statute is typical of the six and provides that:

> . . .(N) othing in this article shall be so construed as to prohibit. . .services rendered by a physician's trained assistant, a registered nurse, or a licensed practical nurse if such services be rendered under the direct supervision and control of a licensed physician.[18]

The physician's assistant program, as designed by Professor Shearer at Oklahoma State University, specifies that the assistant will not be in direct physical contact with the doctor; i.e., he would be under a doctor, or group of doctors, but would be located in a community some distance away from the supervising physician. Thus from the above stated law, the legal status of the program is unclear. However, the program does have complete support of the state medical association.

Assuming that the legal problems of the above program can be effectively minimized, the next logical issue involved is to determine physician's acceptance of such a program. A study of this subject was conducted by Rousselot in January, 1971.[19] A mail-out questionnaire was sent to 300 randomly selected general practitioners in the state of Oklahoma. He received replies from 111 doctors which represented a return rate of 44%. The following results were obtained:

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[18]Oklahoma Statutes, Title 59, Section 492 (supp. 1968-1969).

[19]Ed Rousselot, "Potential Acceptability by Oklahoma General Practitioners of a Former Independent Duty Medical Service Technician as a Civilian Physician's Assistant" (unpub. paper, Manpower Research Center, Oklahoma State University, January 29, 1971).

> Thirty-four percent of the respondents indicated that they would feel comfortable about having a physician's assistant under their direction working remote from them but in close contact with them. Twenty-eight percent were unsure. Thirty-eight percent indicated that they would not feel comfortable in the above described situation.[20]

Rousselot concluded that:

> For the most part, Oklahoma physician's recognize that the former Independent Duty Medical Service Technician can be a valuable asset to them for the provision of primary medical care. It was hoped that some characteristic such as age of the doctor or the size of the town in which he practiced could be used to predict to what degree a physician would accept the Physician's Assistant. Unfortunately no such characteristic was found.[21]

In the preceding paragraphs the writer has attempted to evaluate the legal status, in regards to a physician's assistant program, as well as give an over-view of potential physician's acceptance of such a program. Assuming that there are no problems involved in the legalities of such a program, and assuming an adequate number of general practitioners are willing to under-sign a physician's assistant, the next logical step is to determine potential acceptance of the communities which would be involved in such a program.

A study of community acceptance of a physician's assistant was conducted by Fry.[22] Eight rural communities, throughout western and central Oklahoma, were interviewed. The instrument consisted of a questionnaire containing 26 hypothetical illnesses which might be encountered. These

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[20]Ibid., p. 21.

[21]Ibid., p. 22.

[22]Fred L. Fry, "A Study of the Acceptability of the Former Military Independent Duty Corpsman as a Medical Resource in Rural Communities" (unpub. thesis, Oklahoma State University, May, 1970).

items ranged, in degree of severity, from minor to severe accidents. The respondents were asked to indicate if they would use the physician's assistant, as the situation described, in the 26 hypothetical illnesses. Twenty-five interviews were conducted in each of eight communities twenty of which were randomly selected and five of which were taken from Community Leaders.[23] A summary of Fry's study concluded that:

> The results of the interviews showed that the residents of rural communities could be expected to use the medical corpsman for approximately 75 percent of their medical needs if he were located in their community and in contact by telephone to his supervising physician.
>
> It was found that distance from competent medical resources was the major factor in determining acceptance, with usage beginning at 51 percent and increasing roughly 1 percent for each mile the interviewee lived from present resources. Income was the next most important factor in the acceptance with projected usage increasing somewhat as income increased. The use of income as a predictor, however, is of questionable value depending on one's desire for accuracy. The factors of age, sex, education, and community influence were found to have little bearing on acceptance. Through using the Mann-Whitney U-Test, it was found that usage of the physician's assistant is relatively high for routine and emergency cases with lower levels of usage for intermediate cases.[24]

The study by Fry has many of the same conclusions as the writer's conclusions regarding present health practices in doctorless communities. Although the present study made no mention of a physician's assistant, there were several questions which were designed to determine indirectly the feasibility of such a program.

Indications from the present study would also suggest that the residents of rural communities would use a physician's assistant if one

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[23] Ibid., p. 13-17.

[24] Ibid., p. 40-41.

were available; i.e., sixty-two percent of the sample indicated they had been sick but had not gone to a doctor; and, in that group, 77.4% said they would have gone if one would have been available in their town. Further support for the program is suggested when types of illnesses are summarized; i.e., sixty-six percent of all households with children had at least one children's minor illness, and 22.9% of those same households had one or more children's accidents or injuries. Fifty-six percent of all adults had at least one minor illness, and 10.6% had one or more accidents. Thus a large proportion of those households which were sampled had minor illnesses during the last year, with a considerably smaller proportion having accidents. Assuming that residents would use a physician's assistant primarily for minor illnesses and accidents, the research suggests that these towns have a sufficient incidence of the above illnesses to allow the feasibility of such a program.

Results of the present study suggest that people who live in communities which do not have a doctor have many common demographic characteristics such as: most of the people are either married or widowed (93.3%); a large number (59.9%) have less than a high school education; sixty-seven percent are over 55 years of age; sixty-eight percent do not have children residing at home; fifty-six percent earned less than $5,000 in 1970; and 38% of the heads of household were retired. Because of this similarity, demographic characteristics of residents in small communities do not appear to be a major factor in determining the selection of a physician's assistant.

This study has also provided some insights regarding what characteristics a successful physician's assistant should possess; i.e., the

respondents were asked to indicate the primary reason for choosing a family doctor. Across all towns, 34% said they liked him and that he does a good job; 30% indicated he was recommended by a friend or relative; and 12% said he was easy to get in to see. Thus quality of care, personality, recommendations from trusted sources, and convenience to the patient provide indirect clues into what characteristics a successful physician's assistant should exhibit.

Although the demographic patterns of the three communities were similar, their health practices, in certain aspects, were quite different. These differences have enabled the researcher to indicate those towns in the study which appear to be more acceptable for a physician's assistant program; i.e., this assumption is based on one variable (differential use of primary doctors). The towns of Mulhall and Leedey indicated only 12 primary doctors whereas Lamont listed 21. Furthermore, in Mulhall 38.8% were going to one doctor, in Leedey 45.8%, but in Lamont only 28.3% were going to one doctor. Similarly, in Mulhall 81.6% of the households were going to the nearest doctor, in Leedey 85.4%, but in Lamont only 37% went to the nearest physician. Thus since the physician's assistant must be under-signed by a co-operating doctor, the towns of Mulhall and Leedey appear to be less problematic than Lamont in terms of getting a major proportion of doctors to under-sign such a program. Under no circumstances does the researcher mean to imply that residents of Lamont would not use a physician's assistant; but, because of the aforementioned characteristics however, Lamont would require the agreement of five or six physicians in four different cities whereas in Leedey and Mulhall only two doctors, for each town,

would cover a high proportion of residents. And in both cases the doctors would be located in the same city.

While the present study has been concerned primarily with community health practices, the researcher feels that a well coordinated public relations program should be implemented. This would provide information to the community as well as to physicians throughout the state. Its purpose would be to establish rapport with communities prior to and after implementation of the program. The public should be informed about the duties, qualifications, and limitations of a physician's assistant. It should be understood that he is not a licensed doctor and that his principal duty is to provide primary medical care to communities which are relatively isolated from licensed physicians, and have connections with licensed M.D.s for medical problems beyond his scope.

The training program for a physician's assistant should be brief. Time need not be consumed for medical training because the assistant has previously received both training and experience while in the military. Thus training should consist of acquainting the physician's assistant with characteristics of rural communities and the types of problems he might encounter.

In order to attract former Military Independent Duty Specialists to a physician's assistant program, the opportunity for career mobility must be provided. One such program calls for establishment of an assistant's salary at a GS-7 rating which increases, depending on qualifications, to a maximum of GS-11.[25] Thus their annual pay would range

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[25] U. S. Department of Health, Education, and Welfare; Indian Health Services; Office of Program Development, "Community Health Medic of the Indian Health Services," December, 1970.

between $8,582 - $16,404. This should create an incentive for the physician's assistant which in turn should promote higher quality patient care.

An important economic factor, concerning the success of a physician's assistant program, was discovered from this study. Two of the three communities which were surveyed (Leedey and Lamont) have fully equipped medical clinics which are not being utilized. Assuming those communities would grant permission to use those facilities, a tremendous savings could be realized by the doctors in the surrounding cities which might under-sign a physician's assistant. One might further assume the above mentioned communities are not isolated incidents and that other small communities also have facilities which are not being used.

From the preceding analysis certain characteristics have been examined which not only encourage the development of a physician's assistant program, but lend themselves to suggestions for said program. The following is a list of suggestions for such a program. This list is by no means exhaustive and is not arranged in order of importance.

(1) Geographical distance is an important factor in choosing communities for a physician's assistant. Small doctorless towns which are nearer to one, and only one, city with doctors would be more desirable locations for a physician's assistant than doctorless communities which are located equal distance to more than one city with doctors.

(2) Demographic variables such as age, marital status, education, occupation, number of children, and income do not appear to be major factors in determining what communities would use a physician's assistant.

(3) Communities will use a physician's assistant, especially for minor illnesses and accidents.

(4) A physician's assistant must be qualified professionally.

(5) The physician's assistant should have a likeable personality.

(6) A well coordinated public relations campaign should be implemented, in conjunction with a physician's assistant program.

(7) A physician's assistant training program should be brief.

(8) A successful physician's assistant program should provide for career mobility of the assistant.

(9) A physician's assistant is not a licensed doctor but can provide quality primary medical care to communities which do not have a doctor.

(10) Many small communities have pre-existing medical facilities which would save considerable cost to the cooperating physician who was willing to undersign a physician's assistant.

(11) Further research is indicated to determine the psychological and sociological implications of a physician's assistant program on rural communities.

The following study has provided possible guidelines to the present health crisis in the United States. Rural communities, like those examined in this study, are losing physician's proportionally, while large urban centers are gaining doctors. It seems highly improbable that this situation can be corrected by traditional methods; i.e., by using general practitioners. More and more medical students are specializing which paints an even darker future for rural areas.

New ideas such as physician's assistant program is a means of improving primary medical care to citizens in the future. This idea is

being discussed both locally and nationally but unfortunately discussions do not necessarily produce the monies necessary to carry out such a program. From the series of research which has been completed at Oklahoma State University,* the evidence strongly suggests that a physician's assistant program is feasible and could serve to reduce the health crisis in Oklahoma as well as the nation.

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APPENDIX A

REVISED INTERVIEW SCHEDULE

QUESTIONNAIRE

1. Marital Status

___1. Single
___2. Married
___3. Widowed
___4. Divorced
___5. Separated

2. Education (Head of household)

___1. Some Grade School
___2. Eighth Grade Graduate
___3. Some High School
___4. High School Graduate
___5. Some College
___6. College Graduate
___7. Post Graduate
___8. Other _____

3. Age (Head of household)

___1. 25 or under
___2. 26-35
___3. 36-45
___4. 46-55
___5. 56-65
___6. 66-75
___7. 76 or above

4. Occupation (Head of household)

___1. Unskilled worker, laborer, farmer
___2. Semiskilled worker (machine operator)
___3. Service worker (policeman, fireman, barber, salesman, bookkeeper, secretary, etc.)
___4. Skilled worker or craftsman (carpenter, electrician, plumber, etc.)

4. Continued

___5. Owner, manager, partner of a small business or a small farm; lower level governmental official, military commissioned officer
___6. Professional requiring a bachelor's degree (engineer, elementary or secondary school teacher, etc.)
___7. Owner, high-level executive--large business or large farm or high level government agency
___8. Professional requiring an advanced college degree (doctor, lawyer, college professor etc.)
___9. Housewife
___0. Retired

5. Number of children in family (residing at home)

___0. None
___1. One
___2. Two
___3. Three
___4. Four
___5. Five
___6. Six
___7. Seven
___8. Eight
___9. Nine or more

6. Total family income

___1. $1,000 or under
___2. $1,001-$3,000
___3. $3,001-$5,000
___4. $5,001-$7,500
___5. $7,501-$10,000

6. Continued

___6. $10,001-$15,000
___7. $15,001 and above

7. How long have you lived in this town? (Head of household)

___1. Less than one year
___2. 1-4 years
___3. 5-9 years
___4. 10-19 years
___5. 20 years or over, but not all of life
___6. All of life

8. Approximately how many times did you and your family members see a doctor in the last year?

___1. None
___2. Once
___3. 2-6
___4. 7-12
___5. 13-20
___6. 21-25
___7. 26-30
___8. 31 or over

9. Has any sickness, injury of health problem bothered you or members of your immediate family (those who live at this residence) in the past year?

___1. Yes
___2. No

If yes, please specify:

10	11	12	13
	Days Confined		
Ailment	House or Bed	Hospital or Nursing Home	Times Saw Doctor
Children			
Adults			

14. Have you or your family had any illnesses in the last year in which you did not go to a doctor?

___1. Yes
___2. No

15. If yes, what was the reason or reasons for not going?

___1. Not necessary for colds
___2. Unable to see doctor
___3. Too expensive
___4. No way to go
___5. Not serious enough
___6. Too far to drive
___7. Can cure myself
___8. Only go when there is an emergency

If convenience is mentioned, please probe.

16. Had there been a doctor in your town, would you or your family have gone to him for this illness?

___1. Yes
___2. No

17. Do you presently have a family doctor?

___1. Yes
___2. No

18. If yes, please specify:

Doctor # One:
(A) Who _____
(Name of doctor)
(B) Distance from home _____
(Miles)
(C) City _____
(D) _____ _____
(Specialist) (G.P.)

Doctor # Two:
(A) Who _____
(Name of doctor)
(B) Distance from home _____
(Miles)
(C) City _____
(D) _____ _____
(Specialist) (G.P.)

18. Continued

Doctor # Three:
(A) Who _____
(Name of doctor)
(B) Distance from home _____
(Miles)
(C) City _____
(D) _____ _____
(Specialist) (G.P.)

19. Is this doctor a:

___1. M.D.
___2. Chiropractor
___3. Osteopath
___4. Other _____
(Specify)

20. Why was this doctor chosen? (Please list all factors you consider)

___1. Recommended by a friend or relative
___2. Like him
___3. Easy to get in to see
___4. Does a good job
___5. Used to live here, later moved
___6. Cheaper
___7. Nearest doctor
___8. Specialist recommended by a doctor
___9. Only doctor we know
___0. Company doctor

21. Is your family doctor the nearest doctor to your hometown?

___1. Yes
___2. No

If no, how far is the nearest doctor? _____
(Miles)

22. Do you ever go to this nearest doctor?

___1. Yes
___2. No

Under what circumstances?

23. Why is the nearest doctor not your family doctor?

24. What is the distance you or your family travel to see a doctor (if you do not have a family doctor)? _____
(Miles)

25. Suppose you, or a member of your family, had an illness involving a considerable expense, say $500 or more, how would you pay for it?

___1. Income
___2. Savings
___3. Insurance (Private or Group)
___4. Relative or friend
___5. Stocks and bonds
___6. Sell house, car, or other possessions
___7. Medicare
___8. Medicaid
___9. Borrow
___0. Other (specify)

26. Approximately what was the total amount your family paid for medical expenses last year? (Do not include dental or eye work)

___1. Had none
___2. Less than $100
___3. $101-$250
___4. $251-$500
___5. $501-$750
___6. $751-$1,000
___7. $1,001-$1,250
___8. $1,251-$1,500
___9. $1,501-$2,000
___0. $2,001 and over

APPENDIX B

LETTER OF INTRODUCTION

April 15, 1971

Residents of Mulhall:

I am currently involved in a research project at Oklahoma State University. The study is concerned with determining present health practices in small doctorless towns in Oklahoma. I will be interviewing homes in Mulhall in the next few days and would greatly appreciate your cooperation.

Thank you very much.

Sincerely,

Terry J. Bixler

Terry J. Bixler
Graduate Research Assistant
Oklahoma State University

APPENDIX C

INTERVIEW SCHEDULE USED IN PRETEST

QUESTIONNAIRE

1. Marital Status

___1. Single
___2. Married
___3. Widowed
___4. Divorced
___5. Separated

2. Education

Husband	Wife	
___	___1.	Some Grade School
___	___2.	Eighth Grade Graduate
___	___3.	Some High School
___	___4.	High School Graduate
___	___5.	Some College
___	___6.	College Graduate
___	___7.	Post Graduate
___	___8.	Other_____

3. Age

Husband	Wife	
___	___1.	21 or under
___	___2.	22-35
___	___3.	36-50
___	___4.	51-64
___	___5.	65 or above

4. Occupation

Husband	Wife	
___	___1.	Unskilled worker, laborer, farmer
___	___2.	Semiskilled worker (machine operator)
___	___3.	Service worker (policeman, fireman, barber, etc.)
___	___4.	Skilled worker or craftsman (carpenter, electrician, plumber, etc.)

4. Continued

___5. Salesman, bookkeeper, secretary, office worker, etc.
___6. Owner, manager, partner of a small business or a small farm; lower level governmental official, military commissioned officer
___7. Professional requiring a bachelor's degree (engineer, elementary or secondary school teacher, etc.
___8. Owner, high-level executive--large business or large farm or high-level government agency
___9. Professional requiring an advanced college degree (doctor, lawyer, college professor, etc.)
___0. Housewife

5. Number of children in family (residing at home)

___1. None
___2. One
___3. Two
___4. Three
___5. Four
___6. Five
___7. Six
___8. Seven
___9. Eight or more

6. Total Family Income

___1. $1,000 or under
___2. $1,001-$3,000
___3. $3,001-$5,000
___4. $5,001-$7,500
___5. $7,001-$10,000
___6. $10,001-$14,999
___7. $15,000 and above

7. How Long have you lived in this town?

Husband	Wife	
___	___1.	Less than one year
___	___2.	One to four years
___	___3.	Five to nine years
___	___4.	Ten to nineteen years
___	___5.	Twenty years and over but not all of life

8. About how many times did you and your family members see a doctor in the last year?

___1. None
___2. Once
___3. 2-6
___4. 7-12
___5. 13-20
___6. Over 20

9. How many times per year do you or your family usually see a doctor?

___1. None
___2. Once
___3. 2-4
___4. 5-7
___5. 7-9
___6. 10-15
___7. 16-20
___8. 21 or more

10. Has any sickness, injury or health problem bothered you or members of your immediate family (those who live at this residence) in the past year?

___1. Yes
___2. No

If yes, please specify:

(A) What was the sickness, injury or health problem?
(B) How many days, if any, were you confined to bed at home?
(C) How many days, if any, were you confined to the house but not bed?
(D) How many days, if any, were you hospitalized?
(E) How many times did you see a doctor during the period you were ill?

(10A)	(10B)	(10C)	(10D)	(10E)
	Days Confined			
Ailment	Bed	House	Hospital	Times Saw Doctor

11. Have you or your family had any illnesses in the last year in which you did not go to a doctor?

___1. Yes (If yes, what was the reason or reasons for not going?)
___2. No

12. Had there been a doctor in your town, would you or your family have gone to him for this illness?

___1. Yes
___2. No

13. Do you presently have a family doctor?

___1. Yes
___2. No

If yes, (A) Who_____
(Name of Doctor)
(B) Distance from home
_____
(Miles)
(C) City_____

14. Is this doctor a:

___1. M.D.
___2. Chiropractor
___3. Osteopath
___4. Other _____
(Specify)

15. Why was this doctor chosen? (Please list all factors you consider)

16. Is your family doctor the nearest doctor to your hometown:

___1. Yes
___2. No

If no, how far is the nearest doctor? _____
(Miles)

17. Do you ever go to <u>this</u> nearest doctor?

___1. Yes
___2. No

Under what circumstances?

18. Why is the nearest doctor not your family doctor? (M.D.)

19. When and where did you or a member of your family last consult a doctor?

(A) When _____
(Month and Year)
(B) Where _____
(City)
(C) Where:

___1. Office
___2. By telephone
___3. Hospital
___4. Clinic
___5. Home

(D) Was this your:

___1. Family doctor
___2. Specialist

20. What is the distance you or your family travel to see a doctor?
_____ (If you do not have a
miles family doctor)

21. Suppose you, or a member of your family, had an illness involving a considerably expense, say $500 or more, how would you pay for it?

___1. Income
___2. Savings
___3. Insurance
___4. Relative
___5. Friend
___6. Stocks and bonds
___7. Sell house, car, or other possessions
___8. Don't see how I could pay the bills
___9. Borrow
___0. Other _____
(Specify)

22. Approximately what was the total amount your family paid for medical expenses last year? (Medicine, doctor bills, etc.)

___1. Had none
___2. Less than $50
___3. $50-$99
___4. $100-$249
___5. $250-$499
___6. $500-$999
___7. $1,000-$1,499
___8. $1,500 and over

APPENDIX D

TYPES OF ILLNESSES ENCOUNTERED FOR ALL COMMUNITIES IN 1970

TYPES OF ILLNESSES ENCOUNTERED
FOR ALL COMMUNITIES IN 1970

Minor	Major	Major (cont)	Accidents
Colds	Hardening of arteries	Rheumatism	Jammed hip
Check-up	Pregnancy	Surgery	Foot (tetnus)
Sinus shots	Kidney stones	Blocked nerve	Back injury
Sore throat	Female problems	Stroke	Broken collar bone
The causes	Arthritis	Eyesight	Sprained ankle
Chicken pox	High blood pressure	Blood tests	Hit in eye
Bronchitis	Low blood count	Ulcer	Shoulder injury
Ears cleaned	Cancer check-up	Appendectomy	Leg injury
Asthma	Bladder infection	Leukemia	Hurt knee
Flu	Hormone treatments	Pneumonia	Nose injury
Allergies	Back trouble	Urology	Cut leg
Vitamin shots	Prostrate	Infection	Run needle in leg
Warts removed	Cancer	Emphysema	Broken leg
Measles	Diabetes		Car wreck
Measle shots	Kidney infection		Head injury
Headaches	Liver trouble		Ruptured disc
Poison ivy	Heart check-up		Smashed finger
Ear trouble	Tumor		Burned
Foot problems	Hernia		Motor cycle wreck
Growth on hand	Bladder check-up		Gun shot in leg
Anemic	Back adjustments		Spider bite
Nerves	Mononucleosis		
Cold shot	Heart attack		
Ear infection	Heat stroke		
Hay fever	Sinus infection		
Virus	Bladder surgery		
Flu shots	Blood clot		
Hormone shots	Blood poisoning		
Ear aches	Gastric trouble		
Lab tests	Intestinal infection		
Tonsillitis	Ureterus Surgery		

APPENDIX E

PRIMARY REASON WHY PEOPLE DO NOT SEE A DOCTOR FOR AN ILLNESS

PRIMARY REASON WHY PEOPLE DO NOT SEE
A DOCTOR FOR AN ILLNESS

Reason	Mulhull (N=35)	Leedey (N=31)	Lamont (N=27)	Total (N=93)
Not serious enough	13 (37.1)*	10 (32.3)	14 (51.9)	37 (39.8)
Too far to drive	5 (14.3)	7 (22.6)	6 (22.2)	18 (19.4)
Unnecessary for colds	8 (22.9)	6 (19.4)	1 (3.7)	15 (16.1)
Too expensive	5 (14.3)	3 (9.7)	0 (0.0)	8 (8.6)
Cure themselves	0 (0.0)	2 (6.5)	5 (18.5)	7 (7.5)
No way to go	2 (5.7)	2 (6.5)	0 (0.0)	4 (4.3)
Unable to see doctor	2 (5.7)	1 (3.2)	1 (3.7)	4 (4.3)

*The number in parenthesis is the percentage.

APPENDIX F

A LISTING OF ALL DOCTORS, THE CITY WHERE THEY ARE LOCATED AND THE DISTANCE FROM TOWNS IN THE STUDY: RANKED ACCORDING TO USAGE FROM HIGH TO LOW

A LISTING OF ALL DOCTORS, THE CITY WHERE THEY ARE LOCATED AND THE DISTANCE FROM TOWNS IN THE STUDY: RANKED ACCORDING TO USAGE FROM HIGH TO LOW

MULHALL

Name of Doctor	City Where Located	Distance in Miles
Lehew	Guthrie	13
Ringrose	Guthrie	13
Petty	Guthrie	13
Bohlman	Guthrie	13
Hogue	Guthrie	13
Evans	Perry	20
Brown	Perry	20
Adkison	Oklahoma City	50
Lea	Stillwater	20
Eonis	Yukon	70
Boughan	Fairview	85
Miller	Oklahoma City	50

LEEDEY

Hiene	Elk City	35
Husband	Elk City	35
Baker, Jr.	Elk City	35
Shadid	Elk City	35
Featherston	Elk City	35
Whinery	Sayre	50

LEEDEY (Cont)

Name of Doctor	City Where Located	Distance in Miles
Buster	Cheyenne	50
Dersch	Shattuck	60
Tisdel	Clinton	42
Cunningham	Clinton	42
Harold	Clinton	42
Moore	Pauls Valley	200

LAMONT

Kregger	Tonkawa	14
Ghormley	Blackwell	23
Matthews	Tonkawa	14
Tagge	Enid	40
Gibson	Ponca City	35
Roberts	Enid	40
Steffen	Enid	40
H. Jones	Ponca City	35
Champlin	Enid	40
Kaufman	Winfield, Kansas	60
W. R. Smith	Enid	40
MacIntire	Enid	40
Kinnan	Caldwell, Kansas	36
DeJarnett	Ponca City	35
Loghmier	Enid	40
Stafford	Enid	40
Howt	Ponca City	35
Morgan	Blackwell	23

LAMONT (Cont)

Name of Doctor	City Where Located	Distance in Miles
Jansen	Enid	40
Honska	Stillwater	75
Becker	Blackwell	23

VITA

Terry Jack Bixler

Candidate for the Degree of

Master of Science

Thesis: A DESCRIPTIVE STUDY OF PRESENT HEALTH PRACTICES IN SELECTED RURAL OKLAHOMA COMMUNITIES: IN CONJUNCTION WITH A SERIES OF STUDIES RELATING TO A PHYSICIAN'S ASSISTANT PROGRAM

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Biographical:

Personal Data: Born in Alva, Oklahoma, September 18, 1942, the son of Mr. and Mrs. Clifford R. Bixler.

Education: Graduated from Waynoka High School, Waynoka, Oklahoma, in May, 1960; attended Northwestern State College, Alva, Oklahoma, in 1960-62; received the Bachelor of Arts degree from Northwestern State College in 1967, with a major in Sociology; completed requirements for the Master of Science degree from Oklahoma State University in July, 1971, as a Manpower Research Fellow.

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