MEDICAL CARE
December 1980, Vol. XVIII, No. 12

A Navajo Health Consumer Survey

THOMAS STEWART, PH.D.,* PHILIP MAY, PH.D.,† AND ANITA MUNETA, M.P.H.‡

The findings of a health consumer survey of 309 Navajo families in three areas of the Navajo Reservation are reported. The survey shows that access to facilities and lack of safe water and sanitary supplies are continuing problems for these families. The families show consistent use of Indian Health Service providers, particularly nurses, pharmacists and physicians, as well as traditional Navajo medicine practitioners. Only incidental utilization of private medical services is reported. Extended waiting times and translation from English to Navajo are major concerns in their contacts with providers. A surprisingly high availability of third-party insurance is noted. Comparisons are made between this data base and selected national and regional surveys, and with family surveys from other groups assumed to be disadvantaged in obtaining health care. The comparisons indicate somewhat lower utilization rates and more problems in access to care for this Navajo sample. The discussion suggests that attitudes regarding free health care eventually may be a factor for Navajo people and other groups, that cultural considerations are often ignored or accepted as truisms in delivering care, and that the Navajo Reservation may serve as a unique microcosm of health care in the U.S.

THE NAVAJO INDIAN RESERVATION encompasses an area of 24,700 square miles in the heart of the Four Corners region in northeast Arizona, northwest New Mexico and southeast Utah. The Navajo is the largest of all U.S. Indian reservations, comprising approximately one fifth of all Indian land in the United States, and is comparable in size to the state of West Virginia. Much of the land is inaccessible except by foot or horseback, and weather conditions frequently make unimproved roads impassable. Of the reservation's approximately 5,000 miles of roads, only 1,500 miles are paved. There is no public transportation system and there are only about 38,000 telephones on the entire reservation. The estimated population of the Navajo people on the reservation in 1976 was 150,000.

Until 1955, health care for the Navajo people living on the reservation was provided by the Bureau of Indian Affairs. In 1955 the Indian Health Service of the United States Public Health Service assumed responsibility for the delivery of health services on the Navajo Reservation. Since that time the Indian Health Service in the Navajo area has developed a substantial system of acute care hospitals and clinic facilities. A number of private non profit facilities have also developed either on or adjacent to the reservation (Monument Valley Clinic, Navajo Nation Health Foundation and Presbyterian Medical Services) and provide some choice for Navajo consumers. Additionally, the Navajo Tribe has developed health and social service programs which closely parallel those of states (alcohol and drug abuse programs, screening programs, etc.). Over

* Department of Family Medicine, Medical University of South Carolina, Charleston.
† University of New Mexico, Albuquerque.
‡ Navajo Health Authority, Shiprock, N.M.

0025-7079/80/1200/1183/$01.15 © J. B. Lippincott Co.

the past 30 years the Navajo community has experienced radical growth from circumstances in which only traditional Navajo medicine and sporadic, limited western medical care were available in the 1940s and 1950s to the current situation of hospitals, ambulatory care centers, outreach programs and a continuing traditional medical system. The extent and complexity of the current health care delivery system was officially recognized with the selection of the reservation as a single health systems agency (under P.L. 93-641) in 1976.

Full appreciation and understanding of the impact of the rapid growth of a modern health care delivery system upon Navajo consumers was hampered by a serious lack of data. During this period the only systematic data collected was patient contact data from federal and nonfederal facilities located on the reservation. That data base was limited and inappropriate for assessing certain delivery problems. For instance, very little was known about Navajo utilization of private physicians and other sources of care in communities off the reservation. As a result, the extent to which official data from facilities on the reservation portrayed total morbidity and mortality patterns was unknown.

In 1976 and 1977 a survey of Navajo health consumers was conducted in three geographic areas of the Navajo Reservation to initiate a consumer data base. This was the first broad survey of Navajo health consumers conducted in the field and provided data regarding home-site characteristics, family and individual health behavior, access to health care facilities, and self-report on health problems. The survey was conducted by the Navajo Health Authority, a nonprofit corporation of the Navajo Tribe, under contract with the United States Public Health Service and Navajo Area Indian Health Service. Data were collected on 309 families and 1,573 individuals living in the three geographic areas. The major objective of the study was to provide relevant data on consumer health behavior for the purposes of planning and evaluation of the operation of Indian Health Service facilities and tribal outreach programs. A subobjective was to establish a prototype of consumer health surveys on the reservation (patterned as closely as possible after the periodic Health Interview Series conducted by the Census Bureau).

Background and Methodology

The Navajo Health Consumer Survey was designed to implement family health interviews in three geographic areas of the reservation, using area sampling techniques. The three areas in the survey were Crownpoint Service Unit, located entirely in the state of New Mexico in the eastern portion of the reservation; Fort Defiance Service Unit, in the central portion of the reservation and including areas in both Arizona and New Mexico; and Kayenta Service Unit, in the western portion of the reservation and including parts of Arizona and Utah. The findings of this research are generalized only to these three areas.

The Crownpoint area includes approximately 4,000 square miles of rather sparsely populated land (14,695 estimated population). There is some light industry and mining activity in the Crownpoint area, but most employed individuals commute to work in towns off the reservation. The 2,800-square-mile Fort Defiance Service Unit is the most economically advanced in the reservation, with an estimated population of 19,159. It houses the tribal capital, Window Rock. Its residents typically are blue-or white-collar workers in a component of the Navajo Tribe or federal agencies. Kayenta remains a very remote area on the reservation and encompasses some 4,000 square miles and 11,396 people. In the Kayenta area, more of the traditional Navajo ways are maintained than in any other part of the reservation.

The Peabody Coal Company in Black Mesa is the major source of employment there. These three areas together comprise approximately two fifths of the land area on the Navajo Reservation and an estimated one third of the population.

The interview instrument was patterned after the Health Interview Survey (HIS-1-1973, DHEW) and the Indian Health Survey, 1955–56 (PHS-2474). The identified interview respondents were to be either heads of household or the spouses of heads of households. Each family respondent was requested to provide data for all children younger then 16 residing in the home and for any absent adults. All available adults were requested to respond to the individual questions regarding their health behavior. The interview schedule was divided into a series of items related to the behavior of the total family unit and for the individuals within the family. The schedule was developed in both Navajo and English forms. The field work was conducted by a team of two field researchers, who were permanent staff members of the Navajo Health Authority. Though the interviewers had substantial field experience on the reservation and spoke Navajo fluently and as their first language, they received extensive training in a six-week program that included interviewing and field-research techniques, and field orientation by individuals who knew the three areas well.

An area sampling technique was employed. It was important for this project to test the feasibility of developing a random sample modeled as closely as possible to major federal surveys (the sampling technique is described in detail in reference 1).

Advance notice of the field work was announced on Navajo radio and television programs broadcast to the three areas, in the tribal newspaper, at social gatherings and events such as rodeos, and in chapter meetings (a chapter is the basic geographical and political unit of the Navajo Tribe). The intent of the survey and its potential applications were described in the public information releases and presentations. All verbal presentations were conducted primarily in Navajo.

Field work for the three areas required five months. The Crownpoint and Fort Defiance areas were completed in 1975 and the Kayenta survey was completed in 1976. The first-call completion rate for interviews was quite high (about 90 per cent). Five per cent were completed on the second call. Another five per cent of the original sample refused to cooperate or to complete the interviews. The majority of the interviews were completed on week days during the daylight hours. It was anticipated and this project's experience confirmed that Navajo families generally travel on weekends to purchase supplies and conduct business. In the Crownpoint and Fort Defiance areas, slightly fewer than 85 per cent of the interviews were conducted either entirely in Navajo or in a combination of Navajo and English. In the Kayenta area all of the interviews were conducted entirely in Navajo.

Family and Household Information

In the large majority of the interviews the family respondent was either the female spouse of the head of household or a female head of household. As in other surveys, men were generally reluctant or poor informants on family health matters. The mean household size was 5.1, which is slightly lower than the mean size reported in earlier research.[2] Similarly, the sample in this survey reflected age information that was congruent with that of the larger Navajo population: It was predominately young. The median age of the survey for all three areas was approximately 19 years of age. This figure is slightly higher than the median age of 17 reported in 1970 (Indian Health Trends) and of 17.4 reported for all Navajo in 1976.[3] Some variation in the areas was noted, with the Kayenta area re-

vealing a higher mean age and larger proportion of older (age 65 and older) individuals.

This sample also reflected the relatively low educational achievement of Navajo people on the reservation. Though reservation school systems and Navajo attendance at public and private schools have grown substantially during the past three and four decades, this survey discovered that approximately 95 per cent of those above age 18 had achieved less than a high-school educational level. The employment data reflected that the three areas continue to have a subsistence economy basically. However, the data reveal also that the majority of families (72 per cent) had at least one family member employed in a position in the wage economy. The data on employment must be interpreted with caution, because it was determined that the respondents tended to view employment in a wage position as "being employed" and did not seem to consider herding, farming, weaving and other traditional modes of work on the reservation as "employment."

Table 1 portrays the household distance from the closest major clinical facility within the area. The interviewers measured the distance from the household to the closest major facility using the most probable route that a family would take. The Fort Defiance area was the only one in which a sizable proportion of the respondent families lived within a short distance of the major facility. All three areas had at least one third of the families located 40 miles or more from a major facility.

Transportation for health care remains a problem for many Navajo families. Approximately 14 per cent of the families did not have transportation at all; a larger proportion, about 25 per cent, had occasional transportation (generally from other family members) and about 50 per cent had a consistent source of transportation. Those without an available source of transportation usually depended upon neighbors.

TABLE 1. Household Distance From Closest Major Clinical Facility Considered by Area (%)

Miles From Facility	Crownpoint	Fort Defiance	Kayenta
1-5	2.2	39.2	2.3
6-10	6.6	5.4	10.2
11-15	2.2	.8	6.8
16-20	26.4	6.9	0.0
21-25	27.5	6.2	18.0
26-30	2.2	4.6	25.0
31-40	2.2	6.2	6.8
41-50	27.5	.8	11.4
50+	3.3	30.0	19.3
Total	100.0	100.0	100.0

The data obtained from these families reinforced the existing picture of numerous Navajo home sites without water, toilet facilities or electricity. Though substantial progress has been made in the provision of these services, the fact that the rural Navajo population is so widely dispersed makes it impractical financially and logistically to provide full services to all Navajo consumers. However, it is also apparent that in many cases health education efforts in regard to basic principles of prevention, such as safe water storage and the use of outhouses or privies, have not been particularly effective.

Kayenta, which was the most isolated of the three areas, revealed much more reliance on well systems. Fort Defiance families reflected more access to regular water systems. In all three areas storage for well and stream water was seen as a matter of concern; almost all families used uncovered containers to store water. As expected, a relatively low percentage of the households have flushing toilets. Most of the families (64 per cent) in the three areas used an outhouse/privy arrangement; in Kayenta more than one third of the households had no facilities at all.

The areas varied substantially in regard to the availability of electricity. Fort Defiance households reported more than 62 per cent with electricity, Crownpoint

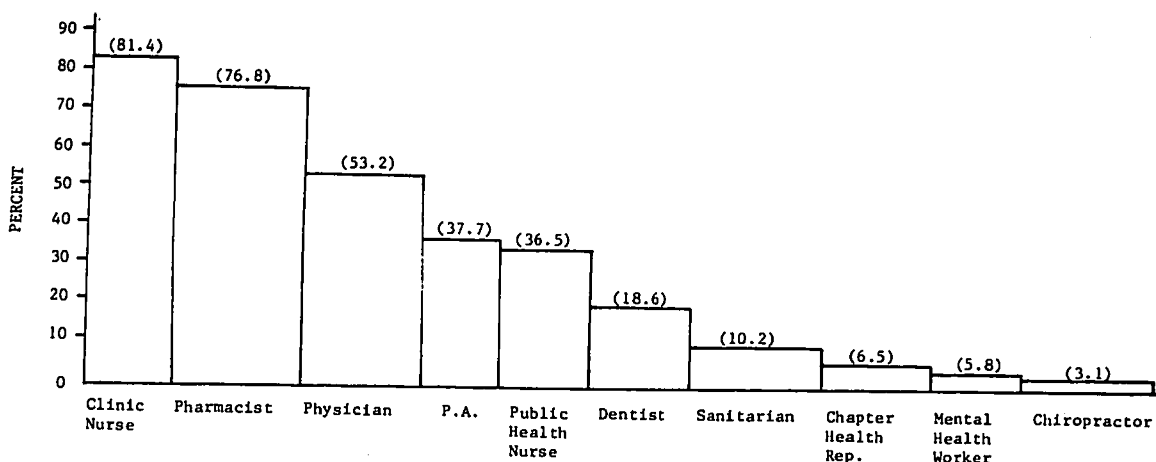

FIG. 1. Percentage of individuals having contacts with selected health care providers during previous year. Chapter Health Representatives are persons hired to serve as consumer advocates and as a link to federal and tribal health care programs.

There are three chiropractors in the area, all of whom practice in communities adjacent to the reservation.

households reported 72 per cent with electricity and Kayenta households reported only 10 per cent with electricity. Generally the availability of refrigeration was dictated by electrical supplies. However, a small number of families reported gas-operated refrigerators.

The families reported substantial use of radio programs and newspapers as a source of information. More than 82 per cent of the total families reported listening regularly to radio programs, which were broadcast in both Navajo and English from radio stations generally located in border communities. Though Navajo has only become a written language in this century and most older Navajo have never learned to write their own language, a substantial proportion of the reporting families and individuals indicated that they either read newspapers or have had newspapers read to them on a regular basis. These findings point to radio programming as the broadest vehicle for health education and information efforts.

Providers' Visits

The survey elicited data from all adult individuals regarding contacts with selected health care providers. Figure 1 reveals that the provider seen most often by Navajo consumers in this survey was a clinic nurse. Almost as many (76.8 per cent) reported that they saw a pharmacist. Slightly over one half had contact with a physician.

The largest number of Navajo (and other Indian) health care providers in reservation facilities are nurses, both registered and practical nurses. Many of the nurses also speak both Navajo and English and tend to remain in the facilities longer than other providers. It seems that both organizational (screening function) and practical (translation and recognition) considerations place the clinic nurses in a central role in Indian Health Service and private facilities on the reservation. These data also support an earlier recognition on the part of reservation facilities of the visibility of the pharmacist and efforts to expand the traditional pharmacist role to include health education and other functions.

Only 2 per cent reported never having contact with a physician. Most of the physician contacts were associated with acute and emergency episodes. Substantially fewer indicated dental visits in the

past year and 21.4 per cent had never seen a dentist. The underutilization of dental services is consistent with national data.

A rather small proportion of those reporting physician and dentist contacts went to an office or facility other than Indian Health Service facilities (approximately 5 per cent). Indian Health Service personnel were the essential suppliers of nontraditional health care for these Navajo. Those who had been in contact with the physician assistants were able to distinguish between the roles of the physician assistants and the physicians. Most of the physician assistants used by Indian Health Service are Navajo or members of other tribes who are trained in accredited Indian Health Service training programs.

Only 9.8 per cent of the individuals were reported as being inpatients during the year before the interviews. Of those who were inpatients during that period, almost one third were hospitalized more than once.

Reported Health Problems

Respondents listened to a list of conditions and were asked to indicate which prevailed for themselves and each member of their family. The list of diseases was adapted from a survey conducted by Indian Health Service in 1955 and designed to elicit conditions that would probably require contact with the health care system. Problems associated with ears and eyes were most commonly reported (28 per cent). This finding was expected, given the high prevalence of otitis media and other ear problems and trachoma and other eye problems reported in data available from Navajo facilities. Other categories were reported as having negligible occurrences (back problems, breathing problems, etc.). The translation and description process using this problem checklist was difficult and a matter of concern in the survey. Those interviewed responded clearly to items associated with specific gross body areas, such as eyes, ears and limbs. The data were not as specific when related to functional problems, such as breathing and stiffness.

Only 3.6 per cent of the respondents reported a need for emergency care during the year before the interviews. The problems requiring emergency care were generally accidents not associated with motor vehicles. One of the most common problems reported for emergency care was a fall in dealing with livestock, such as herding and rodeo performing.

Prenatal and Postnatal Care

It was the opinion of the interviewers that discussion of stillbirths, miscarriages and any item other than a full-term live birth was very sensitive. The data obtained reflect substantial underreporting of problem births.§ In Fort Defiance and Crownpoint, women reported that 21.4 per cent had been pregnant in the last five years. The respondents in the Kayenta area indicated that 11.2 per cent were pregnant during the last five years. The Kayenta women indicated a much higher proportion of women who were pregnant at the time of the survey. Among those pregnant during the past five years, the great majority said they had at least one physician contact during the last trimester of the pregnancy, and more than 90 per cent of these women reported having an examination after delivery. In all three areas Navajo mothers were much more likely to obtain postnatal than prenatal care. It should be noted that a high percentage of women on the Navajo Reservation give birth in hospitals and are subsequently exposed to an active maternal and infant-care program at the time of

§ For purposes of this survey the child-bearing years were defined as ages 15–45.

birth. Navajo women also have an extended family network that provides a substantial amount of support to them during pregnancy and may affect the perceived need for physician care.[4]

Kaltenbach[3] reported that 1974 data showed that maternal mortality was the fourth most common cause of death for Navajo women (accounting for 7.2 per cent of reported deaths). This data reinforces the existing assumption that a number of pregnant Navajo women are not in regular contact with providers during the last trimester and have high-risk pregnancies that are not likely to be identified and managed optimally.

Navajo and English Translation and Waiting Time

Though the large majority of the interviews in all areas were conducted in Navajo, a smaller percentage reported that they required interpretation from English into Navajo at the Indian Health Service facilities. Individuals requiring interpretation at IHS facilities most commonly reported using hospital personnel, particularly nurses, for the process. The interviewers noted that though a number of the interviews were initiated in English by choice of the respondent, it was often necessary to speak in Navajo to clarify a question and the respondent seemed to be more comfortable and understanding while speaking Navajo. It seems likely that for most respondents explanation and full expression are best conducted in Navajo.

Translation of English medical and anatomic terms to Navajo is not a parallel process. The interpreter must translate concepts, not just words, and must understand the material he or she is called upon to translate. The Cornell Many Farms Project[5] demonstrated well the difficulties of translating interactions between a medical provider who speaks English and a consumer who speaks Navajo. As in the 1950s, at the beginning of the current Indian Health Service delivery system, translation between the Navajo consumer and the English-speaking provider continues to be a serious problem.

Information was obtained from respondents regarding the recollection and perception of the amount of time they waited for their last contact at an IHS facility. Approximately half of the individuals recalled waiting less than an hour or "a short time" during their last contact, and the remaining respondents waited either "a long time" or over an hour, with 10 per cent recalling that they had waited two to three hours. This data seems to confirm the often repeated complaints of long waiting times created by the sporadic availability of transportation and other factors on the part of Navajo consumers and understaffing and related problems on the part of IHS facilities.

Use of Traditional Navajo Health Practitioners

To explore the strong likelihood of participation by consumers in traditional Navajo medicine and the health care delivery system, a series of items were directed at the use of traditional healers by the Navajo individuals. A consistent percentage of the respondents reported contacts with traditional Navajo practitioners and the Native American Church for healing. Traditional Navajo medicine is one of the most highly developed and sophisticated healing systems in Indian cultures in North America. The integrity and importance of this system has been well maintained to the present. The most important healer in this system is the "chanter" or "singer." Chanters are the only performers of the intricate and highly specialized Navajo healing rituals. Diagnosticians employ a variety of methods (stargazing, physical manipulation, history taking) to indicate to Navajo patients the appropriate source of treatment for their problem. Herbalists perform the general function of providing access to herbs and herb potions for

TABLE 2. Utilization of Traditional Practitioners (%)

Type of Healer	Kayenta	Crownpoint and Fort Defiance
Diagnostician	8.7	12.7
Herbalist	6.0	7.3
Chanter (singer)	23.1	17.5
Native American Church ceremony	7.8	20.4

Note: These are percentages of affirmative responses for each type of provider and do not sum to 100.0 per cent.

healing purposes. Diagnosticians and healers as specialists in the system have been in decline in recent years and chanters increasingly tend to perform multiple roles. The Native American Church uses healing ceremonies as a major part of its community function. This is a pan-Indian movement and the extent of its appeal or membership on the Navajo Reservation is not known. It must be noted that the four categories in Table 2 are not functionally discrete or mutually exclusive; a chanter might provide herbs and membership in the Native American Church does not obviate use of traditional Navajo practitioners.

Table 2 reveals rather active use of traditional Navajo healers and/or Native American Church ceremonies. The pattern for Kayenta differs from the other two areas. Kayenta is a more traditional area, not affected as much by modern developments (such as participation in a wage economy) as are the other two areas. It is likely that chanters are more available in the Kayenta area and the Native American Church, a recent development on the reservation, is not as active in that region.

Interpretation of the findings regarding use of traditional healing methods must be guarded; the interviewers found this to be a sensitive topic. Some respondents indicated that they did not understand the appropriateness of including Navajo medicine and modern medicine in the same interview. It should also be pointed out that Navajo healing practices are relatively expensive for Navajo families. For instance, a major ceremony conducted by a singer who is in demand can cost a family a considerable amount in terms of possessions for the singer's fee (jewelry, etc.) and food for the participants.

Comparison of Survey Findings with National Data and Community Studies

The conditions described above frequently prompt comparisons between the Navajo Reservation and circumstances in developing countries. Such comparisons are natural enough because even in recent years exotic problems such as kwashiorkor have been reported and large-scale public health problems (such as tuberculosis, diptheria and enteritis) which are more common in developing countries than the United States, are still evident. However, the more relevant comparisons now must be between Navajo people and the United States generally and selected subpopulations specifically. Navajo culture no longer has the isolation it had before World War II. Wage economy, resource exploitation, technological innovations, manpower development and other aspects of modernization have forced rapid and radical changes in Navajo life. Kunitz[6] suggests that rapid demographic and social changes are going to be reflected in the disease patterns of Navajo people, with a growing evidence of the modern degenerative diseases in Navajo people. It is important to understand Navajo culture as it evolves in the context of the larger American culture, particulary in reference to health delivery systems.

In an effort to place the Navajo consumer data in context, comparisons were made with selected national data and other family studies of specific subcultures.

Table 3 compares selected items from the Navajo Health Consumer Survey and from two major sources of national data.

TABLE 3. Comparison of Navajo Health Consumer Survey Data with Selected National (and Regional) Data

Item	Robert Wood Johnson Special Report[8]	National Health Interview Survey Data[7]	Navajo Health Consumer Survey Data
Utilization rates			
Percentage with one or more hospital episodes		10.6	9.8
Percentage with physician visits in past year		75.5	53.2
Percentage with dentist visits in past year		48.7	18.6
Access to care			
Percentage traveling more than 15 minutes to physician			
Total, U.S.	52.0		71.1
Spanish heritage, Southwest	45.0		71.1
Percentage spending 30 minutes or more waiting			
Total, U.S.	36.0		94.0
Spanish heritage, Southwest	35.0		94.0

Considering the utilization comparisons between the Navajo consumers in this survey and the reports of national trends in 1976,[7] it is evident that the Navajo are slightly less likely to experience hospitalization than are health consumers nationally. Similarly, Navajo consumers are less likely to have a physician or dentist contact during the previous year than are individuals nationally. While 75 per cent of the national sample had been in contact with a physician during the previous year, only slightly more than one half of the Navajo consumers were in contact with a physician during the previous year. Again, it is noted that the dental contacts, both nationally and on the Navajo Reservation, are lower than the physician contacts, and, the Navajo consumers report only 18.6 per cent compared with 48 per cent of the national sample.

The access information in Table 4 from the Robert Wood Johnson Foundation survey[8] indicates that the Navajo families and individuals reporting in this study indicate a relative problem of access. To appreciate both the national and regional trends, data from the Robert Wood Johnson Foundation Survey included both the figures for the total United States and for the subgroup, Spanish heritage in the southwest. Considering the percentage of individuals who have to travel more than 15 minutes for medical care, it is apparent that the large majority of the Navajo in this survey had to travel well over 15 minutes, whereas only 45 per cent of the Spanish-speaking sample and 52 per cent of the national sample had to travel more than 15 minutes for medical care. Furthermore, when considering the percentage of those who spend 30 minutes or more waiting for medical care, the Navajo consumers again perceived that they experienced longer waiting times than did those from the Spanish-speaking sample and national sample.

In an effort to understand the comparability of the Navajo consumers to groups and communities that might be more similar in regard to circumstances such as access to and utilization of delivery systems, a comparison with similar surveys was conducted. Table 4 portrays the Navajo

TABLE 4. Comparison of Navajo Health Consumer Survey Data from Selected Other Family Health Surveys

Source	Location	No. of Families in Sample	Item	Comparison	Navajo Consumer Data
Pa. Dept. of Health[9]	Wilkes-Barre, Pa.	431	% with physician contact in first trimester of pregnancy	80.0	18.0
			% of pregnant women delivering in hospital	98.0	97.0
McCorkle and May[10]	Nashville, Tenn.	594	% never seeing physician	5.7	2.4
			% never seeing dentist	18.9	21.5
Flora et al.[11]	W. Va. rural counties	268	% seeing physician in last year	50.5	53.2
			% seeing dentist in last year	15.0	18.6
			% hospitalized overnight	11.9	9.8
			% having home visit from public health nurse	2.3	36.5
			% with third-party coverage	15.8	22.0

Health Consumer Survey data in relation to data from selected other family health surveys with special populations. Prenatal and delivery data from the Navajo Consumer Survey and a survey conducted in Wilkes-Barre, Pa.,[9] revealed one marked difference, namely, Navajo women from the three areas surveyed were more likely to make their first physician contact in the later stages of pregnancy. The Wilkes-Barre sample had 80 per cent reporting early contacts. The Navajo women, on the other hand, reported less than one fifth with early contacts. Both groups reported a high delivery rate in hospitals.

In a comparison between the Navajo consumers and individuals in Nashville, Tennessee, in 1968, it is noted that a smaller percentage of Navajo reported that they have never been in contact with a physician than did blacks and whites in lower socioeconomic status areas of Nashville.[10] This is somewhat surprising, since rural areas are often represented as having the more severe access problems. The percentages in the two populations who have never seen a dentist are relatively high.

Perhaps the most revealing comparison is between the two rural groups, the Navajo and the West Virginia hollow residents.[11] Both the Navajo and the West Virginia sample reported a smaller percentage who had seen a physician during the past year than the national figures. The same observation was true for those reporting that they had seen dentists during the past year. However, one marked difference was the figure that relates to contacts with the public health nurse; the Navajo consumers reported that more than one third had been in contact with the public health nurse during the previous year, whereas only 2.3 per cent of the West Virginia respondents reported that they had been in contact with such a nurse. This difference is probably accounted for by the identification of public health nursing as a long-standing program on the Navajo reservation. Service

units on the Navajo reservation have had field nursing components whose nurses have engaged in both preventive and follow-up activities with patients. During the decades in which tuberculosis was rampant on the Navajo Reservation (1930–1960) a public health nursing program was crucial and historically it has continued.

Again, it is interesting to note the unexpected high percentage of Navajo families with third-party coverage. The figure for the Navajo sample is roughly comparable with that of the West Virginia sample. This figure is unusual in light of the fact that though the two communities are probably comparable in regard to employment and income figures, the Navajo families have had free access to the Indian Health Service facilities and services for several decades.

In summary, the Navajo families in this survey revealed substantially lower utilization rates than the national figures. They also reported longer travel and waiting times than a Spanish-speaking population in the same region. Comparison between the Navajo consumers and other populations with traditionally low utilization patterns revealed that the Navajo seemed comparable in most respects. The Navajo were most similar to the other rural population, the West Virginia families. The similarities and differences are important in providing a perspective on Navajo health consumers. The unique aspects of the Navajo Reservation, the existence of a large federal delivery system and absence of comparative studies have created a tendency to view the Navajo health delivery system in a rather isolated manner. This initial attempt at a comparison points to a base for fully appreciating Navajo health behavior, both for its distinct and shared characteristics. Reciprocally, an appreciation of the Navajo's experience may also be useful in understanding social and cultural elements in health care delivery generally. Observation of the Navajo experience with its separate language and alternative healing system invites a sharper focus upon cultural and social differences in the provision of care—one can easily see the cultural distance between an older Navajo person who speaks Navajo only, has used traditional Navajo healers and must hitchhike 40 miles, and the young Anglo physician at an Indian Health Service facility. Yet, we note that consumers in lower socioeconomic areas in Nashville reported a higher percentage of those who have never had a physician contact. It is important to recall that behavioral impediments to care are as likely to occur in metropolitan areas with sophisticated medical centers as they are in isolated rural areas.

A project which should receive further attention for comparative purposes is the matter of Navajo attitudes and behavior regarding the federal and the private fee-for-service systems. Navajo people view the provision of care by the federal government as a right for all Navajo guaranteed by treaty. The consumers interviewed reported much higher utilization of the federal system than the private facilities or private physicians. However, two sources of data pointed to some ambivalence on the part of these consumers toward federal health care. First, the unexpected availability of third-party health insurance is an indicator of a desire for choice. Our opinion is that such insurance is not simply accounted for an an incidental benefit of employment. The families having health insurance clearly saw it as an option. Second, the largest number of unsolicited remarks in the interviews dealt with opinions regarding federal and private services (such comments were cataloged by interviewers at the end of the interview and were evident in about 40 per cent of the interviews). The consumers commenting were adamant about the health care as a treaty right for the Navajo people. Yet, about 16 per cent of all respondents offered a spontaneous opinion that they would re-

ceive "better" care when they paid for it. It must be recalled that costs are involved in traditional Navajo medicine. It may well be that Indian Health Service has to contend with an image problem with these consumers. Even when excellent services are offered, the consumer attitude is that free care is second-rate. The act of paying for care seems to be relevant in consumer assessment of the quality of care.

Does this observation apply more generally to all Navajo and other populations in the United States? Do patients who participate in Medicare, community and neighborhood health centers and other subsidized programs perceive that they receive "poor people's care?" Does this have impact upon their health and illness behavior? Would a negative income tax or similar system have more impact upon the health of America's poor than structuring federal or other Public health delivery arrangements? There are situations in America today where consumers, poor and rich, have either limited or no choices regarding their care and public programs (National Health Service Corps, Rural Health Initiatives, Indian Health Service) are necessary. We are simply trying to point out that these Navajo consumers had definite opinions about having a choice for care and the relative quality of care and are suggesting that this is a consideration for program and policy development on the Navajo Reservation. Perhaps it is also a consideration for other populations in the United States. Certainly, it is a matter which deserves exploration.

Conclusions

Generally the findings of the survey confirmed a number of assumptions and suspicions regarding health care on the Navajo Reservation. Travel to and from sources of care is still a considerable problem, both in terms of distance and accessibility of a vehicle, for most Navajo families. Under these circumstances utilization will probably be limited to acute episodes and emergencies. Chronic problems and conditions which require regular or maintenance contacts will likely be best cared for through outreach programs (public health nurses, community health representatives or others) or patient and family education. Basic services which are taken for granted in urban and most rural communities (electricity, sewage disposal and water systems) are still lacking in most locations of the areas surveyed. Perhaps the costs of developing such services are prohibitive; however, the absence of these will be a contributing factor to the prevalence of gastrointestinal, nutritional, respiratory and other problems.

As with most aspects of contemporary Navajo life, the findings portray in broad relief the mixture of traditional Navajo ways and modern American culture. The continued use of Navajo as the primary language on the reservation was evident, as was the difficulty of communication with non-Navajo providers in clinical contacts. Navajo families also utilized traditional Navajo medicine and Native American Church healing ceremonies as alternatives. In contrast, there were indicators of contemporary life: most respondents listened to radio programs or used newspapers for information, a surprisingly high proportion had third-party health insurance and the proportion of families with regular wage-earners was higher than expected. The fact that so many respondents were consistent or occasional users of services and facilities on the reservation, regardless of the difficulties of access, indicates that this sample accepted the contributions of the larger health care system as represented on the reservation. Navajo culture has demonstrated pragmatism in its assimilation of elements from other cultures and creation of a new and unique product from that element. Horses and sheep were taken from the Spanish and New Mexican cul-

tures and integrated into Navajo life within a remarkably short period historically. Weaving, silversmithing and other art forms were adopted from Pueblan and other cultures and now we have the distinct and famous Navajo expressions of these art forms. Cultural pragmatism apparently operates in regard to health care as well. Those aspects of contemporary health care that seem to work for Navajo consumers are accepted and integrated with older elements (Navajo medicine) that also are functional. The fact that the attitudes, behaviors, beliefs and perceptions were so recently learned or developed on the reservation makes it a rich arena for research on health and illness behavior. It is useful for us to view the evolving delivery system on the Navajo Reservation not only to understand its unique place in contemporary American society but also to consider it as a system that may add to our knowledge of other systems and the delivery of services in general.

References

1. Hubbard J, Muneta A, Stewart TJ. Survey sampling on the Navajo Reservation. Human Organization 38(2):187-9.

2. Boyle GJ. Economic status of the Navajo on the reservation. Albuquerque: University of New Mexico (mimeo.), 1969.

3. Kaltenbach C. Health problems of the Navajo Area and suggested interventions. Window Rock, Ariz.: Navajo Health Authority (mimeo.), 1976.

4. Laughlin B. A study of the needs of pregnant women in a selected group of Navajo women. Chapel Hill: University of North Carolina, 1962. (Masters thesis.)

5. Adair J, Deuschle K. The people's health. New York: Appleton-Century-Crofts, 1970.

6. Kunitz SJ. Variations in economy, mortality and fertility on the Navajo Reservation. Lake Powell Research Bulletin, No. 20 (NSF, RANN). Los Angeles: Institute of Geophysics, University of California, 1975.

7. National Center for Health Statistics. Current estimates from the Health Interview Survey, 1976. Rockville, Md.: National Center for Health Statistics, 1977.

8. Robert Wood Johnson Foundation. America's health care system: a comprehensive portrait. Princeton, N.J.: Robert Wood Johnson Foundation, 1978.

9. Pennsylvania Department of Health. Health services utilization, preventive health behavior and health information services among families in four lower socioeconomic census tracts in Wilkes-Barre, Pa. Harrisbug: Pennsylvania Department of Health, 1968.

10. McCorkel RJ, May JT. In the bend of the Cumberland: a survey of health in lower-income areas of Nashville. Nashville: Center for Community Studies, 1971.

11. Flora RE, Jarvis M, Chick E. Health facility utilization by people living in West Virginia hollows. W Va Med J 1967;63:316-319.