Transportation, Distance, and Health Care Utilization for Older Adults in Rural and Small Urban Areas

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ABSTRACT

Transportation is a vital issue for access to health care, especially in rural areas where travel distances are great and access to alternative modes such as transit is less prevalent. This study estimates the impacts of transportation and geography on utilization of health care services for older adults in rural and small urban areas. Using data collected from a survey, a model was developed based on the Health Behavior Model that considered transportation and distance as factors that could enable or impede health care utilization. A random sample of individuals aged 60 or older living in the rural Upper Great Plains states of North Dakota, South Dakota, Montana, and Wyoming was surveyed by mail. With a response rate of 20%, responses were received from 543 individuals. An ordered probit model was used to estimate trip frequency, and a binary probit model was used to estimate the likelihood that an individual would miss or delay a health care trip. Distance and transportation variables were not found to significantly influence the total number of routine or chronic care trips made overall, while emergency care visits were impacted by transportation options. However, additional results showed that those who cannot drive make more trips if someone else in the household can drive; distance and access to transportation impact the likelihood that someone will miss or delay a trip; and difficulty reported in making trips is significantly affected by distance and transportation options. The greatest problems for people using public transportation for health care trips is inconvenient schedules, the need to match transit and medical schedules, and infrequent service.

EXECUTIVE SUMMARY

There is significant evidence that health care utilization is lower in rural areas compared to urban areas. While there are a number of possible explanations for these differences, such as differences in the number of physicians available or individual characteristics, the longer travel distances and fewer transportation options available in rural areas could be a significant factor. Distances to regional health care centers in rural areas can often be great. The problem becomes compounded when a growing portion of residents in rural areas are older adults who need access to health care services but may have limited transportation options. There are an increasing number of senior citizens living in rural areas who prefer to age in place but may be forced into moving to improve their access to health care. If providing transportation to health care for those who lack it increases the utilization of these services, there could be cost benefits in terms of reduced need for emergency care and preventable hospitalizations.

The objective of this study is to assess the impacts of transportation and travel distance on utilization of health care services for older adults in rural and small urban areas. Other objectives are to find how many missed trips there are due to lack of transportation and estimate the characteristics of those people who miss trips, to determine how much older adults rely on public transportation for medical trips, to discover the concerns older adults have with using public transportation for medical trips, and to estimate the demand for using public transportation for medical trips among those who do not currently have access to transit.

A survey was developed and distributed to a random sample of individuals aged 60 or older living in the rural Upper Great Plains states of North Dakota, South Dakota, Montana, and Wyoming. Using data collected from the survey, a model was developed based on the Health Behavior Model (HBM) that considered transportation and geography as factors that could enable or impede health care utilization. The HBM, which has been effectively applied by health economists, states that an individual's use of health services is a function of his/her predisposition to use services, factors enabling or impeding use, and need for care.

A total of 543 responses was received, yielding a response rate of 20.0%. The age of respondents ranged from 60 to 95, with the median age being 70. The median distance that respondents said they travel to health care services is 5 miles for routine health checkups, 9 miles for chronic health care visits, and 5 miles for emergency care. There is considerable variation in the reported distances, as some respondents living in towns with health care facilities are within a few blocks of service, while others reported the need to travel 100 or more miles. Eighty-nine percent said they drive themselves for health care trips, 55% said they will at least sometimes get a ride from a family member or friend, 5% use a public van or bus, 4% walk or ride bicycle, 3% get a ride from a volunteer driver, 2% ride in a human service agency car or van, and 1% take a taxi. The types of transportation used differ somewhat based on gender, age, whether the person has a disability, and geographic characteristics.

The findings indicate that need for care is the most significant variable determining the number of health care trips taken. Distance and transportation variables did not significantly influence the number of routine or chronic care trips made overall, indicating that people who needed to make health care trips were able to access the necessary transportation, regardless of distance or ability to drive. The results were different for emergency care, however, where the number of transportation options used positively influenced the number of trips, with the effect being greater for those who do not drive.

Additional results, however, found that distance and transportation factors do have an influence on routine and chronic care. First, those who cannot drive make more trips if someone else in the household can drive. Second, distance and access to transportation impact the likelihood that someone will miss or delay a trip. Third, difficulty reported in making trips is significantly affected by distance and availability of transportation options.

For those who do not drive, the odds of making additional routine or chronic care trips increase by a factor of about 2.3 to 2.4 when there is someone else in the household who can drive. Older adults who are widowed or living alone, therefore, are less likely to obtain their needed health care. These results have important implications regarding the need for providing additional transportation services for older adults.

Findings also show that people who drive are substantially less likely to miss or delay a medical trip, and those with someone else in the household who can drive are also less likely to miss or delay trips, while the likelihood of missing or delaying routine trips increases with distance. These results suggest that even though the total number of trips taken may not be affected by distance or transportation factors, individuals are more likely to miss a scheduled trip if they cannot drive, do not have someone else in the household who can drive, or the distance is too great. Individuals that miss a scheduled trip then have to make up that missed appointment at a later time. Results indicate that they do eventually make those trips, but if they are delaying the trips to a later time, they may not get the care at the time they most need it. Moreover, the level of care required may be more serious and more costly.

Individuals who must travel longer distances are also significantly more likely to say that getting transportation to health care is difficult. The burden of getting transportation to health care is found to increase with distance and is also greater for those who ride with a family member or friend or a volunteer driver. Those who rely on friends, family, or volunteer drivers for a ride may benefit from access to public transportation.

To suit their needs, the type of transit service provided needs to be convenient and frequent enough, and the transit and medical schedules need be coordinated, as these were the greatest concerns noted by the survey respondents. Respondents also cited a need for door-to-door service. Greater coordination between transit providers and health care providers would benefit those relying on transit. Expansion of transit service and greater awareness of available service in rural areas could also be beneficial for those who cannot or prefer not to drive. As the survey showed, more than half of respondents said they either do not have demand-response service available to them or they are not aware of such service, more than two-thirds said the same about fixed-route service, and nearly three-quarters indicated either a lack of intercity service or no awareness of such a service.

Future research on the impacts of public transportation on health care utilization and transportation difficulties will need to gather data from a larger number of transit users. The number of transit users who responded to this survey was too small to make too many conclusions regarding transit.

In response to an open-ended question about concerns with transportation to health care, respondents commonly mentioned that they currently do not have problems with transportation, but many noted that it could be an issue in the future and that they would be very grateful to have public transportation services available to them if and when that time comes.

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1. INTRODUCTION

Access to transportation is a critically important aspect of health care utilization. This is especially true in rural areas where individuals often have to travel long distances to access health care services. Previous research has shown that increased distance between residents and health care providers decreases utilization of health care services. The problem becomes compounded when a growing portion of residents in rural areas such as the Upper Great Plains are older adults who need access to health care services but may have limited transportation options. There are an increasing number of senior citizens living in rural areas who would prefer to age in place but may be forced into moving to improve their access to health care. Public transportation could play an important role in providing rural residents access to health care while allowing them to stay where they prefer to live.

The objective of this study is to assess the impacts of transportation and geography on utilization of health care services for older adults in rural and small urban areas. To that end, a survey was developed and distributed to people aged 60 or older living in the rural Upper Great Plains states of North Dakota, South Dakota, Montana, and Wyoming. Using data collected from the survey, a model was developed based on the Health Behavior Model that considered transportation and distance as factors that could enable or impede health care utilization. The impacts of the ability to drive, having someone else in the household who can drive, and having access to transit on health care use were estimated.

Other objectives are to find how many missed trips there are due to lack of transportation and estimate the characteristics of those people who miss trips, to determine how much older adults rely on public transportation for medical trips, to discover the concerns older adults have with using public transportation for medical trips, and to estimate the demand for using public transportation for medical trips among those who do not currently have access to transit.

The paper is organized as follows. Section two discusses the differences in health care utilization between rural and urban areas and reviews the literature on the topic. Previous studies examining the effect of distance on health care utilization are examined. The third section reviews previous research relating transportation to health care. In section four, the Health Behavior Model, which will be used to estimate the impacts of transportation and geography on health care use, will be introduced. A discussion of survey development is provided in section five, and the characteristics of the respondents are detailed in the sixth section. The data from the survey are analyzed in section seven. The analysis includes an ordered probit model of health care trip frequency, a binary probit model estimating the likelihood that the respondent has missed or delayed a health care trip over the past year, and an ordered probit model estimating the difficulty in getting transportation to health care as reported by the respondents. Current use and demand for public transportation, the problems identified with using public transportation for health care, and other comments made by survey respondents are discussed in section eight. The final section provides a discussion of key findings and conclusions.

2. DIFFERENCES BETWEEN RURAL AND URBAN HEALTH CARE UTILIZATION

There is significant evidence that health care utilization is lower in rural areas compared to urban areas (Horner et al. 1994, Blazer et al. 1995, Casey et al. 2001, Arcury et al. 2005, Iezzoni et al. 2006, Winters et al. 2006). According to Jones et al. (2009), rural residents have higher rates of age-adjusted mortality, disability, and chronic disease than those living in urban areas, and they have lower access to health care in terms of affordability, proximity, and quality. These differences could be due to a number of reasons, such as differences in the number of physicians available, possible differences in individual characteristics between rural and urban residents, and the longer travel distances and fewer transportation options available for people in rural areas.

2.1 Fewer Physicians in Rural Areas

One possible explanation for lower health care utilization in rural areas is that there are fewer doctors and specialists per capita. As Jones et al. (2009) explain, many rural counties do not have sufficient patient volume to support full-service hospitals, so the rural health care model focuses on providing primary care and emergency care locally, while referring patients to regional health care centers for specialized care. Fordyce et al. (2007) found that not only are there fewer specialists per capita in rural areas, but that there are also fewer generalists per capita. Their study found, overall, that rural areas contained 19% of the population in the United States but only 11% of physicians. More specifically, they found the number of generalists per 100,000 people declined from 72 in urban areas to 55 in rural areas and 36 in the most isolated rural areas. These isolated, or frontier, areas are defined as those having a population density of six people or fewer per square mile. The decrease in specialists in rural regions is more severe. The number of medical, surgical, pediatric, or other specialists per 100,000 people dropped from 138 in urban areas to 58 in rural areas and 17 in the most isolated rural areas. Physicians practicing family medicine are the only ones that do not decrease in number per capita as population declines. Lishner et al. (1996) found that the lack of health care services in rural areas is especially concerning for people with disabilities.

2.2 Differences in Characteristics of Urban and Rural Individuals

Differences between urban and rural areas in terms of income, insurance coverage, education, culture, and attitudes could explain some of the differences in health care utilization. A study of the use of preventive services found that those with low income, less education, lack of health insurance, and lack of knowledge about the potential benefits were less likely to utilize the service (Casey et al. 2001). No significant difference in health insurance coverage between metro and non-metro areas was found in a study by Jones et al. (2009), but they did find average incomes are higher in metro areas, so non-metro residents pay, on average, a higher percentage of their income on health care. Furthermore, Jones et al. (2009) found that non-metro households are more likely than metro households to report that health care costs limit their medical care.

The culture of a region could also impact the probability that one would seek health care services. Casey et al. (2001) noted that previous research has shown that traditional rural values such as self-reliance, individualism, a preference for informal support networks, and reluctance to seek medical care may hinder use of preventive care services. Arcury et al. (2005) studied the Appalachian Region and included in their model cultural health beliefs and practices of the area such as detrimental health behaviors, use of folk medicine, effects of conservative religion on medical care use, and alienation from national society.

2.3 Impact of Distance on Health Care Utilization

Distance to health care facilities and access to transportation could significantly impact health care utilization. The distances to regional health care centers can often be great, especially in the most rural areas. The distance decay effect states that the interaction between two locales decreases as the distance between them increases. This effect is often found to occur in consumer travel behavior, as increasingly smaller proportions of the population will travel to certain locations as the distance to those locations increases. A number of studies have measured the impact of distance on health care utilization and have found the same effect to occur.

Nemet and Bailey (2000) studied the relationship between distance and utilization of health care by a group of elderly residents in rural Vermont, focusing on a county on the Canadian border where 82% of the residents live in rural areas. They found that people who had to travel more than 10 miles to their physician tended to go to their physicians less frequently than those who had to travel shorter distances. Goodman et al. (1997) also studied northern New England, including Maine, New Hampshire, and Vermont, and found that those who lived farther from the hospital were substantially less likely to be hospitalized for medical illness. Distance to regular care services was found to have a significant negative relationship with the number of regular care check-up visits in a study of rural North Carolina (Arcury et al. 2005). This study, though, did not find distance to impact the number of chronic care or acute care visits. Winters et al. (2006) conducted a study on the self-management of chronic illness by women living in isolated, rural areas of five western states. The study found that distance had a significant impact. They found that travel distance to health services and the related costs affected their healthcare decisions, and the time spent traveling affected them physically and was a cause of stress.

Other studies have examined more specific health care issues. For example, Gregory et al. (2000) found that use of cardiac revascularization services in New Jersey decreased as distance to the service increased. Similarly, Harris et al. (2008) found that proximity to a hospital predicted higher hospitalization rates for cardiovascular disease (more specifically, myocardial infarction and heart failure) in Maine. Since it is unlikely that those living in communities distant from hospitals are healthier, the results suggest they are less likely to seek hospitalization. Littenberg et al. (2006) found that insulin use declines as patients live farther from their source of care, and a study in France found that detection rates of hepatitis C decreased as the distance to the general practitioner increased (Monnet et al. 2006). Although many of these studies examine specific geographic regions and different health care issues, the effect seems to be largely universal. For example, a study in Honduras found that walking time to the clinic negatively impacted primary health care utilization (Baker and Liu 2006).

Underutilization of preventive health care services in rural areas is also a concern. Casey et al. (2001) found that after controlling for demographic factors, rural residents are less likely than urban residents to obtain certain preventive health services.

3. TRANSPORTATION AND HEALTH CARE BACKGROUND

Access to transportation is critically important for utilization of health care services. While long travel distance makes trips to medical care burdensome, lack of transportation makes those trips impossible. In rural areas where travel distances are longer and access to alternative modes such as transit is less prevalent, transportation becomes a vital issue for access to health care. While many studies have analyzed the relationship between distance and health care use, fewer have examined the relationship between transportation and health care.

Arcury et al. (2005) conducted one such study in rural North Carolina. They found that those who had a driver's license had roughly twice as many health care visits as those who did not, and those who had family or a friend who could provide transportation had about 1.6 times more visits than those who did not. A very small percentage of residents surveyed had used public transportation to access health care, but transit was very important to those who did use it. The small number of respondents who used public transportation had four more chronic care visits per year than those who did not.

If providing transportation to health services for those who lack it increases the utilization of these services, there could be cost benefits in terms of reduced need for emergency care and preventable hospitalizations. It has been estimated that 3.6 million Americans do not obtain medical care in a given year because of lack of transportation, and that may be a conservative estimate (Wallace et al. 2005, 2006). Missing a trip for routine care or preventive services can often result in a medical trip that is more costly than the trip that was missed. While providing non-emergency medical transportation (NEMT) for those who lack it may be expensive, it has the potential to provide cost savings.

A study by Wallace et al. (2006), in fact, did find the provision of NEMT to those who lack access to transportation to have net societal benefits. For the seven chronic conditions and five preventive conditions analyzed in their study, Wallace et al. (2006) found that the net health care benefits of increased access to NEMT for those transportation-disadvantaged individuals who lack it exceeded the additional costs of transportation for all of these conditions. The benefits included actual decreases in health care costs for some conditions and improved quality of life. For some of the conditions they found a net cost savings, and for the others, the improvements in quality of life or life expectancy were found to be sufficient to justify the added expense.

NEMT is not expensive when compared with emergency transportation. Flaherty et al. (2003) cite costs of $400-$525 per ambulance trip and $10-$20 per NEMT trip. They argued that a significant number of ambulance rides for Medicare patients are not for true emergencies, especially in rural areas, and that if just half of the these ambulance trips could be prevented, the savings to Medicare would be substantial.

Flaherty et al. (2003) considered whether a NEMT program could be included within the Medicare program as it is in Medicaid. Medicaid's assurance of transportation to medically necessary health care is one of the features that sets it apart from traditional health insurance. Medicaid NEMT expenditures totaled slightly more than $3 billion in FY 2006, which was almost 20% of the entire federal transit budget but only a small portion of the Medicaid budget (Rosenbaum 2009).

4. MODELING HEALTH CARE UTILIZATION

Following Arcury et al. (2005), the model used in this analysis integrates concepts from the Health Behavior Model (HBM). This model, which has been effectively applied by health economists, was initially developed in the late 1960s to help understand why families use health services, to define and measure equitable access to health care, and to help develop policies to promote equitable access (Andersen 1995).

The HBM states that an individual's use of health services is a function of his/her predisposition to use services, factors enabling or impeding use, and need for care. Predisposing factors include demographic characteristics such as age and gender; social structure, which has traditionally been measured using education, occupation, and ethnicity and can also include social networks and interaction and culture; and health beliefs, which are the attitudes, values, and knowledge that might influence use of health care services (Andersen 1995). Enabling factors include availability of health personnel and facilities, income, health insurance, regular source of care, travel and waiting times, and social relationships (Andersen 1995).

Arcury et al. (2005) included transportation as an enabling factor. They added measures of geographic access and spatial behavior to the HBM, including distance, transportation availability, and activity space. Although studies show that increased distance to a provider reduces utilization, Nemet and Bailey (2000) found that an individual's activity space may be more important. Activity space consists of the places or areas than an individual travels to, or interacts with, on a frequent basis. Research has shown that people who have providers located outside their activity space are less likely to utilize health care services (Nemet and Bailey 2000). Sherman et al. (2005) analyzed methods for representing a person's activity space in healthcare accessibility studies, including the use of geospatial technologies.

5. SURVEY DEVELOPMENT

A survey was developed to collect information on use of health care services and the predisposing factors, enabling factors, and need for care. Specifically, the survey asked how many trips the respondent made for routine health checkups, chronic health care visits, and emergency care visits over the last year, following Arcury et al. (2005). Respondents were also asked how many trips they missed or had to delay due to a lack of transportation. The survey collected information on the following predisposing factors: age, gender, education, marital status, and propensity to seek care. Propensity to seek care was determined, following Nemet and Bailey (2000) and Haynes (1991), by asking how often the respondent would wait to see a doctor, assuming cost and ability to get to a health care facility were not a concern, for each of the following: chest pains, fever, stomach pains, pain from a fall, can't stop coughing, and blood in bowel movement. An average propensity to seek care score was calculated based on the response to this question.

The survey collected information on the following geographic and transportation factors: distance from health care facilities (classified by those for routine health checkups, chronic health care visits, and emergency care), activity space, ability to drive, having someone else in the household who can drive, number of vehicles in the household, access to public transportation, and use of various transportation options. Activity space was determined by simply asking which cities or towns the respondent visits at least once per month. Zip code data were also collected, which allows the respondents to be classified based on the size of their community. The survey also asked how difficult it is for respondents to get transportation to their medical provider, what percentage of their medical trips are out of town, and what problems they have with using public transportation for medical trips. Other enabling factors included in the survey were income, insurance, and whether the respondent has a regular medical doctor or physician. Need for service was determined by asking if they have any chronic conditions or illnesses, what they consider their overall level of health to be, if they have any disabilities, and how severe they consider their disability to be. Finally, the survey included an open-ended question that gave respondents the opportunity to provide any comments or concerns they have regarding transportation to health care. The complete survey is provided in Appendix A.

The survey was distributed by mail to a random sample of 2,850 people aged 60 or older living in North Dakota, South Dakota, Montana, and Wyoming. These four Upper Great Plains states were chosen due to similarities in geography. Each state is very rural with a few small urban centers. There are no large urban areas in these states. The largest metropolitan statistical areas (MSAs) in the region, according to 2009 Census estimates, are Sioux Falls, SD, with a population of 238,000 and Fargo, ND, with a population of 200,000. There are a total of 11 MSAs in the four-state region and 26 micropolitan areas. The survey was targeted at people aged 60 or older because they are most likely to be impacted.

The survey was conducted in May and June of 2010. The random sample of names and addresses was obtained from AccuData Integrated Marketing. The survey was also provided online. The survey cover letter mailed to each respondent included a web address for the online survey if the respondent preferred that method. (The online survey was not advertised in any other way). One hundred thirty-five surveys were not received due to incorrect addresses or, in a few cases, the intended respondent being deceased. That left 2,715 surveys that, presumably, were received. Three weeks after the survey was mailed, a reminder card was sent out to survey participants. This card included the web address to the online survey, provided a phone number if the respondent needed a new copy, and gave a date for when the survey would close.

A total of 543 responses were received, yielding a response rate of 20.0%. Of these, just six surveys were completed online, indicating that, despite increased Internet usage by people of all ages, the mail survey is still more effective for older adults. There may be some concern of selection bias influencing the results. That is, people with transportation issues or those who use public transportation may be more likely to complete the survey than others. A small number of comments were received by phone or email by potential respondents who said they were not going to complete the survey because they thought it did not apply to them, indicating such a bias could exist. However, the bias it not likely a major concern given that the total response rate is typical for a mail survey and that the characteristics of survey respondents are similar to those of the target population, as shown in the following section.

6. CHARACTERISTICS OF RESPONDENTS

6.1 Demographics

The age of respondents ranged from 60 to 95, with the average age being 72 and the median age 70. About half of respondents were aged 60-69, while a third were 70-79 and 18% were 80 or older. This distribution closely resembles the age distribution of the population, although people over age 80 were slightly underrepresented. Fifty-three percent of respondents were female, indicating a good distribution by gender as 54% of the population of people aged 60 or older in the four-state region is female (see Table 6.1).

Sixty-four percent of respondents said they are currently married, while 23% were widowed and the remainder were divorced, separated, or never married. The sample has a greater representation of married individuals and fewer people divorced or separated than the population of people aged 60 or older, but the distribution is close. As you would expect, the percentage of respondents who are widowed increases with age, from 8% of those in their 60s to half of those aged 80 or older (see Table 6.2). There is also a substantial difference between men and women, as women are much more likely to be widowed. Women in their 70s were just as likely to be widowed as they were to be married, while men were seven times more likely to be married than widowed. For those aged 80 or older, 69% of women were widowed, compared to 26% of men. Of the 121 respondents in the survey who were widowed, 79% were women. These results are very similar to the four-state population estimates from the 2006-2008 American Community Survey, which showed that 80% of women aged 85 or older are widowed, compared to 34% of men. The result of this difference is that older women are more likely than older men to be living alone and not have someone else to help provide transportation.

Table 6.1 Comparison of Survey Respondents and Target Population Characteristics

	Survey respondents		Target population[a]
Characteristic	(n)	(%)	(%)
Gender			
Male	253	47	46
Female	282	53	54
Age			
60-69	256	48	46
70-79	179	34	31
>80	96	18	23
Marital Status			
Married	343	64	59
Widowed	122	23	24
Divorced/Separated	50	9	13
Never married	21	4	4
Education			
Did not complete high school	39	7	-[b]
Completed high school	141	26	-
Some college	159	30	-
Completed college	93	17	-
Post graduate education or advanced degree	104	19	-
Income			
<$25,000	134	28	-[b]
$25,000-$44,999	157	33	-
$45,000-$74,999	116	24	-
$75,000-$99,999	46	10	-
>$100,000	29	6	-
State			
North Dakota	157	29	22
South Dakota	143	27	27
Montana	163	31	33
Wyoming	71	13	18
Size of Community[c]			
Metropolitan area	172	32	27
Micropolitan area	99	19	20
Town 2,500-10,000	54	10	15
Rural <2,500	206	39	38

[a]Population estimates for gender, age, and marital status are from the American Community Survey 2006-2008, population data for states are from 2008 Census estimates, and community population data were from the 2000 Census.
[b]Education and income data for the population aged 60 or older were not available.
[c]Community data were classified by zip codes.

Table 6.2 Marital Status by Age and Gender

Age	n	Married	Widowed	Divorced / Separated	Never Married
		----------Percentage----------			
Total					
60-69	256	75	8	13	4
70-79	179	62	29	7	2
80+	96	42	50	4	4
Males					
60-69	123	84	4	8	4
70-79	87	79	11	7	2
80+	42	69	26	2	2
Females					
60-69	135	66	12	18	4
70-79	92	46	46	7	2
80+	54	20	69	6	6

Geographically, 29% of respondents were from North Dakota, 27% were from South Dakota, 31% were from Montana, and 13% were from Wyoming (see Table 6.1). This distribution is somewhat close to what would be expected based on the populations of the four states, except North Dakota was overrepresented and Wyoming was underrepresented. The overrepresentation of North Dakota is not surprising given that the survey was conducted by a North Dakota university. North Dakota residents may have felt more inclined to complete the survey as it came from a local source. Similarly, Wyoming residents may have been less inclined to complete the survey due to their greater distance from and less familiarity with the university conducting the study.

As for the communities being represented in the sample, 32% of respondents were from a metropolitan area, 19% were from a micropolitan area, 10% were from cities that have a population of 2,500 to 10,000 and are not part of a metro or micropolitan area, and 39% were from rural areas or towns with population below 2,500. Again, this is fairly close to the actual population distribution.

6.2 Enabling Factors

6.2.1 Geography

The average distance respondents said they travel to health care services was 17 miles for routine health checkups, 42 miles for chronic health care visits, and 17 miles for emergency care. There is considerable variation in the reported distances, however, and some extreme distances skewed the averages upward. Some respondents living in towns with health care facilities are within a few blocks of service, while others reported the need to travel 100 or more miles. The median distance reported was 5 miles for routine health checkups, 9 miles for chronic health care visits, and 5 miles for emergency care (see Table 6.3). A quarter of respondents said they travel 2 miles or less for routine or emergency care visits and 2.5 miles or less for chronic health care visits. On the other end of the spectrum, 25% travel 20 miles or more for routine checkups, 55 miles or more for chronic care, and 22 miles or more for emergency care, and 10% must travel 41 miles, 120 miles, and 43 miles or more for routine, chronic, and emergency care, respectively. The results show substantial variation in travel distances and very long travel distances for a significant number of individuals.

Table 6.3 Distances Traveled to Health Care Services

			Percentiles				
	n	Average	10th	25th	Median	75th	90th
		----------miles one way----------					
Routine health checkups	522	17.2	0.5	2	5	20	41
Chronic health care visits	496	41.8	1	2.5	9	55	120
Emergency care	513	17.3	0.5	2	5	22	43

A number of respondents reported making out-of-town health care trips. About 40% said that at least 10% of their health care trips are out-of-town, while 23% indicated that all or most (more than 75%) of their medical appointments are out-of-town.

6.2.2 Transportation

Given the distances that must be traveled, access to transportation is critically important. Most of the respondents, or 94%, said they have a current driver's license and are able to drive (see Table 6.4). The survey results show that driving decreases with age, but the driving rates are still high even among those aged 80 or older. Ninety-eight percent of respondents in their 60s can drive, 94% of those in their 70s can drive, and 86% of those aged 80 or older can currently drive. These results are similar to those found in a recent survey of North Dakota AARP members (Mattson 2009). While the percentage of older adults who still drive is high, many may prefer to reduce their driving or may feel forced to drive due to lack of adequate alternatives, and for those who either decide or are forced to quit driving, their access to alternative means of travel is critical. Furthermore, many of those who still have a driver's license and say they can drive may be infrequent drivers or their driving may be very limited.

Table 6.4 Access to Automobile

Has current driver's license and able to drive	
Total (n=536)	94%
Age 60-69 (n=253)	98%
Age 70-79 (n=179)	94%
Age 80+ (n=96)	86%
Another member of household has current driver's license and can drive	
Total (n=535)	69%
Age 60-69 (n=254)	81%
Age 70-79 (n=179)	61%
Age 80+ (n=94)	52%
Men (n=254)	78%
Age 60-69 (n=121)	89%
Age 70-79 (n=87)	71%
80+ (n=41)	61%
Women (n=285)	61%
Age 60-69 (n=135)	73%
Age 70-79 (n=92)	52%
Age 80+ (n=53)	45%
Number of vehicles in household	
0	2%
1	31%
2	43%
3+	23%

For those who no longer drive, they may rely on someone else in the household who can drive to provide their means of transportation. The survey found that 69% of respondents have another member in the household who has a current driver's license and is capable of driving. However, for those aged 80 or older, who are most likely to need someone else to provide rides, just over half said someone else in the household can drive. As women are more likely than men to be widowed, they are also less likely to have someone else in the household who can drive. The survey found that 78% of men aged 60 or older had someone else in the household who could drive, compared to 61% of women. A majority of households were found to have two or more automobiles, while 31% have just one and 2.4% reported having no vehicle.

Table 6.5 shows the availability of public transportation services as reported by survey respondents. Actual availability of these services may differ since it is based on what respondents reported and not a documentation of all services that actually exist. According to the survey results, half of the respondents said they have access to a taxi, 42% indicated access to a demand response service (described in the survey as door-to-door or curb-to-curb public van or bus service such as paratransit or dial-a-ride), 31% reported access to a fixed-route bus service within one quarter of a mile of their home, and 27% said they have access to public van or bus service to other cities where they have medical appointments. Most of the remainder said they do not have access to these services, while some answered that they do not know.

Table 6.5 Reported Access to Public Transportation

	Yes	No	Don't know	Not applicable
Taxi	50%	46%	5%	
Demand response service	42%	44%	14%	
Fixed-route service within 1/4 mile of home	31%	62%	6%	
Transit to out-of-town health care appointments	27%	42%	17%	14%

Respondents were asked to identify all the types of transportation they use for making health care trips. Eighty-nine percent of respondents said they drive themselves when making health care trips. This is less than the number of those who said they can drive, indicating some will not drive themselves for medical appointments even if they are capable of driving. It may be the case that some are comfortable driving for only some types of trips, such as those close to home, and will not drive for other trips. Over half, or 55%, said they will at least sometimes get a ride from a family member or friend. Five percent of the respondents said they use a public van or bus, 4% walk or ride bicycle, 3% get a ride from a volunteer driver, 2% ride in a human service agency car or van, and 1% take a taxi.

The responses differ somewhat based on gender, age, whether the person has a disability, and geographic characteristics (see Table 6.6). Just as other studies have shown (Mattson 2009, Rosenbloom 2006), women are more likely to use public transportation, slightly less likely to drive, and more likely to get a ride with a family member or friend. As age increases, respondents were less likely to drive themselves or walk and more likely to use other means of travel. For those aged 80 or older, driving decreased to 78% and use of public transportation increased to 10%. People with disabilities were also less likely to drive (73%) and more likely to use public transportation (11%) than those without disabilities. The results suggest that while use of public transportation is low overall, it is a valuable mode for certain segments of the population, such as those over age 80 and people with disabilities.

Table 6.6 Transportation Used to Access Health Care

	n	Drive yourself	Get a ride from family member or friend	Get a ride from volunteer driver	Ride in human service agency car or van	Take public van or bus	Take taxi	Walk / bicycle
		----------Percentage----------						
Total	532	89	55	3	2	5	1	4
Gender								
Male	255	91	46	4	2	4	1	4
Female	284	89	62	3	2	6	1	4
Age								
60-69	255	95	51	2	1	4	1	6
70-79	177	89	53	3	2	4	1	3
80+	93	78	67	6	5	10	3	0
Disability								
Yes	133	73	68	7	3	11	2	2
No	389	95	51	2	2	3	1	5

Of those who do not drive themselves for health care trips, 87% get a ride from a family member or friend, 20% use public transportation, 13% get a ride from a volunteer driver, 9% ride in a human service agency car or van, 5% walk or ride bicycle, and 4% take a taxi (see Figure 6.1).

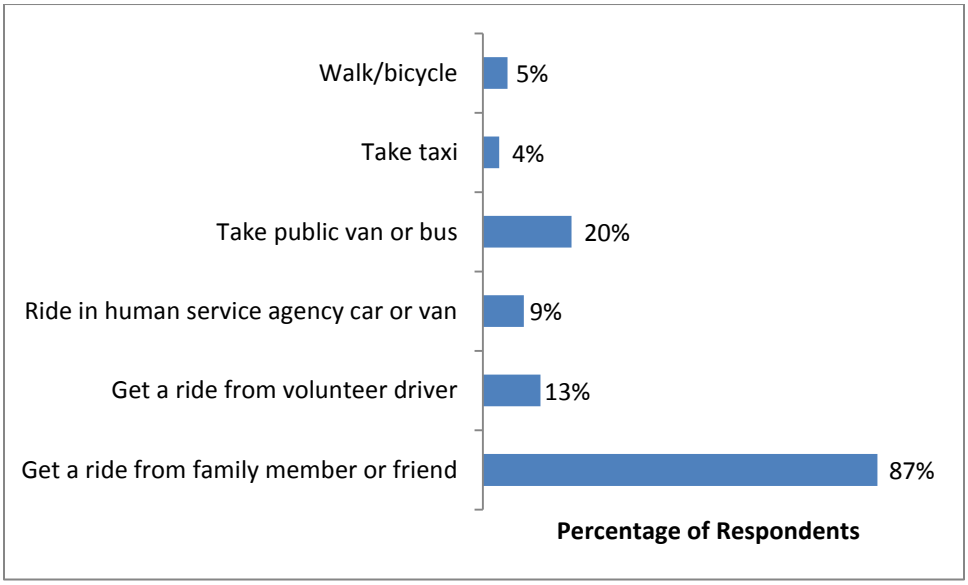

Figure 6.1 Transportation Used to Access Health Care for those Who Do Not Drive (n=55)

Survey respondents mostly indicated that they do not have difficulties getting transportation to their medical care provider (see Figure 6.2). For in-town appointments, 86% said it is not at all difficult to get transportation, 9.7% said it is not too difficult, 2.4% reported it is somewhat difficult, and 1.6% answered that it is very difficult. Respondents indicated greater difficulties getting transportation to out-of-town appointments, as 65% said it is not at all difficult and 23% reported it is not too difficult, while 8.8% and 3.1% answered that it is either somewhat or very difficult, respectively.

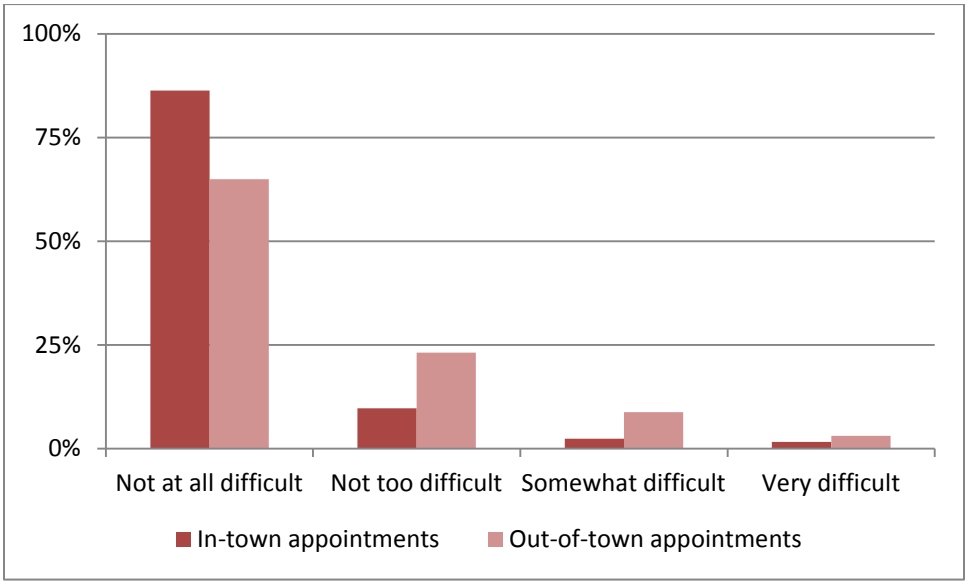

Figure 6.2 Difficulty Reported for Getting Transportation to Medical Appointments

6.2.3 Other Enabling Factors

Other enabling factors include income, insurance coverage, and whether one has a regular doctor. Income levels of the respondents were described previously in Table 6.1. About 2% of the respondents said they do not have health insurance. Approximately 48% reported having a combination of both public and private insurance, while 27% said they have just private insurance and 24% answered that they have just public insurance, such as Medicare, Medicaid, or VA benefits. Ninety-five percent reported having a regular doctor or physician that they go to. It is hypothesized that those without a regular doctor may be less inclined to seek medical care.

6.3 Need for Care

The health status of an individual determines need for care. Respondents were asked to describe their overall health as being good, fair, or poor. Two-thirds said their overall health is good, 30% answered that it is fair, and 4% reported having poor health. Just over half of the respondents reported having one or more chronic condition or illness, and 26% said they have a disability.

6.4 Health Care Trips Made and Missed

The survey asked how many trips the respondent made for routine health checkups, chronic health care visits, and emergency care visits over the last year. Chronic care differs from routine care in that it refers to care for specific chronic conditions and often requires trips to specialists, whereas routine checkups more likely occur at local clinics. The survey provided some examples of chronic care visits: visits for asthma, heart disease, cancer, dialysis, etc. Emergency care would occur in hospitals or walk-in clinics.

Over half of respondents (53%) reported making one or two trips for routine health checkups over the past year (see Table 6.7). Close to a quarter said they took three to five such trips, and 14% took six or more trips, while nearly 10% reported making no trips for routine health checkups. Much greater percentages said they took no trips for chronic health care visits (54%) or emergency care (74%). The responses show, however, that for those who do need to make trips for chronic conditions, the frequency of those trips tends to be greater. For example, of those who needed to make trips for chronic conditions, nearly 60% took more than two trips, 35% took more than five, 18% took more than ten, and 7% took more than 20. Of those who made a trip for emergency care over the past year, most took one or two such trips.

Table 6.7 Number of Health Care Trips Taken and Missed or Delayed During the Past Year

	Routine health checkups	Chronic health care visits	Emergency care
Number of Trips Taken	----Percentage of respondents----		
0	9.5	54.4	74.3
1-2	53.0	19.0	20.9
3-5	23.6	10.9	4.2
6-10	7.6	7.5	0.6
11-20	4.4	5.1	0.0
> 20	1.9	3.2	0.0
Number of Trips Missed or Delayed			
0	95.4	95.9	98.6
1-2	3.8	2.9	0.8
3-5	0.4	1.0	0.6
6-10	0.2	0.0	0.0
11-20	0.2	0.0	0.0
> 20	0.0	0.2	0.0

The survey also asked respondents how often they missed or delayed a health care trip because they could not drive or did not have a ride. As previous studies have indicated, not as much is known about how many health care trips are missed due to lack of transportation (Wallace et al. 2006). The survey results showed that about 4.6% of respondents missed or delayed a routine health checkup, 4.1% missed or delayed a chronic health care visit, and 1.4% missed or delayed an emergency care visit. Most of those who reported missing or delaying trips said that they missed or delayed one or two trips, while 1% of respondents reported missing or delaying three or more chronic care visits.

7. EMPIRICAL ANALYSIS

Three models were estimated. The first model estimated number of health care trips made for each of the three trip types, the second estimated likelihood of missing or delaying a health care trip for each trip type, and the third estimated the degree of difficulty that respondents reported for making health care trips.

7.1 Trip Frequency

An ordered probit model was used to estimate trip frequency. The dependent variable was measured on a 0-5 scale, where 0 = no trips, 1 = 1 to 2 trips, 2 = 3 to 5 trips, 3 = 6 to 10 trips, 4 = 11 to 20 trips, and 5 = more than 20 trips. Independent variables included age, gender, propensity to seek care, distance to health care service, transportation variables, type of insurance, income, whether the individual has a regular doctor, whether he or she has any chronic condition, health status, and whether or not the individual has a disability. Age, gender, and propensity to seek care are predisposing factors. It is hypothesized that people may make more health care trips as age increases and that women will make more trips, as found by Arcury et al. 2005. Propensity to seek care, which is measured on a scale of 1 to 6 with a higher number indicating greater propensity to seek care, is expected to positively influence the number of trips.

Distance, transportation variables, insurance, income, and regular doctor are enabling factors. It is hypothesized that trips will decrease with increases in distance and that the number of trips will be greater for those with insurance, higher income, and a regular doctor. The transportation variables included are whether the individual can drive and the number of transportation options used for accessing health care. It is hypothesized that the number of trips will be greater for those who can drive and for those with more transportation options. The transportation options variable is measured as the number of transportation options used to access health care services. An interaction is included between the number of transportation options and a dummy variable for those who do not drive, since the number of transportation options available may be more important for those who cannot drive.

Chronic conditions and health status are measures of need for care. A dummy variable is included for whether or not the individual has a chronic condition or illness. Health status is measured on a scale of 1 to 3 where 1=poor, 2=fair, and 3=good. People with chronic conditions and poorer health are expected to take more trips. Disabilities could be a measure of need for care, but it could also be an impediment as people with disabilities may face greater difficulties in obtaining adequate transportation.

Estimated odds ratios are shown in Table 7.1. Unlike previous studies, no significant relationships were found between distance to health care and health care usage, and the ability to drive was not found to have any significant effect on trip frequency. The number of alternative transportation options used was also not found to significantly influence routine health checkups or chronic care visits, but it was found to have a significant effect on the number of emergency care visits taken, especially for those who do not drive. The number of emergency care visits increased as the number of transportation options increased, and the impact was significantly greater for those who do not drive.

Table 7.1 Estimated Results from Ordered Probit Model of Health Care Trip Frequency

	Routine Health Checkups (n=430)		Chronic Care Visits (n=212)		Emergency Care Visits (n=411)	
Variable	OR	95% CI	OR	95% CI	OR	95% CI
General characteristics						
Age	1.02**	1.00-1.04	1.01	0.99-1.03	1.01	0.99-1.04
Male	1.03	0.82-1.28	0.97	0.71-1.31	0.95	0.73-1.25
Propensity to seek care	1.13**	1.02-1.26	1.05	0.90-1.22	1.04	0.91-1.20
Distance	1.00	1.00-1.01	1.00	1.00-1.00	1.00	0.99-1.00
Transportation variables						
Can drive	1.44	0.77-2.70	0.87	0.46-1.65	1.01	0.52-1.96
Transportation options	1.02	0.87-1.21	1.13	0.89-1.44	1.24**	1.01-1.52
Transportation options* Cannot drive	1.10	0.80-1.50	1.17	0.84-1.62	1.55***	1.11-2.16
Type of insurance						
Public	2.55**	1.07-6.09	3.68**	1.16-11.67	950	-[a]
Private	2.28*	0.96-5.40	3.12*	0.98-9.97	1079	-[a]
Public and private	2.84**	1.20-6.75	3.77**	1.21-11.78	1029	-[a]
Other enabling factors						
Income	0.98	0.88-1.09	1.05	0.91-1.22	1.09	0.95-1.24
Regular doctor	2.58***	1.52-4.40	0.62	0.20-1.92	0.95	0.50-1.81
Need for care						
Chronic condition	1.21	0.95-1.53	-[b]	-[b]	1.02	0.75-1.38
Health status	0.63***	0.49-0.81	0.61***	0.46-0.82	0.59***	0.44-0.80
Disability	0.82	0.62-1.10	1.00	0.71-1.40	0.94	0.66-1.35

Note: OR = odds ratio; CI = confidence interval.
*$p < .10$ **$p < .05$ ***$p < .01$
[a]Could not be estimated. [b]Not included in model.

Other enabling factors were found to significantly influence trip frequency. Routine health checkups increased as propensity to seek care increased. Insurance coverage was found to significantly influence health care use, as those with coverage were substantially more likely to make routine health checkups or chronic care visits than those without coverage. The results suggest that those with a combination of public and private insurance were more likely to take more trips. Insurance coverage, however, was not found to have any significant effect on emergency care visits. No significant relationship was found between income and health care usage, while the odds of making routine health checkups was found to be significantly greater for those with a regular doctor.

As expected, need for care is one of the most significant variables explaining health care usage. For all types of health care visits, the odds of taking additional trips decreased by 40% as health status improved from poor to fair or from fair to good.

Since people who cannot drive may be influenced differently by geographic and transportation factors than those who can drive, the model was re-estimated with the sample restricted to those who do not drive for medical trips. It is hypothesized that the number of trips taken by those who do not drive is positively influenced by having another person in the household who can drive and by use of public transportation. The insurance variables were dropped from this model since there was no one in the sample who did not have insurance, and income was also dropped because the variable was insignificant and including it reduced the sample size because income data were not provided by some respondents. The sample size for this model is small, but some significant results were found, as shown in Table 7.2.

Table 7.2 Estimated Results from Ordered Probit Model of Health Care Trip Frequency for Individuals who Do Not Drive

	Routine Health Checkups (n=46)		Chronic Care Visits (n=41)		Emergency Care Visits (n=47)	
Variable	OR	95% CI	OR	95% CI	OR	95% CI
General characteristics						
Age	1.06***	1.02-1.10	1.05**	1.01-1.09	1.01	0.97-1.05
Male	1.22	0.54-2.72	1.19	0.55-2.61	0.74	0.32-1.75
Propensity to seek care	1.17	0.81-1.70	1.38*	0.95-2.01	1.07	0.74-1.56
Distance	1.00	0.99-1.01	1.00	0.99-1.01	0.99**	0.98-1.00
Transportation variables						
Household driver	2.27*	0.95-5.41	2.36**	1.00-5.59	1.61	0.65-3.99
Use transit	0.75	0.32-1.74	0.70	0.28-1.75	1.82	0.75-4.45
Other enabling factors						
Regular doctor	1.76	0.24-12.73	-[a]	-[a]	823	-[b]
Need for care						
Chronic condition	1.71	0.61-4.80	-[a]	-[a]	2.20	0.68-7.12
Health status	0.52*	0.27-1.03	0.47**	0.22-0.98	0.36***	0.18-1.74
Disability	0.28***	0.12-0.65	1.01	0.43-2.39	0.27***	0.11-0.67

Note: OR = odds ratio; CI = confidence interval.
*$p < .10$ **$p < .05$ ***$p < .01$
[a]Not included in model. [b]Could not be estimated.

The estimates show that for those who do not drive, having someone else in the household who can drive has a significant positive impact on the number of routine and chronic health care visits. The odds of taking additional trips were estimated to increase by a factor of 2.27 and 2.36, respectively, for routine health checkups and chronic care visits when there is someone else in the household who can drive. Use of transit, on the other hand, was not found to have any significant impact on the number of health care trips taken. When the sample is restricted to those who do not drive, the impact of distance is found to be significant for emergency care visits. The odds of taking additional emergency care visits was found to decrease by about 1% for each additional mile traveled.

In the full model shown in Table 7.1, trip frequency was not found to be significantly different for people with disabilities, but when the sample is restricted to those who do not drive, people with disabilities were found to have substantially fewer routine and emergency care visits. These results suggest that people with disabilities who cannot drive may have greater difficulties obtaining alternative means of transportation.

7.2 Missed or Delayed Trips

A binary probit model was estimated to predict the likelihood of an individual missing or delaying a trip. The dependent variable is a binary variable equal to 1 if the respondent reported missing or delaying a health care trip during the past year due to a lack of transportation and 0 if not. Age, gender, and propensity to seek care are included as predisposing factors. It is hypothesized that the probability of missed trips will increase due to increased difficulty in obtaining transportation. Distance to the health care service, transportation variables, income, and disabilities are included as enabling or impeding factors. Measures of need for care are not included because it is assumed that the missed trips were needed.

Transportation variables in the model include whether the person drives, whether there is someone else in the household who can drive, whether the respondent uses transit, and the number of transportation options used. It is hypothesized that missed trips will decrease for those who can drive, those with another driver in the household, and those who use transit. It is also expected to decrease as the number of options used increases.

While results shown previously in Table 7.1 indicated that distance and transportation have mostly insignificant effects on health care usage, the results from this model show that these factors have a significant impact on the likelihood that an individual will miss or delay a trip (see Table 7.3). People who drive are substantially less likely to have reported missing or delaying a health care trip over the past year, for all types of trips (odds ratios of 0.19 to 0.25). Those with someone else in the household who can drive were also less likely to have missed or delayed a routine health care trip (odds ratio 0.43) or a chronic care visit (odds ratio 0.49). Use of transit, however, was not found to have a significant impact on the likelihood of missing or delaying a trip, and the number of transportation options used had an unexpected positive impact.

Table 7.3 Estimated Results for Binary Probit Model of Missed or Delayed Health Care Trips

	Routine Health Checkups (n=431)		Chronic Care Visits (n=214)		Emergency Care Visits (n=420)	
Variable	OR	95% CI	OR	95% CI	OR	95% CI
General characteristics						
Age	0.96**	0.93-1.00	0.97*	0.93-1.00	0.96	0.90-1.02
Male	0.82	0.47-1.43	0.78	0.39-1.54	0.86	0.29-2.52
Propensity to seek care	0.80*	0.63-1.01	0.92	0.68-1.23	0.86	0.56-1.33
Distance	1.01***	1.00-1.02	1.00	1.00-1.01	1.00	0.99-1.01
Transportation variables						
Drives	0.24***	0.12-0.49	0.19***	0.09-0.41	0.25**	0.08-0.79
Household driver	0.43***	0.24-0.79	0.49**	0.24-0.99	0.80	0.28-2.24
Uses transit	1.62	0.72-3.64	1.68	0.68-4.20	2.71	0.79-9.34
Transportation options	1.39*	0.94-2.07	1.22	0.75-1.96	0.78	0.39-1.56
Other enabling factors						
Income	1.04	0.79-1.36	0.86	0.61-1.22	0.48*	0.20-1.14
Disability	1.30	0.75-2.24	1.14	0.60-2.17	0.46	0.15-1.45

Note: OR = odds ratio; CI = confidence interval.
*$p < .10$ **$p < .05$ ***$p < .01$

The odds of missing or delaying a routine health checkup was found to increase as distance to the health care service increased, but the effect of distance was not found to be significant for chronic or emergency care visits.

Other results show that the odds of missing a trip tends to decrease with age. Those with a greater propensity to seek care are less likely to miss or delay a routine health checkup, and increases in income are associated with decreased probability of missing emergency care visits.

7.3 Difficulty Getting Transportation

The last model is an ordered probit model estimating difficulty with getting transportation to medical care facilities. The dependent variable is the difficulty respondents reported in getting transportation on a scale of 1 to 4, where 1=not at all difficult, 2=not too difficult, 3=somewhat difficult, and 4=very difficult. Independent variables include age, gender, distance to health care, transportation variables, income, and disability. It is expected that difficulties may increase with age and distance and for people with disabilities and those with lower incomes. For out-of-town trips, distance to chronic care service is used since those types of trips are more likely to be to another town, and for in-town trips, the distance to routine care is used. Transportation variables include dummy variables for each means of transportation used to access health care.

The results show that difficulty in obtaining transportation increased with increases in distance for both out-of-town and in-town trips (see Table 7.4). People who drive were significantly less likely to report difficulty getting transportation for in-town trips. Those who ride with a family member or friend were more likely to report difficulties with out-of-town trips, and those who ride with volunteer drivers were more likely to report difficulties for both out-of-town and in-town trips. These results suggest that people who need to rely on others for a ride are more likely to find it difficult to obtain transportation. Transit use was not found to have any impact, but it is likely that there were too few transit users who completed the survey to be able to analyze its effect.

Other findings are that people with disabilities are significantly more likely to report difficulties getting transportation to medical facilities, and younger adults and those with higher income were less likely to find it difficult to obtain transportation for out-of-town trips.

Table 7.4 Factors Impacting the Difficulty for Getting Transportation for Out-of-Town and In-Town Medical Trips: Estimated Results from Ordered Probit Model

	Out-of-Town Trips (n=369)		In-Town Trips (n=426)	
	OR	95% CI	OR	95% CI
General characteristics				
Age	1.03***	1.01-1.04	0.99	0.97-1.01
Male	0.98	0.74-1.28	1.00	0.72-1.40
Distance	1.00***	1.00-1.01	1.01**	1.00-1.01
Means of transportation				
Drive	1.17	0.74-1.86	0.40***	0.26-0.64
Ride with friend or family	1.56***	1.17-2.07	1.17	0.82-1.67
Ride with volunteer driver	2.29**	1.21-4.35	1.82*	0.93-3.55
Human services vehicle	1.49	0.65-3.43	1.24	0.51-3.03
Transit	1.53	0.82-2.85	1.35	0.69-2.63
Taxi	2.34	0.52-10.47	0.00	-
Walk/bicycle	1.31	0.72-2.36	1.43	0.67-3.06
Other enabling factors				
Income	0.88*	0.78-1.01	0.89	0.75-1.04
Disability	1.63***	1.20-2.22	1.81***	1.29-2.56

Note: OR = odds ratio; CI = confidence interval.
*$p < .10$ **$p < .05$ ***$p < .01$

8. USE OF PUBLIC TRANSPORTATION FOR HEALTH CARE

8.1 Current Use and Demand for Public Transportation

As shown previously in Table 6.6, 5% of respondents reported using public van or bus for health care trips. That number increases to 10% of people aged 80 or older and 11% of people with disabilities. Separate questions asked respondents how often they use public transportation, defined as public van or bus or taxi, for any purpose and for medical trips specifically (see Table 8.1). The survey found that 14% of respondents use public transportation, and 7% use it for medical trips. Most of those who use public transportation are infrequent users, using it less than once per month. Only 4% reported using public transportation at least once per month, including 1% who use it for medical trips.

Table 8.1 Current Use and Demand for Public Transportation

	How Often Public Transportation is Currently Used by Respondents				How Often it Would be Used for Medical Trips by Those who Currently do not have Access	
	Any purpose		Medical trips			
	(n)	(%)	(n)	(%)	(n)	(%)
Never	463	86	496	93	218	64
Less than once per month	55	10	32	6	93	27
1-3 times per month	10	2	4	1	25	7
Weekly	4	1	2	0	2	1
More than once per week	4	1	0	0	1	0

Many of those who do not use public transportation do not have access to the service, so it is not an option for them. The survey asked those who do not have access to public transportation or do not know if it is available if they would use the service if it were available. Thirty-six percent said that they would use public transportation for medical trips if it were available. Most of those respondents indicated they would be infrequent users, but some indicated they would use it at least once per month. Twenty-seven percent said they would use it less than once per month, while 7% answered that they would use it one to three times per month and less than 1% said they would be weekly users.

Those who use public transportation most often said they started using the service because they could no longer drive, it was convenient for them, or service became available, and some mentioned using it because of problems with their vehicle.

8.2 Problems with Using Public Transportation

The survey asked respondents to identify problems they have with using public transportation for medical trips, if it is available to them. Fourteen potential problems were included in the survey, and the respondents were asked to indicate for each if it is a minor problem, a major problem, not a problem, or not applicable. Since many respondents were not users of public transportation, they most commonly indicated that the problems were not applicable or not a problem or they skipped the question. A number of respondents, however, did indicate having problems with public transportation (see Figures 8.1 and

8.2). The most commonly cited problems for both in-town and out-of-town medical trips were the need to match transit and medical schedules and inconvenient schedules. About 15% of all 543 responses indicated that schedules were at least a minor problem, and 9% said that the need to match transit and medical schedules is a major problem. Other problems cited by at least 10% of the respondents were service too infrequent, service not going where they need to go, lack of door-to-door service, and difficulty getting information about the service. Of those who said they have access to fixed-route or demand-response service, 23% said the need to match transit and medical schedules is a problem, 20% said inconvenient schedules are a problem for in-town medical trips, and 15% said infrequent service is a problem.

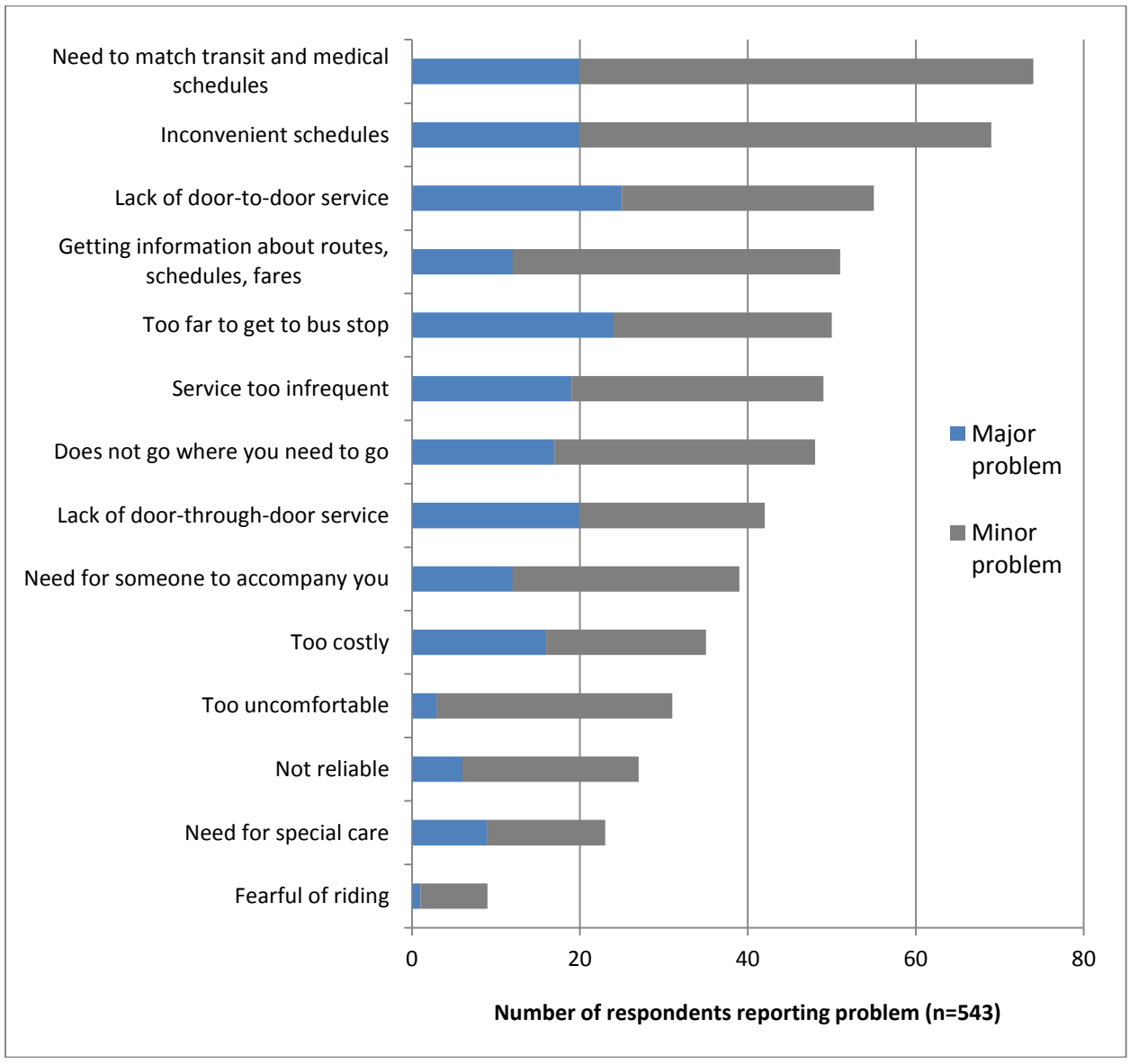

Figure 8.1 Problems with Using Public Transportation for In-Town Medical Trips

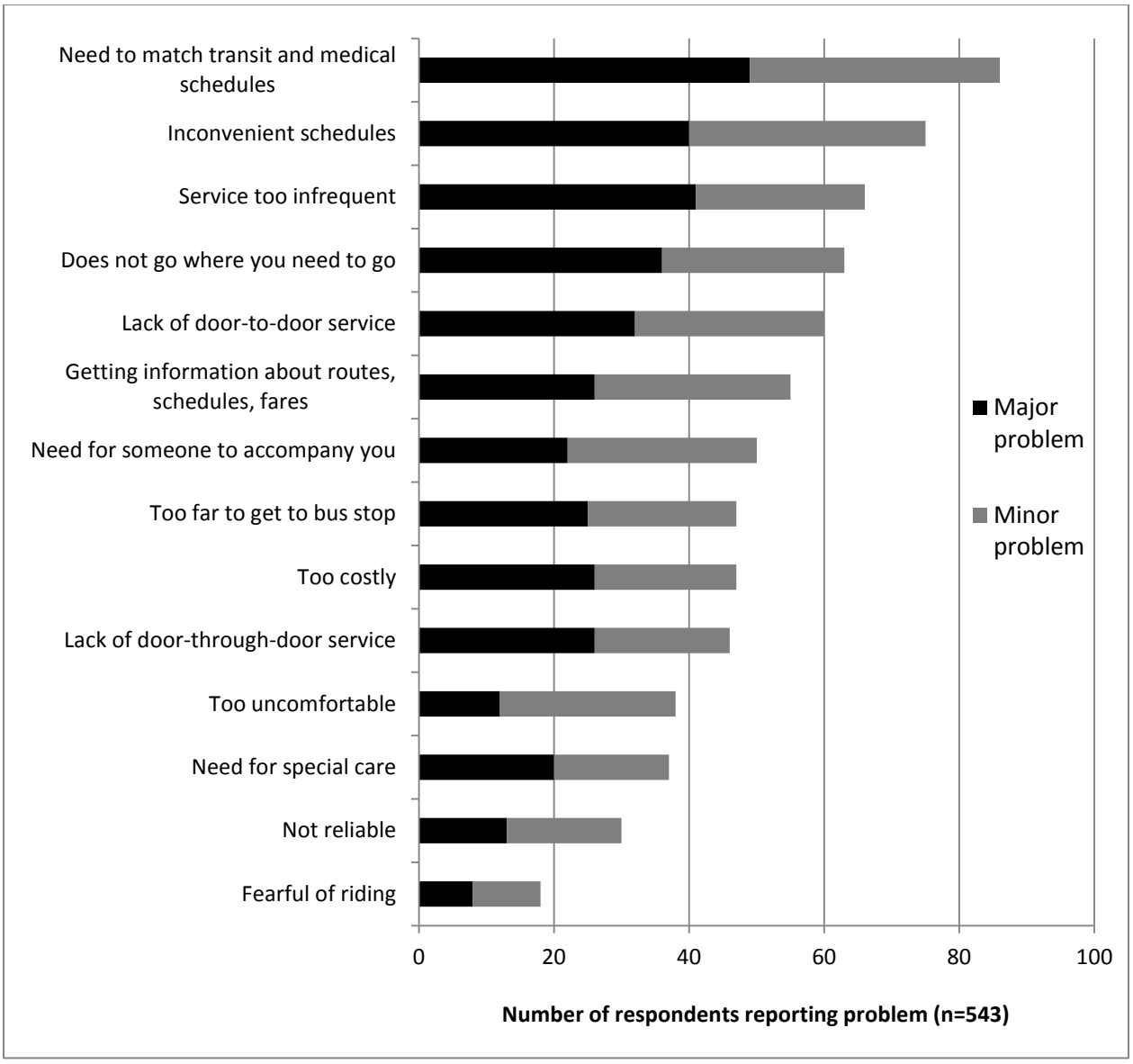

Figure 8.2 Problems with Public Transportation for Out-of-Town Medical Trips

For those with access to public transportation to other cities where they have medical appointments, 32% said the need to match transit and medical schedules is a problem for using transit for out-of-town trips, including 19% who said it is a major problem. Twenty-six percent said inconvenient schedules is a problem, and 21% reported that infrequent service is a problem.

8.3 Other Comments

The survey concluded with an open-ended question that allowed respondents to provide any comments or concerns they have regarding transportation to health care. The full list of comments, organized by geographic areas, can be found in Appendix B. Respondents most commonly mentioned that they currently do not have any problems with transportation, but several noted that it could be an issue in the future and that they would be very grateful to have public transportation services available to them if and when that time comes. Some commented that if they are ever unable to drive, they would have to move to a bigger city.

Many respondents mentioned relying on family members for rides, which can be difficult at times since family members often have jobs and their own commitments. Some commented that the transportation service available in their community is good, while others noted that service is lacking or in need of improvement. Respondents in metropolitan areas were more likely to express satisfaction with the available transportation options. A few current users commented on how fortunate they feel they are to have the service available to them. A few others noted the hardships in rural areas with long travel distances and few transportation options.

The following is a selected list of comments from respondents that is fairly representative of the major points received:

- "I am independent and able to drive."
- "Although I do not need it at this point, I feel it is extremely important that it is available for those who do need it."
- "At this stage of my life I do not need it yet. But should it be a necessity, I would be very lucky if I had access to it."
- "If I were unable to drive, ALL medical would be a problem! Being realistic, that could happen at any time!"
- "I drive myself. If I can't, two of my family members live in town."
- "My son has to take time off work to take me."
- "Because I live out of the city 10 miles, there is no public transportation. Therefore, I am dependent on my daughter, so I try to make appointments on her days off from work."
- "Would probably need to move into town if critical health conditions were to develop."
- "The dial-a-ride service was a godsend while I was confined to a wheelchair. I'd use it gratefully again when the need arises."
- "There is a need for increased public transportation in smaller communities."
- "Transportation is quite adequate here." [in the bigger cities]

9. KEY FINDINGS AND CONCLUSIONS

The findings indicate that need for care is the most significant variable determining the number of health care trips taken. In some cases, enabling or predisposing factors are also found to influence health care use. Less than 2% of respondents reported not having insurance, but they were significantly less likely to make health care trips. Propensity to seek care, having a regular doctor, and age all influenced the number of routine health checkups.

Distance and transportation variables did not significantly influence the number of routine or chronic care trips made, suggesting that people who needed to make health care trips were able to access the necessary transportation, regardless of distance or ability to drive. This finding differs from those of other studies that have found a negative relationship between distance and health care use. However, previous research has indicated that whether or not services are within an individual's activity space, or the area in which the person routinely travels, may influence utilization more so than the distance traveled. The use of activity space data could have provided different results. It could be that rural residents in the survey area routinely travel long distances for other reasons, so long-distance health care trips might be considered routine. An attempt was made to collect activity space data in the survey, but the data were incomplete and of poor quality.

The results were different for emergency care trips, however, as the number of transportation options used positively influenced the number of trips, with the effect being greater for those who do not drive. Immediate access to transportation may be more important for emergency trips since there is little opportunity to plan ahead for the trip. People who rely on one specific means of transportation, such as getting a ride from a family member or friend, could have difficulties during an emergency if access to their regular source of transportation is not available. Those who rely on driving themselves could also have a problem if their condition renders them unable to drive.

Although distance and transportation factors were not found to affect the overall number of routine or chronic care visits made, further analysis suggest that these factors do play a role. First, those who cannot drive make more trips if someone else in the household can drive. Second, distance and access to transportation impact the likelihood that someone will miss or delay a trip. Finally, the degree of difficulty reported in making trips is significantly affected by distance and transportation.

For those who do not drive, the odds of making additional routine or chronic care trips increase by a factor of about 2.3 to 2.4 when there is someone else in the household who can drive. Older adults who are widowed or living alone, therefore, are less likely to obtain their needed health care. These results have important implications regarding the need for providing additional transportation services for older adults. As discussed earlier, a significant percentage of older adults are widowed and/or living alone, especially women. Providing more and better alternative transportation options could, therefore, increase health care usage. The results, however, did not show that use of transit significantly increased health care usage for those who do not drive. This could possibly be due to poor or inadequate service or too small of a sample size. The survey does show that close to a quarter of those who do not drive use public transportation for medical trips, indicating that it is relied upon by certain segments of the population.

Findings also show that people who drive are substantially less likely to miss or delay a medical trip, for all types of trips; those who have someone else in the household who can drive are less likely to miss or delay routine or choric care visits; and the likelihood of missing or delaying routine trips increases with distance. These results suggest that even though the total number of trips taken may not be affected by distance or transportation factors, individuals are more likely to miss a scheduled trip if they cannot drive, do not have someone else in the household who can drive, or the distance is too great. Individuals that

miss a scheduled trip then have to make up that missed appointment at a later time. Results suggest that they do make those trips, but if they are delaying the trips to a later time, they may not get the care at the time they most need it. Moreover, the level of care required may be more serious and more costly.

Even though they may not take fewer total trips, people who must travel longer distances are significantly more likely to say that getting transportation to health care is difficult. The burden of getting transportation to health care is found to increase with distance and is also greater for those who ride with a family member or friend or a volunteer driver. These difficulties could add stress and decrease quality of life. The findings suggest that those who have to rely on friends, family, or volunteer drivers for a ride may benefit from access to public transportation.

The greatest problems for people using public transportation for health care trips are inconvenient schedules, the need to match transit and medical schedules, and infrequent service. Greater coordination between transit providers and health care providers would benefit those relying on transit. Expansion of transit service and greater awareness of available service in rural areas could also be beneficial for those who cannot or prefer not to drive. As the survey showed, more than half of respondents said they either do not have demand-response service available to them or they are not aware of such service, more than two-thirds said the same about fixed-route service, and nearly three-quarters indicated either a lack of intercity service or no awareness of such a service.

There are some limitations to this research. First, there may be significant differences between older adults who have had disabilities since they were younger versus those that have more recently begun facing limitations with their mobility. The latter group may have more experience with personal mobility management and may be more likely users of public transportation. Unfortunately, the data collected in this survey do not allow for any distinction between these two groups. Future research could study the differences between these groups. There could also be differences between older women who have relied on their husbands to drive and women from the baby boom generation who are lifetime drivers.

Another limitation is that better data could have been collected on driving habits. The survey simply asked if respondents currently have a driver's license and can drive, but many of those who answered yes may be very infrequent or limited drivers. Also, since dementia and other cognitive impairments increase with age, some older adults who received the survey may not have had the cognitive ability to complete it. The implication is that the oldest adults and those with cognitive impairments could have been under-represented.

Future research on the impacts of public transportation on health care utilization and transportation difficulties will need to gather data from a larger number of transit users. The number of transit users who responded to this survey was too small to make too many conclusions regarding transit. Further research could also compare results between different communities with different levels and types of transportation options.

There is a need for connecting health care and transportation research. By providing individuals transportation to health care services, especially preventive care, they can learn to manage their conditions better, their health status may improve, and in the long-run there could be a decrease in health care costs. With an aging population, the number of older adults who can no longer drive or who are widowed and living alone will continue to rise. These individuals will face increased difficulties in getting transportation to health care. For public transportation to be able to effectively serve these individuals, transportation providers and health and social service providers will need to increase communication and coordination to make the best use of scarce resources.

Research on transportation and access to health care in a specific region could involve first the identification of all transportation providers in the region and where the gaps in service exist. Analysis then could focus on how well the transportation providers coordinate with each other and with health care providers, how satisfied users are with the available service, what barriers are preventing people from getting where they need to go, and how those barriers could be addressed.

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APPENDIX A. SURVEY

TRANSPORTATION AND ACCESS TO HEALTH CARE SURVEY

Small Urban & Rural Transit Center
North Dakota State University

PART A. USE OF HEALTH CARE SERVICES

1. Over the past year, approximately how many trips have you made for each of the following?

	None	1-2	3-5	6-10	11-20	More than 20
Routine health checkups	☐	☐	☐	☐	☐	☐
Chronic health care visits (for example, visits for asthma, heart disease, cancer, dialysis, etc.)	☐	☐	☐	☐	☐	☐
Emergency care	☐	☐	☐	☐	☐	☐

2. Over the past year, how many trips did you miss or delay because you could not drive or did not have a ride?

	None	1-2	3-5	6-10	11-20	More than 20
Routine health checkups	☐	☐	☐	☐	☐	☐
Chronic health care visits	☐	☐	☐	☐	☐	☐
Emergency care	☐	☐	☐	☐	☐	☐

3. Approximately what percentage of your medical appointments is out-of-town?
   - ☐ 0-10%
   - ☐ 10-25%
   - ☐ 25-50%
   - ☐ 50-75%
   - ☐ 75-100%

PART B. TRANSPORTATION

Please answer the next questions to help us understand how access to transportation may influence the number of health care trips you make. To clarify, in-town trips refer to trips within your community, and if you do not live in a town, it refers to trips to your nearest town.

4. How difficult is it for you to get transportation to your medical care provider?

	Not at all Difficult	Not too Difficult	Somewhat Difficult	Very Difficult
In-town appointments	☐	☐	☐	☐
Out-of-town appointments (if any)	☐	☐	☐	☐

5. Do you have a current driver's license and are able to drive?

☐ Yes ☐ No

6. Does another member of your household have a current driver's license and can drive?

☐ Yes ☐ No

7. How many vehicles are in your household?

☐ 0 ☐ 1 ☐ 2 ☐ 3 or more

8. Are the following transportation options available to you?

	Yes	No	Don't know	Not applicable
Taxi	☐	☐	☐	
Door-to-door or curb-to-curb public van or bus service (such as paratransit or dial-a-ride)	☐	☐	☐	
Fixed-route bus service within one quarter of a mile of your home	☐	☐	☐	
Public van or bus service to other cities where you have out-of-town medical appointments	☐	☐	☐	☐

9. How often do you use public transportation (including public van or bus or taxi)?

- ☐ Never
- ☐ Less than once per month
- ☐ 1-3 times per month
- ☐ Weekly
- ☐ More than once per week

10. How often do you use public transportation for medical trips for yourself?

- ☐ Never
- ☐ Less than once per month
- ☐ 1-3 times per month
- ☐ Weekly
- ☐ More than once per week

If public transportation is not available, or if you don't know if it is available, answer question #11, otherwise skip to question #12.

11. How often would you use public transportation for medical trips for yourself if it were available?

- ☐ Never
- ☐ Less than once per month
- ☐ 1-3 times per month
- ☐ Weekly
- ☐ More than once per week

12. What types of transportation do you use for making health care trips? (check all that apply)

- ☐ Drive yourself
- ☐ Get a ride from family member or friend
- ☐ Get a ride from volunteer driver
- ☐ Ride in human service agency car or van
- ☐ Take public van or bus
- ☐ Take taxi
- ☐ Walk/bicycle

13. For **in-town** medical trips, how much of a problem is each of the following with using public transportation, if available?

	Not a problem	Minor problem	Major problem	Not applicable
Inconvenient schedules	☐	☐	☐	☐
Need to match transit and medical schedules	☐	☐	☐	☐
Service too infrequent	☐	☐	☐	☐
Does not go where you need to go	☐	☐	☐	☐
Getting information about routes, schedules, fares	☐	☐	☐	☐
Need for someone to accompany you	☐	☐	☐	☐
Need for special care	☐	☐	☐	☐
Too uncomfortable	☐	☐	☐	☐
Fearful of riding	☐	☐	☐	☐
Not reliable	☐	☐	☐	☐
Too costly	☐	☐	☐	☐
Lack of door-to-door service	☐	☐	☐	☐
Lack of door-through-door service	☐	☐	☐	☐
Too far to get to bus stop	☐	☐	☐	☐
Other:	☐	☐	☐	☐

14. For **out-of-town** medical trips, how much of a problem is each of the following with using public transportation, if available?

	Not a problem	Minor problem	Major problem	Not applicable
Inconvenient schedules	☐	☐	☐	☐
Need to match transit and medical schedules	☐	☐	☐	☐
Service too infrequent	☐	☐	☐	☐
Does not go where you need to go	☐	☐	☐	☐
Getting information about routes, schedules, fares	☐	☐	☐	☐
Need for someone to accompany you	☐	☐	☐	☐
Need for special care	☐	☐	☐	☐
Too uncomfortable	☐	☐	☐	☐
Fearful of riding	☐	☐	☐	☐
Not reliable	☐	☐	☐	☐
Too costly	☐	☐	☐	☐
Lack of door-to-door service	☐	☐	☐	☐
Lack of door-though-door service	☐	☐	☐	☐
Too far to get to bus stop	☐	☐	☐	☐
Other:	☐	☐	☐	☐

15. How far would you be willing to go to reach a bus stop for trips to out-of-town medical appointments?

____ Miles

☐ Check here if you would only use curb-to-curb, door-to-door, or door-through-door service.

☐ Not applicable.

16. If you use public transportation, why did you first start using it?

_____

_____

_____

PART C. GEOGRAPHY

The next two questions are about the area where you live and travel. Your responses will help explain how easy or difficult it is for you to access health care services.

17. What is the distance (in miles) that you live from the health care service you would go to for each of the following, and in which town/city is it located:

Routine health checkups:	City:	_____	Miles:	_____
Chronic health care visits:	City:	_____	Miles:	_____
Emergency care:	City:	_____	Miles:	_____

18. Which towns or cities do you visit at least once per month for non-medical purposes (such as shopping, social visits, etc.), including the town/city in which you live?

_____

_____

_____

PART D. YOUR HEALTH

The next set of questions asks about your current health status. Your responses to these questions will help us better understand your need for health care trips. Your answers will be kept entirely confidential.

19. Do you have one or more chronic conditions or illnesses? ☐ Yes ☐ No

20. If yes, please indicate your condition(s): _____

_____

21. Would you consider your overall health to be: ☐ Poor ☐ Fair ☐ Good

22. Do you have any disabilities? ☐ Yes ☐ No

23. If so, please indicate your disabilities:_____

24. Would you consider your disability to be:

- ☐ Mild
- ☐ Moderate
- ☐ Severe

25. If cost and ability to get to a health care facility were not a concern, how long would you wait to see a doctor if you had the following conditions:

	Less than 1 day	1 day	2 days	3 days	4-7 days	More than 1 week
Chest pains	☐	☐	☐	☐	☐	☐
Fever	☐	☐	☐	☐	☐	☐
Stomach pains	☐	☐	☐	☐	☐	☐
Pain from a fall	☐	☐	☐	☐	☐	☐
Can't stop coughing	☐	☐	☐	☐	☐	☐
Blood in bowel movement	☐	☐	☐	☐	☐	☐

26. Do you have a regular medical doctor or physician that you go to?

☐ Yes ☐ No

PART E. ABOUT YOU

Finally, please provide some general information about yourself. Your responses will be kept entirely confidential.

27. What year were you born? _____

28. Gender: ☐ Male ☐ Female

29. What is your marital status?

- ☐ Married
- ☐ Divorced/Separated
- ☐ Widowed
- ☐ Never married

30. Education

- ☐ Did not complete high school
- ☐ Completed high school
- ☐ Some college
- ☐ Completed college
- ☐ Post graduate education or advanced degree

31. What type of health insurance do you have?

- ☐ Public (e.g., Medicare, Medicaid, VA benefits)
- ☐ Private (including HMOs, Blue Cross/Blue Shield, Medica, Companion Life, Clear Choice, Aetna, etc.)
- ☐ Public and private
- ☐ None

32. What is your five-digit zip code? _____

33. What is your yearly household income from all sources?

- ☐ Less than $25,000
- ☐ From $25,000 to $44,999
- ☐ From $45,000 to $74,999
- ☐ From $75,000 to $99,999
- ☐ $100,000 or more

Do you have any other comments or concerns you would like to add regarding transportation to health care?

_____

_____

_____

_____

_____

THANK YOU FOR YOUR HELP!

APPENDIX B. OTHER COMMENTS

The following is a list of comments respondents made regarding transportation to health care, in response to the final question of the survey. The comments are organized by state and the size of the respondent's home community. A few comments were excluded since they did not address issues of transportation and access to health care.

Table B.1 Survey Respondents' Comments

South Dakota

Metropolitan Areas

This year my daughter lost her job so therefore she was able to take me to my appointments. They need a program to reimburse family members to help with our elders!

Although this survey is not applicable to me at this time (because I drive myself all over the U.S. and am very healthy) transportation is a major issue in rural SD. In Sioux Falls, it is also a major problem for seniors because our public transportation is not adequate.

May need it someday! My parents used paratransit and wheelchair services!

Don't think it's an issue in Sioux Falls. Would be an issue in some parts of the state.

In Sioux Falls transportation is fairly good. Emergency service has been quite adequate for us.

Transportation should be available to those in need. Sliding pay scale based on income. Free only in certain situations. We all must realize we need to become pro-active in our health care!

Not a problem. Before becoming blind I used the taxi or drove myself.

It is not a problem - I live 5 blocks from one hospital and 15 blocks from the other. My family doctor is 5 blocks. My pain clinician is 55 miles (once a month). I find that my social life is visiting doctors!

Unless you're on a list to receive help, you fend for yourself to get rides around here. Health insurance costs are skyrocketing and doctors and hospitals keep raising prices, so someone like myself can't afford to see a doctor. I find someone to take me or I don't go.

The dial-a-ride service in Rapid City was a godsend while I was confined to a wheelchair. I'd use it gratefully again when the need arises.

Because I live out of the city 10 miles, there is no public transportation. Therefore, I am dependent on my daughter, so I try to make appointments on her days off from work. Senior citizens need a source of transportation private (business) for that sole purpose whether it is for health, grocery shopping, church, etc.

I'm very healthy and have my own transportation. I volunteer and there are a number of people calling for rides which we often provide.

Rapid City needs train service to reach and travel to other parts of the country. Only transportation is airline (too expensive) or bus service, which is difficult and slow - We have train track through Rapid City but no passenger trains - why not?? Rapid City is isolated transportation wise. Transportation is very difficult during the winter.

I do need to go to Sioux Falls (350 miles) or Chadron, Nebraska, (200 miles) for one of my problems, but I never do because of the distance. I haven't figured out how to get to either place without driving.

Micropolitan Areas

Our community is well organized in medical care - hospital, ambulance, helicopter service, clinics. With family and friends I am able to meet all appointments.

I use the DAV bus a couple times per year to go to Sioux Falls Veterans Hospital.

I can't drive out of town.

Currently we are fortunate not to need special medical care, which often requires people to go to Sioux Falls. If this were the case we would likely have our son or daughter take us there as we haven't driven in that city for some time.

Watertown has a couple transit vans. I have not used that service and am not sure how that works.

I have no problem regarding transportation.

If I need service I would probably use the service. I am pretty self sufficient.

Towns 2,500-10,000

Our community of Madison is within 55-60 miles from major medical facilities in Sioux Falls, SD. We have volunteer drivers, taxi, the 2 nursing homes have bus/ambulance service. Transportation for health service, to me, does not seem to be a problem.

My son, age 30, is blind. He lives in Sarasota, FL in part because public transportation here is South Dakota is poor!

I use public van when the snow is bad.

I am blind, my daughter lives 45 miles away, and I can't afford the taxi.

Rural Areas <2,500

No public transportation.

There is a need for increased public transportation in smaller communities.

We live in the country - 24 miles from town. Still working - still able to drive!

We live at a rural lake. We are totally dependent upon ourselves to get wherever we need to go. If we were unable to drive ourselves, we would have to move to a city.

We have good bus service but there are places one driver will go but not all drivers. If the van or bus is full, someone has to stay back, which sometimes they figure out something.

There is no public transportation available here.

My local post office's location has a population less than 30. We have a wonderful critical care hospital 25 miles away and many providers come on a weekly or monthly basis.

I am able to drive myself to VA appointments in Fargo, but public transportation (a van) is available once per month.

Hospital and clinic are 1 block from my house. Excellent ambulance service.

Because of age now and good health, I don't require this type of service , but if and when the time comes I will be so very grateful to whomever provides. We baby boomers are getting to that stage and age if we aren't there already. I think it's a wonderful service and very needed.

It would be great to have public transportation from White River to Pierre, Rapid City, and Sioux Falls for appointments, but most likely too expensive for the number of people who would take advantage of it.

I am blessed with good health and am fortunate I am able to drive myself for any medical attention I would need. When those facts change, I will move closer to medical help.

My husband and son drive me to my appointments. I can drive but rarely drive anymore. I live in a small community and must drive away for health care.

Health is good and I do all I can to keep it that way.

We live in a rural area. EMT or ambulance takes about 30 min to longer.

North Dakota

Metropolitan Areas

I can definitely see a need for assistance in the future (public transport) as population ages. Also, husband has morbid obesity and may need van assistance in the next 1-2 years.

Downtown traffic congestion.

Loss of transportation to the pharmacy and clinic would be a hardship.

At this time we haven't required public transportation. If some time in the future we need it, we're fortunate to have bus and taxi service available.

Inconvenient in having to travel all the way to Fargo for some VA medical problems. We have fine facilities right here in Bismarck.

Transportation is quite adequate here.

I am fortunate in having access to good health care. Would travel elsewhere if local doctor recommended I do so. Rimrock Trailways bus rickety. Fargo bus depot in questionable area. Creepy!!

I think it is pretty good here in Bismarck, although I don’t use public transport yet.

Bismarck public transit for seniors is a wonderful program - only problem is if you have procedure where they will not discharge unless a friend/relative accompanies you, or if it were an emergency. Transit requires 24 hour service request.

So far I am able to live alone and can drive to health care facilities and I see no reason to rely on public transportation. I have 2 daughters living in the city, so they are my emergency drivers.

Towns 2,500-10,000

My spouse and I are in good health and both of us drive. My aunt uses the senior bus daily for radiation in Fargo, and we are very glad that service is available if we should ever need it.

Public transportation is a blessing.

Rural Areas <2,500

I am independent and able to drive.

Not at this time. I live 10 miles from Casselton and Casselton, ND has "Community Care." Believe they furnish transportation for some of the community. Not sure the exact coverage of miles.

My daughter drives me to appointments.

Do not currently need additional transport assistance. However, do feel that there are areas that might need additional transportation. Not sure if public transport is the answer.

I live in the country, so I have to use my own resources to get medical care.

Park River has an excellent ambulance service and Walsh county has EMT full time service.

So far I'm able to drive myself.

Would like to see in future years a method whereby transportation would be available for persons in need of kidney dialysis. A route wherein a vehicle equipped with means to administer dialysis locally rather than have the patient move to another community.

If I was to ever have cancer and needed treatment, a 80 mile trip every day would not be possible as that is how far it is to have chemo - too big of an expense.

My husband and I live in the country and drive all over so we don't really know what is available.

Although I do not need it at this point, I feel it is extremely important that it is available for those who do need it.

So far, has not affected me.

I live in the Turtle Mt Reservation. No buses or any public transportation. The hospital provides transportation for out-of-town appointments.

If I were unable to drive, ALL medical would be a problem! Being realistic, that could happen at any time!

Should be available for veterans and low income families. Do not like to wait on someone else's schedule.

Later if I can't drive I would use public transportation.

At this stage of my life I do not need it yet. But should it be a necessity, I would be very lucky if I had access to it.

Make the public more aware that it's available and what the cost is. I cannot drive in cities.

Since both my wife and I are able to drive, seeking medical attention has not been a problem.

Would love to see a couple dialysis machines at our local health care facility as several in our area are on dialysis and some go to Minot, Williston, or New Town, which is very unhandy considering distance, roads, and conditions. I cannot drive after dialysis. My other household member can drive but is working.

Montana

Metropolitan Areas

Because both my husband and I drive - the public transportation is not an issue for us. In our church there is one elderly women who lives several miles out of town where there is no access to public transportation or transportation from a senior center or medical clinic. Several of us took turns going to get her and taking her to her bi-weekly p.t. appointments. I'm sure there are others like her who cannot get to appointments because there is no one to take them and they cannot afford a taxi.

None. I drive by myself just fine.

Living in Billings this is not a problem. It is a very large health care center. Living in many other places in Montana, transportation is a major problem. Especially since small town service is limited to non-existent. They also have various travel assistance systems. Most get very little use. City buses run empty much of the time.

I'm 63 years old and able to drive myself to my health care. However, when unable to do so, it would be nice to have transportation easily available - like door-to-door service.

In 10 years we would probably need some transportation services.

We have adequate public transportation in Billings and if I had to use it, it would be readily available.

I'm not sure yet what Billings has available - so no comment.

Need more in Montana.

Have no problem so far.

No concerns at present!

As long as I am in good health I have no problem going to see my family doctor and a oncology doctor all in 6 miles or less.

I think transportation options in Missoula are more than adequate. In most of Montana, they are not.

Really not a problem in Missoula, MT.

Micropolitan Areas

So far I'm lucky to have adequate transportation and know there is a public van available if necessary.

I drive and my husband drives.

The city of Bozeman provides excellent transportation to all health facilities for those living in the city. I live too far away for this benefit.

Assisted living home provides transportation to nearby hospital and doctors office.

There is no public transportation for people that live outside city limits.

Towns 2,500-10,000

No bus service or taxi service from Laurel to Billings. For people that are disabled or unable to drive, this would be a help if these services were available.

My annual heart and stress tests are conducted 120 miles distance.

At present my health is good. My wife has a heart condition which requires only a once a year visit to Billings, MT. If her or my health gets to the point where we need much more health care, we would probably relocate and move to Billings or Great Falls.

My husband and I live in a rural area far from big cities. We are both social workers. Locally there is a small bus for the handicapped and elderly. Also the VA has a bus that takes vets up to Fort Harrison in Helen and give a bus trip to Salt Lake City for vets to have surgery.

We live in the country and there is only senior transportation in our nearest town, Deer Lodge MT. There is no public transportation to where I live or between Deer Lodge and other towns unless you are a veteran.

There is a bus to Butte twice a month but none to Bozeman, which a lot of people go to for doctors.

I rely extensively on the local door to door van service. The staff is wonderful and having this service allows me to remain independent in my home! My only request is to have slightly extended hours (more full day service). I drive limited distances and only in good weather.

There will probably come a time when I will need transportation for medical trips.

Libby recently began a transportation service especially for senior citizens which comes to the door and goes to Kalispell. It's a wonderful service for home bound people needing care.

Rural Areas <2,500

None is available in the Big Timber area. If I were unable to drive, public transportation to Billings for medical issues could be important.

Not yet!

All answers to transportation questions are the same. I live in a very small town (Broadview, Montana) I must travel to Billings, Montana, for all medical reasons. I use my own car all traveling.

My son has to take time off work to take me.

So far I haven't needed and am thankful to be able to get myself around. My sister had MS and used public transportation a lot - it was wonderful for her. Should I need it I would be thankful it was available.

I'm now 86 - very unlikely that I would travel much. I use our PA in Ekalaka - he sent me to Billings, MT my heart attack, then Baker and Ekalaka for nursing home here in town about one block away.

I have no public transportation, so I'm on my own 30 miles from town and main doctor is about 80 miles one way.

Would be handy if available.

Would probably need to move into town if critical health conditions were to develop.

I live alone on a ranch in rough country 1 mile from county road, 15 miles from oiled road and 56 miles from town. Have been snow bound 75% of time since October!

For my regular eye exams, I have had to miss several appointments because I could not find anyone to drive me the day of my appointment. The doctor expects me to have a driver.

Lincoln at one time had a Greyhound Bus service daily between Missoula and Great Falls with daily stops both ways in Lincoln. It would be nice to have that service again.

I strongly support the concept of public transportation for the United States, both in rural and urban areas for health, environmental, and financial reasons. I use it when it's available in cities.

Our community could use 2 days a week bus service (minimum) for seniors who cannot (may not) drive and who have limited social network to take them. We rely on church volunteers or family, especially in winter with bad roads. I am still able to drive myself or have family to take me.

Bozeman has an excellent "Free" bus system which rolls right to the hospital. The Bus system extends out of town at least nine miles. In the winter there are Free bus shuttles running as far as 50+ miles to the local ski areas so a person could hook up and get into Bozeman for health care I think.

I have to drive myself or ask a neighbor. I live 17 miles from the nearest medical place.

Calling 911 is recommended in our area for emergencies. The times I have had to dial 911 I get an operator in Missoula. They say to hang up and call the Polson, MT sheriff's dept. They do not service our area. It took me 7 hours to get the local fire department to call on my mother who lay on the floor. Then the Arlee fire department didn't know where she lived. She was in her 80s at the time of the phone call. If you could provide 911 service to Arlee I'll come to you and cook you dinner!

For inabling symptons, I would call 911 for emergency help. Otherwise I would drive myself or spouse.

If I get where I can't drive I will just have to shoot myself.

As far as I know there is no public transportation available in Bigfork, MT. It would help if there was some public transportation from Bigfork to Kalispell or Bigfork to Polsen.

If there were a rural bus - van that could carry bicycles, we would use it often.

Wyoming

Metropolitan Areas

For some of my friends, the wait for a bus to go to and from a doctor visit is ridiculous.

The CATC bus (Casper, WY) provides excellent service to me. I "work out" five days per week, and the bus picks me up at my home each morning between 7:05 and 7:20, and takes me back home when I call.

Some folks really need help - I am Lucky!

Due to federal grants and programs, Casper WY has a reasonably good system for getting the person and medical provider together. The bus service is however designed more toward the commercial/retail ease of access rather than medical/health care.

I drive myself. If I can't, two of my family members live in town.

I (72) and my husband (77) are lucky to be able to drive and are quite mobile. However, some other people we know aren't able to drive or don't have a car. They seem to have access to some form of transportation without much problem (door to door by appointment).

Glad I don't need to rely on public transportation.

Micropolitan Areas

Log on to Fort Collins CO city website to see good example of integrated mass-transit.

Feel guilty about not using more public transportation, but auto is far too convenient

Towns 2,500-10,000

No public transportation. Not able to ride long distances. Have to be driven to pain medication.

For severe problems we go to Cheyenne, 75 miles. If bad we use ambulance, expensive.

The closest transportation for out-of-town is 30 miles and that is only for chronic illness that requires care and treatment in Casper. There is nothing but a bus service north to Cody and Billings.

I live 15 miles out in country - must get private transportation at least to source of public transportation.

Rural Areas <2,500

It basically does not exist in rural Wyoming.

There is no public transportation at all in any city or town in southwest Wyoming. In Kemmerer we don't even have access to Greyhound bus service or Amtrak. The closest Greyhound stop is 50 miles in Evanston, WY.

There is no kind of transportation near. Nearest Dr clinic 25 miles. Then still have to go at least 100 miles one way to hospital, Jackson Hole, WY or Rock Springs, WY. Roads close lot in winter and older you get, harder to drive yourself, so far we can drive our self. I have missed trips because of the weather.