

Transportation as a Foundation for Better Healthcare

By Jon E. Burkhardt

The finest medical services are of little value to individuals who cannot access them. As noted by a local alliance of community leaders in North Carolina, “A lack of mobility and access to services results in:

- A delay in receiving medical attention and/or obtaining necessary medications. This results in: illness which is more serious, reduced quality of life; and increased cost of care to the patient, medical providers and the community.
- A significant use of the emergency room for non-emergency care, resulting in increased cost and less efficient use of emergency services.
- An increased dependence on ambulance services for non-urgent care, resulting in increased cost and less availability for true emergencies.
- Decreased use of preventive care opportunities, health improvement programs and public and private human services.
- Isolation from the community, particularly for those who are economically disadvantaged, on fixed incomes or who are part of the growing population of elderly.”

Transportation helps surmount the barriers to opportunity. In the case of access to medical services, transportation helps to achieve longer lives of higher quality.

Transportation Services in the Medicare Program

By law, Medicare can only reimburse patient transportation to Medicare-approved medical services when that transportation is provided by ambulance. And in order to receive Medicare reimbursement for ambulance transportation, a determination must be made that an ambulance is the only means by which the patient can be transported without serious health risk.

Data indicate that the Medicare program is reimbursing some clients and ambulance operators for many trips that do not require ambulance transportation, and thus could be provided more cost-effectively by other means of transportation. Furthermore, some medical services now being provided by emergency departments could more cost-effectively be provided elsewhere. Legislative changes to the current restrictions could allow alternative transportation and medical services and, at the same time, save millions of dollars for the Medicare program and provide much needed funding for community transportation services.



Medicare is one of the key federal health insurance programs in the United States. The Medicare program is administered by the Centers for Medicare and Medicaid Services (CMS) of the U. S. Department of Health and Human Services (DHHS). This program has two distinct components: hospital insurance (known as Part A) and supplemental medical insurance (Part B).

Part A covers hospitalization, some hospice care and a limited amount of post-hospital skilled nursing and home health care. Part B covers physicians' services, outpatient hospital care, physical therapy and other specified services, such as ambulance transportation. Both parts of the program provide insurance protection for covered services to almost all persons age 65 or older, certain disabled persons and individuals with chronic renal disease who elect this coverage. In 1998, Medicare paid for nearly 58 percent of all healthcare expenses incurred by persons 65 and older in the United States.

Transportation costs are allowable expenses under Medicare Part B, but there are serious restrictions on their usage. By statute and regulation, Medicare will provide reimbursement only for transportation services provided by ambulance. Both emergency and non-emergency ambulance trips may be reimbursed through Medicare, but reimbursement for ambulance transport is limited to severe medical situations such as a life-threatening emergency, a need for restraints

or emergency treatment while in transit or confinement of the patient to bed before and after the trip.

CMS's Medicare Carriers Manual provides that reimbursement may be made for expenses incurred for ambulance service provided that certain conditions are met:

- Vehicle and crew requirements of at least two crew members with specified training;
- Medical necessity: When the use of any other means of transportation is not possible without endangering the individual's health;
- Reasonableness: Ambulance service must be reasonably needed for the treatment of the illness or injury involved; and
- Destination: Local transportation only, and to the nearest institution with appropriate facilities for the illness or injury involved.

The Medicare program is not authorized to provide reimbursement for trips other than those made in ambulances. There are no circumstances that qualify as exceptions to this rule. Furthermore, ambulance trips are only to be reimbursed when conditions of medical necessity can be confirmed, regardless of whether or not any alternative form of transportation was available for that trip.

Current Ambulance Transportation Costs

In 2000, Medicare program data files (Medicare Part B Physician/Supplier Data) show a total allowed expense for emergency ambulance services of \$2,221,895,701. For 1999, allowed Medicare ambulance expenses were \$2,074,180,935.

Research has shown that not all trips reimbursed by the Medicare program are for conditions that meet reasonable definitions of medical emergencies. This leads to expenses that are higher than necessary for transportation and for medical treatments. While it is important to remember that certain strictly defined non-emergency or prescheduled ambulance trips may be reimbursed by Medicare, a major issue is the degree to which non-emergency ambulance trips could have been provided by other providers. Various sources have examined this issue.





Medicare Patients Need Transportation

In 1994, DHHS's Office of Inspector General (OIG) issued a report entitled "Ambulance Services for Medicare End-Stage Renal Disease Beneficiaries: Medical Necessity." End-stage renal disease (ESRD) Medicare patients are especially likely to have a critical need for transportation support to access life-extending dialysis treatments. Missing dialysis treatments can lead to serious medical problems, even death.

Transportation access problems are particularly severe in rural areas, which often lack local dialysis facilities and may lack long-distance transportation services to urban dialysis treatment centers. Persons with disabilities and low-income individuals also typically have problems finding sufficient transportation services for dialysis. Medicare patients seeking dialysis transportation via ambulance must present a written order from their doctor stating that any other form of transportation would be harmful to their health. In some parts of the country, there may be no other means of transportation to dialysis except by ambulance but, according to regulations, such situations do not qualify for Medicare reimbursement for travel costs. According to CMS's Office of Information Services, there were 270,000 Medicare patients receiving dialysis as of December 31, 1999.

The OIG report concluded that, in 1991, 70 percent of ambulance trips involving dialysis (representing about \$44 million in ambulance allowances) did not meet Medicare guidelines for medical necessity. This report found that, in many instances, other means of transportation could have been used for dialysis trips because there was no evidence that travel other than by ambulance would have been unsafe for the patient on the date of travel. The report showed that relatively few dialysis patients (2 percent of the ESRD Medicare beneficiaries sampled) were incurring 75 percent of the ambulance transportation costs.

Further, in 1998 another OIG report concluded that in 1996 Medicare spent \$104 million for medically unnecessary ambulance transportation — a figure that many in both the transportation and health care communities concede is dramatically conservative.

Emergency, or Non-Emergency?

In July 2000, the Government Accounting Office (GAO) released a report entitled "Rural Ambulances: Medicare Fee Schedule Payments Could Be Better Targeted." The report was based on meetings with more than 50 ground and air ambulance providers, both free-standing and hospital based, in North and South Dakota, and correspondence with ambulance service providers in Minnesota and Wyoming. GAO also examined claims data provided by (then) Health

Care Finance Administration, observed the ambulance claims processing system of a major Medicare insurance carrier and attended meetings on Medicare ambulance fee schedules. The main focus of the report was the recommendation for an improved fee schedule for rural ambulance providers, but the report also noted that almost one-half of Medicare ambulance trips (48.2 percent) are not taken for emergency medical care, which questions the need for ambulance transportation.

Emergency, or Non-Emergency, Part II

The National Hospital Ambulatory Medical Care Survey (NHAMCS) is a national probability sample survey of ambulatory care visits to hospital outpatient and emergency departments. It is conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention and looks at actual patient records and medical information. The 1999 NHAMCS examined more than 21,100 patient records from a probability sample survey of hospital emergency departments across the nation. The data are used to create national estimates of emergency department usage, including detailed patient information. The NHAMCS provides information on patient arrival at the hospital — including mode of transportation, payment source and the level of urgency with which the patient should be seen. Using this information, the NHAMCS can provide accurate national estimates of the number of Medicare patients who arrived at hospital emergency rooms via ambulance, and the level of urgency of treatment for those patients.

Data on the immediacy with which patients need to be seen are divided into four categories: emergent — less than 15 minutes, urgent — 15 to 60 minutes, semi-urgent — between 1 and 2 hours and non-urgent — between 2 and 24 hours. By combining data from the semi-urgent and non-urgent categories, the NHAMCS provides accurate national estimates of the numbers and percentages of non-emergent ambulance arrivals reimbursed by Medicare in 1999. For trips in which immediacy of care was reported in 1999, 459,653 of the 3,491,578 trips, or more than 13 percent of all ambulance trips reimbursed by Medicare, were for non-emergent patients.

If one assumes that the proportion of trips shown as non-emergency also applies to those trips for which the immediacy of care needed was not reported, the total number of non-emergency Medicare trips is really 13.2 percent of 4,782,847 or 631,336 ambulance trips, not 459,653.



Non-Emergency Ambulance Emergency Department Visits, 1999

Statistic	Number	Percent
Medicare		
Total Ambulance Arrivals	4,782,847	100.0
Immediacy of Care Needed Not Reported	1,291,269	27.0
Immediacy of Care Needed Was Reported	3,491,578	73.0
Care Needed Was Not Emergent or Urgent	459,653	13.2*
Medicaid		
Total Ambulance Arrivals	1,894,843	100.0
Immediacy of Care Needed Not Reported	474,292	25.0
Immediacy of Care Needed Was Reported	1,420,551	75.0
Care Needed Was Not Emergent or Urgent	297,152	20.9*

* Percent shown is of those cases where immediacy of care was reported.

Source: Tabulations by Westat based on data from 1999 National Hospital Ambulatory Medical Care Survey.

Potential Transportation Cost Savings

By dividing the total Medicare ambulance trips in 1999 by the total Medicare ambulance costs, an average ambulance trip cost of about \$434 is calculated. Multiplying this per trip figure times the number of trips shown by NHAMCS to be non-emergency trips, the 1999 Medicare non-emergency ambulance cost is estimated at just under \$200 million. This means that the potential cost estimate for these non-emergency trips rises nearly \$75 million to \$274 million.

If the non-emergency Medicare trips could be provided by community transportation services instead of by ambulances, substantial cost savings could be realized. According to National Transit Database (NTD) reports, the national average cost of a paratransit trip is \$16.75. Note: Because these NTD figures focus on ADA paratransit trips, it is likely that the \$16.75 figure overstates the per trip paratransit costs that would be applicable in many communities. For example, 2002 costs of non-emergency medical transportation providers in upstate New York are \$11.00 per one-way trip. Using these various average cost figures, the cost to provide non-emergency Medicare transportation via paratransit and the cost savings of paratransit versus ambulance transportation can easily be calculated.

The average of these estimates, made by using 1999 data, is \$265 million per year. Clearly, were the Medicare program to allow the use of paratransit services for non-emergent

Medicare trips, a substantial cost saving would be realized in contrast to the exclusive use of ambulances. Including non-hospital trips and non-emergency trips that could have been provided by other than ambulance transportation, total unnecessary ambulance use in the Medicare program could well exceed \$400 million per year.

With Medicare ambulance transportation costs now in excess of \$3.3 billion annually, the Medicare legislation's insistence on the exclusive use of ambulance transportation is driving the program's costs skyward. A conservative estimate of Medicare transportation dollars that are not now being used cost-effectively is \$230 million. Compared to other programs that fund transportation services, this is really a large amount.

In 1999, Medicare paid for nearly 4.8 million ambulance trips at an average cost of \$434 per trip. Using an average one-way trip cost for paratransit services of \$16.75, one could get almost 26 paratransit trips for the cost of one Medicare-reimbursed ambulance trip. If the \$11 per trip cost figure is used, then one could get 39 paratransit trips for the cost of one ambulance trip. If the non-emergent Medicare trips that are currently being provided via ambulance could be provided with paratransit vehicles, massive cost savings could result. These savings could be invested in more transportation services, or more medical services, or both.



Estimates of Non-Emergency Medicare Ambulance Transportation Trips and Costs

Factor	Value
Total Medicare Ambulance Trips, 1999 (NHAMCS)	4,782,847
Total Cost of Medicare Ambulance Trips, 1999 (CMS)	\$2,074,180,935
Average Cost of Medicare Ambulance Trips	\$433.67
Estimate of Non-Emergent Medicare Ambulance Trips, 1999 (NHAMCS)	631,366
Total Cost of Medicare Ambulance Trips Estimated as Non-Emergent, 1999	\$273,791,398

Source: Tabulations by Westat based on data from 1999 National Hospital Ambulatory Medical Care Survey.

Potential Emergency Department Cost Savings

The Medicare legislation's insistence on transportation provided for medical emergencies is also contributing to a growing healthcare crisis. Emergency rooms, which are in short supply and provide costly care, are becoming increasingly over-burdened as their numbers decrease and the number of annual emergency room visits increases. This problem is especially serious in rural areas, where the number of emergency rooms decreased by 11 percent from 1990 to 1999, but the volume of patients served increased 24 percent over the same period. Non-emergent Medicare patients arriving via ambulance require emergency staff to diagnose and admit, which makes an unnecessary contribution to this problem of emergency room over-crowding. Shifting non-emergent Medicare patients to paratransit services would allow them to bypass the emergency room and go directly to a physician, thus providing some measure of relief to overburdened emergency rooms.

According to the American Council of Physicians (ACP), the average charge for a non-urgent emergency room visit is approximately 2.3 times higher than the cost of an of-

fice-based visit. The ACP calculates the average non-urgent emergency room visit costs \$103.25, while the average office-based visit to the doctor costs only \$44.89. Applying ACP's cost savings of office-based visits (\$58.36) to the national total of non-emergent Medicare patients provided by the NHAMCS, one can calculate total nationwide estimated cost savings of using office-visits versus emergency department (ED) visits, which is nearly \$37 million. Were other figures used for the cost of emergency room visits, the cost savings could rise more than 50 percent, to a level exceeding \$57 million.

Cost Savings from Improved Access to Preventive Health Care

Healthcare is a large issue in the United States. Healthcare expenses accounted for 13.5 percent of the U.S. gross domestic product in 1998, and healthcare costs are increasing much more rapidly than the overall cost of living index. In 1998, total healthcare expenses in the United States were

Estimates of Non-Emergency Medicare Trip Cost Savings by Using Paratransit

Factor	Value
Estimate of Non-Emergent Medicare Ambulance Trip Costs, 1999	\$273,791,398
Estimate (NTD) of Cost to Provide Non-Emergent Trips via Paratransit	\$10,575,381
Potential Savings (NTD) of Using Paratransit for Non-Emergent Trips	\$263,216,017
NYS Estimate of Cost to Provide Non-Emergent Trips via Paratransit	\$6,644,694
Potential Savings (NYS) of Using Paratransit for Non-Emergent Trips	\$266,846,704

Source: Tabulations by Westat based on data from 1999 National Hospital Ambulatory Medical Care Survey.



said to be nearly \$561 billion.

Health services are not distributed equally across the United States in terms of geography or access to services by specific population groups. Persons in urban areas, higher-income individuals and workers generally consume more healthcare services than persons living in rural areas, lower-income individuals, persons who are not employed and members of minority groups.

Benefits of Preventive Health Care

The Economic Benefits to Prevention

Applying preventive medical measures would generally seem to be a logical course of action. The most recent work on this subject seems to agree: spending money to prevent disease and injury and promote healthy lifestyles makes good economic sense (Centers for Disease Control and Prevention, 1999). But analysts have argued for a long time about the cost-effectiveness of preventive medical measures. Whether or not the costs of preventive care are justified inevitably depends on the type of health maintenance involved. Some forms of prevention, generally primary prevention, pay and pay very well.... For secondary prevention, it is not possible to generalize.

One argument has sometimes been expressed as the so-called paradox of health: highly effective preventive measures for some conditions could prolong life, increasing the chances that costly unrelated diseases could occur in the future and increasing the life span over which health insurance must be paid. If a preventive medical treatment were to both improve health and reduce healthcare costs, it would obviously be desirable, but the long-term health or cost effects of many treatments are difficult to predict. Various measures for evaluating the value of preventive services include impacts on health status, health effects versus net healthcare costs, reductions in net healthcare outlays and net economic benefits.

In the face of such analytical challenges, some policymakers have argued for a simple policy solution.

“It is a goal to be healthy for as long as possible and no more time should be spent on this economic question,” said the Norwegian Ministry of Health, rather succinctly, in 1998. If one accepts this empowering approach to a controversial question, the question then becomes how can analysis be used to choose between several preventive practices? Part of the answer is to evaluate and compare the cost-effectiveness of certain preventive measures.

Access to Care Reduces Overall Costs

In 1998, \$105 billion was spent on hospital inpatient services for patients age 65 and older, and Medicare was responsible for covering almost 80 percent of that cost. Some of these hospital costs easily could have been avoided with appropriate preventive healthcare — something as simple as scheduling a periodic health examination to check a patient’s height, weight and blood pressure. Unfortunately, there are tens of millions of Americans living in rural areas, many of whom are elderly Medicare beneficiaries who lack the transportation necessary to access a medical provider for regular health checks. If improved access to preventive health care could reduce these hospital costs by only 1 percent (a conservative goal) it would save Medicare almost \$1 billion each year. The economic effect of increased preventive care access would be far greater when applied to the entire health budget. All else aside, this would lead to the ultimate goal of bettering the general health and welfare of Americans.

Studies have shown that a small proportion of patients consume the largest portion of medical resources. Zook and Moore’s study showed that, for a given year, the high-cost 13 percent of patients consumed as many medical resources as the low-cost 87 percent of patients. Factors noted in skewing the distribution of costs to the high-cost patients included potentially harmful personal habits like alcoholism, heavy smoking and obesity, unexpected complications during treat-

Projected Nationwide Cost Savings of Shifting Non-Emergency Medicare Patients to Office Visits Rather than Emergency Rooms

Factor	Value
Estimate of Non-Emergent Medicare Trips (NHAMCS, 1999)	631,366
Cost Savings of Office Visit vs. ED Visit	\$58.36
Estimate of Total Nationwide Cost Savings of Office Visits vs. ED Visits	\$36,846,520

Source: Tabulations by Westat based on data from 1999 National Hospital Ambulatory Medical Care Survey.



ment of high-cost patients and repeated hospitalizations for long-term illnesses. The study concluded that major savings can be achieved in long-term illness through greater use of ambulatory care.

Because long-term illnesses also were found to be highly correlated with potentially harmful personal habits, more ambulatory care could address two of the three major factors making high-cost patients consumers of such a large proportion of medical resources: harmful personal habits and repeated hospitalizations. It should also be noted that high-cost patients, when admitted to hospitals, are five times more likely than low-cost patients to die in the hospital or be diagnosed as having terminal illness.

Access to appropriate levels of care also would reduce excessive emergency department usage. Emergency rooms are mostly overwhelmed with people who have preventable problems that developed into emergency situations because they could not afford primary care. Williams quotes a price differential of \$120 in Michigan between the average cost per visit to an emergency room (\$186) and the cost per visit to a health center for primary and preventive care (\$66). Using insurance records from Florida Hospital in Orlando, Fla., it was calculated that the average cost there for a physician office visit is \$55 and the average cost for an emergency room visit is \$462, a price differential of \$407.

Improved Transit Options Make Healthcare More Cost-Effective

Transportation to medical services could enhance the cost-effectiveness of healthcare programs in many ways. It helps provide affordable access to primary medical care for preventive services such as periodic health examinations and screening, vaccinations and medical and life-style counseling. Effective transportation takes patients to primary ambulatory care facilities for services and treatments designed to reduce preventable hospitalizations and reduce avoidable emergency department usage.

Using non-emergency vehicles and staff to transport non-emergency patients, saves ambulance expenses and ensures that emergency services are available when truly needed. It provides access to educational programs teaching individuals how to maintain active, high-quality and independent lifestyles over extended periods of time and it connects residents to social opportunities to enhance community integration and reduce the kinds of isolation and depression that lead to a lack of incentive for self care.

Using transportation as a means to make even a slight improvement in healthcare services could have massive benefits. A mere one percent reduction in total healthcare expenses would achieve a savings of \$5.6 billion per year.

Savings of \$25 to \$50 billion per year are within the realm of possibility. For such reasons, a number of communities are now offering innovative transportation programs designed to enhance access to medical facilities.

Innovative Solutions Are Needed

Community transportation systems have a key role to play in health services. They do this by bringing patients to primary care physicians in order to reduce unnecessary hospitalizations and unnecessary emergency department usage, provide counseling regarding high-risk destructive behaviors, and engage in preventive practices, treatments, and screenings. They also provide access to prompt care to avoid minor situations getting worse, and they provide highly cost-effective services, reserving emergency services for emergency situations.

The Medicare program could achieve annual cost savings of \$300 to \$400 million by eliminating the program's insistence on ambulance transportation to emergency facilities. But even larger opportunities for cost savings are available to governments and insurance providers: by offering transportation services as part of a comprehensive health care package, annual medical care savings for the United States could exceed \$25 billion. Policymakers need to be encouraged to begin the transportation system investments that will benefit persons needing medical services and the nation as a whole. 🚗

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Non-emergency Medical Transportation and the Transportation Disadvantaged:

A Critical Lack of Access to Needed Medical Care

Reinforcing the conclusions drawn from the important research by Westat's Jon Burkhardt, (see p. 14) the Transportation Research Board's Transit Cooperative Research Project has undertaken a study entitled: "Cost Benefit Analysis of Providing Non-Emergency Medical Transportation." The hypothesis of the research team performing the study — improving access to healthcare will both improve the quality of life for patients and decrease healthcare costs — substantiates the Association's long-held position on non-emergency medical transportation.

By Richard Wallace and Paul Hughes-Cromwick, Senior Analysts, Altarum Institute

Millions of Americans cannot drive or provide or purchase their own transportation. Members of this transportation-disadvantaged population, due to low income, physical or mental disability, inability to drive, geographic isolation, or some other reason, cannot transport themselves or are unable to purchase available transportation services, such as buses or taxis.

Not surprisingly, being transportation disadvantaged reduces access to essential healthcare services. Although disease progression can be complicated, reduced access to care clearly leads to decreases in health status or lost opportunities for detecting diseases early. People with chronic conditions like heart failure, asthma or diabetes and especially people with multiple conditions are those who stand to benefit most from prompt screening and disease prevention, and have the most to gain from improved access to non-emergency medical transportation.

As a result of their lack of access to non-emergency medical transportation, people can experience a variety of negative — and potentially costly — healthcare outcomes that could have been avoided had sufficient transportation been available. For example, routine conditions, left untreated, can lead to a need for emergency care. Furthermore, poor monitoring and inability to avail oneself of preventive care result in unnecessary hospitalizations. Poorly managed asthma — a problem among children who are also more likely to be transportation disadvantaged than the general population — can cause a major asthma attack that could require hospitalization. Our hypothesis is that improving access to healthcare for the transportation-disadvantaged population will lead to improved quality of life, potential enhancements in life expectancy, and an overall decrease in health costs nationally. This decrease may exceed the incremental increase in transportation costs.

In response to the importance of examining unmet needs for non-emergency medical transportation nationally, the Transportation Research Board launched the project entitled Cost Benefit Analysis of Providing Non-Emergency Medical Transportation (TCRP B-27). As part of this project, the authors are seeking to estimate the benefits of providing currently unavailable non-emergency transportation to transportation-disadvantaged persons and to compare these to the increased transportation costs. For the most part, our work relies on analysis of nationally representative U.S. healthcare studies — the National Health Interview Survey (NHIS) and the Medical Expenditure Panel Survey (MEPS) — to estimate the size of the transportation-disadvantaged population

that misses care due to a lack of non-emergency medical transportation and seeks to estimate the cost effectiveness of providing the missed transportation in terms of improved health status relative to increased transportation costs. We are in the process of performing our cost-effectiveness analysis in two different ways: (1) at a macroscopic level and (2) at a microscopic level for critical conditions, such as asthma and heart disease, that affect the transportation-disadvantaged.

In examining the transportation costs, we are considering the type of transportation service provided — such as a normal bus, a wheelchair-lift equipped van, etc. — the distance traveled, and the location of the trip in an urban or rural area, because all of these factors will affect the cost of providing the currently lacking transportation. Already, the federal government, and other units of government, is making a substantial investment toward the transportation-disadvantaged population. In addition to the regular community and public transportation services offered by public transportation providers, many other sources of mobility stem from the 62 federal programs that fund such travel. This research will quantify the financial and clinical benefits of providing efficient transportation services to the transportation-disadvantaged population and compare that to the incremental costs of the transportation and routine care.

Our results to date indicate that millions of Americans miss medical care due to a lack of transportation in a given year. On average, they are disproportionately female, poorer, and older; have less education; and are more likely to be minorities than those who do not miss care due to a lack of non-emergency transportation. While adults who miss care are spread across urban and rural areas much like the general population, children lacking transportation are more concentrated in urban areas. In addition, these 3.6 million people suffer from multiple conditions at a much higher rate than do their peers. Many of the conditions they face, however, can be managed if appropriate care is

made available. Based on our macroscopic cost-effectiveness analysis, we found that only small health benefits are needed to balance the added costs; furthermore, at the microscopic level, we found that providing missing non-emergency medical transportation to asthma and heart disease patients is highly cost effective.

The specific medical conditions that affect the population with lack of access to non-emergency medical transportation include hypertension, asthma, chronic obstructive pulmonary disease, diabetes, stroke, and depression. Furthermore, the population lacking access to non-emergency medical transportation suffers from these conditions at higher rates than does the rest of the U.S. population. Our findings show, for example, that heart disease and arthritis are roughly twice as prevalent for adults lacking non-emergency medical transportation, and depression is more than three times as prevalent. For children, asthma is twice as prevalent in the population lacking non-emergency transportation. Those lacking access to these transportation services also suffer from access to preventative services, such as screening for cancer and prenatal care. Thus, the lack of transportation is placing a highly vulnerable population at risk of negative healthcare outcomes.

Paradoxically, despite lacking access to non-emergency medical transportation, the affected population requires more physician office visits, has more emergency room visits and ends up having more surgeries compared to those with greater access to transportation. Thus, we have further hypothesized that transportation-disadvantaged persons who miss routine care require more emergency care than the general population requires, or are substituting emergency trips for regular trips to their primary care provider, if they have one. Likewise, poor monitoring and preventive activities in the transportation-disadvantaged population can result in unnecessary — and expensive — hospitalizations. In fact, the lack of access to routine healthcare can, at times, even increase overall transporta-

tion costs, such as when an ambulance is used in a non-emergency situation because no other options exist.

Based on our findings to date, we see great promise for societal benefits from improving the quality of life of the transportation-disadvantaged population by increasing its access to non-emergency medical care by investing in missing transportation resources. When our study is completed, we will have estimated the overall cost-effectiveness of providing this transportation for many of the critical conditions prevalent in the population and look forward to reporting these findings to both the transportation and healthcare communities — as well as the readers of *Community Transportation* magazine.

We also believe that this issue would be better studied, and easier to study, if national healthcare and transportation data sets were modified to allow more direct assessment of the magnitude of this access problem and of the benefits that could be achieved by remedying it. Currently, national healthcare studies and data sets barely address transportation access, and national transportation studies and data sets, such as the National Household Travel Survey, do not investigate health at the condition level. With better data, more evidence will be available to shed light on this critical gap between needing care and having the transportation resources to access it; as well as on appropriate services to fill this gap, be they more transportation, telemedicine, or other solutions. 📡

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