

THE NET BENEFITS TO MEDICARE OF THE PURCHASE OF POWERED VEHICLES FOR THE MOBILITY IMPAIRED: AN ANALYSIS OF THE MEDICARE DATA

EXECUTIVE SUMMARY

This study investigates whether Medicare's purchases of powered vehicles result in subsequent dollar savings for Medicare. Medicare data for the period 1994 through 2001 were obtained for the study, though the period of primary investigation begins with 1997, which is when an improved generation of powered vehicles was first made available. During the 1997-2001 period, powered vehicles purchased through Medicare consisted of approximately 89% powered wheelchairs and 11% powered scooters.

Research by others indicates that lower Medicare expenditures are incurred when individuals with mobility problems become more mobile and self-sufficient. If beneficiaries' Medicare expenditures after the provision of powered vehicles are less than those expected without provision of powered vehicles then Medicare's purchases of powered vehicles might not constitute a net cost to Medicare. In fact, these purchases might result in a net dollar savings to Medicare. Such considerations have motivated the present study, which is the most comprehensive look, to date, at the effect of powered vehicles on Medicare expenditures.

The study compares the Medicare expenditures of two groups of individuals: (1) Medicare beneficiaries for whom Medicare purchased a powered vehicle during the study period and (2) Medicare beneficiaries for whom Medicare did not purchase a powered vehicle during the study period, but who had similar characteristics as those who did receive a powered vehicle. The analysis compares differences in Medicare expenditures per quarter.

The data utilized were the Standard Analytical Files (SAFs) from the Centers for Medicare and Medicaid Services. We studied those who survived over the entire 1994-2001 period, which were more than two-thirds of those for whom Medicare paid for powered vehicles, had both Part A and Part B Medicare insurance coverage for the whole period, and were not in an HMO for Medicare purposes during the period.

The statistical analysis consisted of several important stages. The first stage identifies "would-be applicants". This stage of the analysis uses, among other variables, medical diagnoses of known applicants for powered vehicles and of non-applicants present in a 10% random sample from the SAF Medicare population. The analysis identifies those non-applicants who have a high probability of being like those who actually applied for a powered vehicle.

A second stage identifies those "would-be applicants" who have a high probability of approval for Medicare payment for a powered vehicle, had they applied. This stage, in other words, identifies "would-be approvals" chosen from the "would-be applicants". This stage utilizes the frequencies of key medical diagnoses of known applicants, in addition to other variables. It also utilizes Medicare's decisions about who among the known applicants were actually provided a powered vehicle.

A third stage analysis assigns a quarter and a year when the “would-be” approvals would first be sufficiently impaired as to be eligible for a powered vehicle. This is a quarterly analysis of medical diagnoses from the Medicare claims histories of “would-be” approvals.

The final stage is a comparison of differences in Medicare expenditures per quarter for those with powered vehicles and the “would-be” approvals. This comparison is where the savings are identified. The differences in spending before and after receipt or assignment of a powered vehicle are significantly lower for those who actually received the powered vehicles.

The evidence from our study is that purchases of powered vehicles save Medicare money. Our findings are that the purchases of powered vehicles are statistically significantly and negatively related to differences in Medicare expenditures per person per quarter.

For the period in the data relevant for the current improved generation of powered vehicles – the period 1997 through 2001 – on average, the estimate of Medicare’s average savings is \$679.78 per quarter per qualifying person who receives a powered vehicle.

Since average savings were measured on a per quarter basis, we examined the persistence of these savings after the attainment of a powered vehicle. We analyzed expenditures for those beneficiaries who received or were assigned a powered vehicle in the period from the 1st Quarter of 1997 through the 1st Quarter of 1999 in order to observe the pattern of savings for several years. The analysis indicates that the average savings per quarter is highest during the first year after receiving the powered vehicle. However, savings continue to accumulate over time, and during the third year after the attainment of the powered vehicle the average savings per quarter is still positive and statistically significant. For those who survived at least 12 quarters after attaining a powered vehicle, the evidence shows a net average savings to Medicare of \$9,300 per beneficiary over the observed three-year period.

We investigated the sources of Medicare’s savings. We found that Medicare’s expenditures in the Durable Medical Equipment file were statistically significantly higher for those for whom Medicare purchased a powered vehicle. This is to be expected since the costs of the powered vehicles are included in that expenditure data. However, these higher equipment expenditures were more than offset by statistically significantly lower Medicare quarterly expenditures in the Home Health (-\$186.38), Inpatient (mainly hospitalization) (-\$582.86), Carrier (-\$161.21), Skilled Nursing Facility (-\$74.49) Outpatient (-\$23.43), Hospice (-\$0.29), expenditure files.

The exact causes of these savings await further research. Some plausible avenues through which Medicare incurs a net savings, however, are suggested by our findings. Perhaps Inpatient expenditures are lower because those with powered vehicles experience fewer serious falls and, therefore, fewer hospitalizations related to injuries from such falls, such as broken hips. Powered wheelchairs, and in some cases scooters, appear to serve as alternatives to more expensive options, such as living in a skilled nursing facility or in an assisted living facility. While there is evidence that powered vehicles improve quality of life by expanding the user’s mobility options, this study reports, for an important segment of users, that powered vehicles have the added benefit of providing a net cost savings to Medicare.

■ *This research was conducted by RRC, Inc., an economics consulting firm located in Bryan, Texas. The authors are Dr. Donald R. House, Dr. Clifford L. Fry, and Dr. Kent D. Nash -- President, Executive Vice President, and Associate of RRC, Inc., respectively. The research methodology has been reviewed by Dr. Badi Baltagi, Professor of Economics, George Summey, Jr. Professor of Liberal Arts, Department of Economics, Texas A&M University.*