April 2002

Evaluation of Medicare's Competitive Bidding Demonstration for DMEPOS

Second-Year Annual Evaluation Report

CMS Contract No. 500-95-0061/T.O. #3

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RTI Project Number 07346.002.009

RTI INTERNATIONAL

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ES.1.1 Background and Purpose

The Balanced Budget Act of 1997 (BBA 97) (U.S. Congress, 1997) authorizes the Secretary of the Department of Health and Human Services to implement up to five demonstration projects of competitive bidding for Medicare Part B items and services, except physician services. On the basis of this authority, the Centers for Medicare & Medicaid Services (CMS)[1] planned and implemented the DMEPOS Competitive Bidding Demonstration to test the use of competitive bidding to set prices for durable medical equipment and prosthetics, orthotics, and supplies (DMEPOS). Two rounds of bidding have occurred in the first demonstration site (Polk County, Florida), with Round 1 and Round 2 prices taking effect on October 1, 1999, and October 1, 2001, respectively. The second demonstration site includes three counties in the San Antonio Metropolitan Statistical Area. Bidding in San Antonio occurred in 2000, and the resulting prices took effect on February 1, 2001.

BBA 97 requires that the demonstration be evaluated for its impact on Medicare program payments, access, diversity of product selection, and quality. The purpose of this report is to describe the results to date of the evaluation of the DMEPOS Competitive Bidding Demonstration. We evaluate the impact of the demonstration on

- Medicare expenditures,
- beneficiary access to care,
- quality of care (including diversity of product selection),
- competitiveness of the market, and
- the reimbursement system.

Our First-Year Annual Evaluation Report evaluated the effects of the demonstration in Polk County during the period before and the 9-month period after the demonstration prices took effect on October 1, 1999. This Second-Year Evaluation Report evaluates the effects of the demonstration in Polk County during the period between July 1, 2000, and September 30, 2001. The report also covers the effects of the demonstration in San Antonio during the period before and the 8-month period after the demonstration prices took effect on February 1, 2001.

[1] Prior to July 2001, CMS was named the Health Care Financing Administration (HCFA). We use the new name throughout our report.

ES.1.2 Demonstration Overview

In Polk County, the demonstration is scheduled to last for 3 years and include two rounds of bidding. The first round resulted in a fee schedule that remained in effect for 2 years, and the fee schedule based on the second round of bidding will be in effect for 1 year. Round 1 included five product categories: oxygen equipment and supplies, hospital beds and accessories, enteral nutrition, urological supplies, and surgical dressings. Enteral nutrition was not included in Round 2, but the other four product categories were retained.

In San Antonio, the demonstration is scheduled to last 23 months and include one round of bidding. Five product categories are included in San Antonio: oxygen equipment and supplies, hospital beds and accessories, wheelchairs and accessories, general orthotics, and nebulizer drugs.

Aside from the differences in length, number of bidding rounds, and product categories, the demonstration design is similar for the Polk County and San Antonio sites. Each product category is considered a separate competition, so suppliers are required to submit separate bids for each product category in which they wish to compete. Demonstration suppliers are selected using a four-stage bid evaluation process. First, those bidders that meet the demonstration's eligibility and quality standards are identified. Second, a composite bid for each bidder is calculated from the bid submission, and a cutoff composite price is chosen. Only those bids that are at or below this cutoff are considered for further evaluation. In setting the cutoff, the supply capacity and geographic coverage provided by the bidders are considered. Third, references from referral agents (hospital discharge planners, social workers, physician office staff, and home health workers who refer patients to DMEPOS suppliers) and financial institutions are collected. Fourth, the references are evaluated and on-site inspections are made to verify that the remaining bidders meet general and product-specific quality and service requirements. Bidders are scored to identify those suppliers with the greatest potential to provide high quality products and services.

At the end of the bid evaluation process, multiple demonstration suppliers are selected in each category. Demonstration suppliers are not guaranteed to receive a set number of Medicare patients. These provisions of the demonstration are designed to promote competition among demonstration suppliers for patients. This competition, it is hoped, will encourage suppliers to maintain quality and service levels during the demonstration.

The new fee schedule is determined from the demonstration suppliers' bids. The demonstration suppliers will be reimbursed according to this new fee schedule, minus the 20 percent beneficiary copayment and any applicable deductibles.

Several transition policies cover beneficiary/supplier relationships that existed prior to the demonstration. Beneficiaries may continue to receive oxygen equipment and supplies or nebulizer drugs from their original supplier, regardless of whether the supplier is a demonstration

supplier. However, payments will be made according to the new demonstration fee schedule. Those beneficiaries who have preexisting rental agreements or purchase contracts for enteral pumps, hospital beds and accessories, or wheelchairs and accessories may continue to use their current supplier, and these suppliers will be paid the preexisting fees for the duration of the rental period. If beneficiaries are referred to a nondemonstration supplier in error, then Medicare will cover the first 2 months of claims while the beneficiary locates a new supplier.

The demonstration includes quality standards for demonstration suppliers, and these standards exceed current Medicare standards. Also, CMS designated an Ombudsman in each site to receive, record, and respond to complaints from beneficiaries, physicians, suppliers, and other interested parties.

ES.1.3 Evaluation Methods and Data

This evaluation requires extensive descriptive and explanatory analyses to evaluate both the effectiveness of the implementation *process* and the *impact* of the demonstration on beneficiaries, providers, and the Medicare program. We are addressing the five evaluation areas using several sources of qualitative and quantitative data. Data sources include site visits and telephone discussions with key demonstration participants, focus groups, a review of documentation, surveys of beneficiaries and providers, bid analysis, and claims analysis. In the past year, we have conducted follow-up surveys of Medicare beneficiaries in Polk and a comparison county, analyzed results of baseline and follow-up beneficiary surveys relative to the Polk County demonstration, conducted baseline surveys of beneficiaries in San Antonio and a comparison site, analyzed bidding results and estimated potential reductions in Medicare allowed charges for San Antonio and for Round 2 bidding in Polk County, and conducted a series of site visits to San Antonio. Later in the evaluation, we will conduct follow-up surveys of beneficiaries and a survey of suppliers in San Antonio and a comparison site, analyze utilization claims and expenditures data, and make additional visits to both demonstration sites.

ES.2 Medicare Expenditures

Medicare allowed charges equal the product of price times the volume of utilization, summed across procedures. By comparing the demonstration prices to the Medicare statewide fee schedules that would have been in effect in the absence of the demonstration, we can calculate the demonstration's impact on prices. We do not yet have sufficient claims data to estimate the demonstration's impact on utilization. However, if we assume that utilization remains constant, we can estimate the effects of the demonstration on annual allowed charges, Medicare expenditures, and beneficiary copayments.

Key findings in this section are as follows:

- In Polk County, Round 2 demonstration prices are lower than the Medicare statewide fee schedule for all items in the oxygen equipment and supplies and hospital beds and accessories product categories. Demonstration prices are also lower than the fee schedule for 18 of 24 urological supply items and 21 of 28 surgical dressings items. Round 2 demonstration prices are lower than Round 1 demonstration prices for most of the items in the oxygen equipment and supplies and surgical dressings product categories. However, all of the Round 2 prices for urological supplies are higher than Round 1 prices. For hospital beds and accessories, most of the Round 2 prices are slightly higher than the Round 1 prices.

- In San Antonio, demonstration prices are lower than the existing Medicare statewide fee schedule for all items in the oxygen equipment and supplies, hospital beds and accessories, wheelchairs and accessories, and general orthotics product categories. For nebulizer drugs, the demonstration prices are lower than the Medicare statewide fee schedule prices for 16 of 27 items and higher for 11 of 27 items.

- Assuming that utilization remains constant at predemonstration levels, we estimate that the demonstration will reduce allowed charges in Polk County by nearly $1.3 million, $1.3 million, and $1.5 million during the first, second, and third years of the demonstration in Polk County, respectively. We estimate that San Antonio allowed charges will be reduced by $2.3 million during the first year of the demonstration and by $2.1 million in the second "year" (11 months).

- Combining savings from both sites, we estimate that the demonstration will reduce allowed charges by nearly $8.5 million (19.9 percent), again assuming that utilization remains constant at predemonstration levels. Medicare expenditures (defined as allowed charges less copayments and deductibles) will fall by about $6.8 million, and beneficiary payments will fall by about $1.7 million.

ES.3 Beneficiary Access

We define beneficiary access as the ability of Medicare beneficiaries to locate and use, without undue burden, the services and products that are covered by Medicare. Competitive bidding reduces the number of approved suppliers in a given area, and suppliers might respond to the new environment in a number of ways. Responses can range from strategies to increase market share to business practices designed to reduce costs because of lower reimbursement. For example, suppliers could attempt to increase market share by extending service and advertising, thereby filling in geographic gaps left by ineligible suppliers. Conversely, suppliers could respond by delaying routine maintenance or employing fewer service technicians and customer service representatives in an effort to reduce costs. This could increase the need for service calls and extend waiting times, thereby decreasing access. Because of the uncertainty of the outcomes, it is

important to monitor the demonstration's impact on beneficiary access and evaluate whether competitive bidding affects beneficiaries' ability to obtain needed products and services.

Key findings in this section are as follows:

- Survey data show few statistically significant demonstration impacts on access-related survey measures in Polk County. This suggests that the demonstration has had little overall impact on beneficiary access.

- Our Polk County analysis detects statistically significant demonstration effects that indicate a decline in the provision of portable oxygen equipment and an increase in conserving device usage among new users under the demonstration. We also detect a decline in maintenance visits among new users of medical equipment. Other statistically significant impacts include changes in the ways beneficiaries order and receive their equipment, as well as declines in some types of training for urologicals and surgical dressings users. We will monitor and further evaluate these issues as the demonstration continues.

- In San Antonio, some referral agents adapted their methods for coordinating care in response to the demonstration. Some difficulties with access occurred during the first months of the demonstration when some demonstration suppliers provided wheelchair items that were not ordered or were not properly adjusted. Agents have since become more familiar with demonstration rules and demonstration-eligible suppliers, and they are now using suppliers with whom they are comfortable.

ES.4 Quality and Product Selection

One of the major concerns about competitive bidding is that it may encourage suppliers to provide lower quality products and services in an effort to cut costs and restore profit margins reduced by the bidding process. Lower quality may be manifested by suppliers' offering lower quality products, postponing preventive maintenance, delaying service calls, limiting product selection, reducing the level of training or expertise of staff, and/or reducing inventory to the point that time needed to fill orders is increased. On the other hand, the DMEPOS competitive bidding demonstration design includes a number of features intended to maintain and promote quality. Our approach has been to evaluate the effect of the demonstration on the quality of products and services by obtaining information directly from Medicare beneficiaries, beneficiary organizations, referral agents, and suppliers. To do so, we rely on beneficiary surveys and site visits to each demonstration site.

Key findings in this section are as follows:

- Users of oxygen and other medical equipment in Polk County are highly satisfied with their experiences with their DMEPOS suppliers. Survey data show that overall satisfaction ratings were high before the demonstration and remain at that level 1 year after its inception.

- Survey data indicate that quality of DMEPOS products and services is high both before and after the demonstration. There are few statistically significant demonstration impacts on quality-related survey measures. This suggests that the demonstration has had little overall impact on quality thus far.

- We observe a statistically significant relationship between the demonstration and a decrease in the number of major equipment problems reported by new oxygen users. We also detect statistically significant improvements in other medical equipment users' ratings of their equipment's reliability. We will monitor and further evaluate these variables as the demonstration continues.

- In site visits, some San Antonio referral agents reported problems with demonstration suppliers of wheelchairs. It appears that referral agents adapted their methods for coordinating care in response to such problems. By familiarizing themselves and following up with new suppliers who are eligible to provide demonstration products, agents are able to ensure that the patients they serve continue to receive high quality DMEPOS products and services.

ES.5 Competitiveness of the Market

The process of competitive bidding may reduce the number of suppliers that serve Medicare beneficiaries in these markets. For subsequent bidding rounds to be successful, a sufficient number of bidders must be left in the market to induce competitive bids. Continued competition is also necessary to preserve beneficiary access and quality services. The effects of the demonstration are also obviously of interest to suppliers themselves. DMEPOS suppliers generally opposed competitive bidding prior to the demonstration project. The demonstration's impact on suppliers and on suppliers' feelings about competitive bidding will likely shape suppliers' attitudes for future policy discussions about competitive bidding.

Key findings in this section are as follows:

- Twenty-six firms submitted a total of 52 bids for the four product categories in Round 2 bidding in Polk County, and 16 suppliers (62 percent) were awarded demonstration status. There were nearly as many bidders in Round 2 (26) as in Round 1 (30), when 16 demonstration suppliers were also named.

- The number of firms submitting bids for urological supplies in Round 2 bidding in Polk County fell from 9 to 7, and the number of suppliers submitting bids for surgical dressings fell from 8 to 4. The reductions are worthy of attention because these product categories had the fewest winners and demonstration suppliers in the first round of the demonstration.

- Entry into and exit from the market are still possible in the presence of competitive bidding. Half of the Round 2 demonstration suppliers in Polk County also had demonstration status in Round 1, but half did not.

- Seventy-nine firms submitted a total of 169 bids for the five product categories in San Antonio. Overall, 65 percent of the suppliers that submitted bids won demonstration status in at least one product category. Within product categories, the number of winning bids ranged from 8 for orthotics to 32 for oxygen equipment and supplies.

ES.6 Reimbursement System

This report focuses on the implementation process in San Antonio, Texas, where most of our findings echo the first-year conclusions regarding the Polk County site. We investigate the differences between the Polk County and San Antonio demonstrations, as well as the difference between the first and second rounds of the demonstration in Polk County. We also examine the costs of implementing competitive bidding for DMEPOS. Knowledge of these costs is essential for evaluating whether competitive bidding can produce Medicare cost savings; to evaluate this issue, the costs of implementation must be compared to any reductions in Medicare payments.

Key findings in this section are as follows:

- There were three major differences in demonstration design between Round 1 bidding in Polk County and subsequent rounds of bidding in San Antonio and Polk County. The weighting mechanism used to calculate the composite price was improved. The project design in San Antonio changed three of the product categories originally used in Polk County. Enteral nutrition was dropped as a product category in Round 2 bidding in Polk County.

- Although a couple of key milestones on the project schedule met with delay, competitive bidding was successfully implemented in San Antonio. Stakeholders were educated about the demonstration and received useful information. CMS and its contractor evaluated bids from 79 suppliers, more than twice as many as in Polk County. The delays that caused CMS to depart from its planned schedule were a 1-month delay in implementation relative to the tentative starting date of January 1, 2001, and delivery of the demonstration directories very close to the actual starting date of February 1, 2001. Delivering the directories in a more timely fashion would improve implementation of the demonstration.

- For the entire demonstration, CMS and contractor costs of implementation will total about $4.8 million between 1995 and 2002. About $1.2 million in costs were incurred in the development phase of the demonstration from September 1995 to June 1998 (15 months before the demonstration prices took effect). About $3.6 million, or $800,000 per year, in costs will be incurred during the operational phase of the demonstration from July 1998 until December 2002.

- The incremental costs of operating a second demonstration site are relatively low, ranging from $300,000 in a year when bidding occurs to $110,000 per year in nonbidding years.

- The costs of implementing the demonstration are about 40 percent lower than the projected $8.5 million reduction in Medicare allowed charges associated with the demonstration.

ES.7 Summary and Conclusions

Based on approximately 2 years of operation, CMS's Competitive Bidding Demonstration for DMEPOS shows the potential to decrease Medicare expenditures. Competitive bidding has lowered the prices paid by Medicare for the large majority of DMEPOS products and services. Because we do not yet have data on utilization, we cannot definitively conclude that total DMEPOS allowed charges (the product of price times utilization) will fall. However, if utilization remains constant, we estimate that Medicare allowed charges for demonstration products will fall by nearly $8.5 million over the course of the demonstration, a reduction of 20 percent.

To date, we have no evidence of major adverse effects on beneficiary access to care, quality of products and services, or diversity of product selection. Our results for Polk County indicate that the demonstration has not been accompanied by major changes in beneficiaries' access to or quality of DMEPOS products and services. Beneficiaries' overall satisfaction with their service from DMEPOS suppliers has remained very high. The impact of the demonstration on satisfaction was not statistically significant in regression analyses. Similarly, the demonstration did not have a statistically significant impact on almost all of the access and quality measures included on Polk County beneficiary surveys. The demonstration design includes quality standards and provisions to maintain beneficiary access and these probably have helped to maintain access and quality.

Although the majority of our findings suggest that the demonstration has not reduced access or quality, a few isolated findings cause concerns. Survey data from Polk County indicated statistically significant declines in the provision of portable oxygen to new oxygen users and training for surgical dressing and urological supplies users, a possible shift away from suppliers making home deliveries, and less frequent routine maintenance visits to new medical equipment users. Some referral agents in San Antonio described incidents where demonstration suppliers provided wheelchair items that were not ordered or were not properly adjusted.

Industry competition has generally remained healthy in the presence of the demonstration. Seventy-nine suppliers submitted bids in San Antonio, and 26 suppliers submitted bids in Round 2 bidding in Polk County. Multiple winners were selected in each product category in each round of bidding. In Polk County, nondemonstration suppliers in Round 1 survived to bid successfully in Round 2. However, the falling number of bidders for urological supplies and surgical dressings raises questions about the feasibility of bidding for products with low allowed charges.

The demonstration has also shown that CMS can design, implement, and operate a reimbursement system that uses competitive bidding relatively efficiently. CMS and its contractor

have been able to notify and educate stakeholders, solicit and evaluate bids, select winners, and implement the new reimbursement system with relatively few problems. We estimate that developing, implementing, and operating the demonstration will cost about $4.8 million over a 7-year period ending in December 2002. This total is less than the estimated $8.5 reduction in Medicare allowed charges associated with the demonstration.

Although most of our findings from the evaluation thus far are positive, many important evaluation issues remain unresolved. The San Antonio demonstration, which has been underway for less than a year, includes different product categories that could be more susceptible to deteriorations in access or quality under competitive bidding. The San Antonio demonstration also provides a larger market in which to test the demonstration's effects on market competition over time. Our analyses have identified some concerns related to access, quality, and competition, and we will continue to monitor these over the duration of the demonstration. Furthermore, with only 2 years of experience under the demonstration, it is premature to conclude what the long-term effects of competitive bidding on the evaluation issues will be.

Our evaluation will continue throughout the duration of the demonstrations in Polk County and San Antonio, and we will collect extensive information on the demonstration's impacts over time. We will issue the Final Evaluation Report in 2003, shortly after the demonstration concludes on December 31, 2002.

SECTION 1
BACKGROUND AND METHODS

1.1 Purpose

The Balanced Budget Act of 1997 (BBA 97) (U.S. Congress, 1997) authorizes the Secretary of the Department of Health and Human Services to implement up to five demonstration projects of competitive bidding for Medicare Part B items and services, except physician services. At least one of these demonstration projects must include oxygen and oxygen services. On the basis of this authority, the Centers for Medicare & Medicaid Services (CMS)[1] planned and implemented the DMEPOS Competitive Bidding Demonstration to test the use of competitive bidding to set prices for durable medical equipment (DME) and prosthetics, orthotics, and supplies (POS). Bidding in the first demonstration site, Polk County, Florida, was conducted in early 1999, and the resulting prices took effect on October 1, 1999. A second round of bidding was conducted in Polk County in 2001, with new prices taking effect on October 1, 2001. The second demonstration site includes three counties in the San Antonio, Texas, metropolitan statistical area (MSA). Bidding in San Antonio occurred in 2000, and the resulting prices took effect on February 1, 2001.

BBA 97 requires that the demonstrations be evaluated for their impact on Medicare program payments, access, diversity of product selection, and quality. The purpose of this report is to describe the results of the evaluation of the DMEPOS Competitive Bidding Demonstration through September 30, 2001. We evaluate the impact of the demonstration on

- Medicare expenditures,
- beneficiary access to care,
- quality of care (including diversity of product selection),
- competitiveness of the market, and
- the reimbursement system.

Our First-Year Annual Evaluation Report evaluated the effects of the demonstration on the first demonstration site, Polk County, during the period before and the 9-month period after the demonstration prices took effect on October 1, 1999. This Second-Year Annual Report evaluates the effects of the demonstration on the Polk County site during the period between July 1, 2000, and September 30, 2001. The report also covers the effects of the demonstration on the San Antonio demonstration site during the period before and the 8-month period after the

[1] Prior to July 2001, CMS was named the Health Care Financing Administration (HCFA). We use the new name throughout our report.

demonstration prices took effect in San Antonio on February 1, 2001. We emphasize that the demonstration in Polk County will continue until September 30, 2002, and the demonstration in San Antonio will continue until December 31, 2002. Our evaluation will continue until the demonstration ends in both sites. Although we have learned a number of lessons from the evaluation so far, it is premature to make final conclusions about the long-term impact of the demonstration on many of the evaluation issues. We will repeat this caution throughout our report, as we identify evaluation activities that will continue for the duration of the demonstration.

In the remainder of this section, we present an overview of the key features of the demonstration design; provide a brief history of the demonstration to date; and discuss links among the major evaluation issues, our evaluation approach, and the methods and data we use to perform the evaluation. Sections 2 through 6 describe the evaluation results for Medicare expenditures, access, quality, competitiveness of the market, and the reimbursement system, respectively. In each of these sections, we present results, identify unresolved issues, and discuss ongoing evaluation activities. In Section 7, we summarize the key conclusions across evaluation areas and make policy recommendations on the basis of these conclusions.

1.2 Demonstration Overview

In Polk County, the DMEPOS Competitive Bidding Demonstration is scheduled to last for 3 years and include two rounds of bidding (Table 1-1). The first round resulted in a fee schedule that was in effect for 2 years, while the fee schedule based on the second round of bidding will be in effect for 1 year. In Round 1, five product categories were included: oxygen equipment and supplies, hospital beds and accessories, enteral nutrition, urological supplies, and surgical dressings. Enteral nutrition was dropped from Round 2 of the demonstration, while oxygen equipment and supplies, hospital beds and accessories, urological supplies, and surgical dressings were retained.

In San Antonio, the DMEPOS Competitive Bidding Demonstration is scheduled to last for 23 months and include one round of bidding (see Table 1-1). Originally, the new demonstration prices were scheduled to take effect on January 1, 2001, but the start of the demonstration was postponed 1 month until February 1, 2001. Five product categories are included in the San Antonio demonstration: oxygen equipment and supplies, hospital beds and accessories, wheelchairs and accessories, general orthotics, and nebulizer drugs.

Aside from the differences in dates, number of rounds, and product categories, the demonstration design is similar in Polk County and San Antonio. Each product category is considered a separate competition, so suppliers are required to submit separate bids for each product category in which they wish to compete. Demonstration suppliers are selected using a four-stage bid evaluation process. First, those bidders that meet the demonstration's basic

Table 1-1. Demonstration Timeline

Demonstration Event	Date
BBA 97 Passed	August 5, 1999
Polk County, Florida	
Round 1	
Site Announcement	May 29, 1998
Request for Bids	February 11, 1999
Bidders Conference	February 23, 1999
Bid Submission Deadline	March 29, 1999
Bid Evaluation	March 29 to July 1999
Winners Announced	August 13, 1999
Supplier Directory Distributed	September 13, 1999
New Prices Take Effect	October 1, 1999
End of First Round	September 30, 2001
Round 2	
Request for Bids	March 2, 2001
Bidders Conference	March 27, 2001
Bid Submission Deadline	April 17, 2001
Bid Evaluation	April 27 to August 2001
Winners Announced	August 29, 2001
Supplier Directory Distributed	September 4, 2001
Second Round Prices Take Effect	October 1, 2001
Demonstration Ends	September 30, 2002
San Antonio, Texas	
Site Announcement	March 9, 2000
Request for Bids	May 5, 2000
Bidders Conference	May 16, 2000
Bid Submission Deadline	June 23, 2000
Bid Evaluation	June 23 to November 2000
Winners Announced	December, 2000
Supplier Directory Distributed	January 24, 2001
New Prices Take Effect	February 1, 2001
Demonstration Ends	December 31, 2002

eligibility and quality standards are identified. Second, a composite bid for each bidder is calculated from the bid submission, and a cutoff composite price is chosen. Only those bids that are at or below this cutoff are considered for further evaluation. In setting the cutoff, the supply capacity and geographic coverage provided by the bidders are considered. Third, references from referral agents (hospital discharge planners, social workers, physician office staff, and home health workers who refer patients to DMEPOS suppliers) and financial institutions are collected. Fourth, the references are evaluated and on-site inspections are made to verify that the remaining bidders meet general and product-specific quality and service requirements. Bidders are scored to identify those suppliers with the greatest potential to provide good quality and service.

At the end of the bid evaluation process, multiple demonstration suppliers are selected in each category. Demonstration suppliers are not guaranteed to receive a set number of Medicare patients. These provisions of the demonstration are designed to promote competition among demonstration suppliers for patients. This competition, it is hoped, will encourage suppliers to maintain quality and service levels during the demonstration.

The new fee schedule is determined from the bids that came in below the cutoff composite price. The demonstration suppliers will be reimbursed according to this new fee schedule, minus the 20 percent beneficiary copayment and any applicable deductibles.

Several transition policies govern beneficiary/supplier relationships that existed prior to the demonstration. Beneficiaries may continue to receive oxygen equipment and supplies or nebulizer inhalation drugs from their original supplier, regardless of whether the supplier is a demonstration supplier. However, payments will be made according to the new demonstration fee schedule, and the supplier must agree to accept assignment and demonstration prices. Those beneficiaries who have preexisting rental agreements or purchase contracts for enteral pumps, hospital beds and accessories, or manual wheelchairs and accessories may continue to use their current supplier, and these suppliers will be paid under the normal Medicare fee schedule for the duration of the rental period. Repairs to purchased products, hospital beds and accessories, manual wheelchairs and accessories, and oxygen equipment are exempt from the demonstration and will be reimbursed under the normal Medicare fee schedule. If beneficiaries use a nondemonstration supplier in error, then Medicare will cover the first 2 months of claims while the beneficiary locates a new supplier.

Special policies cover reimbursement for demonstration products that are covered by Part B when Medicare beneficiaries reside in nursing facilities. Nursing facilities are allowed to continue existing relationships with nondemonstration suppliers, but payments are made on the basis of the demonstration fee schedule. In order to implement these policies, nursing facilities were asked to provide information about their DME suppliers.

The demonstration includes quality standards for demonstration suppliers, and these standards exceed those set under the National Supplier Clearinghouse program. Also, CMS designated an Ombudsman in each site to receive, record, and respond to complaints from beneficiaries, physicians, suppliers, and other interested parties. Palmetto Government Benefits Administrators (Palmetto GBA) is implementing the demonstration under contract and in collaboration with CMS.

1.3 History of the Demonstration

1.3.1 Planning Stages

CMS has long been interested in using competitive bidding to set Medicare fee schedules. Developmental work on competitive bidding demonstrations for clinical laboratory services and DME began in the mid-1980s. However, because of a congressional funding moratorium, the projects were not implemented at that time. CMS resumed work on the clinical laboratory and DME competitive bidding demonstrations in 1995.

Interest in competitive bidding has intensified in recent years as continued growth in Medicare spending has forced CMS, the President, and Congress to seek additional innovative means to control program spending. This interest culminated in provisions addressing competitive bidding in the BBA 97. BBA 97 authorizes the Secretary of Health and Human Services to conduct up to five demonstration projects of competitive bidding for Part B items and services, except physician services. The key demonstration provisions, presented in Section 4319 of the BBA 97, are as follows:

- The Secretary will implement up to five demonstration projects under which competitive acquisition areas will be established for contract award purposes.
- Each demonstration shall be conducted in not more than three competitive acquisition areas.
- Competitive acquisition areas shall be all or part of an MSA. Criteria for selecting competitive acquisition areas include availability and accessibility of services and probability of savings from the demonstration.
- To receive a contract, providers must meet quality standards.
- The amount to be paid under a contract must be less than what would have been paid in the absence of a contract.
- The number of providers awarded contracts may be limited to the number needed to meet projected demand.

- The demonstrations shall be evaluated for their impact on Medicare program payments, access, diversity of product selection, and quality.

- A demonstration project may be expanded if the project reduces federal spending and does not reduce program access, diversity of product selection, or quality.

- The demonstration may include any Part B service except physician services. At least one demonstration project will include oxygen and oxygen equipment.

- The demonstrations—which will be operated over a 3-year period—must be completed by December 31, 2002.

1.3.2 Polk County—Round 1

On May 29, 1998, Polk County, Florida—an MSA that includes the cities of Lakeland and Winter Haven—was announced as the first site for the DMEPOS Competitive Bidding Demonstration. Polk County was selected because it has a relatively small population but a large proportion of Medicare beneficiaries, high expenditures for DMEPOS per beneficiary, and a large number of suppliers servicing the area. In 1997, 4,500 beneficiaries received about $6.6 million in Medicare reimbursement for the products included in the demonstration. Nationally, Medicare paid about $3 billion for the items included in the demonstration. The following DMEPOS product groups were included in the demonstration:

- oxygen equipment and supplies,

- hospital beds and accessories,

- enteral nutrition,

- urological supplies, and

- surgical dressings.

On February 11, 1999, CMS sent a Request for Bids (RFB) to every supplier that had submitted claims to Medicare during the previous year for items included in the demonstration and for beneficiaries residing in the demonstration area. CMS also published notices of the demonstration in national trade journals and in *Commerce Business Daily*, a publication that lists upcoming government procurements.

Medi-Health Care Inc., C&C Homecare, and Florida Association of Medical Equipment Dealers (collectively "FAMED") filed a request for an injunction against the commissioner of the Social Security Administration, the administrator of CMS, and other codefendants on February 4, 1999. FAMED alleged that, in developing the competitive demonstration project, CMS had violated the Federal Advisory Committee Act (FACA), which ensures public access and participation in

advisory committee meetings and makes available to the public any documentation from the meeting. Palmetto GBA, the demonstration contractor, had convened a National Technical Expert Panel (NTEP) to gather feedback regarding the design of the competitive bidding project and to enhance communication with interested members of the public. The panel met three times and was not expected to, and did not, issue a report. FAMED claimed that they were unable to participate in the NTEP because they did not receive proper notice. Had they been able to participate, they would have hoped to influence the structure of the demonstration and afford themselves a better chance to bid successfully. FAMED asked that CMS be prevented from using any of the recommendations from the NTEP and that the demonstration project be delayed until the FACA requirements were met. However, the case was dismissed, and the United States Court of Appeals, Eleventh Circuit, denied FAMED's appeal on November 9, 1999 (194 F.3d 1227), stating that FAMED was only able to allege speculative damages and a tenuous causal connection of damages to the alleged violations. The lawsuit may have caused uncertainty among suppliers about whether the demonstration would proceed as scheduled. Ultimately, however, the lawsuit did not delay the demonstration.

CMS held a Bidders Conference in Lakeland, Florida, on February 23, 1999, to describe the bidding process, explain the operational policies of the demonstration, share information on bidding strategies, and answer questions from prospective bidders. Prospective bidders were also given an opportunity to submit follow-up questions to CMS after the conference. About 100 people attended the Bidders Conference.

Bids were due on March 29, 1999. Thirty different suppliers submitted a total of 73 bids across five different product categories. The demonstration contractor, Palmetto GBA, and CMS reviewed these bids for both quality and value. They selected 16 suppliers, each to provide products in at least one product category, for participation in the demonstration. Results of the bidding, including the preliminary number of suppliers in each category and estimated savings, were announced in July 1999. CMS released a final list of demonstration suppliers in August 1999 (Table 1-2), after reviewing appeals and obtaining signed contracts from suppliers. The Demonstration Supplier Directory, which provides each demonstration supplier's contact information and service area, was distributed in September 1999.

Based on the demonstration suppliers' bids, new reimbursement rates were established for each product category included in the demonstration. The new rates went into effect on October 1, 1999.

1.3.3 Polk County—Round 2

The second round of bidding for Polk County, Florida, followed roughly the same format and schedule as the first round of bidding. However, enteral nutrition was not included in

Table 1-2. Demonstration Suppliers by Product Category, Polk County—Round 1

Supplier	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Enteral Nutrition	Urological Supplies	Surgical Dressings
American Home Patient	X	X	X		
Comprehensive Health Care	X	X	X	X	X
Encore Respiratory, Inc.	X				
Global Medical, Inc.	X	X	X		
Health Care Diagnostics	X	X	X		
Home Care Medical Services	X	X	X		
Home Care Supply	X				
Housecall Medical Equipment	X	X			
Jernigan Healthcare				X	X
Med-Services Network	X				
Medi-Healthcare	X	X	X	X	
Medical Technology Solutions					X
Medline Healthcare			X	X	X
Respitek Medical Services	X	X			
Sun Factors, Inc.	X	X		X	
VNA Homecare, Inc.	X	X			
Total Number of Suppliers	13	10	7	5	4

Round 2 of the demonstration (see Section 6). The following four product categories were included in the demonstration:

- oxygen equipment and supplies,
- hospital beds and accessories,
- urological supplies, and
- surgical dressings.

The RFB for Round 2 was released on March 2, 2001, and the Bidders Conference was held in Lakeland, Florida, later in the month. Bids were due on April 17, 2001, 45 days after the RFB was released. Twenty-six different suppliers submitted a total of 51 bids across the four different product categories. Palmetto GBA and CMS selected 16 suppliers, each to provide products in at

least one product category, for participation in the demonstration. CMS released the final list of demonstration suppliers in August 2001 (Table 1-3), and the demonstration contractor distributed the Supplier Directory to beneficiaries and suppliers in September 2001. Round 2 demonstration prices went into effect on October 1, 2001. The Round 2 prices will remain in effect for 1 year, until September 30, 2002, when the Polk County demonstration is scheduled to end.

Table 1-3. Demonstration Suppliers by Product Category, Polk County—Round 2

Supplier	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Urological Supplies	Surgical Dressings
American Home Patient		X		
Atlantic Medical Supply	X	X		
Desoto Home Health Care	X	X		
DME Zone		X		
Florida Medical Equipment Services	X			
Garrett's Medical Supply, Inc.			X	
Health Alliance, Inc.			X	
Health Care Diagnostics	X	X		
Jernigan Healthcare			X	X
Lincare	X			
Med-Services Network	X	X		
Medi-Healthcare	X	X	X	X
Medline Healthcare			X	X
QualiMed Respiratory and Mobility, Inc.	X			
RespiCare of Central Florida	X			
Sun Care	X	X		
Total Number of Suppliers	10	8	5	3

1.3.4 San Antonio

In March 2000, CMS announced that San Antonio would be the second site for the DMEPOS Competitive Bidding Demonstration. Three (Bexar, Comal, and Guadalupe Counties) of the four counties in the San Antonio MSA are included in the demonstration. The San Antonio demonstration includes the following product categories:

- oxygen equipment and supplies,
- hospital beds and accessories,
- wheelchairs and accessories,
- general orthotics, and
- nebulizer drugs.

According to a CMS news release, San Antonio was selected for the demonstration "because it has enough beneficiaries and suppliers to create the potential for significant savings" (<www.hcfa.gov/ord/dmepr300.htm>). San Antonio has approximately 112,000 Medicare beneficiaries in the three-county area included in the demonstration. Between 15 and 48 suppliers provided significant services to Medicare beneficiaries in each of the five product areas included in the demonstration.

The RFB for San Antonio was released on May 5, 2000, and the Bidders Conference was held in San Antonio later in the month. Bids were due on June 23, 2000. Seventy-nine different suppliers submitted a total of 179 bids across the five different product categories. Palmetto GBA and CMS selected 51 suppliers, each to provide products in at least one product category, for participation in the demonstration. CMS released the final list of demonstration suppliers in January 2001 (Table 1-4), and the demonstration contractor distributed the Supplier Directory to beneficiaries and suppliers in January 2001. The demonstration prices went into effect on February 1, 2001, and will remain in effect until December 31, 2002, when the San Antonio demonstration is scheduled to end.

1.4 Evaluation Methods and Data

This section describes the methods and data we are using to evaluate the five major evaluation areas (Medicare expenditures, access, quality, competitiveness of the market, and the reimbursement system). This evaluation requires extensive descriptive and explanatory analyses to evaluate both the effectiveness of the implementation *process* and the *impact* of the demonstration on beneficiaries, providers, and the Medicare program. We address the five evaluation areas using several sources of qualitative and quantitative data. Data sources include site visits and telephone discussions with key demonstration participants, focus groups, a review of documentation, surveys of beneficiaries and providers, bid analysis, and claims analysis.

For many analyses, we are using an external comparison group composed of Medicare beneficiaries from areas that are similar to the Polk County and San Antonio demonstration sites. Brevard County, Florida, was chosen as the comparison county for Polk County because it closely resembles Polk County in several key characteristics:

Table 1-4. Demonstration Suppliers by Product Category, San Antonio

Supplier	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
AAA Medical & Oxygen Supply	X	X			
A.R.E. Pharmcare, Inc.	X	X	X		
Alamo Sleep Center & Respiratory Equipment, Inc.	X				
AMERICAIR of San Antonio & Austin	X				
American Homepatient	X	X	X		X
Angel Care Medical Supply, Inc.	X		X		
Aspin Health Systems, Inc.		X			
Bexar Care Home Medical Equipment & Supplies	X	X	X		
Cedar View Medical Supply	X		X		X
Champs Medical	X	X	X		X
Chartwell Care Givers, Inc.	X				X
Choice One Medical		X	X		
Christus Santa Rosa Homecare	X				
Custom Care Pharmacy					X
D&L Medical Products, Inc.	X	X	X		
Davila Pharmacy, Inc.		X	X		
EBI, L.P.				X	
G.G. Medical, Inc.	X				
Healix Health Services, Inc.	X				
Healthquest Pharmacy					X
Homecare Dimensions	X			X	
Hope Medical Supply	X	X	X		
Huntleigh Home Medical, LLC	X	X	X		
Kirby Drugs of Texas, Inc.					X
Longhorn Drug Co.					X
LYNAY Healthcare, Inc.	X	X			
MG Pharmaceutical, Inc.	X				
Med Link America, Inc.					X
Ortho-Tex, Inc.				X	
OxeNET	X	X	X		

(continued)

Table 1-4. Demonstration Suppliers by Product Category, San Antonio (continued)

Supplier	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
Oxy-Care, Inc.		X			
P.F.T. Services, Inc.	X		X		
Patient Care Systems, Inc.	X				
Praxair Healthcare	X				
Prescott's Orthotics & Prosthetics				X	
Professional Medical	X	X	X		X
Promise Medical, Inc.	X		X		
Rehab In Motion, Inc.		X			
Respiratory Solutions, Inc.	X	X	X		
Revcare Pharmacy		X	X		X
San Antonio Extended Medical Care, Inc.	X				
San Antonio Orthotics and Artificial Limbs				X	
San Antonio Prosthetics, Corp.				X	
Simon & Simon Medical Equipment Co., Inc.	X	X	X		
South Texas Medical Supply	X	X	X	X	
Southern Medical, Inc.	X	X	X		
Summit D.M.E. of San Antonio	X	X	X		
Texas Homecare Providers	X				
The Orthopedic Store				X	
Travis Medical		X	X		
Western Medical Supplies and Equipment, Inc.		X	X		
Total Number of Suppliers	32	24	23	8	11

- location in Florida,
- a single-county MSA,
- number of Medicare beneficiaries,
- number of DME suppliers, and
- managed care penetration.

Based on similar characteristics, the Austin–San Marcos, Texas, MSA was chosen as the comparison area for San Antonio.

Our primary focus in the evaluation is on Medicare, Medicare beneficiaries, and Medicare suppliers. It is possible that the demonstration will affect non-Medicare beneficiaries or payers. When those effects are clearly evident, we report them, but such effects are not a major focus of our evaluation. Below, we discuss our approach for evaluating the five major evaluation areas.

1.4.1 Medicare Expenditures

Our evaluation of Medicare expenditures focuses on price, utilization, and overall expenditures (the product of price and utilization). The evaluation addresses the following primary questions:

- Does competitive bidding reduce the price Medicare pays for DMEPOS?
- Does utilization of DMEPOS rise, fall, or remain the same?
- Do overall Medicare expenditures for DMEPOS fall?

The first question is critical to the overall evaluation of the demonstration project because proponents of competitive bidding expect that competitive bidding will reduce prices relative to the current Medicare fee schedule. If this expectation is proven incorrect, much of the motivation for using competitive bidding for DMEPOS will be lost. Conceptually, competitive bidding will have a good chance of reducing Medicare fees if current fees are higher than supplier costs. In the primary analysis of price, we compare the new price schedules generated by competitive bidding to the Medicare statewide DMEPOS fee schedules that would otherwise hold in Florida and Texas. For a secondary analysis, we will also compare the new fee schedule to the prices paid by the Veterans Administration for demonstration products.

For the second question, the probable effects of competitive bidding on utilization (the number of units used) are less clear, because utilization is determined by the interplay between the demand for and the supply of DMEPOS. To the extent that lower Medicare prices reduce beneficiary out-of-pocket costs, beneficiaries will tend to increase the quantity demanded. Economic theories do not make a clear prediction about the impact of price reductions on supply. Standard supply theory implies that suppliers tend to reduce the quantity supplied when prices fall, at least according to standard economic theory. On the other hand, the theory of supplier-induced demand suggests that suppliers will try to exploit their informational advantages to induce demand if they suddenly face lower prices. Although many economists have criticized the theoretical underpinnings of supplier-induced demand, some economists and many other researchers find this theory intuitively appealing. It is not clear to what extent, if any, DMEPOS suppliers can induce

demand. The demonstration is also designed to weed out fraudulent suppliers, which could by itself reduce utilization. Of course, all of these conjectures about utilization could be rendered moot by the nature of DMEPOS: to the extent that the demand for DMEPOS is driven by medical necessity, rather than price, there may be relatively little effect on utilization. In the analysis of utilization, we will use Medicare National Claims History data to compare utilization in the Polk County and San Antonio demonstration sites to utilization in their respective comparison sites.

For the third question, the overall effect of competitive bidding for DMEPOS on total expenditures depends on competitive bidding's effect on both price and utilization. If price falls and utilization either falls or remains the same, Medicare expenditures will definitely fall. If price falls and utilization rises, the overall effect on expenditures will depend on the relative magnitudes of the two changes. If the percentage reduction in price is larger than the percentage increase in utilization, overall expenditures will fall. Proponents of competitive bidding expect that price reductions will dominate, but this expectation must be tested empirically. Data from the price and utilization analyses will be combined to evaluate the overall effect of the demonstration on Medicare expenditures.

Table 1-5 summarizes the analyses to be performed. In the table, "pre-intervention" and "post-intervention" refer to data for the periods before and after the demonstration fee schedules took effect on October 1, 1999, in Polk County and on February 1, 2001, in San Antonio. Results of the analyses are presented in Annual Evaluation Reports; the last column of the table indicates the report in which results are expected to be presented.

Table 1-5. Evaluation Approach: Medicare Expenditures

Issue	Method	Data Source	Pre-Intervention	Post-Intervention	Comparison Site	Evaluation Report[a]
Price	Comparative analysis	Bids; old and new fee schedules; VA fees	✓	✓		1, 2, 3
Quantity	Claims analysis	National Claims History	✓	✓	✓	3
Total expenditures	Claims analysis	National Claims History	✓	✓	✓	3

[a]Report 1: First Annual Evaluation Report. Report 2: Second Annual Evaluation Report. Report 3: Final Evaluation Report.

1.4.2 Beneficiary Access

Beneficiary access to and quality of DMEPOS services are interrelated, and both may change in response to competitive bidding. The impact of competitive bidding on access and

quality is potentially very complex. The purpose of the evaluation is to determine which outcomes occur and assess their implications for beneficiaries and suppliers.

From a conceptual standpoint, the demonstration's effects on access and quality are not clear. The competitive bidding rules have reduced the number of approved suppliers providing DME to Medicare beneficiaries in Polk County and San Antonio. Further, if demand for services is constant (because, for example, there is no change in beneficiary health status and DME technology), competitive bidding will almost certainly reduce the total revenue available to suppliers and shift the remaining revenue to fewer suppliers. Thus, we would expect some suppliers who do not bid or whose bids are not accepted to leave the local market. Approved suppliers might experience increased profits from increased volume and share of total revenue or decreased profits from smaller profit margins. Approved suppliers could adapt to the potential for increased market share by advertising, opening new locations to fill in the geographic gaps left by suppliers who are not approved, and improving service, thereby increasing beneficiary access. Alternatively, they might retain their initial configuration and marketing behavior and attempt to restore profit margins by offering lower-quality products, delaying routine maintenance, or employing fewer mechanics and customer service representatives, thereby increasing the need for service calls, extending the waiting time for service, and decreasing access and quality. At the same time, the demonstration also includes measures to maintain access and quality.

The evaluation addresses the following principal access question:

- Does competitive bidding reduce beneficiaries' ability to receive the DMEPOS services they need, when they need them?

We are performing several analyses to address this question. First, we have examined whether the number of DME suppliers decreases in the demonstration site. Second, we are collecting and analyzing data on perceived access from beneficiaries, suppliers, and referral agents. Third, as claims data become available, we will examine realized access by testing whether utilization changes in the demonstration site. Finally, we will test whether beneficiary out-of-pocket expenses are affected by the demonstration. Table 1-6 summarizes the analyses to be performed.

1.4.3 Quality and Product Selection

If competitive bidding results in pressure on profit margins (an empirical question to be determined as part of the evaluation), then suppliers may attempt to restore profits by lowering quality and therefore their cost of goods and services. Lower quality may be manifested in many ways: for example, by offering lower-quality products, postponing preventive maintenance, delaying service calls, or reducing inventory to the point that time needed to fill orders increases, or even, at the extreme, committing fraud and abuse. On the other hand, demonstration suppliers will still have to compete among themselves to attract new patients, giving suppliers incentives to

Table 1-6. Evaluation Approach: Beneficiary Access

Issue	Method	Data Source	Pre-Intervention	Post-Intervention	Comparison Site	Evaluation Report[a]
Number of suppliers	Claims analysis	National Claims History	✓	✓	✓	3
Beneficiary perceptions	Survey of users	Beneficiaries	✓	✓	✓	1, 2, 3
Referral agent perceptions	Focus groups	Physicians and referral agents		✓		1, 2, 3
Supplier perceptions	Focus groups	Suppliers		✓		1, 2, 3
	Survey	Suppliers		✓	✓	3
Realized access	Claims analysis	National Claims History, beneficiary surveys	✓	✓	✓	3
	Site visit	Ombudsman		✓		1, 2, 3
Out-of-pocket expenses	Claims analysis	National Claims History, Durable Medical Equipment Regional Carrier	✓	✓	✓	3

[a]Report 1: First Annual Evaluation Report. Report 2: Second Annual Evaluation Report. Report 3: Final Evaluation Report.

maintain quality and offer a wide product selection. In addition, quality was one of the criteria used to select demonstration suppliers, and an Ombudsman investigates all complaints to resolve quality issues.

Our analysis of demonstration effects on quality uses both the beneficiary and the supplier as the unit of analysis. Beneficiary-level and supplier-level analyses are based on both qualitative and quantitative data.

The evaluation addresses the following principal quality questions:

- Does the demonstration reduce, maintain, or increase the quality of equipment provided to beneficiaries?
- Does the demonstration reduce, maintain, or increase the quality of service provided to beneficiaries?
- Does the demonstration reduce, maintain, or increase the product selection offered to beneficiaries?

To answer these questions, we analyze

- beneficiary assessments of quality,
- supplier assessments of quality,
- referral agent assessments of quality,
- product selection, and
- fraud and abuse data.

These analyses are summarized in Table 1-7.

Table 1-7. Evaluation Approach: Quality and Product Selection

Issue	Method	Data Source	Pre-Intervention	Post-Intervention	Comparison Site	Evaluation Report[a]
Beneficiary perceptions	Survey of users	Beneficiaries	✓	✓	✓	1, 2, 3
Supplier perceptions	Survey	Suppliers		✓		3
	Focus groups	Suppliers		✓		1, 2, 3
Referral agent perceptions	Focus groups	Physicians and referral agents		✓		1, 2, 3
Complaints	Report of complaints	Ombudsman reports		✓		1, 2, 3
Product selection	Qualitative	Supplier product lists	✓	✓	✓	2, 3
	Focus groups	Suppliers		✓		1, 3
	Survey	Suppliers		✓	✓	3
Fraud through denied claims	Claims analysis, interviews	Durable Medical Equipment Regional Carrier		✓		3

[a]Report 1: First Annual Evaluation Report. Report 2: Second Annual Evaluation Report. Report 3: Final Evaluation Report.

1.4.4 Competitiveness of the Market

The process of selecting winners may substantially reduce the number of suppliers that serve the demonstration areas. This could have important implications for the health of the DMEPOS market in these areas. A sufficient number of bidders must be left in the market for both

quality and price competition benefits to be realized in the future. Obviously, reductions in the number of suppliers also have special relevance to suppliers. Thus, the analysis of industry competitiveness is an important component of the evaluation of the feasibility of competitive bidding. Our analysis focuses on the following questions:

- Does competitive bidding significantly reduce the number of suppliers serving the market?
- Are small businesses differentially affected by the demonstration?
- Do winning bidders significantly increase market share?
- Has the demonstration adversely impacted future competition in the market?

To address these issues, we use econometric analysis where appropriate; however, some questions related to competition can only be addressed in a case study approach. We are conducting a comprehensive qualitative and quantitative evaluation using pre- and post-intervention claims data, data collected from a supplier survey, data collected in focus groups of referral agents and suppliers conducted during site visits, and discussions with other payers of DMEPOS.

These data allow us to characterize the supplier market in both the pre- and post-intervention periods and evaluate what changes have occurred in the local market. Specifically, we make pre- and post-intervention comparisons of several measures of market competition, including

- the number of suppliers providing each product category;
- the number of suppliers who are local or from beyond the market area;
- the share of demonstration DMEPOS of the suppliers' total business;
- the Herfindahl Index, a measure of market concentration, for each product category; and
- relative market shares of small, medium, and large suppliers by product category.

We are also analyzing the reasons behind changes in these variables by evaluating the following in both the first and second round of bidding:

- entry and exit decisions for the demonstration sites;
- bid decisions;
- the effect of winning the contract; and
- financial status by product type and supplier size, origin, and breadth of products.

The key industry competitiveness analyses are summarized in Table 1-8.

Table 1-8. Evaluation Approach: Competitiveness of the Market

Issue	Method	Data Source	Pre-Intervention	Post-Intervention	Comparison Site	Evaluation Report[a]
Market concentration	Herfindahl Index	Claims	✓	✓	✓	3
Number of bidders per round	Bid analysis	Bids		✓		1, 3
Supplier strategies	Site visits	Suppliers		✓		1, 3
Supplier perceptions	Survey, site visits	Suppliers		✓		1, 2, 3
Cost structure	Survey, bid analysis	Suppliers, bids		✓		1, 2, 3

[a]Report 1: First Annual Evaluation Report. Report 2: Second Annual Evaluation Report. Report 3: Final Evaluation Report.

1.4.5 Reimbursement System

Our evaluation of the reimbursement system focuses on the process of the competitive bidding demonstration itself, rather than on the outcomes (i.e., cost savings, access, and quality) covered in other task areas. The process of the demonstration is a major focus of the evaluation because one of the objectives of the government's policy is to achieve a fair and administratively feasible reimbursement system. Information is being solicited from beneficiaries, suppliers, physicians, referral sources, and government officials to determine whether the demonstration does, in fact, meet this government objective.

Five areas (or phases) are being covered under the evaluation of the reimbursement system: publicity and solicitation, management of the bidding process, selection of winners, administration and monitoring, and public education. Methods used to evaluate the reimbursement system include site visits, key informant interviews, focus groups, surveys, and review of documentation. The following general evaluation questions are addressed:

- What parts of the process worked? What did not work?
- What problems or barriers were encountered during implementation? How were they resolved?
- What were facilitating factors? Why?

- How can the competitive bidding system be improved in subsequent years?
- How much does it cost to implement the demonstration?

Table 1-9 summarizes the methods and data sources we are using.

Table 1-9. Evaluation Approach: Reimbursement System

Issue	Method	Data Source	Pre-Intervention	Post-Intervention	Comparison Site	Evaluation Report[a]
Reimbursement system	Survey, site visits	Suppliers, beneficiaries		✓		1, 2, 3
	Focus groups	Physicians and referral agents		✓		1, 3
	Site visit	Durable Medical Equipment Regional Carrier		✓		1, 2
	Site visit	Ombudsman		✓		1, 2, 3

[a]Report 1: First Annual Evaluation Report. Report 2: Second Annual Evaluation Report. Report 3: Final Evaluation Report.

1.4.6 Data Collection Methods

The major data collection and analysis methods we are using in the evaluation are surveys, qualitative studies, and claims data and statistical analysis. Below, we discuss the major survey and qualitative data collection activities during the first and second years of the evaluation. The data analysis component of this project will involve evaluating National Claims History and enrollment data; this component was begun 1 year after the demonstration fee schedule went into effect in its first site.

1.4.7 Beneficiary Surveys

In each site, we fielded two beneficiary surveys: one for oxygen users and another very similar survey for other medical equipment and supply users (hospital beds, enteral nutrition, urological supplies, and surgical dressings in Polk County; hospital beds, wheelchairs, and orthotics in San Antonio; questions about nebulizer drugs were included in both surveys in San Antonio). Among the demonstration product categories, oxygen accounts for the majority of beneficiaries and Medicare expenditures. We used the same survey for all other equipment categories to provide enough observations for statistical analysis. Research questions that were addressed by the surveys focused on access, quality, and product selection.

In Polk County and its comparison site, Brevard County, the initial beneficiary surveys were conducted from March through June 1999. The surveys entered the field 6 months before

the demonstration prices took effect on October 1, 2001; we treat the survey responses as baseline data for outcomes in the market before the demonstration began. We mailed surveys to 2,895 beneficiaries: 1,600 oxygen users and 1,295 medical equipment users. The overall response rate to the two surveys (excluding ineligible and deceased individuals) was 74 percent. Follow-up beneficiary surveys were conducted from December 2000 through March 2001, entering the field just over 1 year after the demonstration prices took effect. We mailed surveys to 2,960 beneficiaries: 1,600 oxygen users and 1,360 medical equipment users. The overall response rate to the two surveys (excluding ineligible and deceased individuals) was 75 percent.

In San Antonio and its comparison site, Austin–San Marcos, the baseline beneficiary surveys were conducted from November 2000 through February 2001. We mailed surveys to 3,200 beneficiaries: 1,600 oxygen users and 1,600 medical equipment users. The overall response rate to the two surveys (excluding ineligible and deceased individuals) was 70 percent. Follow-up beneficiary surveys will be fielded during 2002, 1 year after the demonstration prices took effect.

In addition to the follow-up beneficiary survey in Texas, we will also conduct a survey of DME suppliers in 2002. Suppliers in both San Antonio and Austin–San Marcos will be surveyed.

1.4.8 Qualitative Studies

The qualitative studies for this project include site visits, focus groups, review of written materials, and telephone conversations with individuals involved in the demonstration, such as beneficiaries, physicians, suppliers, the demonstration contractor, and others. The main objectives of these qualitative studies are to gain an in-depth understanding of the demonstration's effect on beneficiaries, referral agents, and suppliers and to observe and monitor all aspects of the demonstration in a person-to-person environment.

Prior to the site visits, we contacted individuals to ask if they would be willing to participate in an interview. We briefly explained the purpose of the site visit and described the topics that we would discuss during the interview. We also explained that their participation was confidential and that we would not reveal their identity to CMS or to any other third party.

We conducted four site visits to Polk County in the first year of the evaluation. The first site visit took place after bidding had occurred but before winners were announced. During the first visit, we interviewed both suppliers that bid and suppliers that did not bid, focusing on the bidding process and reasons for bidding or not bidding. We spoke with seven suppliers and the Ombudsman during the visit; we interviewed an eighth supplier by telephone shortly thereafter.

The second visit took place 2 months after the demonstration prices took effect. We interviewed beneficiaries and representatives of beneficiary groups, suppliers, referral agents, and the demonstration Ombudsman. The interviews with beneficiaries and referral agents focused on

transition issues and the initial perceptions of the demonstration. The objective of the supplier interviews was to describe implementation of the demonstration from the supplier perspective, identify supplier planning and actions between the time winners were announced and new prices took effect, and evaluate the early effects of the demonstration on suppliers. We spoke with four suppliers, 13 referral agents and beneficiary groups, and the Ombudsman during this visit.

During the third site visit, which took place 6 months after the demonstration prices took effect, we conducted separate focus groups with demonstration suppliers and referral agents. The supplier focus group discussed implementation issues, product selection, service levels, beneficiary access, and business activity. The referral agent focus group discussed access and quality. Seven demonstration suppliers participated in the supplier focus group, and seven referral agents participated in the referral agent focus group. We also met separately with a nondemonstration supplier and the Ombudsman during this visit.

The fourth site visit took place 8 months after the demonstration prices took effect. During this visit, we met with demonstration suppliers in the urological supplies product category to discuss issues of access, quality, product selection, and pricing. We met with three of the demonstration urological suppliers and conducted telephone interviews with the remaining two demonstration suppliers in this product category.

During the second year of the evaluation, we conducted three site visits to San Antonio. The first visit took place 2 months before the new demonstration prices took effect on February 1, 2001. Bidding had already occurred, and most demonstration suppliers already knew they had been awarded contracts, but the complete list of demonstration suppliers had not been formally announced. We interviewed 10 suppliers and the San Antonio Ombudsman during the visit, focusing on the bidding process and expectations about implementation of the new fee schedule. The second site visit took place 3 months after the demonstration prices took effect. We interviewed referral agents, representatives of beneficiary groups, suppliers, and the demonstration Ombudsman. The interviews focused on transition issues and initial perceptions of the demonstration. The third site visit took place 7 months after the demonstration began. We met with referral agents, demonstration and nondemonstration suppliers, and the Ombudsman.

In addition to the site visits to the demonstration sites, we conducted two site visits to Palmetto GBA, the demonstration contractor, in Columbia, South Carolina. The site visits took place 2 months after the demonstration prices took effect in Polk County and 2 months after the demonstration prices took effect in San Antonio. During the visits, we discussed publicity and education efforts, bid evaluation, claims processing changes, demonstration costs, and other implementation issues. In addition to conducting the demonstration, Palmetto GBA is the Durable Medical Equipment Regional Carrier (DMERC) for Region C, which includes Florida and Texas. In this role, Palmetto GBA is one of the four DMERCs that process Medicare DMEPOS claims.

SECTION 2
MEDICARE EXPENDITURES

2.1 Introduction

One of the key aspects of competitive bidding is its potential ability to decrease the amount that Medicare and its beneficiaries pay for DMEPOS. In this section, we estimate the effects of the demonstration on Medicare allowed charges and expenditures.

Medicare allowed charges equal the product of price times the volume of utilization, summed across procedures. By comparing the demonstration prices to the Medicare statewide fee schedules that would have been in effect in the absence of the demonstration, we can calculate the demonstration's impacts on prices. We do not yet have sufficient claims data to estimate the demonstration's impacts on utilization. However, if we assume that utilization remains constant, we can estimate the effects of the demonstration on annual allowed charges. Estimated allowed charges can then be separated into Medicare expenditures (80 percent of allowed charges) and beneficiary copayments (20 percent of allowed charges).

The First-Year Evaluation Report described reductions in prices associated with the first round of bidding in Polk County. In this report, we first compare Round 2 demonstration prices in Polk County to the Medicare statewide fee schedule and to the Round 1 demonstration prices. We next compare demonstration prices in San Antonio to the Medicare statewide fee schedule. We then estimate reductions in allowed charges for both demonstration sites under the assumption that utilization remains constant at predemonstration levels.

Key findings in this section are as follows:

- In Polk County, Round 2 demonstration prices are lower than the Medicare statewide fee schedule for all items in the oxygen equipment and supplies and hospital beds and accessories product categories. Demonstration prices are also lower than the fee schedule for 18 of 24 urological supply items and 21 of 28 surgical dressings items. Round 2 demonstration prices are lower than Round 1 demonstration prices for most of the items in the oxygen equipment and supplies and surgical dressings product categories. However, all of the Round 2 prices for urological supplies are higher than Round 1 prices. For hospital beds and accessories, most of the Round 2 prices are slightly higher than the Round 1 prices.

- In San Antonio, demonstration prices are lower than the existing Medicare statewide fee schedule for all items in the oxygen equipment and supplies, hospital beds and accessories, wheelchairs and accessories, and general orthotics product categories. For nebulizer drugs, the demonstration prices are lower than the Medicare statewide fee schedule prices for 16 of 27 items and higher for 11 of 27 items.

- Assuming that utilization remains constant at predemonstration levels, we estimate that the demonstration will reduce allowed charges in Polk County by nearly $1.3 million, $1.3 million, and $1.5 million during the first, second, and third years of the demonstration in Polk County, respectively. We estimate that San Antonio allowed charges will be reduced by $2.3 million during the first year of the demonstration and by $2.1 million in the second "year" (11 months).

- Combining savings from both sites, we estimate that the demonstration will reduce allowed charges by nearly $8.5 million (19.9 percent), again assuming that utilization remains constant at predemonstration levels. Medicare expenditures (defined as allowed charges less copayments and deductibles) will fall by about $6.8 million, and beneficiary payments will fall by about $1.7 million.

2.2 Prices

2.2.1 Polk County—Round 1

Demonstration prices for Round 1 bidding in Polk County were discussed in detail in the First-Year Evaluation Report. The key findings were as follows:

- Demonstration prices were lower than the existing Medicare statewide fee schedule for most items in every product category except surgical dressings. Demonstration prices were lower for all 15 oxygen items, 28 of 31 hospital beds and accessories items, 22 of 24 enteral nutrition items, and 37 of 40 urological supplies. For surgical dressings, the demonstration price was higher for 56 of 62 items.

2.2.2 Polk County—Round 2

Table 2-1 provides a brief overview of the product categories included in Round 2 of the demonstration in Polk County. Oxygen equipment and supplies account for the largest allowed charges in the area, with over $6 million in allowed charges in 1999. Medicare Part B covers oxygen equipment and supplies used in the home by beneficiaries with significant hypoxemia (oxygen deficiency in the blood). Virtually all home oxygen users rent stationary oxygen systems that are used exclusively in the home. The most common form of stationary equipment is an oxygen concentrator, an electronic machine that takes oxygen from the surrounding air and concentrates it; a few stationary users get their oxygen from large compressed oxygen tanks or liquid oxygen cylinders. From a supplier's perspective, oxygen concentrators are more efficient to provide than gas or liquid stationary systems because they do not require routine deliveries of tanks or cylinders. Most oxygen users also rent portable oxygen systems that allow them to move away from their stationary systems, both within and outside the home. To be covered by Medicare, a beneficiary's physician must prescribe oxygen, perform lab tests, and sign a certificate of medical necessity. Oxygen is most often prescribed for respiratory and cardiovascular problems. In Round 2, suppliers were required to bid on 7 HCPCS codes in the range from E0424

Table 2-1. Overview of Polk County Product Categories for Round 2

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Urological Supplies	Surgical Dressings
Number of Items Bid	7	17	24	28
Rental or Purchase	Rental, a few purchases	Rental, a few purchases	Purchase	Purchase
1999 Claims	49,135	6,410	3,771	918
1999 Units	98,500	5,842	52,992	60,592
1999 Allowed Charges	$6,182,643	$642,306	$85,620	$93,569
Average Allowed Charges per Unit	$62.77	$109.95	$1.62	$1.54
HCPCS Range	E0424–E0443 (selected codes), E1390	E0250–E0298 (selected codes), E0910, E0940	A4310–A4364 (selected codes), A4402, A4455, A5102, A5112, A6265	A6196–A6258 (selected codes), A6402, A6405, A6406
Most Common Codes (HCPCS code; percentage of allowed charges in category)	Oxygen concentrator (E1390; 84.4%)	Semi-electric hospital bed with side rails and mattress (E0260; 81.8%)	Intermittent urinary catheter, straight tip (A4351; 28.0%)	Hydrocolloid dressing, wound filler, paste, per fluid ounce (A6240; 21.2%)
Range in Fees under 2001 Medicare Statewide Fee Schedule	$14.84 (portable oxygen contents, gaseous, 5 cu. ft)—$179.97 (stationary liquid oxygen system, rental)	$13.10 (mattress, innerspring, rental)—$199.65 (hospital bed, heavy-duty, extra wide rental)	$0.20 (tape, per 18 sq. in.)—$43.16 (external urethral clamp or compression device)	$0.09 (nonsterile nonimpregnated gauze, without adhesive border, 16 sq. in. or less)—$34.25 (hydrogel dressing, wound cover, without adhesive border, over 48 sq. in.)

to E0433, plus E1390. Oxygen concentrators accounted for over 80 percent of Medicare allowed charges in the oxygen category in Polk County in 1999.

Beneficiaries also rent hospital beds for use in the home; occasionally, they purchase accessories. Rentals of semi-electric hospital beds with side rails and mattresses account for over 80 percent of the nearly $0.6 million in allowed charges in the product category in Polk County in 1999.

Urological supplies and surgical dressings each accounted for less than $100,000 in allowed charges in Polk County in 1999. In both product categories, items can be purchased for use in either the home or nursing home. Urological supplies such as catheters and urinary leg bags are used by patients with urinary problems, while gauze and hydrogel surgical dressings are used to cover wounds. Neither product category has a single dominant product code, with the items with the highest allowed charges accounting for only 28 percent of urological supplies allowed charges and only 21 percent of surgical dressings allowed charges.

Round 2 Prices versus Medicare Statewide Fee Schedule. The Round 2 demonstration and 2001 Medicare statewide fee schedule prices for individual items in each product category are detailed in Appendix Tables A-1 through A-4. Round 1 demonstration prices are also shown in these tables. Table 2-2 summarizes the differences between the demonstration and Medicare statewide fee schedules. The first three rows compare the composite price based on the demonstration prices to the composite price based on the fee schedule that would have been in effect in the absence of the demonstration. The composite price is the weighted average of the individual product prices, where the weights are the product weights specified in the RFB. These product weights are based on the proportion of total unit volume in 1999 that is accounted for by the individual product. For each product category, the composite price for the demonstration is lower than the composite price based on the Medicare statewide fee schedule that would have been in effect in the absence of the demonstration. The demonstration composite price is 19.4 percent lower for oxygen equipment and supplies, 34.1 percent lower for hospital beds and accessories, 7.4 percent lower for urological supplies, and 3.8 percent lower for surgical dressings. Looking at individual procedures, Round 2 demonstration prices are lower than the 2001 Medicare statewide fee schedule for all 7 oxygen equipment and supply items and all 17 hospital bed and accessory items. Round 2 demonstration prices are lower than the 2001 Medicare statewide fee schedule for 18 of 24 urological supply codes and 21 of 28 surgical dressing codes. Table 2-3 provides further detail on the magnitude of price reductions and increases under the demonstration. Price reductions were concentrated in the range of 25 to 40 percent for oxygen equipment and supplies. Price reductions generally fell in a lower range of less than 5 to 15 percent for urological supplies and surgical dressings, the two categories where some prices (one in four) increased.

The percentage change in the Round 2 demonstration prices versus the 2001 Medicare statewide fee schedule is displayed for individual items in Figures 2-1 through 2-4. Procedure codes come from the HCPCS. Discounts in the demonstration price for each product in the oxygen equipment and supplies category are graphed in Figure 2-1. As noted above, the demonstration prices for all items in the oxygen category are lower than the 2001 fee schedule

Table 2-2. Difference in Composite Prices Based on Round 2 Polk County Demonstration Prices and the 2001 Medicare Statewide Fee Schedule

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Urological Supplies	Surgical Dressings
Composite Prices[a]				
Demonstration Fee Schedule	$105.55	$85.04	$1.89	$1.77
2001 Medicare Statewide Fee Schedule	$131.01	$128.95	$2.04	$1.84
Percentage Reduction: Demonstration Fees vs. 2001 Medicare Statewide Fee Schedule	19.4%	34.1%	7.4%	3.8%
Individual Prices				
Demonstration Prices Lower than Fee Schedule	7	17	18	21
Demonstration Prices Higher than Fee Schedule	0	0	6	7
Total Demonstration Items	7	17	24	28

[a]The composite price equals the demonstration (or fee schedule) price multiplied by the product weight for each item, summed across all items in the product category.

prices. The largest discounts are approximately 23 percent for liquid oxygen contents (HCPCS code E0442) and 20 percent for the oxygen concentrator (E1390), which accounts for most of the allowed charges in the category. Discounts on the remaining items varied from about 12 percent to 19 percent.

Changes in the price for each product in the hospital beds and accessories category are graphed in Figure 2-2. The demonstration prices of all items are discounted from the Medicare statewide fee schedule, ranging from about 22 percent to 38 percent lower. The biggest discounts of 35 percent to 38 percent were obtained for total electric hospital beds (HCPCS codes E0265RR and E0266RR), fixed- and variable-height beds with mattresses (E0250RR and E0255RR), and used and rental innerspring mattresses (E0271UE and E0271RR). The discount for semi-electric hospital beds (E0260), the largest spending item in the category, is 34 percent.

Changes in the price for each product in the urological supplies category are graphed in Figure 2-3. The demonstration prices are discounted for all but 6 items, ranging from about 5 percent to 34 percent below the Medicare statewide fee schedule. The highest percentage

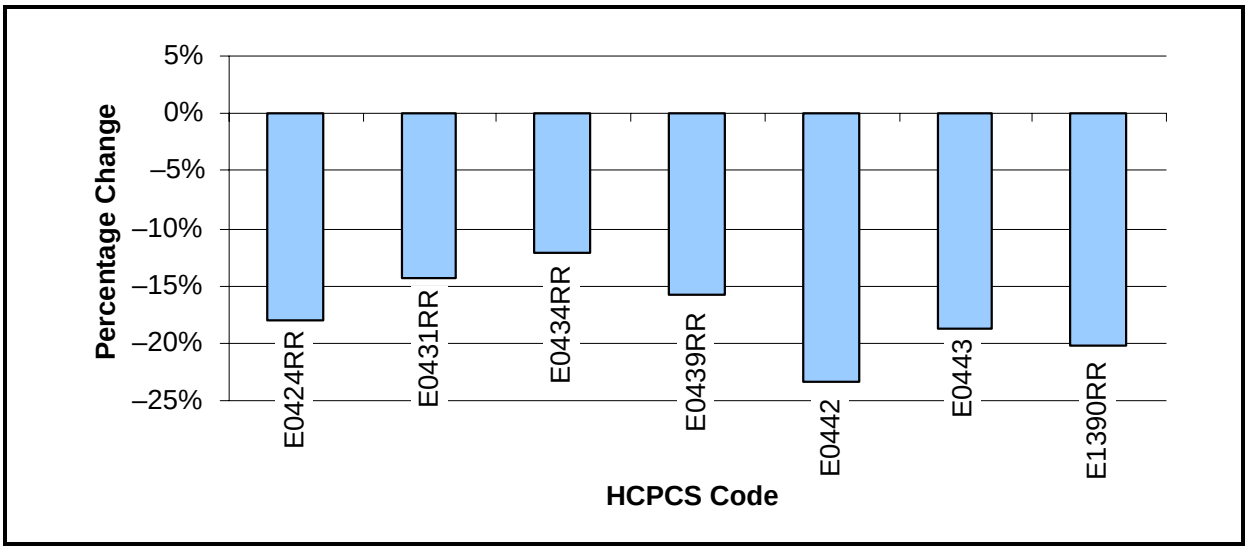
Table 2-3. Number of Round 2 Polk County Demonstration Prices Lower and Higher than 2001 Medicare Statewide Fee Schedule

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Urological Supplies	Surgical Dressings
Number of Lower Prices				
0% to 4.9% Lower	0	0	0	6
5% to 9.9% Lower	0	0	7	7
10% to 14.9% Lower	2	0	7	7
15% to 19.9% Lower	3	0	3	1
20% to 24.9% Lower	2	2	0	0
25% to 29.9% Lower	0	6	0	0
30% to 34.9% Lower	0	5	1	0
35% to 40% Lower	0	4	0	0
All Lower Prices	7	17	18	21
Number of Higher Prices				
0% to 4.9% Higher	0	0	1	4
5% to 9.9% Higher	0	0	0	1
10% to 14.9% Higher	0	0	1	1
15% to 19.9% Higher	0	0	1	0
> 20% Higher	0	0	3	1
All Higher Prices	0	0	6	7
Total Demonstration Items	7	17	24	28

discount for an individual urologicals code was approximately 34 percent for lubricant (HCPCS code A4402). Discounts of 17 to 19 percent were obtained for two Foley catheters and one type of intermittent urinary catheter (A4338, A4344, and A4353). The largest percentage price increases are about 162 percent for ostomy/catheter adhesive (A4364) and 67 percent for tape (A6265).

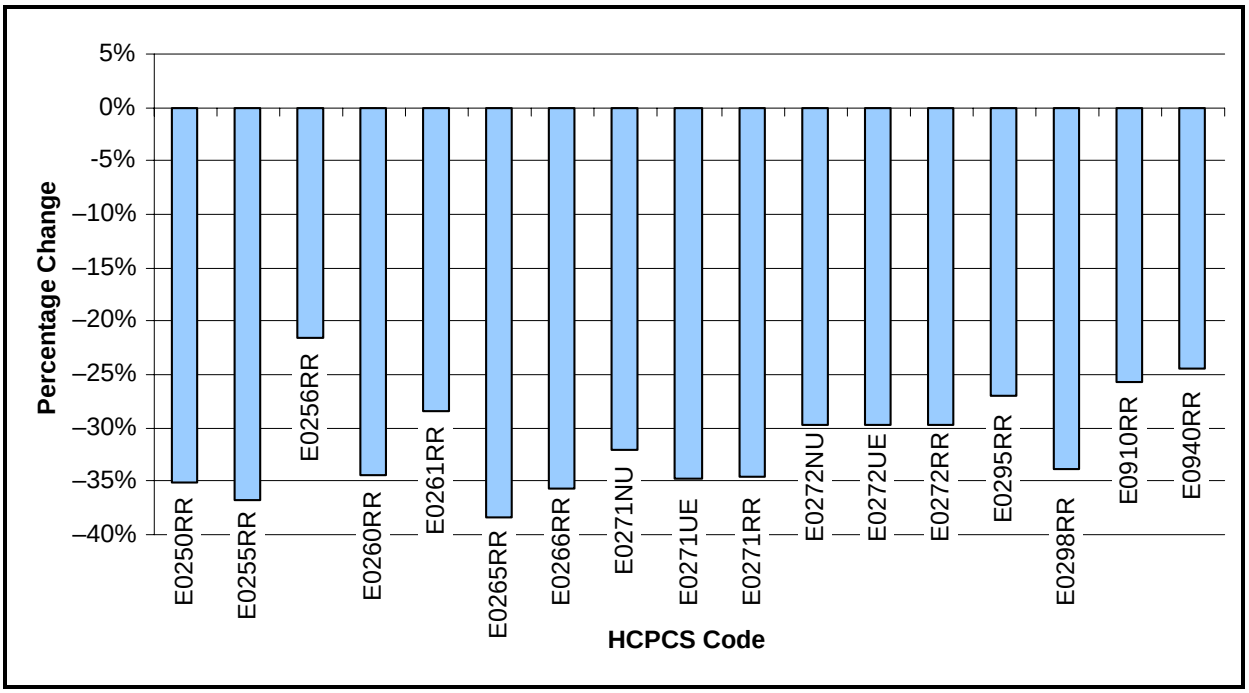
Changes in the price for each product in the surgical dressings category are graphed in Figure 2-4. The demonstration prices are discounted for all but 7 items, ranging from approximately 2 to 18 percent below the Medicare statewide fee schedule. The biggest discounts of 14 to 18 percent were obtained for two types of hydrogel dressings and one specialty absorptive

Figure 2-1. Oxygen Equipment and Supplies—Polk County Round 2 Prices Relative to 2001 Medicare Statewide Fee Schedule



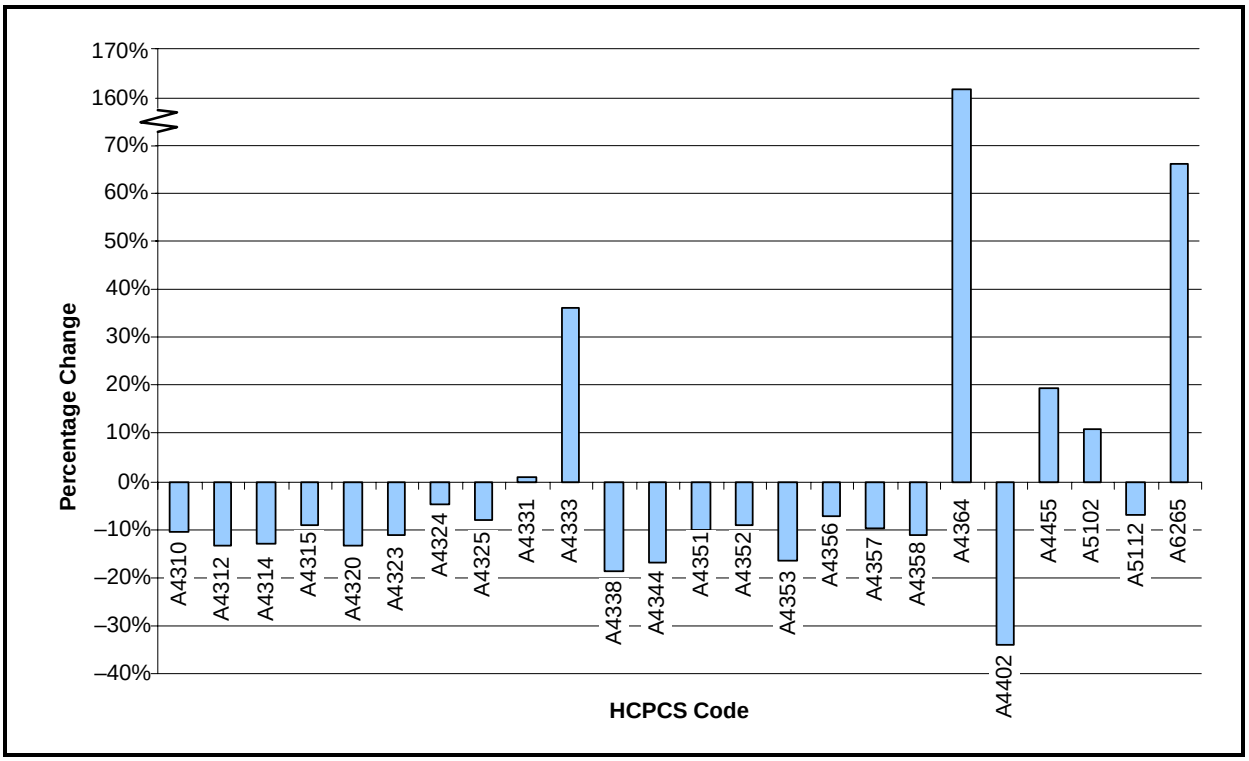
Note: See Appendix Table A-1 for HCPCS code definitions.

Figure 2-2. Hospital Beds and Accessories—Polk County Round 2 Prices Relative to 2001 Medicare Statewide Fee Schedule



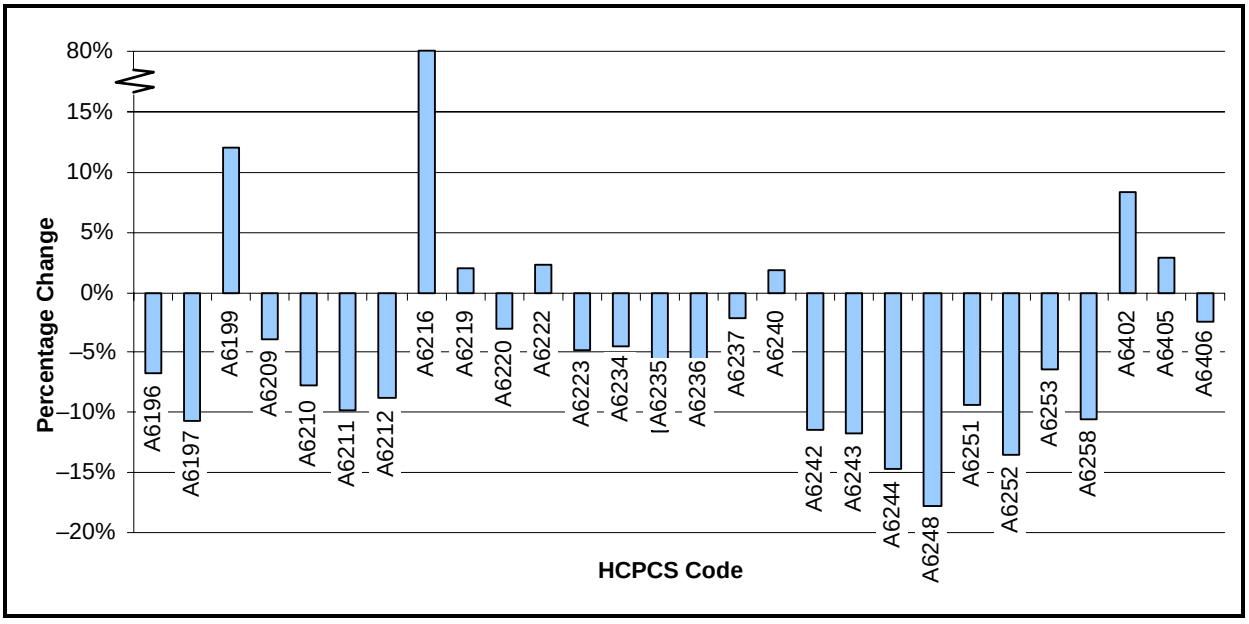
Note: See Appendix Table A-2 for HCPCS code definitions.

Figure 2-3. Urological Supplies—Polk County Round 2 Prices Relative to 2001 Medicare Statewide Fee Schedule



Note: See Appendix Table A-3 for HCPCS code definitions.

Figure 2-4. Surgical Dressings—Polk County Round 2 Prices Relative to 2001 Medicare Statewide Fee Schedule



Note: See Appendix Table A-4 for HCPCS code definitions.

dressing (HCPCS codes A6244, A6248, and A6252). The largest percentage price increases are 80 percent for a type of gauze (where the demonstration allowance is 4 cents higher than the fee schedule) and 12 percent for an alginate dressing (HCPCS codes A6216 and 6199, respectively).

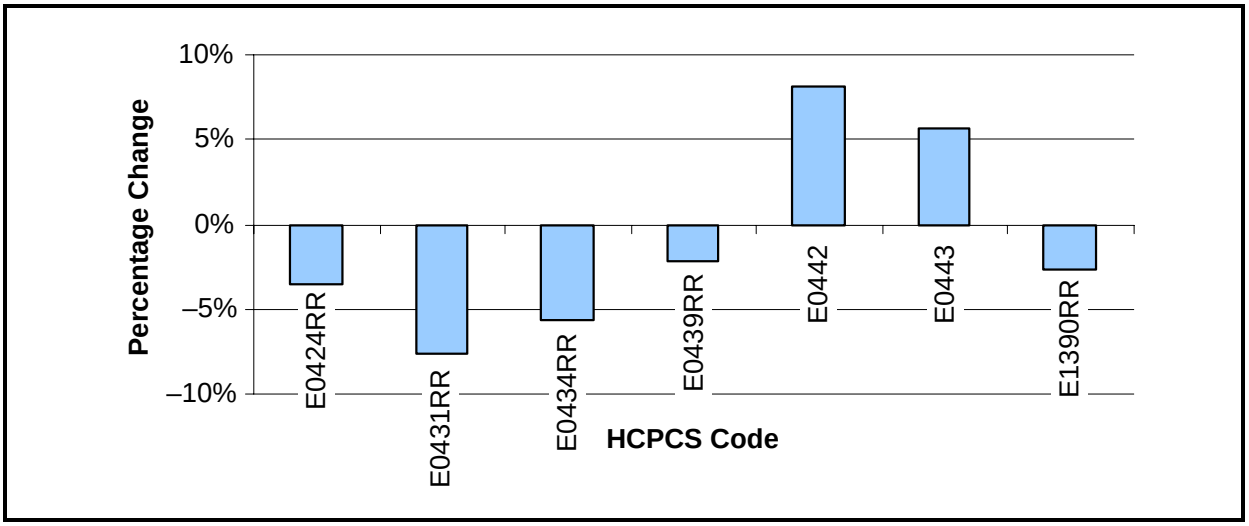
Round 2 Prices versus Round 1 Prices. The percentage change in the Round 2 demonstration price versus the Round 1 demonstration allowance is displayed for individual procedures in Figures 2-5 through 2-8. Changes in the demonstration price for each product in the oxygen equipment and supplies category are graphed in Figure 2-5. Round 2 demonstration prices are lower than the Round 1 allowances for all but 2 items in the oxygen category. The largest decreases are approximately 6 and 8 percent for rentals of portable gaseous and liquid oxygen systems (HCPCS codes E0431RR and E0434RR), respectively. Prices increased by about 8 and 6 percent for liquid and gaseous oxygen contents (E0442 and E0443), respectively.

Round 2 changes in the demonstration price for each product in the hospital beds and accessories category are graphed in Figure 2-6. Round 2 demonstration allowances are not dramatically changed from Round 1; all but 3 codes remained within 2 percent of their Round 1 levels. The largest percentage increases are about 4 and 5 percent for rentals of two types of nonelectric hospital beds (HCPCS codes E0250RR and E0256RR). The largest percentage decline is about 4 percent for E0910RR, a code covering the rental of trapeze bars attached to a bed.

Round 2 changes in the demonstration price for each product in the urological supplies category are graphed in Figure 2-7. All prices increased from Round 1 to Round 2, with most increases ranging from 10 to 20 percent. This result was somewhat expected, as some Round 1 demonstration suppliers had previously stated that the first-round demonstration prices were too low. The largest percentage price increases are about 67 percent for tape (HCPCS code A6265), 65 percent for a catheter anchoring device (A4333), and 40 percent for a bedside drainage bottle (A5102).

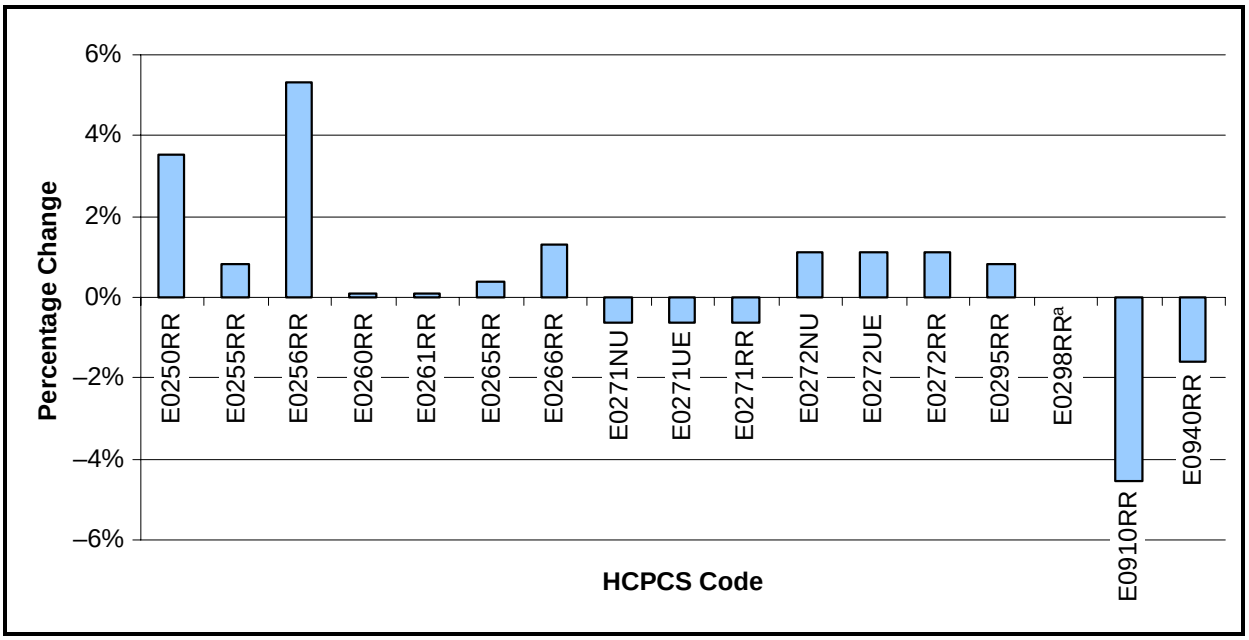
Round 2 changes in the demonstration price for each product in the surgical dressings category are graphed in Figure 2-8. Twenty-three of the 28 fees decreased between Round 1 and Round 2, with 16 of these decreasing by approximately 5 to 20 percent. The biggest discounts of 29 to 32 percent were obtained for transparent film (HCPCS code A6258) and two types of gauze (HCPCS codes A6219 and A6405). The largest percentage price increases are 29 percent for a type of gauze (A6216) and 21 percent for a type of hydrogel dressing (A6244). The large number of surgical dressings prices that fell between Round 1 and Round 2 is not unexpected. Because of a flaw in the weighting mechanism for the composite prices in Round 1 of the demonstration, most of the Round 1 surgical dressing demonstration prices were set higher than the Medicare statewide fee schedule. The weighting mechanism was corrected in Round 2, and this correction probably accounts for much of the reduction in prices relative to Round 1.

Figure 2-5. Oxygen Equipment and Supplies—Polk County Round 2 Prices Relative to Round 1



Note: See Appendix Table A-1 for HCPCS code definitions.

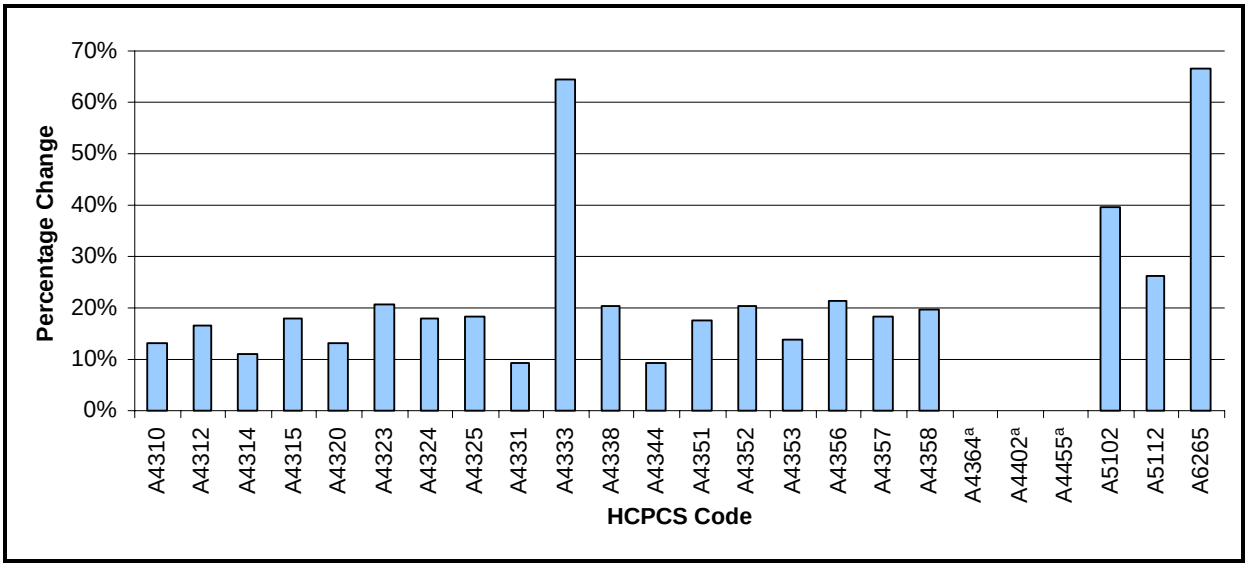
Figure 2-6. Hospital Beds and Accessories—Polk County Round 2 Prices Relative to Round 1



[a]Not included in Round 1.

Note: See Appendix Table A-2 for HCPCS code definitions.

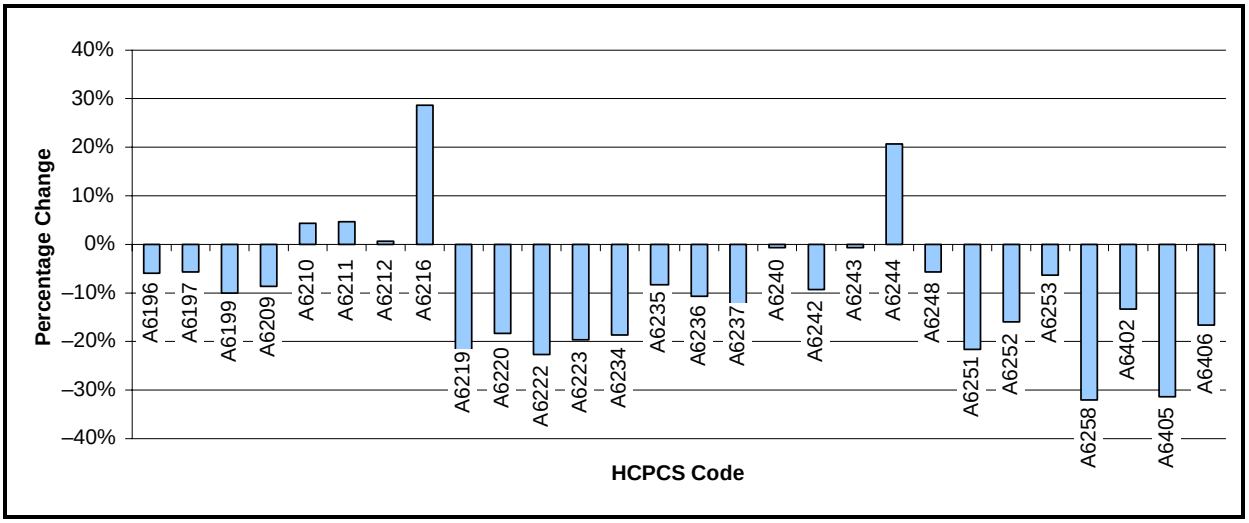
Figure 2-7. Urological Supplies—Polk County Round 2 Prices Relative to Round 1



[a]Not included in Round 1.

Note: See Appendix Table A-3 for HCPCS code definitions.

Figure 2-8. Surgical Dressings—Polk County Round 2 Prices Relative to Round 1



Note: See Appendix Table A-4 for HCPCS code definitions.

2.2.3 San Antonio

Table 2-4 provides a brief overview of the product categories included in the San Antonio demonstration. As in Polk County, oxygen equipment and supplies account for the largest allowed charges in the area, with over $5 million in allowed charges in 1998. In San Antonio, suppliers were required to bid on 10 HCPCS codes in the HCPCS range from E0424 to E0443 and from E1390 to E1406. Oxygen concentrators (HCPCS E1390) accounted for over 80 percent of Medicare allowed charges in the oxygen category in San Antonio in 1998.

Rentals of semi-electric hospital beds with side rails and mattresses account for over 80 percent of the nearly $2 million in allowed charges in San Antonio for hospital beds and accessories. As with hospital beds, beneficiaries rent wheelchairs for use in the home; occasionally, they purchase accessories. Rentals of three types of wheelchairs account for over 80 percent of the nearly $2 million in allowed charges for wheelchairs and accessories.

General orthotics is the smallest of the five product categories in San Antonio, accounting for about $0.45 million in allowed charges. Orthotics (also called orthoses) are braces that provide support for different parts of the body. Although many orthotics are custom-fit for individual patients, the HCPCS codes included in the demonstration were classified as noncustomized at the time the RFB was prepared.[1] Medicare Part B covers orthotics purchased by beneficiaries living in the home or in nursing facilities. Unlike the other product categories, orthotics allowed charges are widely distributed across HCPCS codes, with the largest code accounting for less than 25 percent of allowed charges.

Nebulizer drugs administered through nebulizers are one of the few types of outpatient prescription drugs covered by Medicare Part B. Nebulizers are a type of DME used to administer inhalation therapy, usually for asthma or emphysema. Two of the nebulizer drugs, albuterol and ipratropium bromide, account for nearly 97 percent of the allowed charges included in the demonstration. In contrast to the other products included in the demonstration, nebulizer drugs generally have unit prices less than $1, and patients may consume hundreds of units per month. Nebulizer drugs accounted for over $1.3 million in allowed charges in San Antonio in 1998.

The demonstration and Medicare statewide fee schedule prices for individual items in each product category are detailed in Appendix A. Table 2-5 summarizes the differences between the demonstration and Medicare statewide fee schedule values. The first three rows compare the composite price based on the demonstration prices to the composite price based on the Medicare

[1] A few of these items were later reclassified as customized.

Table 2-4. Overview of San Antonio Product Categories

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
Number of Items Bid	10	18	61	46	27
Rental or Purchase	Rental, a few purchases	Rental, a few purchases	Rental, a few purchases	Purchase	Purchase
1998 Claims	34,708	19,272	35,359	2,017	15,083
1998 Units	61,673	17,425	33,613	2,575	2,026,052
1998 Allowed Charges	$5,180,662	$1,795,273	$1,841,466	$447,686	$1,359,561
Average Allowed Charges per Unit	$84.00	$103.03	$54.78	$173.86	$0.67
HCPCS Range	E0424–E0443 (selected codes), E1390, E1405–E1406	E0250–E0310 (selected codes), E0910, E0940	K0007–K0452 (selected codes)	L1800–L4398 (selected codes)	E0590, J2545, J7608–7684 (selected codes)
Most Common Items (HCPCS code; percentage of allowed charges in category)	Oxygen concentrator (E1390; 82%)	Semi-electric hospital bed with side rails and mattress (E0260; 88%)	Lightweight wheelchair (K0003; 29%); high strength, lightweight wheelchair (K0004; 23%); standard wheelchair (K0001; 23%)	Wrist-hand-finger orthosis, long opponens, no attachment (L3805; 24%), ankle-foot orthosis, plastic (L3730; 14%)	Albuterol, unit dose form (J7619; 61%); ipratropium bromide, unit dose form (J7644; 36%)

(continued)

Table 2-4. Overview of San Antonio Product Categories (continued)

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
Range in Fees under 2001 Medicare Statewide Fee Schedule	$18.25 (portable oxygen contents, gaseous, 5 cu. ft)—$263.04 (oxygen and water vapor enriching system with heated delivery, rental)	$17.60 (bed with side rails, half length, rental)—$300.67 (hospital bed, heavy-duty, extra wide rental)	$5.51 (wheelchair bearings)—$458.75 (manual, fully reclining back, purchase)	$18.66 (replacement soft interface material, static ankle-foot orthosis)—$949.96 (knee-ankle-foot orthosis, femerol fracture case orthosis)	$0.04 (triamcinolone, unit dose form)—$110.45 (pentamidine isethionate, per 300 mg)

Table 2-5. Difference in Composite Prices Based on Demonstration Prices and the 2001 Medicare Statewide Fee Schedule

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
Composite Prices[a]					
Demonstration Fee Schedule	$111.71	$97.04	$57.84	$167.18	$0.55
2001 Medicare Statewide Fee Schedule	$142.79	$130.68	$72.37	$184.79	$0.70
Percentage Reduction: Demonstration Fees vs. 2001 Medicare Statewide Fee Schedule	21.8%	25.7%	20.1%	9.5%	21.4%
Individual Prices					
Demonstration Prices Lower than Fee Schedule	10	18	61	46	16
Demonstration Prices Higher than Fee Schedule	0	0	0	0	11
Total Demonstration Items	10	18	61	46	27

[a]The composite price equals the demonstration (or fee schedule) price multiplied by the product weight for each item, summed across all items in the product category.

statewide fee schedule that would have been in effect in the absence of the demonstration. The composite price is the weighted average of the individual product prices, where the weights are the product weights specified in the RFB. These product weights are based on the proportion of total unit volume in 1998 that is accounted for by the individual product.

The composite price for the demonstration is lower in each product category. The demonstration composite price is 21.8 percent lower for oxygen equipment and supplies, 25.7 percent lower for hospital beds and accessories, 20.1 percent lower for wheelchairs and accessories, 9.5 percent lower for general orthotics, and 21.4 percent lower for nebulizer drugs. The remainder of the table shows the number of demonstration prices lower and higher than the corresponding prices in the Medicare statewide fee schedule.

Demonstration prices are lower than the Medicare statewide fee schedule for all 10 oxygen equipment and supply items (Appendix Table A-5), all 18 hospital bed and accessory items (Appendix Table A-6), all 61 wheelchair and accessory items (Appendix Table A-7), and all 46 general orthotics items (Appendix Table A-8). For nebulizer drugs, the demonstration price was lower than the Medicare statewide fee schedule for 16 of 27 items (Appendix Table A-9).

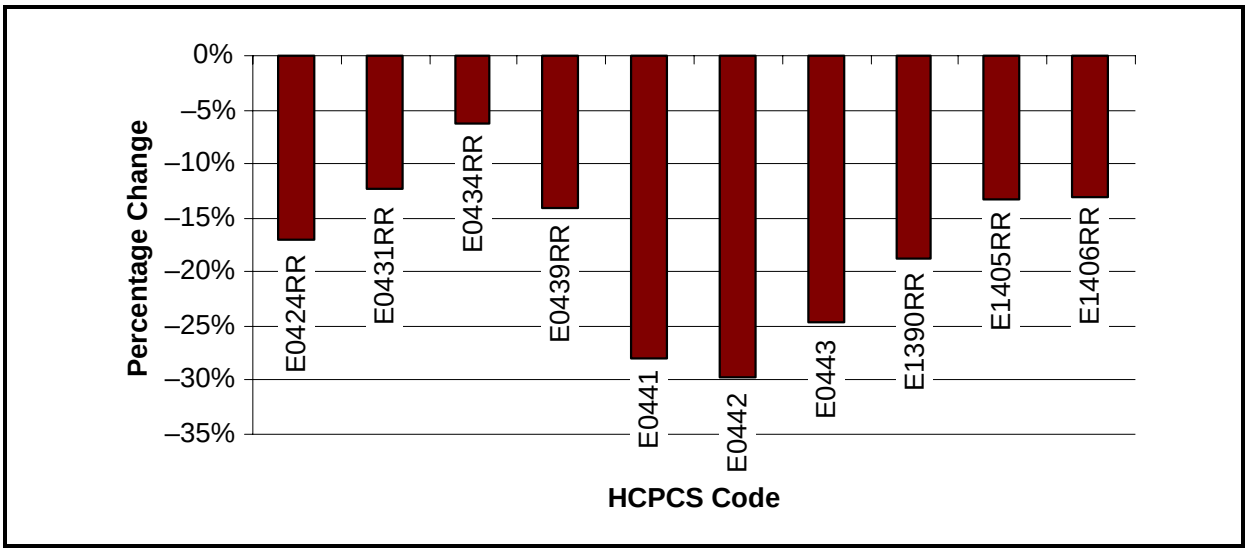
Table 2-6 provides further detail on the magnitude of price reductions and increases under the demonstration. The price reductions achieved under the San Antonio demonstration are rarely smaller than 10 percent, except for nebulizer drugs, the only category with price increases. For hospital beds and accessories, wheelchairs and accessories, and orthotics, the price reductions are commonly between 15 percent and 25 percent.

Table 2-6. Number of Demonstration Prices Lower and Higher than the 2001 Medicare Statewide Fee Schedule

	Oxygen Equipment and Supplies	Hospital Beds and Accessories	Wheelchairs and Accessories	General Orthotics	Nebulizer Drugs
Number of Lower Prices					
0% to 4.9% Lower	0	0	1	1	2
5% to 9.9% Lower	1	0	0	0	5
10% to 14.9% Lower	4	1	3	1	3
15% to 19.9% Lower	2	5	22	13	2
20% to 24.9% Lower	1	5	29	26	1
25% to 29.9% Lower	2	7	6	5	2
30% to 35% Lower	0	0	0	0	2
All Lower Prices	10	18	61	46	16
Number of Higher Prices					
0% to 4.9% Higher	0	0	0	0	1
5% to 9.9% Higher	0	0	0	0	1
10% to 14.9% Higher	0	0	0	0	1
15% to 19.9% Higher	0	0	0	0	0
> 20% Higher	0	0	0	0	8
All Higher Prices	0	0	0	0	11
Total Demonstration Items	10	18	61	46	27

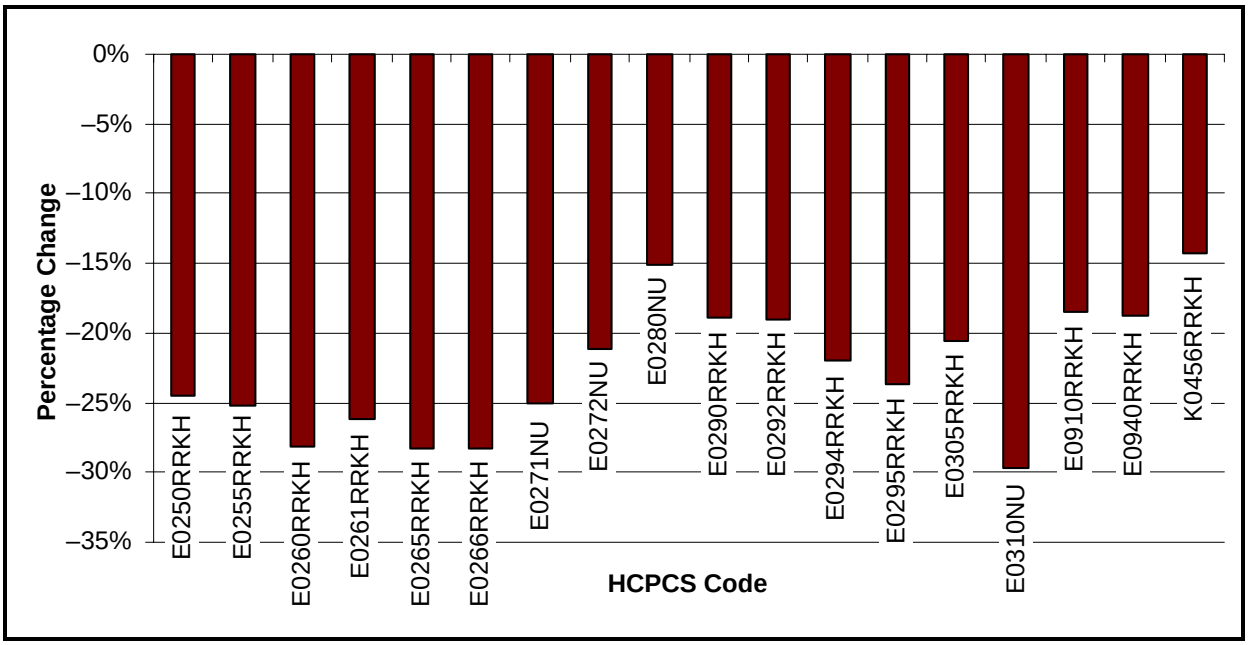
The percentage change in the demonstration price versus the fee schedule price is displayed for individual items in Figures 2-9 through 2-13. Procedure codes come from the HCFA Common Procedure Coding System (HCPCS). Changes in the price for each product in the oxygen equipment and supplies category are graphed in Figure 2-9. As noted above, the demonstration prices for all items in the oxygen equipment and supplies category are lower than the fee schedule prices. The largest discounts are for stationary and portable oxygen contents (HCPCS codes E0441 through E0443), which range from about 25 percent to 30 percent. Discounts on the remaining

Figure 2-9. Oxygen Equipment and Supplies—San Antonio Demonstration Prices Relative to 2001 Medicare Statewide Fee Schedule



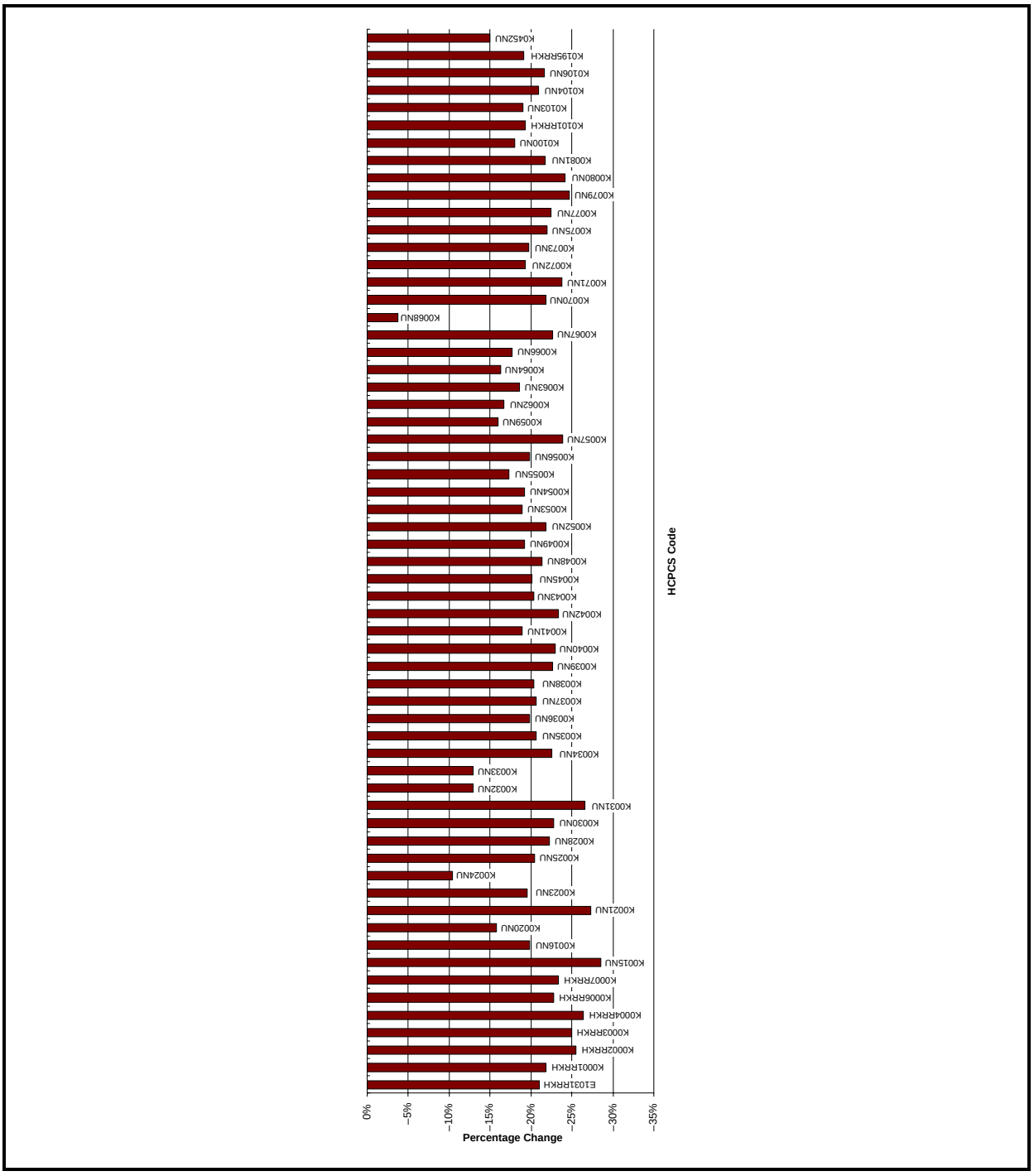
Note: See Appendix Table A-5 for HCPCS code definitions.

Figure 2-10. Hospital Beds and Accessories—San Antonio Demonstration Prices Relative to 2001 Medicare Statewide Fee Schedule



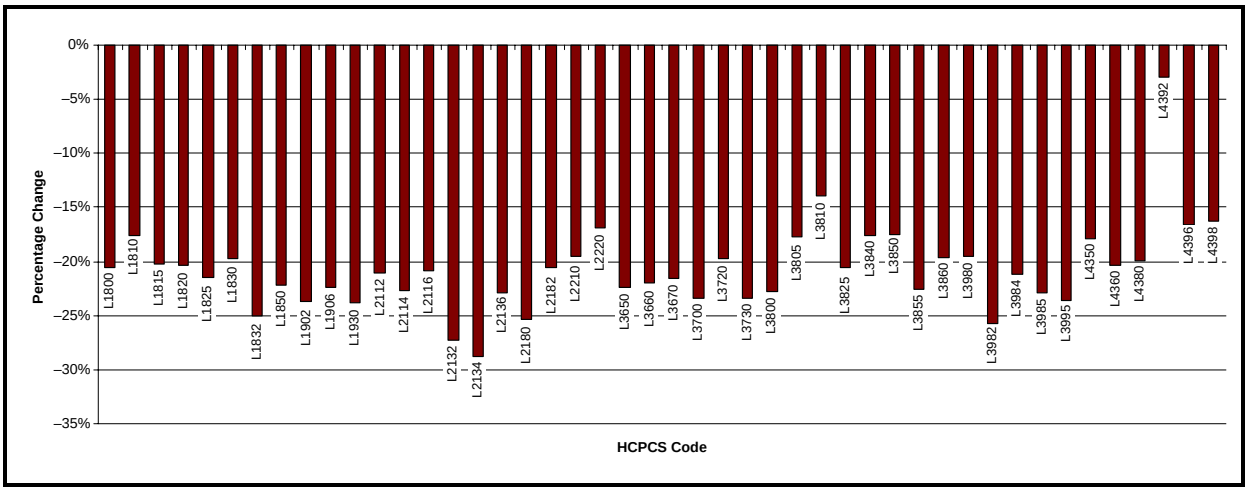
Note: See Appendix Table A-6 for HCPCS code definitions.

Figure 2-11. Wheelchairs and Accessories—San Antonio Demonstration Prices Relative to 2001 Medicare Statewide Fee Schedule



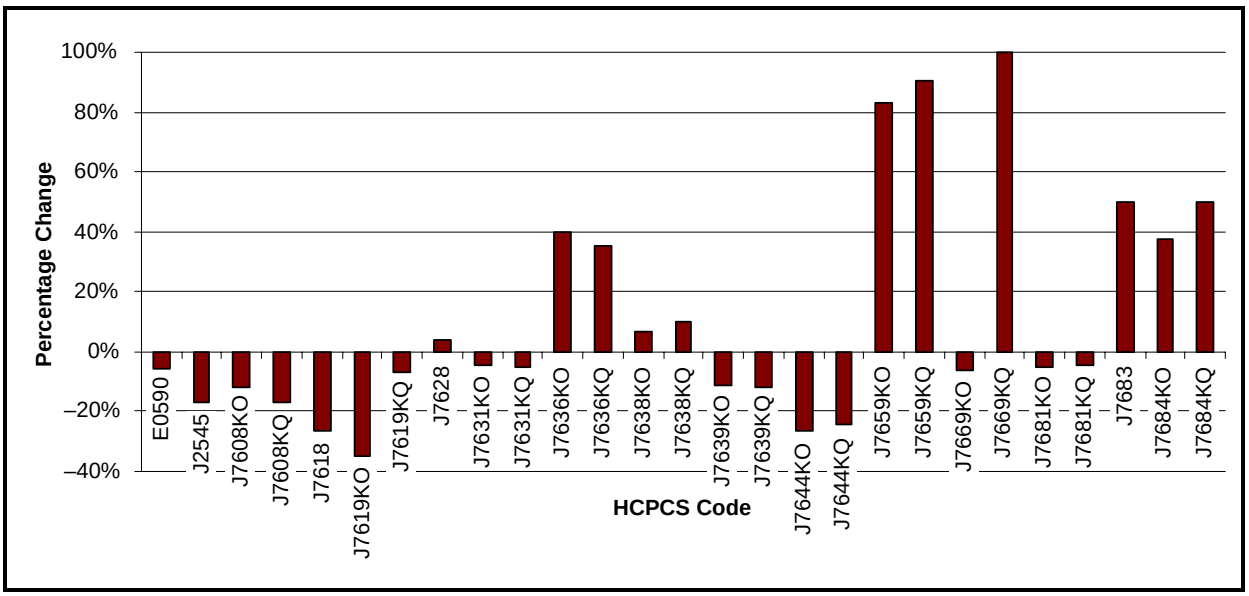
Note: See Appendix Table A-7 for HCPCS code definitions.

Figure 2-12. General Orthotics—San Antonio Demonstration Prices Relative to 2001 Medicare Statewide Fee Schedule



Note: See Appendix Table A-8 for HCPCS code definitions.

Figure 2-13. Nebulizer Drugs—San Antonio Demonstration Prices Relative to 2001 Medicare Statewide Fee Schedule



Note: See Appendix Table A-9 for HCPCS code definitions.

rental items varied from about 6 percent to 19 percent. The demonstration price for oxygen concentrators (E1390RR), which accounted for over 80 percent of oxygen allowed charges in 1998, is 19 percent lower than the Medicare statewide fee schedule price.

Changes in the price for each product in the hospital beds and accessories category are graphed in Figure 2-10. The demonstration prices are discounted for all items, ranging from about 14 percent to 30 percent lower than the Medicare statewide fee schedule. The biggest discounts of 26 percent to 30 percent were obtained for full-length hospital bedside rails (HCPCS code E0310NU) and for semi- and total electric hospital beds (E0260RRKH, E0261RRKH, E0265RRKH, and E0266RRKH). Semi-electric hospital beds accounted for over 80 percent of allowed charges in the product category in 1998.

Changes in the price for each product in the wheelchairs and accessories category are graphed in Figure 2-11. The demonstration prices are discounted for all items, ranging from about 4 percent to 29 percent lower than the Medicare statewide fee schedule. The highest percentage discounts for individual wheelchair codes were approximately 29 percent for a nonadjustable arm rest (HCPCS code K0015) and about 27 percent each for an anti-tipping device (K0021) and a safety belt/pelvic strap (K0031). Demonstration fees for three wheelchair rental codes with relatively high volumes of utilization and allowed charges in past years (K0002, K0003, and K0004) achieved discounts of 25 to 26 percent.

Changes in the price for each product in the general orthotics category are graphed in Figure 2-12. The demonstration prices are discounted for all items, ranging from approximately 3 to 29 percent below the Medicare statewide fee schedule. The biggest discounts of 27 percent to 29 percent were obtained for two codes covering knee ankle foot orthoses, or KAFOs (HCPCS codes L2132 and L2134). Discounts of 25 and 24 percent were obtained for a type of knee orthosis (L1832) and a type of ankle-foot orthosis (L1930), respectively. These two codes were weighted relatively heavily in the computation of the composite bid, having received high utilization levels in past years.

Changes in the price for each product in the nebulizer drugs category are graphed in Figure 2-13. In contrast to the other product categories, demonstration prices are higher than the Medicare statewide fee schedule for almost half the items in the nebulizer drug category. Increases range from 4 to 100 percent over fee schedule amounts, with most falling in the range of 35 to 50 percent increases. However, these increases are entirely within codes where fee schedule amounts are under 75 cents per billed unit and utilization has been relatively low in recent years. Moreover, the majority of demonstration prices are lower than the fee schedule prices. The demonstration price is discounted by 35 percent for single drug unit dose albuterol (HCPCS code J7619KO), by 7 percent for second or later units of multiple unit dose albuterol (J7619KQ), and by about 24 to 27 percent for concentrated albuterol and unit dose ipratropium

bromide (J7618, J7644KO, and J7644KQ). These drugs have accounted for the majority of claims and allowed charges in the nebulizer drug category in recent years. Note that because the weight of the discounted products was large, the composite bid declined by 21.4 percent.

2.3 Polk County versus San Antonio Prices

Two of the product categories, oxygen equipment and supplies and hospital beds and accessories, are included in both the Polk County and San Antonio demonstration sites. However, the composite prices for these product categories are not directly comparable between Polk County and San Antonio because of differences between bidding items and product weights between the two sites and the different timing of the bidding competitions. Prices for individual products are more comparable, although the different timing of the bidding competitions still affects comparability. Table 2-7 shows the demonstration and fee schedule prices for oxygen concentrators and semi-electric hospital beds with side rails and mattresses, the products that account for the highest allowed charges in the two product categories. Although the demonstration prices for San Antonio are from $16 to $24 higher than in Polk County, the dollar and percentage reductions relative to the fee schedule prices are similar between the two sites. Labor and other input costs may differ between Polk County and San Antonio, accounting for some of the differences in demonstration prices between the sites.

Table 2-7. Demonstration and Fee Schedules Prices—Polk County versus San Antonio

	Demonstration Price	Fee Schedule Price	Reduction ($)	Reduction (%)
Oxygen Concentrator (E1390)				
Polk County, Round 1	$175.10	$213.11	$38.01	17.8%
Polk County, Round 2	$170.36	$213.75	$43.65	20.4%
San Antonio	$186.40	$229.49	$43.09	18.8%
Semi-electric Hospital Bed with Side Rails and Mattress (EO1260)				
Polk County, Round 1	$95.66	$136.14	$40.48	29.7%
Polk County, Round 2	$95.74	$145.81	$50.07	30.1%
San Antonio	$119.26	$166.10	$46.84	28.2%

2.4 Estimated Annual Savings to Medicare and Beneficiaries

Utilization data for the demonstration are not yet available. Therefore, to estimate savings from the demonstration in each product category, we multiplied predemonstration volume in the demonstration areas by the demonstration price for each procedure and then summed across all procedures in the product category. This produces an estimate of demonstration savings under the assumption that utilization is unaffected by the demonstration. The assumption of constant utilization is unlikely to hold true in reality because demonstration changes in price are likely to affect demand for DMEPOS, and demand may change for reasons unrelated to the demonstration. Nevertheless, the calculation provides a useful measure of the demonstration's pure price effect.

Estimated reductions in allowed charges for the first year of the first round of the demonstration in Polk County are shown in Table 2-8. The reductions in allowed charges are $918,472 for oxygen supplies, $190,229 for hospital beds and accessories, $167,631 for enteral nutrition, and $16,409 for urological supplies. However, for surgical dressings, allowed charges are estimated to increase by $14,978. Overall, assuming utilization remained constant, the demonstration is estimated to reduce annual allowed charges by a total of $1,277,763, or about 17 percent. Estimated reductions in allowed charges for the second year of the demonstration in Polk County are the same (Table 2-9).

Table 2-8. Estimated Annual Allowed Charges in Polk County, Round 1, First Year (October 1, 1999 – September 30, 2000)[a]

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under 1999 Medicare Statewide Fee Schedule	Estimated Annual Savings Under the Demonstration	Percent-age Savings
Oxygen Equipment and Supplies	$4,670,181	$5,588,654	$918,472	16.4%
Hospital Beds and Accessories	$456,998	$647,228	$190,229	29.4%
Enteral Nutrition	$893,920	$1,061,552	$167,631	15.8%
Urological Supplies	$74,600	$91,008	$16,409	18.0%
Surgical Dressings	$159,378	$144,400	–$14,978	–10.4%
Total	$6,255,077	$7,532,841	$1,277,763	17.0%

[a]Assuming utilization is the same as 1998 utilization. 1998 utilization data provided by demonstration contractor.

Table 2-9. Estimated Annual Allowed Charges in Polk County, Round 1, Second Year (October 1, 2000 – September 30, 2001)[a]

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under 2000 Medicare Statewide Fee Schedule	Estimated Annual Savings Under the Demonstration	Percent-age Savings
Oxygen Equipment and Supplies	$4,670,181	$5,588,654	$918,472	16.4%
Hospital Beds and Accessories	$456,998	$647,228	$190,229	29.4%
Enteral Nutrition	$893,920	$1,061,552	$167,631	15.8%
Urological Supplies	$74,600	$91,008	$16,409	18.0%
Surgical Dressings	$159,378	$144,400	–$14,978	–10.4%
Total	$6,255,077	$7,532,841	$1,277,763	17.0%

[a]Assuming utilization is the same as 1998 utilization. 1998 utilization data provided by demonstration contractor.

In Round 2 bidding in Polk County, most demonstration prices fell for oxygen equipment and supplies, and surgical dressings, while the Medicare statewide fee schedule rose. As a result, the estimated savings under the demonstration rise for these product categories (Table 2-10). Estimated savings for hospital beds and accessories also increased. Demonstration prices for urological supplies tended to rise in Round 2 (the Medicare statewide fee schedule also rose but by a smaller percentage); therefore, estimated savings for this product category are lower than during Round 1 of the demonstration. Across all product categories, estimated annual savings for Round 2 equal $1,465,228. This total is higher than the estimated annual savings in Round 1, even though one more product category (enteral nutrition) was included in Round 1.

Estimates for the first and second years of the demonstration in San Antonio (Tables 2-11 and 2-12) are based on the same volume and the same demonstration and Medicare statewide fee schedule prices. The second "year" only covers 11 months, however, explaining why its totals are only 11/12 of the first year totals. Estimated savings range from 17.7 percent for oxygen equipment and supplies to 27.6 percent for hospital beds and accessories, with the average reduction across all product categories equal to 21.8 percent. Overall, estimated savings in San Antonio are $2.3 million for the first year and $2.1 million for the second year.

Table 2-13 summarizes savings from each site and year of the demonstration. We estimate that total savings from the demonstration will be nearly $8.5 million if volume does not change from predemonstration levels. This would represent a 19.9 percent savings.

Table 2-10. Estimated Annual Allowed Charges in Polk County, Round 2, First Year (October 1, 2001 – September 30, 2002)[a]

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under 2001 Medicare Statewide Fee Schedule	Estimated Annual Savings Under the Demonstration	Percent-age Savings
Oxygen Equipment and Supplies	$4,997,404	$6,201,255	$1,203,851	19.4%
Hospital Beds and Accessories	$506,936	$758,487	$251,551	33.2%
Urological Supplies	$84,957	$91,153	$6,196	6.8%
Surgical Dressings	$96,228	$99,858	$3,630	3.6%
Total	$5,685,525	$7,150,752	$1,465,228	20.5%

[a]Assuming utilization is the same as 1999 utilization. 1999 utilization data from Polk County Round 2 RFB.

Note: Percentage savings shown here do not match percentage reductions shown in Table 2-2 because of differences in volume. Composite prices in Table 2-2 were calculated using weights based on state volumes to avoid the possibility of zero weights for individual products. Table 2-10 expenditures are based on demonstration area volumes.

Table 2-11. Estimated Annual Allowed Charges in San Antonio, First Year (February 1, 2001 – January 31, 2002)[a]

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under 2001 Medicare Statewide Fee Schedule	Estimated Annual Savings Under the Demonstration	Percentage Savings
Oxygen Equipment and Supplies	$3,991,682	$4,849,734	$858,052	17.7%
Hospital Beds and Accessories	$1,533,564	$2,117,231	$583,667	27.6%
Wheelchairs and Accessories	$1,570,066	$2,061,027	$490,961	23.8%
Orthotics	$375,297	$471,132	$95,835	20.3%
Nebulizer Drugs	$876,611	$1,174,179	$297,568	25.3%
Total	$8,347,220	$10,673,303	$2,326,083	21.8%

[a]Assuming utilization is the same as 1998 utilization. 1998 utilization data from San Antonio RFB.

Table 2-12. Estimated Annual Allowed Charges in San Antonio, Second Year (11 months: February 1, 2002 – December 31, 2002)[a]

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under 2001 Medicare Statewide Fee Schedule	Estimated Annual Savings Under the Demonstration	Percentage Savings
Oxygen Equipment and Supplies	$3,659,042	$4,445,589	$786,547	17.7%
Hospital Beds and Accessories	$1,405,767	$1,940,795	$535,028	27.6%
Wheelchairs and Accessories	$1,439,228	$1,889,275	$450,047	23.8%
Orthotics	$344,022	$431,871	$87,849	20.3%
Nebulizer Drugs	$803,560	$1,076,331	$272,770	25.3%
Total	$7,651,619	$9,783,861	$2,132,241	21.8%

[a]Assuming utilization is the same as 1998 utilization. 1998 utilization data from San Antonio RFB.

Note: Percentage savings shown here do not match percentage reductions shown in Table 2-5 because of differences in volume. Composite prices in Table 2-5 were calculated using weights based on state volumes to avoid the possibility of zero weights for individual products. Table 2-12 expenditures are based on demonstration area volumes.

Table 2-13. Overall Demonstration Savings

	Estimated Annual Allowed Charges Under the Demonstration	Estimated Annual Allowed Charges Under State Fee Schedules	Estimated Annual Savings Under the Demonstration	Percentage Savings
Polk County				
Round 1, Year 1	$6,255,077	$7,532,841	$1,277,763	17.0%
Round 1, Year 2	$6,255,077	$7,532,841	$1,277,763	17.0%
Round 2, Year 1	$5,685,525	$7,150,752	$1,465,228	20.5%
Polk County Totals	**$18,195,679**	**$22,216,434**	**$4,020,754**	**18.1%**
San Antonio				
Year 1	$8,347,220	$10,673,303	$2,326,083	21.8%
Year 2	$7,651,619	$9,783,861	$2,132,241	21.8%
San Antonio Totals	**$15,998,839**	**$20,457,164**	**$4,458,325**	**21.8%**
Demonstration Totals	**$34,194,518**	**$42,673,598**	**$8,479,079**	**19.9%**

The cost of DMEPOS is shared by Medicare and beneficiaries. The beneficiaries' copayment rate is 20 percent, and the remaining 80 percent of allowed charges is covered by Medicare. Thus, we estimate that the demonstration will reduce Medicare payments by $6,783,263 and beneficiary payments by $1,695,816.

2.5 Utilization

As noted earlier, our estimates of savings under the demonstration are based on the assumption of constant utilization. We have not yet been able to obtain enough claims data to tell whether utilization has changed under the demonstration. As data become available, we will analyze whether utilization changes. It is possible that changes in utilization may or may not be attributable to the demonstration. To control for this, we will perform a pre-post analysis of utilization using a comparison site for each demonstration site. The comparison county allows us to distinguish between changes due to the demonstration that only affect the demonstration site and changes due to contemporaneous trends in the demand or supply of DMEPOS that affect both the demonstration and the comparison site. This will allow us to identify changes in utilization that are because of the demonstration.

When the claims data become available, we will analyze both changes in utilization per user and the aggregate number of claims with an observation defined over a month, quarter, or 6-month period. We will perform multivariate analyses to identify the effect of the demonstration on these outcomes.

2.6 Summary and Next Steps

Demonstration prices are substantially lower than the fee schedule prices that would have been in effect for almost all items in all product categories in San Antonio and Round 2 of Polk County. Compared to Round 1 prices, Round 2 prices in Polk County are relatively unchanged for oxygen equipment and supplies and hospital beds and accessories, higher for urological supplies, and lower for surgical dressings.

We estimate that competitive bidding in the Polk County demonstration site will reduce Medicare allowed charges by approximately $1.3 million annually, or about 18 percent, assuming that utilization remains constant. Under the same assumption, we estimate that the San Antonio demonstration will reduce allowed charges by about $2.3 million annually, or about 22 percent. Together, we estimate that the two demonstrations will reduce Medicare allowed charges by nearly $8.5 million, or about 20 percent, over their 3 years of operation.

We will analyze the demonstration's impact on utilization during the upcoming months of the evaluation. When that analysis is complete, we will evaluate the combined price and utilization effects on allowed charges. Results will be presented in the Final Evaluation Report.

SECTION 3
BENEFICIARY ACCESS

We define beneficiary access as the ability of Medicare beneficiaries to locate and use, without undue burden, the services and products that are covered by Medicare. Competitive bidding reduces the number of approved suppliers in a given area, and suppliers might respond to the new environment in a number of ways. Responses can range from strategies to increase market share to business practices designed to reduce costs because of lower reimbursement. For example, suppliers could attempt to increase market share by extending service and advertising, thereby filling in geographic gaps left by ineligible suppliers. Conversely, suppliers could respond by delaying routine maintenance or employing fewer service technicians and customer service representatives in an effort to reduce costs. This could increase the need for service calls and extend waiting times, thereby decreasing access. Because of the uncertainty of the outcomes, it is important to monitor the demonstration's impact on beneficiary access and evaluate whether competitive bidding affects beneficiaries' ability to obtain needed products and services.

Because competitive bidding inherently reduces the number of suppliers serving a given area, the demonstration design included a number of features intended to promote and maintain beneficiary access. First, multiple winners were selected in each product category to encourage competition among winning bidders. Second, supplier capacity was taken into account in the bid evaluation process to ensure that selected suppliers have enough capacity to serve the entire area. The Bid Evaluation Panel also examined the financial viability of firms in the competitive range to ensure that access problems would not arise if one or more demonstration suppliers went bankrupt. Finally, transition policies allowed some nondemonstration suppliers to continue serving their existing patients during the demonstration under specific circumstances.

In Section 3.1, we discuss the findings from the baseline and follow-up beneficiary surveys conducted in Polk and Brevard Counties in Florida (the first demonstration and comparison sites, respectively), which provide our most comprehensive understanding of access in the first demonstration site. In Section 3.2, we discuss the service areas offered by demonstration suppliers in their bids. In Section 3.3, we detail our findings related to beneficiary access from three site visits conducted during the first year of the San Antonio demonstration (the second demonstration site). In Section 3.4, we discuss future steps in the analysis of beneficiary access to demonstration services. Key findings in this section are as follows:

- Survey data show few statistically significant demonstration impacts on access-related survey measures in Polk County. This suggests that the demonstration has had little overall impact on beneficiary access.

- Our Polk County analysis detects statistically significant demonstration effects that indicate a decline in the provision of portable oxygen equipment and an increase in conserving device usage among new users under the demonstration. We also detect a decline in maintenance visits among new users of medical equipment. Other statistically significant impacts include changes in the ways beneficiaries order and receive their equipment, as well as declines in some types of training for urologicals and surgical dressings users. We will monitor and further evaluate these issues as the demonstration continues.

- In San Antonio, some referral agents adapted their methods for coordinating care in response to the demonstration. Some difficulties with access occurred during the first months of the demonstration when some demonstration suppliers provided wheelchair items that users were not ordered or were not properly adjusted. Agents have since become more familiar with demonstration rules and demonstration-eligible suppliers, and they are now using suppliers with whom they are comfortable.

3.1 Polk County Beneficiary Survey Results

In this section, we discuss the access-related findings from the baseline and follow-up beneficiary surveys in Polk and Brevard Counties, Florida. Polk County is the first demonstration site, and Brevard County functions as its comparison site. We use these beneficiary surveys as our primary tool for collecting quantitative data on beneficiaries' satisfaction levels and opinions regarding their DMEPOS service and suppliers. In the following sections, we briefly describe the survey and analysis methodology before detailing our findings.

3.1.1 Survey Methodology

We fielded two surveys, the Oxygen Consumer Survey and the Medical Equipment Consumer Survey, in Polk and Brevard Counties both before and after the demonstration's implementation. These surveys were developed by project staff along with several consultants with experience and expertise in DMEPOS. Measures of access in the surveys include the distance from beneficiaries' homes to their suppliers, whether a supplier delivers equipment directly to a beneficiary's home, how long it takes to receive equipment after ordering, and whether beneficiaries have been able to get the equipment and oxygen they need without spending significant amounts of time and energy. The surveys also collect information on the issues related to quality and product selection, which we discuss in Section 4.

We conducted surveys in both the demonstration site (Polk County) and a comparison site (Brevard County). Baseline surveys were fielded from March to June 1999, 3 months before demonstration policies took effect. Follow-up surveys were fielded from January to April 2001, allowing a year of beneficiary experience under the demonstration. The nature of this design allows us to compare Polk County to Brevard County and baseline responses to follow-up responses in both settings. We also conduct multivariate regression analyses, comparing the

incremental change in outcomes from baseline to follow-up in Polk County with the change in outcomes in Brevard County.

Survey samples were identified using data from the demonstration contractor (Palmetto GBA) and the Medicare Enrollment Database (EDB). Palmetto GBA provided claims data used to identify beneficiaries in the demonstration and comparison sites with at least $20 in allowed charges in the demonstration project categories between January 1 and June 30, 2000. This list was merged with demographic and contact information from the Medicare EDB, and individuals known to be deceased were eliminated from the sampling frame before sample selection. Initial plans called for random samples of 800 oxygen users (for the Oxygen Consumer Survey) and 800 other equipment users (for the Medical Equipment Consumer Survey) in the demonstration and comparison sites. However, there were fewer than 800 other equipment users in each site, so all were included in the sample. For oxygen users, a random sample of 800 beneficiaries from each site was drawn with the objective of matching the samples drawn at baseline.

The combined response rate for all surveys was 74 percent, resulting in 3,952 completed questionnaires. Sample sizes and response rates for each survey are presented in Table 3-1. Target sample size for each survey was 800 per county; however, there were not enough users of other medical equipment in Polk and Brevard Counties to sample 800 beneficiaries from each. The percentage of recontacts is higher for the Oxygen Consumer Survey because of a concerted effort to resurvey as many baseline respondents as possible. This strategy allows us to perform more in-depth analyses of oxygen users who have used their equipment in both the pre- and post-demonstration periods. (We could not duplicate this recontacting strategy for the Medical Equipment Consumer Survey because of the smaller number of medical equipment users. In both periods, we survey all eligible users of other medical equipment; the percentage of respondents who are in both survey periods is too low for any special analysis.)

As shown in Table 3-1, response rates were higher for the Oxygen Consumer Survey than for the Medical Equipment Consumer Survey. The higher response rates for oxygen may be because beneficiaries spend more money and receive more service for oxygen equipment than for other product categories; thus, they were more interested in the Oxygen Survey. As described in the next section, proxy respondents were common on the Medical Equipment Consumer Survey, possibly suggesting that medical equipment users are more disabled than oxygen users.

Table 3-1. Selected Characteristics of Survey Samples

	Oxygen Consumer Survey				Medical Equipment Consumer Survey			
	Polk County		Brevard County		Polk County		Brevard County	
	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Sample Size	800	800	800	800	723	759	572	601
Completed Survey	599	604	611	615	365	413	378	367
Deceased/ Ineligible	59	70	63	72	76	81	45	63
Response Rate[a]	80.8%	82.7%	82.9%	84.5%	56.4%	60.9%	71.7%	68.2%
Recontacts[b]	40.7%		40.5%		16.5%		23.4%	

[a]Response rate excludes deceased and ineligible individuals from denominator.

[b]Percentage of follow-up respondents (those who completed a survey) who were also respondents at baseline.

3.1.2 Analysis Methodology

We first examine the survey data graphically, plotting the mean value for selected access variables for the demonstration site at baseline, the demonstration site at follow-up, the comparison site at baseline, and the comparison site at follow-up. By visually comparing these data, we can qualitatively evaluate a number of questions:

- Does the variable change between baseline and follow-up in the demonstration site? How large, relative to the baseline value, is this change?
- Does the variable change between baseline and follow-up in the comparison site? How large, relative to the baseline value, is this change?
- Are there differences between the baseline value for the demonstration site and the baseline value for the comparison site?
- Do these differences persist during the follow-up period?
- Is the change between baseline and follow-up in the demonstration site larger than the change between baseline and follow-up in the comparison site?

To answer the last question, we plot a variable, *Impact*, that equals the difference between follow-up and baseline in the demonstration site minus the difference between follow-up and baseline in the comparison site. This variable can be interpreted as the impact of the demonstration on the access variable. If the variable changes more between baseline and follow-

up in the demonstration site than it changes in the comparison site, *Impact* will take a positive or negative value. On the other hand, if the variable changes by the same amount in both the demonstration and the comparison site, the measured *Impact* will be zero; we can interpret this result as indicating that the demonstration did not affect the variable.

The formula for the *Impact* calculation highlights the advantage of collecting comparison site data for the evaluation. If we only had baseline and follow-up data from the demonstration site, we would not be able to distinguish between changes caused by the demonstration and changes caused by other factors that affect both the demonstration and other similar but nondemonstration sites. For example, if we observe that use of oxygen concentrators increases by 10 percent between the baseline and follow-up surveys in Polk County, we would not be able to tell whether this increase is due to the demonstration or due to another factor that would have caused concentrator use to rise even in the absence of the demonstration. By including the data from the comparison site, we can interpret the change observed at the comparison site as the change that would have occurred at the demonstration site in the absence of the demonstration. After subtracting this change from the actual change in the demonstration site, we can interpret the remaining change as the demonstration's impact.

Although the graphical analysis provides an intuitive way to evaluate the survey data, it cannot tell us whether the demonstration's impact is—from a statistical standpoint—significantly different than zero. To address this issue, we perform a series of multivariate regressions to detect whether the demonstration has a statistically significant impact on the access measures included in the two surveys.

We use the following regression model:

$$(\text{Access Variable})_{ijt} = \alpha + \beta_1 * \text{Polk}_j + \beta_2 * \text{Follow-Up}_t + \beta_3 * \text{Impact}_{ijt} + \beta' * \mathbf{Patient}_{it} + \varepsilon_{ijt}$$

The index *i* represents the patient, the index *j* represents the location (Polk County vs. Brevard County), and the index *t* represents time (baseline vs. follow-up). *Polk* is a dichotomous variable set equal to one for Polk County beneficiaries and zero for Brevard County beneficiaries to represent time-invariant differences between Polk and Brevard Counties. *Follow-Up* is a dichotomous variable set equal to one in the post-demonstration period and zero at baseline. The variable controls for overall time trends that affect both the demonstration and comparison site in the follow-up survey. *Impact* equals one if the observation is from the demonstration site (Polk County) in the post period and zero otherwise (*Impact* equals *Polk* multiplied by *Follow-Up*). ***Patient*** represents a vector of patient characteristics, including health status, level of education, whether patient is a new user, proxy respondent, and other variables concerning living situation. Inclusion of these variables allows us to better control for nondemonstration variables that affect

the access measures. ***Patient*** also includes variables representing the DMEPOS product categories used by the patient to allow for additional service-specific effects.

The dependent variables in our regression model are responses to the surveys' access-related questions. β_1 captures systematic differences between the demonstration and comparison sites that affect access in both the baseline and follow-up periods. β_2 captures the effects of factors that generate changes in responses from baseline to follow-up in both the demonstration and comparison sites. β_3 then isolates the change in outcomes over time in the demonstration site (Polk County) minus the change in outcomes over time in the comparison site (Brevard County). This is the regression equivalent of the graphical impact variable.

We use three regression techniques with the above model, depending on the nature of the access variable. For variables that are continuous (such as equipment delivery times and distance from the beneficiary's home to their supplier), we use ordinary least-squares (OLS) regression. For dependent variables defined as a binomial choice (such as whether a maintenance visit occurred in the last 30 days or whether a beneficiary uses portable oxygen), we use a logistic regression technique. For variables that are ordinal in nature, we use an ordered logistic regression technique. These ordinal variables are generated by survey questions such as "How would you rate the reliability of the equipment you use?" where response choices are "Very reliable," "Somewhat reliable," "Somewhat unreliable," and "Very unreliable." We use a t-test to determine if the coefficient of the *Impact* variable on each access-related outcome is statistically significant at the 5 percent level. Where the *Impact* variable is statistically significant, we say that the presence of the demonstration had an observable effect on the measure of beneficiary access.

In these cases, we report the marginal effect of the demonstration on the dependent variable. When the dependent variable is continuous, β_3 in the OLS regression can be directly interpreted as the demonstration's marginal effect. Logistic and ordered logistic regressions are not linear functions of the explanatory variables, so β_3 cannot be directly interpreted as a marginal effect in these regressions. We calculate the marginal effects using STATA software, at the means of the independent variables. See Appendix B for a detailed description of the marginal effects calculation.

For dependent variables estimated using logistic regressions, Stata calculates the marginal effect of the demonstration as the discrete change in the dependent variable as the *Impact* variable moves from 0 to 1. Since the dependent variables in our logistic regressions are all 0/1 variables, the marginal effect can be interpreted straightforwardly as a change in the probability of respondents with a positive (1) response for the dependent variable.

For ordered logistic regressions, Stata requires a specification of the outcome for which a marginal effect is to be calculated. For each dependent variable, we specify the most positive response outcome (e.g., "very reliable," "always," etc.) because the majority of responses on each

of these variables fall in these categories. With this specification, Stata calculates the marginal effect of the demonstration as the increase in the probability of this most positive response outcome. Interpretation of these effects is therefore similar to that used with logistic regressions.

Means of the patient characteristics used in our regression model are presented in Table 3-2. Patient characteristics are fairly similar between the demonstration and comparison site, and there are relatively few differences between the baseline and follow-up surveys in each site. Moreover, use of the regression model allows us to control for any differences in patient characteristics between the demonstration and comparison sites as well as any differences in patient characteristics between the baseline and follow-up surveys. We derive our race variable from joint use of survey responses and the Medicare Enrollment DataBase (EDB). We use the survey response in most cases to identify race and ethnicity. However, in cases where respondents were inconsistent in their response between baseline and follow-up rounds of the survey, we use the EDB race indicator for that sample member. We also use the EDB if the respondent did not answer the survey questions on race and ethnicity. Table 3-2 shows that only about 25 percent of oxygen users required a proxy respondent to the survey, while about half of the other medical equipment users had a proxy fill out the survey. Including a variable for proxy respondent in the regression analysis, allows us to control for the possibility that proxy respondents provide different answers than users.

We perform separate analyses for oxygen users and for users of other medical equipment and supplies. We also perform separate regression analyses on the subset of survey responses provided by new users. We define new users as those who report having used their DMEPOS for less than a year at the time they complete the survey. Under this definition, a respondent cannot be a new user in both the baseline and follow-up rounds of the survey.

The new user analysis is important because new beneficiaries in the demonstration site at follow-up are required to use demonstration suppliers. Beneficiaries who used home oxygen, hospital beds, and enteral nutrition equipment before the demonstration took effect could maintain supply arrangements with their previous suppliers under specific circumstances through the demonstration's transition policies. These policies do not apply to beneficiaries who began using DMEPOS during the demonstration, or to previous users of urological supplies, surgical dressings, and enteral nutrition food items. Because of these policies, the subset of new users is more likely to show the effects of any changes in service that may be caused by the demonstration than the entire set of DMEPOS users. This is particularly true for the oxygen, hospital bed, and enteral nutrition equipment categories, and less true of surgical dressings and urological supplies.

Table 3-2. Means of Patient Characteristics Used in Regression Model

		Oxygen Consumer Survey				Medical Equipment Consumer Survey			
		Demonstration Site		Comparison Site		Demonstration Site		Comparison Site	
	Ordinal Range	Baseline N=599	Follow-up N=604	Baseline N=611	Follow-up N=615	Baseline N=365	Follow-up N=413	Baseline N=378	Follow-up N=367
White, Non-Hispanic	0,1	0.91	0.91	0.94	0.93	0.86	0.83	0.86	0.88
Income[a]	1-5	2.80	2.80	3.23	3.19	2.94	2.91	2.89	3.07
Education[b]	0-2	0.64	0.56	0.92	0.95	0.80	0.75	0.82	0.84
Good Health Status[c]	0,1	0.18	0.22	0.20	0.26	0.34	0.37	0.20	0.31
Lives Alone	0,1	0.28	0.29	0.29	0.28	0.14	0.17	0.15	0.18
New User	0,1	0.18	0.11	0.24	0.15	0.24	0.17	0.18	0.15
Moved In Past Year	0,1	0.07	0.06	0.05	0.09	0.03	0.11	0.08	0.05
Medicaid Recipient	0,1	0.26	0.27	0.18	0.18	0.30	0.28	0.23	0.23
Proxy Respondent	0,1	0.23	0.24	0.24	0.25	0.51	0.45	0.52	0.57

[a]Values for the Income variable: 1 = less than $5,000/year, 2 = $5,001 to $10,000/year, 3 = $10,001 to $20,000/year, 4 = $20,001 to $30,000/year, 5 = over $30,000/year.

[b]Values for the Education variable: 0 = did not graduate high school, 1 = high school graduate but no college degree, 2 = college graduate and beyond.

[c]Respondent's health status was classified as "good" if respondent indicated that their health status was "good," "very good," or "excellent." Other options for response were "fair" and "poor."

3.1.3 Findings

Many of the generalized access measures have means that indicate high levels of access to care both before and after implementation. In addition, beneficiaries report high levels of satisfaction, a variable that provides a summary measure of perceived access and quality, with DMEPOS services in Polk County both before and during the demonstration (satisfaction is discussed in detail in Section 4). In the sections below, we describe the differences in baseline and follow-up outcomes for the access measures. When interpreting these often small movements, it is important to recognize the high degree of satisfaction among DMEPOS users.

Below, we describe the variables that had the greatest amount of proportional change from baseline to follow-up and consider the corresponding changes in the comparison site. The figures throughout this section present unadjusted results at baseline and follow-up for Polk and Brevard Counties. The figures also present the unadjusted *Impact* variable. We display unadjusted results here because there is little difference between the regression-adjusted and unadjusted results.

We also identify the measures where the demonstration's impact was statistically significant when adjusting for the patient characteristics described above, either among all survey respondents or among only the subset of new users.

Oxygen Consumer Survey

Most of our analyses showed no statistically significant demonstration impacts on the survey's access measures. In Table 3-3, we present the access variables by category, noting those for which the demonstration's impact was statistically significant. The demonstration impact variable was significant for only 4 of the 43 measures for all oxygen users and for only 3 of the 43 measures for new users. In our analyses of oxygen users who responded to the survey in both the pre- and post-demonstration periods, the demonstration's impact was never statistically significant. Below, we describe the major findings for individual access measures in the Oxygen Consumer Survey.

Access to Equipment and Supplies. Among those who use stationary oxygen in Polk County, the unadjusted percentage of respondents using oxygen concentrators increased slightly from 91 to 94 percent, with a similar change in the comparison site. Compressed oxygen tanks became more prevalent at follow-up as the percentage of oxygen users who reported using such systems increased from 6.3 percent to 10.1 percent. The demonstration had a statistically significant impact on the number of beneficiaries using compressed gas tanks. The marginal impact of the demonstration is a 6.1 percentage point increase in the percentage of stationary system users who use a compressed oxygen tank. Stationary compressed oxygen tank systems are commonly provided to oxygen users as backup systems to oxygen concentrators, but they are

Table 3-3. Demonstration Impact on Access Variables—Oxygen Consumer Survey

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Access to Equipment and Supplies	Stationary system use	No	No		
	Type of stationary system				
	Oxygen concentrator	No	No		
	Liquid oxygen cylinder	No	No		
	Compressed oxygen tank	Yes	No	Increase in percent using tanks	
	Portable system use	No	Yes		Decline in percent using portable
	Type of portable system				
	Oxygen tank	No	No		
	Liquid cylinder	No	No		
	Oxygen conserving device use	No	Yes		Increase in percent using devices
Delivery	Initial equipment delivery time	No	No		
	Orderer of equipment				
	Beneficiary	No	No		
	Caregiver	No	No		
	Home health agency (HHA)	Yes	No	Increase in percent ordering by HHA	
	Doctor	No	No		
	Method of equipment receipt				
	Delivered to home by supplier	No	No		
	Mailed to home by supplier	No	No		
	Pick up from supplier	No	No		
	Delivered by home health (HHA)	Yes	No	Increase in percent with HHA delivery	
	Distance to supplier	No	No		
	Time and energy used obtaining DMEPOS	No	No		
	Frequency of receiving portable refills	No	No		
	Number of portable refills ordered each time	No	No		

(continued)

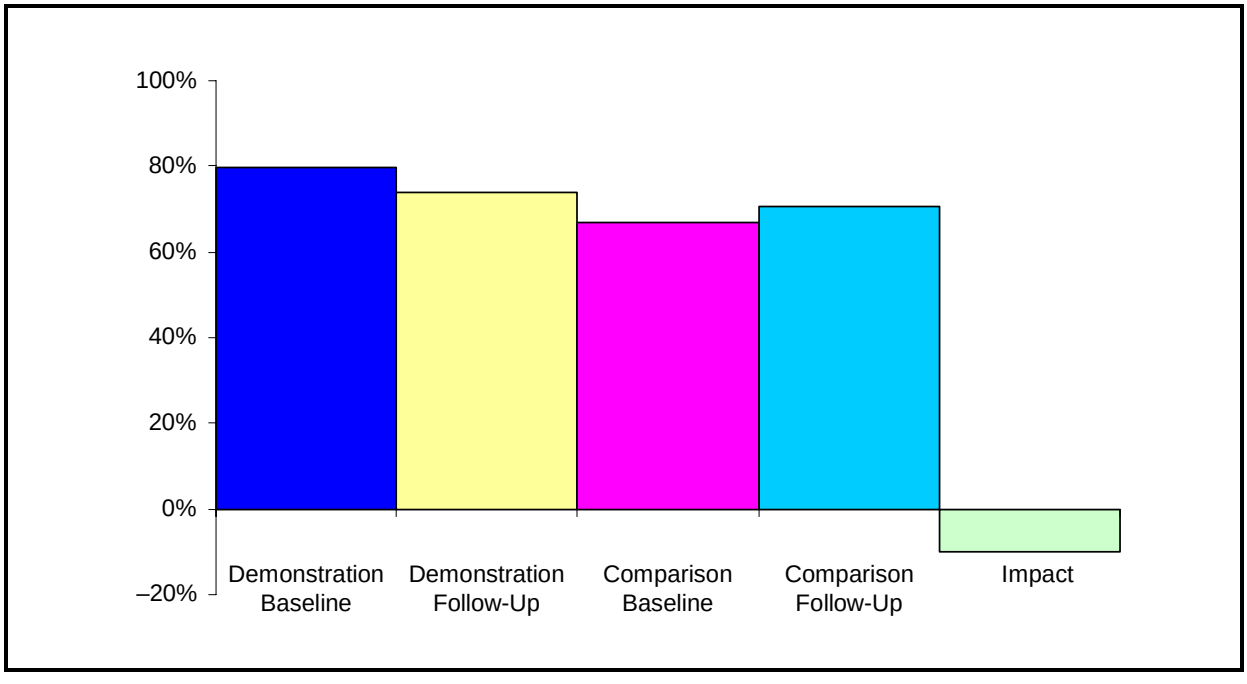
Table 3-3. Demonstration Impact on Access Variables—Oxygen Consumer Survey (continued)

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Delivery	Ran out of stationary oxygen supplies, last 6 months	No	No		
	Ran out of portable oxygen supplies, last 6 months	No	No		
	Use of multiple suppliers	No	No		
Access to Training	Types of training given by supplier				
	Written instructions	No	No		
	Show how to use	No	No		
	Choose a good place	No	No		
	Show how to put together	No	No		
	Show how to take care of	No	No		
	Show how to use safely	No	No		
	Show how to replace parts	No	No		
	Tell how to get service	No	No		
	Tell how to get service after-hours	No	Yes		Increase in percent receiving training
	Did not receive any training	No	No		
Access to Maintenance and Service	Major change in therapy requiring new equipment, last 6 months	Yes	No	Increase in percent with change in therapy requiring new equipment	
	Frequency of maintenance visits	No	No		
	Maintenance visit in last 30 days	No	No		
	Time since last respiratory checkup	No	No		
	Frequency of visits from supplier's respiratory therapist	No	No		
Access to Customer Service	Receipt of supplier assistance with insurance	No	No		
	Number of face-to-face contacts with supplier, last 6 months	No	No		
	Ability to contact supplier by telephone	No	No		
	Supplier service call response time	No	No		

seldom used as the primary stationary system. Our results do not show that compressed gas systems are replacing oxygen concentrators. On the surveys, beneficiaries could indicate that they use more than one type of stationary system. The percentage indicating that they use only a compressed oxygen tank system stayed relatively constant from baseline to follow-up (at about 1 percent of stationary users in Polk), while the percentage using both an oxygen concentrator and a compressed oxygen tank rose from 5.6 percent to 9.6 percent in Polk County. There were no statistically significant changes in the prevalence of oxygen concentrators or liquid stationary systems.

The demonstration county (Polk) experienced a decline in the percentage of beneficiaries using portable oxygen systems from baseline to follow-up, dropping from 79.7 percent use to 73.8 percent (Figure 3-1). The comparison county (Brevard) experienced a small gain in the percentage using portable systems, which may indicate a slight upward or stable trend in the absence of the demonstration. The demonstration effect was not significant among all users. Among new oxygen users, the demonstration's negative impact was statistically significant. Based on the regression results, the presence of the demonstration decreases the probability that new Polk County users will use portable oxygen by 26.9 percent. The unadjusted data for new oxygen users indicate that the prevalence of portable systems fell from 76 percent to 54 percent in Polk County, while rising from 58 percent to 62 percent in the comparison site.

Figure 3-1. Oxygen Consumer Survey: Portable Oxygen System Use, All Users



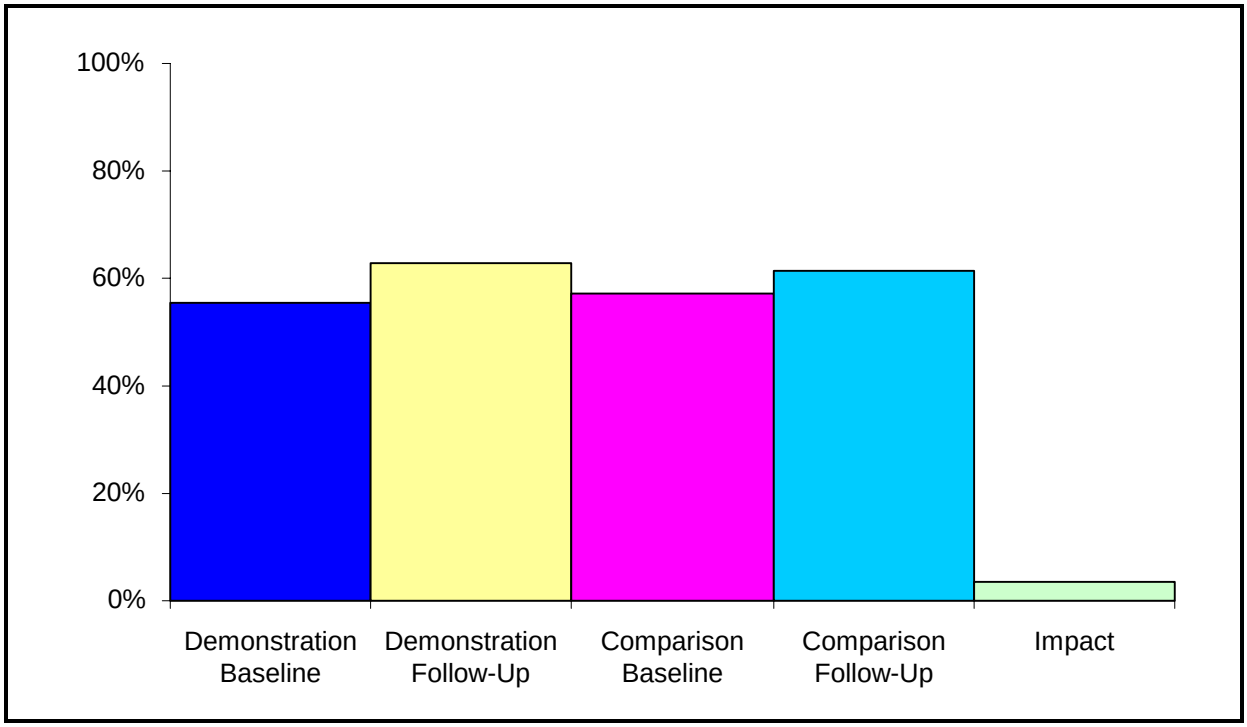
Use of portable oxygen is considered a quality of life issue for beneficiaries who require oxygen therapy. For those with severe conditions, portable oxygen may be necessary for the beneficiary to move about their home, away from the location of their stationary system. Portable oxygen systems also make trips outside the home possible, including visits to the doctor, and therefore may help increase compliance with the beneficiary's oxygen treatment regimen. Access to portable oxygen is influenced by both the level of need (based on a beneficiary's treatment regimen) and the supplier's offering it at the time the oxygen order is placed.

For suppliers, there are significant costs of equipment and staff for delivery of supplies in the provision of portable oxygen to the beneficiary. Newer, lighter tanks are easier for the beneficiary to use but represent a higher cost to suppliers when compared to larger, heavier portable tanks. For each tank left at the beneficiary's home, the supplier must have one in the shop to fill and deliver. Suppliers receive a fixed monthly fee for supplying portable oxygen to a beneficiary, regardless of the number of units or amount of deliveries necessary for the beneficiary. Therefore, limiting access to portable oxygen—including equipment, numbers of tanks delivered, and the frequency of delivery—are viable means for suppliers to influence their costs for providing portable oxygen.

Coverage of portable oxygen requires that a beneficiary meet a set of specific Medicare criteria. It is possible that suppliers under the demonstration have increased their attention to the Medicare criteria that qualify beneficiaries for portable system use, requiring physicians to provide more specific orders and documentation of the beneficiary's need for portable oxygen. Another possibility is that several suppliers selected for the demonstration do not routinely provide portable oxygen to their Medicare patients. A study by the General Accounting Office (U.S. GAO, 1997) found that almost 25 percent of Medicare home oxygen suppliers provided portable oxygen to no more than 10 percent of Medicare beneficiaries they serve. Future claims analysis will attempt to determine whether suppliers selected for the demonstration have a history of providing portable oxygen to a small percentage of their Medicare beneficiaries. Site visits to Polk County did not reveal any additional evidence of decreased access or increased surveillance of coverage criteria, but we will continue to monitor the issue in future visits and claims analysis.

Figure 3-2 displays utilization of oxygen conserving devices among all users in both sites. Each site experienced an increase in the percentage of users with an oxygen conserving device, with the total percentage approaching 60 percent. While not significant among all users, the demonstration had a statistically significant impact on new oxygen users' utilization of oxygen conserving systems. Our analysis indicates that the presence of the demonstration increased the percentage of new oxygen users with conserving devices by 36.5 percentage points. Unadjusted data show that this percentage rose from 46 percent to 74 percent in Polk County from baseline to follow-up, while falling from 63 to 56 percent in Brevard County.

Figure 3-2. Oxygen Consumer Survey: Use of Oxygen Conserving Systems, All Users



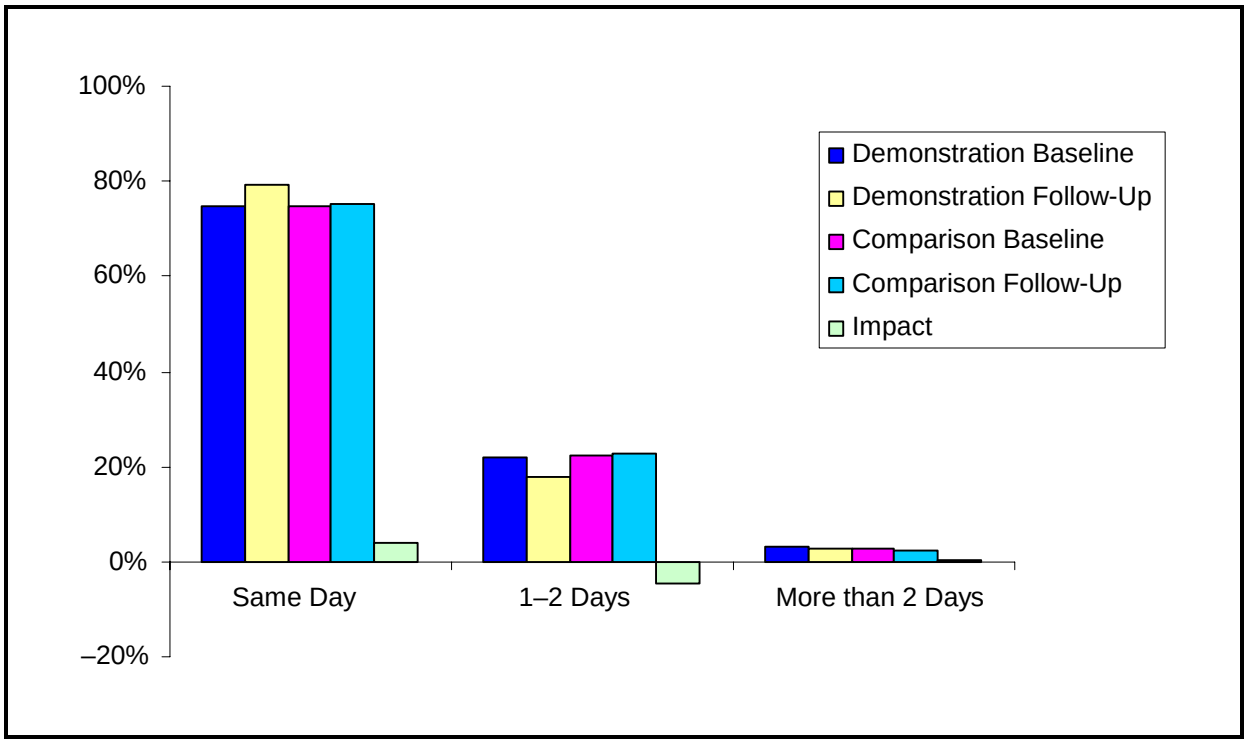
Oxygen conserving systems allow oxygen to flow only when the beneficiary is breathing in, thus conserving the oxygen normally lost when the oxygen flows continuously, whether the beneficiary is breathing in or exhaling. These devices extend the amount of time that a tank of oxygen can be used, thereby decreasing the number of refill tanks required and/or increasing the amount of time between deliveries. This decreases costs for suppliers without affecting the beneficiary's access to oxygen therapy.

Delivery. Beneficiaries are most likely to receive their equipment via home delivery by their oxygen supplier. Approximately 95 percent of Polk County beneficiaries received their equipment in this manner at both baseline and follow-up; Brevard County was closer to 91 percent. A relatively small number receive their equipment via delivery from a home health agency, direct mail from a supplier, or pickup from the supplier. However, two statistically significant demonstration impacts were detected indicating that a larger number of beneficiaries are using home health agencies to order and deliver their oxygen equipment. The marginal effects of the demonstration are an increase of 5.2 points in the percentage of Polk County oxygen users ordering their equipment via home health at follow-up, and an increase of 8.0 points in the percentage receiving their equipment via home health delivery. These increases in home health ordering and delivery may be attributable to paid caregivers (such as home health agencies)

ensuring demonstration compliance by taking responsibility for ordering and delivering their patients' equipment. Although not statistically significant, the shift towards home health appears to be accompanied by declines in doctors' ordering equipment for beneficiaries and in suppliers' mailing supplies to beneficiaries' homes.

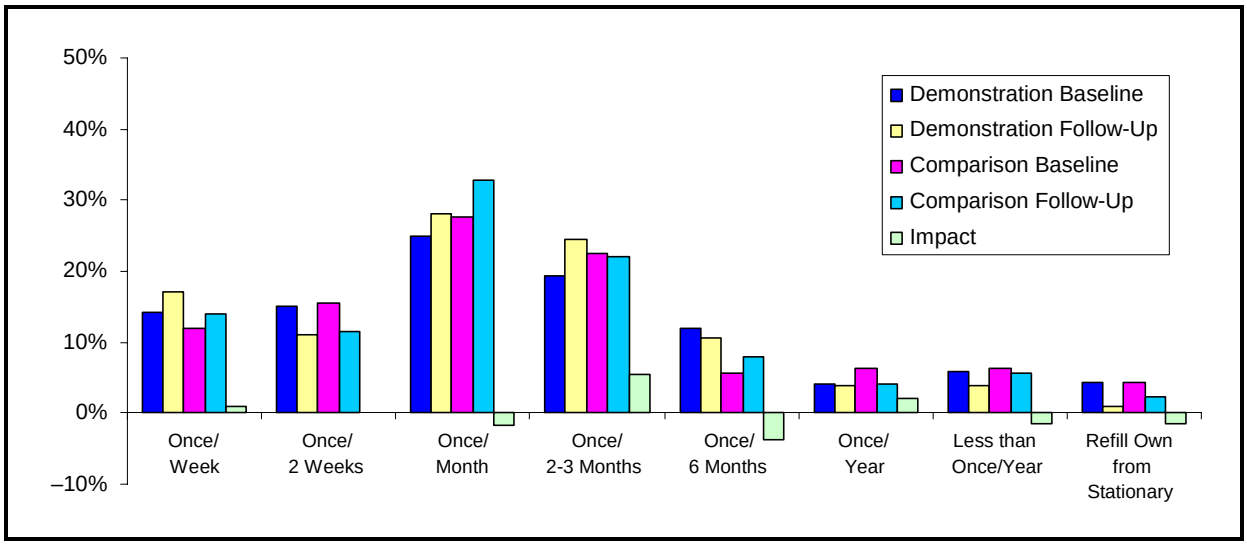
A high percentage of beneficiaries (close to 75 percent in each site and period) reported receiving their oxygen equipment and supplies on the same day they initially ordered them (Figure 3-3). Most other deliveries occur within 1 to 2 days. In Polk County, the percentage receiving their oxygen equipment on the same day as their initial order increased from 75.0 percent to 79.3 percent over the course of the demonstration, while the comparison site experienced little change. The demonstration's impact was not statistically significant.

Figure 3-3. Oxygen Consumer Survey: Length of Time to Get Supplies at Initial Order, All Users



Survey responses do not show any particular interval that is most common for beneficiaries to receive refills for their portable oxygen systems, but most seem to get refills once every 1 to 3 months (Figure 3-4). Respondents from the demonstration and comparison sites generally responded similarly from baseline to follow-up on this measure. The number of refills beneficiaries receive at a time also remained stable from baseline to follow-up in Polk County. Statistically, the demonstration had no significant impact on supplier deliveries with respect to timing or quantity of refills.

Figure 3-4. Oxygen Consumer Survey: Frequency of Getting Refills for Portable Oxygen System, All Users



Access to Training. The types of training received by beneficiaries upon initial receipt of their equipment did not change substantially during the demonstration (Figure 3-5). At least 55 percent of respondents reported receiving each type of training listed on the questionnaire. The highest percentages were for training in how to use the equipment, how to replace parts of the equipment, and how to get service for the equipment. Proportions were lowest for beneficiaries reporting that the supplier provided written instructions and chose a good place for the equipment. Polk County proportions decreased for seven types of training from baseline to follow-up. The demonstration's impact on training was statistically significant only among new users for one type of training. The percentage of new users in Polk County at follow-up who reported receiving training on how to get after-hours service was 16.6 points higher than it would have been in the absence of the demonstration. It should be noted, though, that the statistical significance of this impact is due in part to the large decrease in provision of training on after-hours service in Brevard County. Figure 3-5 shows this decrease in Brevard County among all users. Unadjusted data indicate that the percentage of new oxygen users receiving this instruction increased from 75 to 85 percent in Polk County, but decreased from 81 to 73 percent in Brevard County.

Access to Maintenance and Service. Most beneficiaries reported that their suppliers perform regular maintenance visits every 1 to 3 months to check their oxygen equipment (Figure 3-6). The proportions associated with some intervals did shift moderately, but no consistent pattern of changes in the interval between maintenance visits is apparent. For example, the percentage reporting that their supplier performed a maintenance visit every month fell from

Figure 3-5. Oxygen Consumer Survey: Type of Training Received from Supplier Initially, All Users

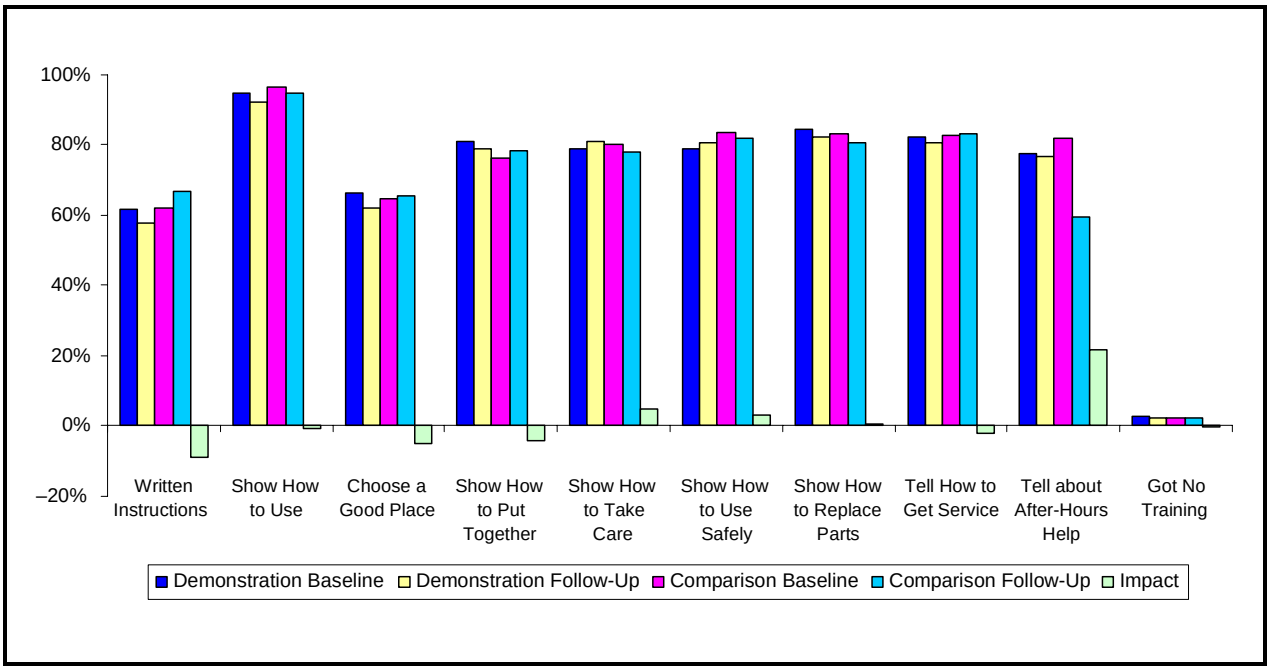
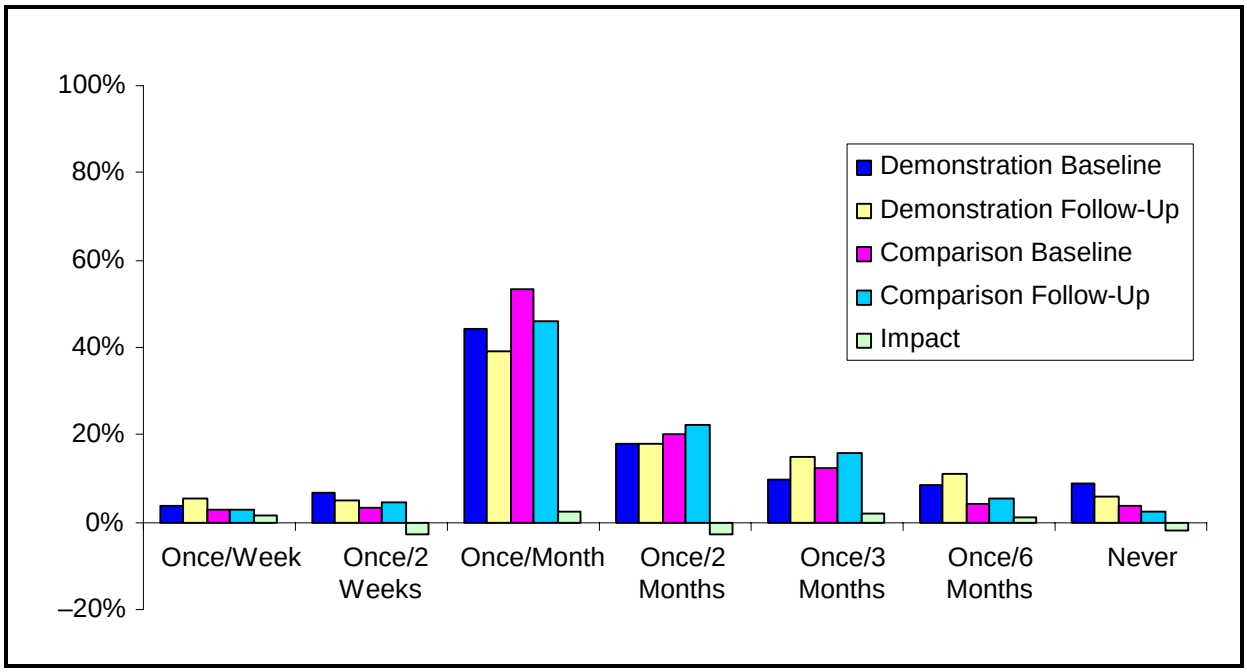


Figure 3-6. Oxygen Consumer Survey: Frequency of Maintenance Visits by Supplier, Last 6 Months, All Users



44.4 percent to 39.3 percent from baseline to follow-up in Polk County. However, Brevard County experienced an even larger decline of 7.3 percentage points in this interval. The demonstration had no statistically significant impact on the frequency of maintenance visits.

The demonstration had a statistically significant effect on increasing the percentage of oxygen users reporting that they had a major change in therapy requiring new equipment in the past 6 months. Marginal effect analysis indicates that the percentage reporting such a change in Polk County at follow-up is 5.8 percentage points higher than it would have been in the absence of the demonstration. This measure was originally included in the survey for possible use as an explanatory variable. We found that the variable had little explanatory power in this role. The observed demonstration impact on the variable is somewhat surprising and therefore worth reporting. While this effect is relatively small and it is not clear how the demonstration could affect therapy, we will continue to monitor this issue in future site visits and attempt to determine why such changes may be occurring.

The beneficiary's last respiratory checkup (physician office visit) is included as an access-related analysis variable because of the relationship between supplier visits to the beneficiary and the frequency of physician office visits. Because staff of oxygen suppliers are often in the home more frequently than beneficiaries routinely go to the physician, supplier staff potentially play an important role in early identification of changes in condition. Therefore, they often urge earlier contact with the physician than the beneficiary would otherwise make. If the demonstration results in a decreased frequency of visits by delivery staff and/or a decrease in clinical evaluations by clinical staff, there may be a delay in beneficiaries' seeking medical attention for clinical changes. This could result in an increase in physician visits and possibly hospitalizations. Approximately 65 percent of Polk County respondents at baseline reported that their last visit to a doctor for a breathing check was between 1 week ago and 3 months ago. At follow-up, beneficiaries were slightly less likely to report a doctor visit in the last week and more likely to have their last visit more than 6 months ago (Figure 3-7). These changes were approximately 4 to 5 percent, as compared to little change in the comparison site. However, none of these differences were statistically significant.

At baseline and follow-up in both sites, over 55 percent of respondents said that they did not have a visit from a supplier's breathing specialist in the past 6 months (Figure 3-8). The demonstration's impact on this measure was not statistically significant. The frequency of breathing specialist visits is an important evaluation issue, as several suppliers we interviewed on Polk County site visits claimed that they generally make such visits every 3 to 6 months. Furthermore, some suppliers worried that the frequency of specialist visits could fall under the

Figure 3-7. Oxygen Consumer Survey: Most Recent Doctor Visit (Respiratory Checkup), All Users

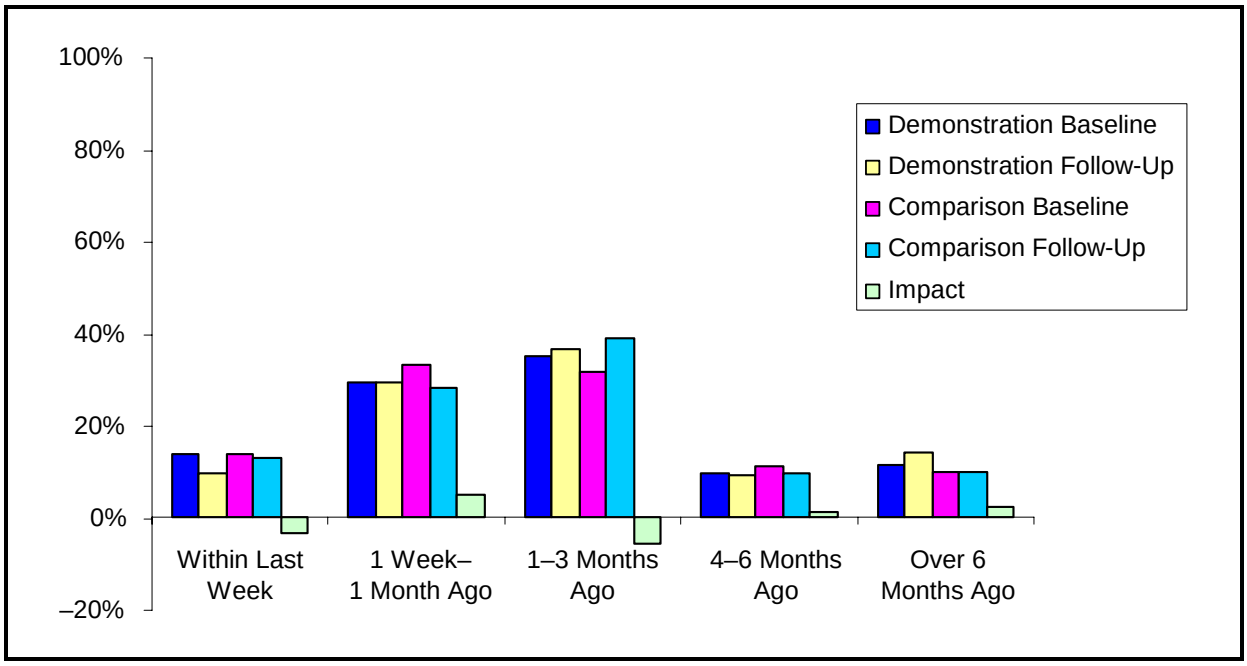
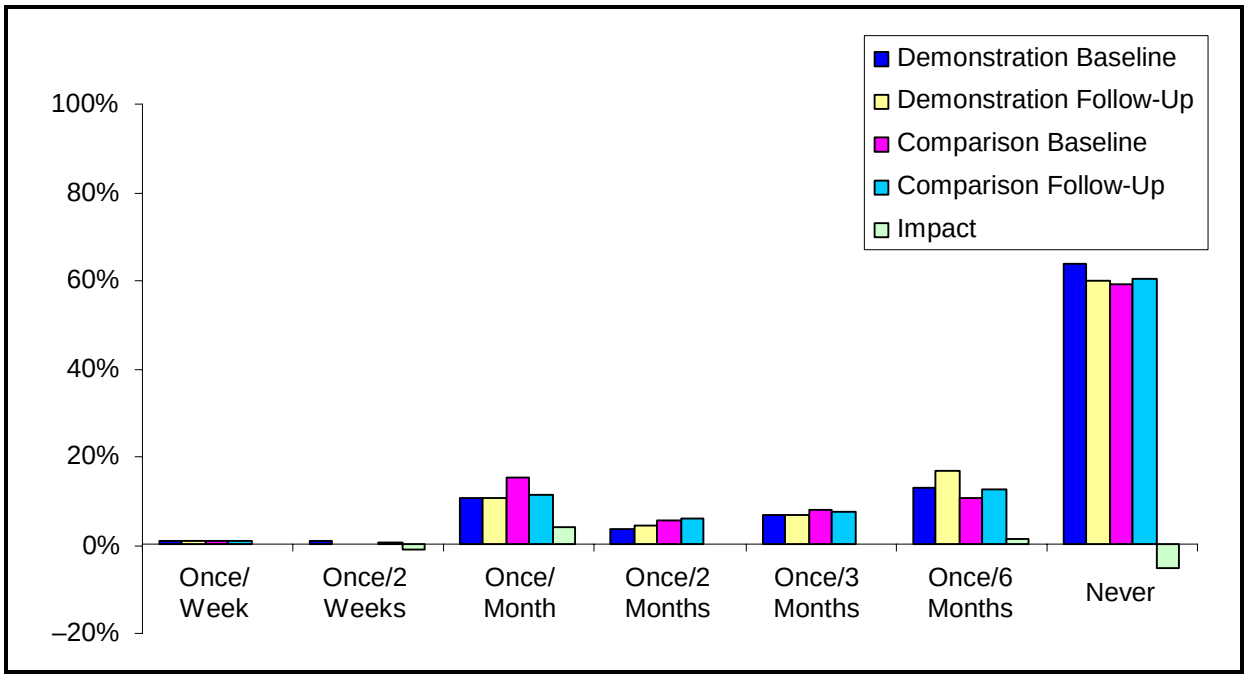


Figure 3-8. Oxygen Consumer Survey: Frequency of Home Checkups by Supplier's Breathing Specialist, Last 6 Months, All Users



demonstration. Our survey data indicate that breathing specialist visits were fairly infrequent before the demonstration began and have not become more or less frequent since then. However, our results may underreport the true frequency of these visits if beneficiaries do not recognize visiting supplier personnel as breathing specialists (i.e., the beneficiary thinks the staff member is making a routine maintenance visit).

Access to Customer Service. A set of survey questions probed beneficiaries regarding the services they receive from their oxygen suppliers. Respondents were queried on issues such as how quickly their supplier responds to service requests and whether they are able to get in touch with their supplier both during the workday and after hours. Proportions remained similar from baseline to follow-up for questions measuring service response times and suppliers' availability for assistance. The demonstration's impact was not statistically significant for any of these measures.

Medical Equipment Consumer Survey

The Medical Equipment Consumer Survey revealed few changes concerning access-related issues. In Table 3-4, we present the access variables by category, noting those for which the demonstration's impact is statistically significant. We detect only one significant demonstration impact when analyzing all users together; we detect 5 statistically significant demonstration impacts when subsetting responses into individual product categories. There are two significant demonstration impacts on access variables when analyzing responses from all product categories together among new users only. Below, we present the major variables of interest.

Delivery. Delivery times (the time from initial order to delivery) in Polk County increased slightly over the course of the demonstration, but the demonstration's impact was not statistically significant (Figure 3-9). Most deliveries occur within 2 days after the order in both sites. Both sites also show declines of similar magnitude over the course of the demonstration in the proportion of deliveries that occur on the same day as the order.

The percentage of Polk County respondents whose supplier is less than 5 miles from their home dropped from 28.8 percent at baseline to 22.7 percent at follow-up, while the percentage whose supplier is over 20 miles away rose from 16.7 percent to 23.9 percent (Figure 3-10). This increase in distance is an expected result because of the smaller number of Medicare-approved suppliers under the demonstration. The demonstration's impact on this measure was not statistically significant.

The demonstration had a statistically significant impact, both among all users and among the subset of hospital bed users, that indicates a decline in the percentage of beneficiaries ordering their equipment for themselves. Our analysis indicates that the percentage of all equipment users self-ordering their equipment is 12.2 points lower than it would be in the absence of the

Table 3-4. Demonstration Impact on Access Variables—Medical Equipment Consumer Survey

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Delivery	Initial equipment delivery time	No	No		
	Orderer of equipment				
	Beneficiary	Yes[a]	No	Decrease in percent self-ordering	
	Caregiver	No	No		
	Home health agency (HHA)	No	No		
	Doctor	No	No		
	Method of equipment receipt				
	Delivered to home by supplier	No	Yes		Decrease in percent with supplier delivering
	Mailed to home by supplier	No	No		
	Pick up from supplier	No	No		
	Delivered by home health (HHA)	No	No		
	Distance to supplier	No	No		
	Time and energy used obtaining DMEPOS	No	No		
	Receipt of excess supplies, last 6 months	No	No		
	Receipt of too few supplies, last 6 months	No	No		
	Use of multiple suppliers	No	No		
Access to Training	Types of training given by supplier				
	Written instructions	No	No		
	Show how to use	No	No		
	Choose a good place	No	No		
	Show how to put together	No	No		
	Show how to take care of	Yes[b]	No	Decrease in percent receiving training	
	Show how to use safely	No	No		
	Show how to replace parts	No	No		
	Tell how to get service	No	No		
	Tell how to get service after-hours	No	No		
	Did not receive any training	Yes[c]	No	Increase in percent with no training	

(continued)

Table 3-4. Demonstration Impact on Access Variables—Medical Equipment Consumer Survey (continued)

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Access to Maintenance and Service	Major change in therapy requiring new equipment, last 6 months	No	No		
	Frequency of maintenance visits	No	No		
	Maintenance visit in last 30 days	No	Yes		Decrease in percent with visit
Access to Customer Service	Receipt of supplier assistance with insurance	No	No		
	Number of face-to-face contacts with supplier, last 6 months	Yes[b]	No	Decrease in number of contacts	
	Ability to contact supplier by telephone	No	No		
	Supplier service call response time	Yes[b]	No	Quicker response times	

[a]Statistically significant among all users and among the subset of hospital bed equipment users.

[b]Statistically significant only among the subset of surgical dressings users.

[c]Statistically significant only among the subset of urological supplies users.

demonstration. Among hospital bed users only, the marginal effect is a 15.8 percentage point decline. Unadjusted data indicate that more medical equipment users are having their equipment ordered for them by caregivers or their doctors, though these effects are not statistically significant. This impact may be generated by referral agents, caregivers, and/or doctors taking more responsibility for ordering beneficiaries' equipment to ensure compliance with demonstration rules. We have seen evidence of such adaptation by referral agents during site visit interviews in San Antonio (which we describe later in this section), and it is possible that agents in Polk County may be behaving similarly. We will investigate this in future Polk County site visits.

The proportion of Polk County beneficiaries who received their supplies by delivery from their supplier dropped by 5 percentage points, and the proportion who received their supplies by mail increased by 5 percentage points (Figure 3-11). However, the demonstration's impact was not statistically significant for this measure among all equipment users. Among new users, the demonstration had a statistically significant impact on lowering the percentage of beneficiaries who receive their equipment via home delivery by their supplier. The marginal effect of the demonstration was a decrease of 35.0 points in the percentage of new medical equipment users receiving their equipment via home delivery by their supplier. Unadjusted data show that home

Figure 3-9. Medical Equipment Consumer Survey: Length of Time to Get Supplies at Initial Order, All Users

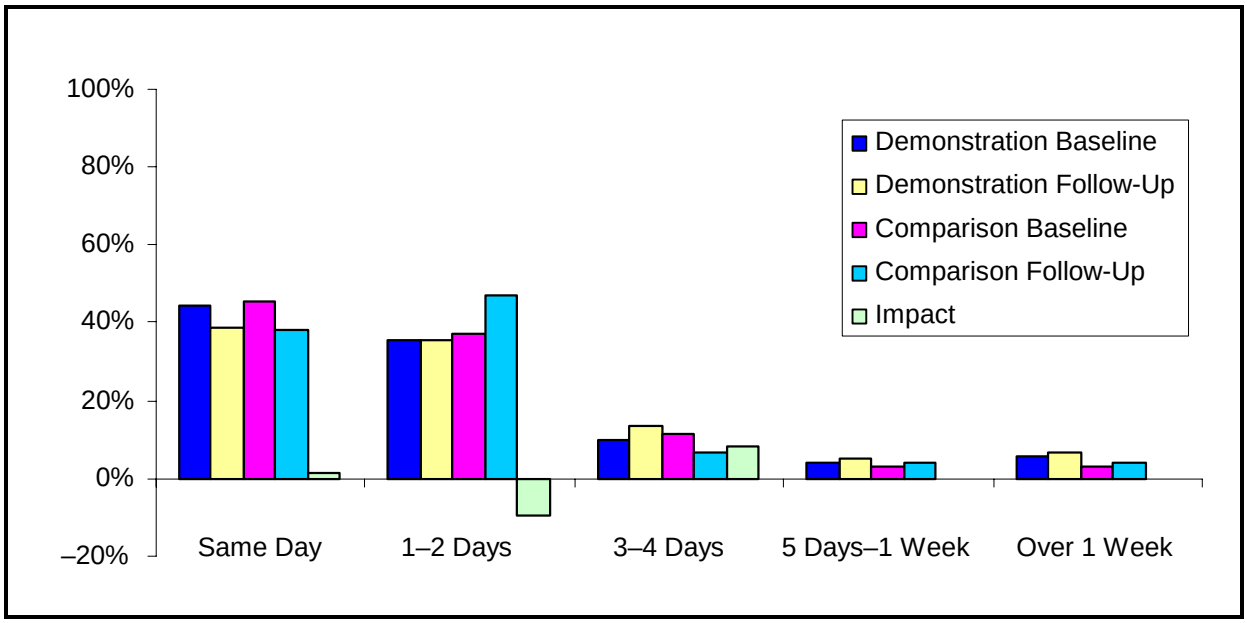


Figure 3-10. Medical Equipment Consumer Survey: Distance to Supplier from Home, All Users

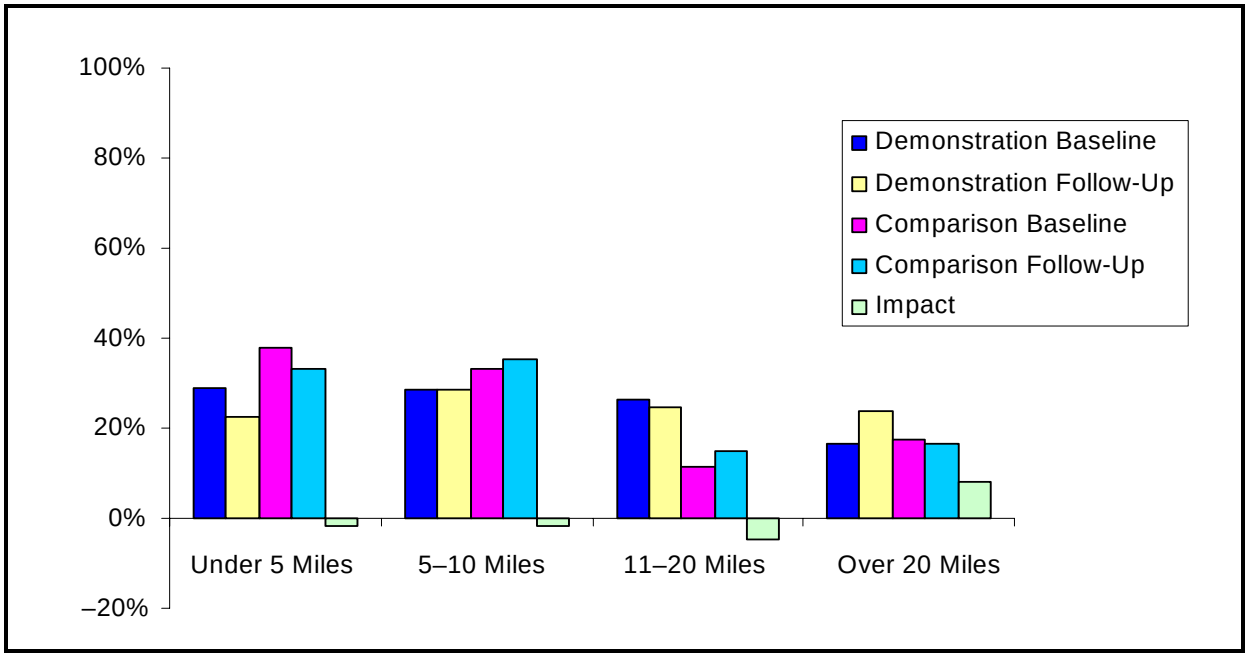
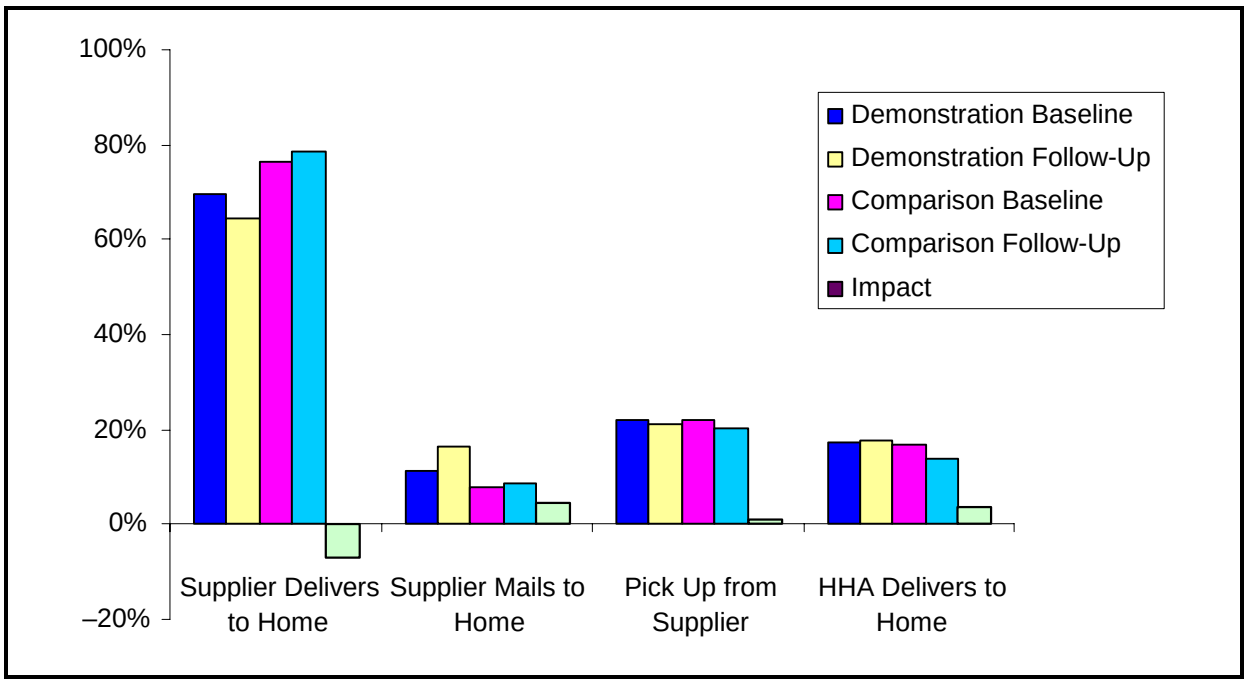


Figure 3-11. Medical Equipment Consumer Survey: Method of Delivery, All Users



delivery by supplier fell from 76 to 66 percent among new users in Polk County, and rose from 71 to 89 percent in Brevard County. Our analysis did not detect a statistically significant substitution toward other methods of receiving equipment; however, unadjusted data for individual product categories provide possible–albeit not statistically significant–insight into the decline in home delivery to new equipment users. Generally, users of surgical dressings and urological supplies shifted from supplier delivery to receiving their supplies by mail. The increase in mail receipt was 6.4 percentage points among urological supplies users and 12.0 percentage points among users of surgical dressings. Users of hospital bed equipment (the largest of the four product categories) shifted from supplier delivery to picking up their equipment from the supplier. Some of the demonstration suppliers for urological supplies and surgical dressings were located outside of the demonstration area, providing a possible explanation for the increase in patients receiving these supplies by mail. It is less clear why hospital bed users became more likely to pick up their equipment and supplies.

Access to Training. The proportion of Polk County respondents who reported receiving training on how to use their medical equipment and supplies increased from baseline to follow-up. Brevard County shows higher levels of training than Polk County in both the pre- and post-demonstration periods. The increases in Polk County do not bring proportions up to the levels seen in the comparison site. The proportion of respondents who received no training on using

their equipment decreased slightly in each site, but the percentage of Polk County respondents at follow-up who received no training (25.9 percent) is still higher than that in Brevard County (18.8 percent).

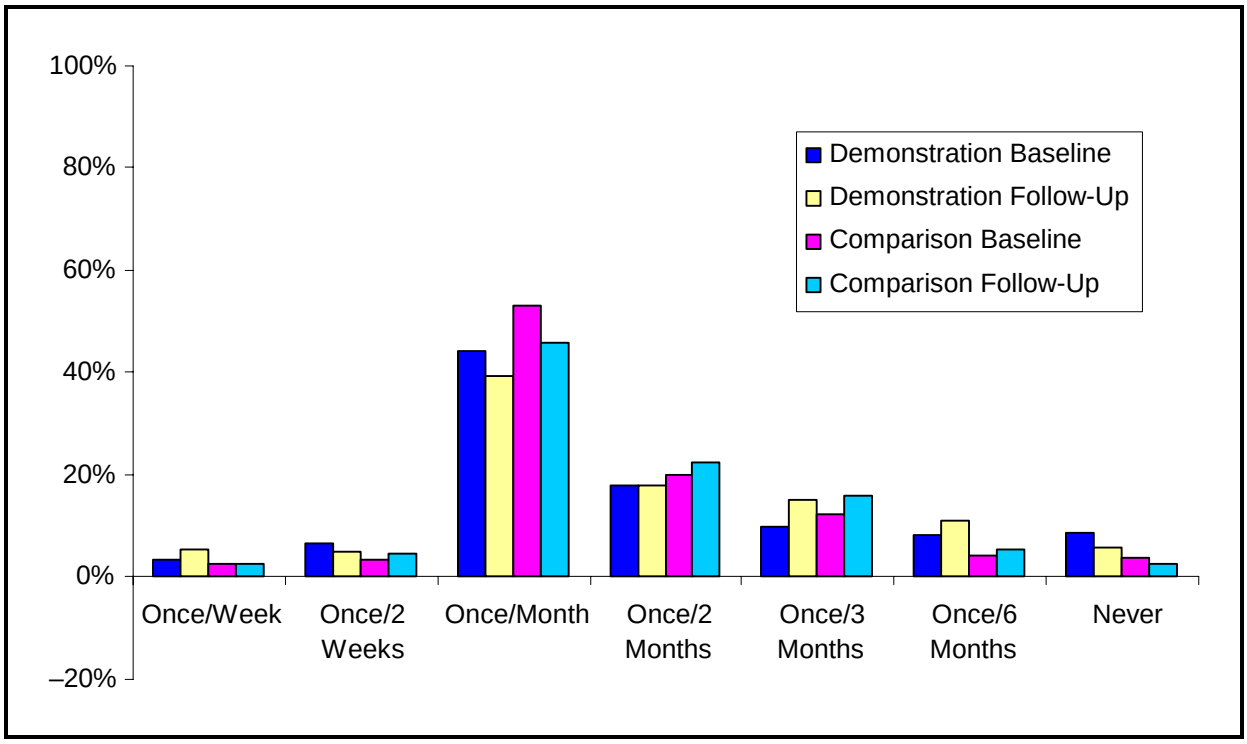
The only statistically significant demonstration impacts on training were detected among product-specific subsets of equipment users. Among surgical dressings users, the demonstration had a significant impact on lowering the percentage of users receiving training on how to take care of their supplies. The marginal effect of the demonstration was a 27.8 percentage point decline in the percentage of surgical dressings users receiving such training. Unadjusted data show that the percentage of surgical dressings users receiving this training fell from 30 to 17 percent in Polk County from baseline to follow-up, while rising from 26 to 36 percent in Brevard County.

Among users of urological supplies, the impact of the demonstration increased the percentage receiving no training on their supplies. The marginal effect of the demonstration was an increase of 23.0 points in the percentage of urologicals users receiving no training. Here, unadjusted data show that the percentage of urologicals users receiving no training rose from 42 to 52 percent in Polk County while falling from 52 to 39 percent in Brevard County.

It is possible that this decline in the provision of training to users of urological supplies may result from the reported inexperience of some demonstration suppliers in this product category. As described in the First-Year Evaluation Report, some demonstration suppliers were relatively new to the urological supplies category. Several reported that they bid lower than cost in the urological supplies category because of this inexperience. The cost pressures generated by this underbidding, combined with inexperience, may have contributed to a decline in training for urological supplies users. Another explanation is a possible shift toward mail delivery for users of urological supplies. Although the demonstration's impact was not statistically significant, unadjusted data indicate that the number of urologicals users who received their supplies by mail rose by 6.4 percentage points in Polk; all other listed methods of equipment receipt declined. Because three of the five providers of urological supplies in Round One were located outside of Polk County, a shift to mailing (rather than delivering) supplies might entail that supplier staff were not available in person to give training to beneficiaries when they first received their urological supplies.

Access to Maintenance and Service. Two survey questions investigate changes in the frequency of routine maintenance visits during the demonstration. The first asks beneficiaries to indicate the frequency of the visits they receive on a continuous scale. Figure 3-12 displays unadjusted responses to this question for all medical equipment users. Our analysis detected no statistically significant demonstration impacts on this variable, either among all equipment users, new users, or product-specific subsets of users.

Figure 3-12. Medical Equipment Consumer Survey: Frequency of Maintenance Visits by Supplier, Last 6 Months, All Users



The second question asks beneficiaries to indicate if their supplier made a routine maintenance visit to their home in the last 30 days. No statistically significant demonstration impact was detected among all medical equipment users. Among new users only, the demonstration had a statistically significant impact, and the marginal effect of the demonstration was a decline of 12.2 points in the percentage with such a visit. Declines appear most common for new hospital bed users and new surgical dressings users, though the changes were not statistically significant for either of these product categories alone.

Access to Customer Service. As with the Oxygen Consumer Survey, the set of survey questions probing access to customer service for medical equipment users showed little change from baseline to follow-up. Polk County showed some improvements in suppliers' provision of after-hours assistance and help with insurance claims. Supplier response times to service calls remained stable. The demonstration's impact on these measures among all users was not statistically significant. However, the demonstration's impact was statistically significant among surgical dressings users for two of these measures. The demonstration decreased the number of contacts that surgical dressings users had with their suppliers and improved suppliers' response times to their service calls. The marginal effect of the demonstration was a decline of 1.9 in the

mean number of contacts with suppliers. While this decrease may be either a beneficial or a detrimental outcome depending on the nature of these contacts, the improvement in response times is certainly beneficial. Marginal effect analysis indicates that the demonstration improved average response times (as reported by beneficiaries) by approximately 2 days in Polk County at follow-up.

3.2 Results of the Bidding: Service Areas

3.2.1 Polk County—Round 1

As part of their bids, 12 of the 16 demonstration suppliers agreed to provide service to every zip code in Polk County. All of the demonstration suppliers who provided surgical dressings and urological supplies—the two product categories with the fewest suppliers in total—served the entire county, as did 9 of the 13 oxygen suppliers. The large number of suppliers supplying each zip code helped to maintain beneficiary access.

3.2.2 Polk County—Round 2

During Round 2 bidding in Polk County, CMS stipulated that all winning suppliers would be required to serve all of Polk County during the demonstration. Therefore, all 16 winning suppliers are providing service to the entirety of Polk County. This should maintain, if not improve, access to DMEPOS services for Polk County beneficiaries.

3.2.3 San Antonio

Forty-one out of 51 demonstration suppliers (80 percent) agreed to provide service to all three counties in the San Antonio demonstration area. All 8 of the demonstration orthotics providers supply the entire demonstration area. Twenty-five of 32 oxygen equipment suppliers, 20 of 24 hospital bed and accessory suppliers, 19 of 23 wheelchair and accessory suppliers, and 7 of 11 nebulizer drug suppliers agreed to provide to the entire demonstration area. Again, the large number of suppliers providing service to all areas of the demonstration suggests that beneficiary access will remain strong.

3.3 Site Visit Results

In this section, we describe findings from site visits conducted in the past year related to access changes under the demonstration. Each of these visits took place in the second demonstration site (San Antonio, Texas). Site visits to Polk County, Florida, were discussed in the First-Year Annual Evaluation Report. We begin by discussing our methodology for conducting site visits.

3.3.1 Site Visit Methodology

Our planning for each site visit began by contacting a set of key informants, such as DMEPOS suppliers, referral agents who work with Medicare beneficiaries using DMEPOS, and beneficiary groups. Our contacts were compiled from directories of local DMEPOS suppliers and civic groups, as well as from lists provided by the Demonstration Ombudsman for each site. We spoke briefly with each contact to explain the purpose of our interviews and review confidentiality. For those who agreed to an interview, we set a time and place for them to meet with (usually) two members of the evaluation team.

Our interviews were structured around a set of protocols containing open-ended questions that covered topic areas central to this evaluation but also enabled key informants to introduce topics they considered relevant to the demonstration. We developed separate protocols for beneficiary groups, referral agents, and suppliers, and revised them before each visit to tailor our questions for relevant and emerging issues. Interviews usually lasted approximately 1 hour.

We interviewed both demonstration and nondemonstration suppliers. In selecting contacts, we attempted to draw a diverse group of interviewees located in inner San Antonio, around its outskirts, and in the surrounding counties of Comal and Guadalupe. Some suppliers we interviewed provide all the demonstration categories of products, while others provide only one type of DMEPOS. Some are branch outlets of national DMEPOS chains with over $2 million in annual revenue; others are locally owned and operated with relatively small amounts of business.

The number of contacts by type that we interviewed on site visits for the San Antonio demonstration is shown in Table 3-5. The first site visit occurred after demonstration suppliers were selected and before demonstration prices took effect. The visit focused on education efforts, bidding strategies, and preparations for implementation. The second site visit occurred 2½ months after the demonstration prices took effect and focused on transitional issues. The third visit took place 7 months after the demonstration prices took effect, when stakeholders had more experience with the demonstration. Below, we describe our access-related findings from interviews conducted during the three San Antonio site visits.

3.3.2 Site Visit Findings

In general, referral agents and beneficiary groups reported few cases of systematic problems with access to DMEPOS products or care affecting beneficiaries. Interviewees reported receiving few calls or questions from beneficiaries about the demonstration, and the complaints or problems they experienced were generally transitional in nature.

To a great degree, the demonstration's impact on beneficiaries is mitigated by the presence of referral agents who are responsible for coordinating the acquisition of new DMEPOS equipment and supplies for beneficiaries. Case managers and hospital discharge planners adjusted their

Table 3-5. Key Informants Interviewed on San Antonio Site Visits, December 2000 through September 2001

Site Visit	Referral Agents	Beneficiary Groups	Suppliers	
			Demonstration	Nondemonstration
Site Visit 1 December 13–15, 2000	0	0	6	4
Site Visit 2 April 17–19, 2001	5	4	2	2
Site Visit 3 August 28–30, 2001	5	0	5	3
Total	**10**	**4**	**13**	**9**

procedures to assure that the beneficiaries they serve will comply with demonstration policies while receiving needed services. This allows the beneficiaries to be served without needing to know a lot about the demonstration. Several referral agents and suppliers we interviewed believed that most beneficiaries have only marginal knowledge of the demonstration, if any.

Case managers and discharge planners generally use familiar suppliers when coordinating beneficiaries' DMEPOS suppliers. Most referral agents reported that before the demonstration they commonly referred beneficiaries to a set of suppliers with whom they had experience and knew to supply good quality products and services. Some of these suppliers are not included in the demonstration, resulting in the need to become familiar with several new companies.

Referral agents' two major concerns regarding any supplier are the quality of services and the ability to do "one-stop shopping." They generally associate quality of services with factors such as timeliness of product delivery, minimal or coordinated paperwork, knowledge about the product, and quality of the product provided. "One-stop shopping" refers to the fact that since many patients use several types of DMEPOS, agents are particularly interested in finding companies that provide as many of the demonstration products as possible and offer a wide variety of other DMEPOS. When one supplier can provide products for all of a patient's needs, the beneficiary does not incur extra time and expense associated with using multiple suppliers.

When a referral agent finds a demonstration supplier who meets their standards, then the agent begins referring patients to that supplier. In this way, referral agents are screening suppliers and may be preventing beneficiaries from using suppliers who provide lower quality service or products.

Still, beneficiaries may experience indirect effects from the demonstration if referral agents find it more difficult to coordinate their DMEPOS care under the new set of rules. Most case managers interviewed said that the few problems they experienced were transitional in nature, associated with the period of adjustment to the demonstration when they were learning about new

suppliers. Several referral agents referred to their early demonstration experience as part of a learning curve that would allow their difficulties to diminish as they became more familiar with new suppliers' product lines and standard procedures.

The most urgent problems occurring early in the demonstration were in acute care settings where discharge must be coordinated quickly. Case managers in these settings were not completely familiar with some of the new demonstration suppliers, especially with regard to how quickly they could deliver necessary equipment. One incident required a beneficiary to wait in a hospital's holding area until the oxygen equipment they needed arrived. In acute care settings such as this, delays in discharge can result when products are not provided on time. This may cause patients to spend extra days in the hospital, possibly backing up admissions and increasing costs to both the hospital and the beneficiary. Hospital case managers expressed some frustration, stating that they previously had arrangements with suppliers who provided timely and high quality service and now needed to find others who were in the demonstration. However, referral agents generally believed that this type of incident would be rare once they became familiar with all the demonstration suppliers.

Little evidence was seen that would indicate systematic and persistent access problems associated with the demonstration. However, some referral agents are concerned that beneficiaries may react negatively to their inability to use familiar suppliers or ones located close to their home under the demonstration. One supplier, located outside San Antonio in a city with a smaller number of DMEPOS providers, reported that some beneficiaries expressed such disappointment.

Referral agents also expressed concerns about an increase in the cost of items not covered by Medicare, which they said began before the demonstration. Because of the appeal of one-stop shopping described above, referral agents prefer to use one demonstration supplier for both covered and noncovered products. However, a demonstration supplier may not offer the lowest cost for the noncovered items. Referral agents believed that using the demonstration supplier for all of a patient's needs may increase the out-of-pocket expenses for the beneficiary. A beneficiary might choose to use more than one supplier if they feel that their cost savings on noncovered items would be greater than the increased costs (of time and inconvenience) of using multiple suppliers. If an increase in beneficiary expenses is becoming problematic, we may expect to see a greater percentage of beneficiaries using multiple suppliers to get all the medical equipment (both covered and noncovered items) they need. We will continue to monitor this issue as the demonstration progresses, using the San Antonio beneficiary surveys as well as site visits, in order to gauge the extent to which beneficiaries may be experiencing this situation.

3.4 Summary and Next Steps

Our findings show that, overall, beneficiary access to DMEPOS products and services during the demonstration has remained at very high levels. Survey data from the Florida demonstration as well as recent San Antonio site visits do not indicate widespread, persistent problems with access.

Survey analyses identified some beneficial impacts of the demonstration. Data indicate that a greater percentage of oxygen users now have compressed oxygen tanks as a backup to their oxygen concentrators. More new oxygen users are using oxygen conserving devices and receiving training on how to get assistance from their supplier after business hours. Beneficiaries who use surgical dressings have reported quicker response times when they make service calls to their supplier.

However, we identified some areas for concern that we will continue to monitor. Survey data indicate a decline in the provision of portable oxygen to new users. This development will require additional investigation in claims analysis (which will allow verification of the extent of any decline) and in future site visit interviews with suppliers and referral agents. This pattern could be the result of suppliers increasing their attention to the criteria for Medicare coverage or suppliers' failure to offer beneficiaries the option of portable oxygen systems.

Survey analyses also detected statistically significant declines in training for surgical dressings users (a decline in training on how to take care of supplies) and urological supplies users (an increase in the percentage receiving no training on their supplies). Other areas for concern include a possible shift away from suppliers making home deliveries and an indication of less frequent routine maintenance visits by suppliers to new medical equipment users. Each of these effects may be associated with the participation of out-of-town suppliers in Round 1 of the demonstration. They may also be related to suppliers' downgrading their services in response to cost pressures under the demonstration fee schedule. Upcoming site visits to Polk County, including interviews with referral agents and beneficiaries, will investigate these developments.

We will continue to monitor the progress of the Florida demonstration and document any changes that we observe. In the coming year, we will also be conducting beneficiary surveys and a supplier survey in San Antonio. These will provide further evidence of the impact of competitive bidding on beneficiary access to DMEPOS products and services.

SECTION 4
QUALITY AND PRODUCT SELECTION

One of the major concerns about competitive bidding is that it may encourage suppliers to provide lower quality products and services in an effort to cut costs and restore profit margins reduced by the bidding process. The DMEPOS competitive bidding demonstration design includes a number of features intended to maintain and promote quality. First, CMS ensured that all bidders underwent an initial quality evaluation, with more strenuous evaluation for potential winners. Second, multiple winners were selected in each product category to maintain competition. Third, CMS designated quality and service standards that are monitored throughout the demonstration. Finally, a Demonstration Ombudsman was appointed in each site to respond to complaints and concerns related to quality.

Lower quality may be manifested by suppliers' offering lower quality products, postponing preventive maintenance, delaying service calls, limiting product selection, reducing the level of training or expertise of staff, and/or reducing inventory to the point that time needed to fill orders is increased. Consequently, our approach has been to evaluate the effect of the demonstration on the quality of products and services by obtaining information directly from Medicare beneficiaries, beneficiary organizations, referral agents, and suppliers. To do so, we rely on beneficiary surveys and site visits to each demonstration site.

Section 4.1 discusses findings from beneficiary surveys in the Polk County, Florida demonstration. Section 4.2 describes ongoing quality issues related specifically to urological supplies in the Polk County demonstration. Section 4.3 details findings from site visits conducted in the past year in San Antonio, Texas. Section 4.4 describes the effects of selecting multiple winners for the demonstrations, and Section 4.5 describes our plans for analyzing product selection under the demonstration. Section 4.6 concludes with a summary of results and a discussion of future analyses. The primary results include the following:

- Users of oxygen and other medical equipment in Polk County are highly satisfied with their experiences with their DMEPOS suppliers. Survey data show that overall satisfaction ratings were high before the demonstration and remain at that level 1 year after its inception.

- Survey data indicate that quality of DMEPOS products and services is high both before and after the demonstration. There are few statistically significant demonstration impacts on quality-related survey measures. This suggests that the demonstration has had little overall impact on quality thus far.

- We observe a statistically significant relationship between the demonstration and a decrease in the number of major equipment problems reported by new oxygen users. We also detect statistically significant improvements in other medical equipment users' ratings of their equipment's reliability. We will monitor and further evaluate these variables as the demonstration continues.

- In site visits, some San Antonio referral agents reported problems with demonstration suppliers of wheelchairs. It appears that referral agents adapted their methods for coordinating care in response to such problems. By familiarizing themselves and following up with new suppliers who are eligible to provide demonstration products, agents are able to ensure that the patients they serve continue to receive high quality DMEPOS products and services.

4.1 Polk County Beneficiary Survey Results

In this section, we discuss the quality-related findings from the baseline and follow-up beneficiary surveys in Polk and Brevard Counties, Florida. Refer to Section 3.1.1 for our survey methodology. Our analysis methodology is identical to that described in Section 3.1.2; however, the dependent variables are responses to the surveys' quality-related questions. We again conduct separate analyses for oxygen users and for users of other medical equipment and supplies. We also perform separate analyses on the subset of survey responses provided by new users (see Section 3.1.2 for a definition of new users). In addition, we include an ordered logistic regression analysis on overall satisfaction ratings. This specification takes into account the ordinal nature of the satisfaction variable.

4.1.1 Oxygen Consumer Survey Findings

Our data indicate high levels of satisfaction with DMEPOS services in Polk and Brevard Counties both before and after the demonstration. Many of the generalized quality measures have means that indicate that beneficiaries are satisfied with the quality of products and services they are receiving from their DMEPOS suppliers. In the sections below, we present the variables that had the greatest amount of proportional change from baseline to follow-up in Polk and Brevard Counties. When interpreting the results, it is important to recognize that both pre- and post-demonstration measures of quality indicate very high levels of service and satisfaction.

As in the previous chapter, the following figures present unadjusted results (the regression results that are adjusted for other characteristics are quite similar). In the text, we identify the measures where the demonstration's impact is statistically significant when adjusting for patient characteristics, either among all survey respondents or among only the subset of new users.

In Table 4-1, we present the quality variables by category, noting those for which the demonstration's impact is statistically significant. The demonstration's impact is significant for none of the 23 measures for all oxygen users and for only 2 of the 23 measures for new users. In our

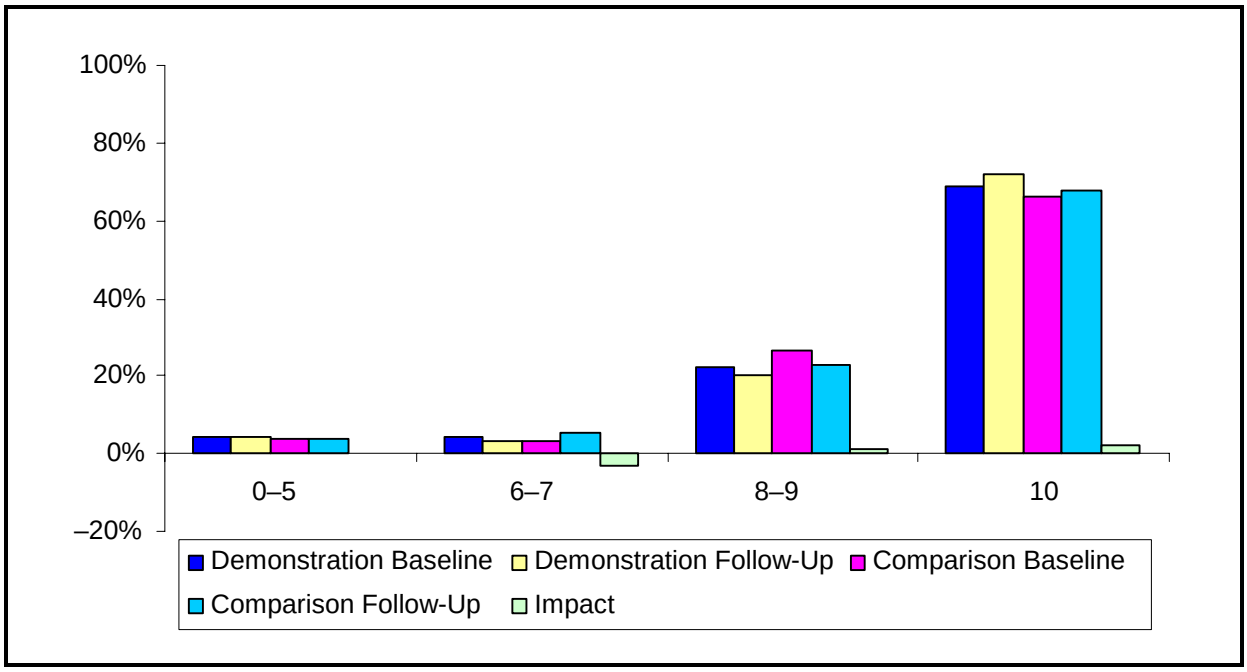
Table 4-1. Demonstration Impact on Quality Variables—Oxygen Consumer Survey

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Overall Satisfaction	Overall satisfaction with supplier	No	No		
	Willingness to recommend supplier	No	No		
Quality of Equipment and Supplies	Equipment reliability rating	No	No		
	Number of major equipment problems, last 6 months	No	Yes		Decline in number of major problems
	Equipment replaced due to malfunction, last 6 months	No	No		
Quality of Training	Rating of training given by supplier	No	No		
	Comfort level with oxygen conserving device	No	No		
	Comfort level, controlling oxygen flow	No	No		
	Comfort level with oxygen system humidifier	No	No		
	Comfort level, attaching regulators	No	No		
	Comfort level, cleaning oxygen system filter	No	No		
Quality of Customer Service	Frequency of customer service courtesy	No	No		
	Frequency of customer service good explanation	No	Yes		Beneficiaries more frequently receive good explanation
	Frequency of customer service thoroughness	No	No		
	Contacted supplier with problem, last 6 months	No	No		
	Problem resolved satisfactorily	No	No		
	After-hours call to supplier, last 6 months	No	No		
	Frequency of after-hours customer service thoroughness	No	No		
	Type of assistance with insurance				
	Explain what insurance will pay for	No	No		
	Offer to bill Medicare/other insurance	No	No		
	Tell how to get information on insurance	No	No		
	Got documentation from physician for you	No	No		
	Did not receive any assistance	No	No		

analyses of oxygen users who responded to the survey in both the pre- and post-demonstration periods, the demonstration's impact was never statistically significant. Below we describe our major findings for individual quality measures in the Oxygen Consumer Survey.

Overall Satisfaction. The satisfaction variable provides a summary measure of beneficiaries' perceptions about access to and quality of service provided by their DMEPOS supplier. Satisfaction ratings for all oxygen survey respondents are shown in Figure 4-1. We analyzed satisfaction ratings based on a survey question that asked respondents to rate their overall experience with their primary supplier on a scale of 1 to 10, with 10 being the best possible rating. In presenting the data graphically, we show the proportion of survey responses falling in each of four ranges of satisfaction ratings: 0 to 5, 6 to 7, 8 to 9, and 10.

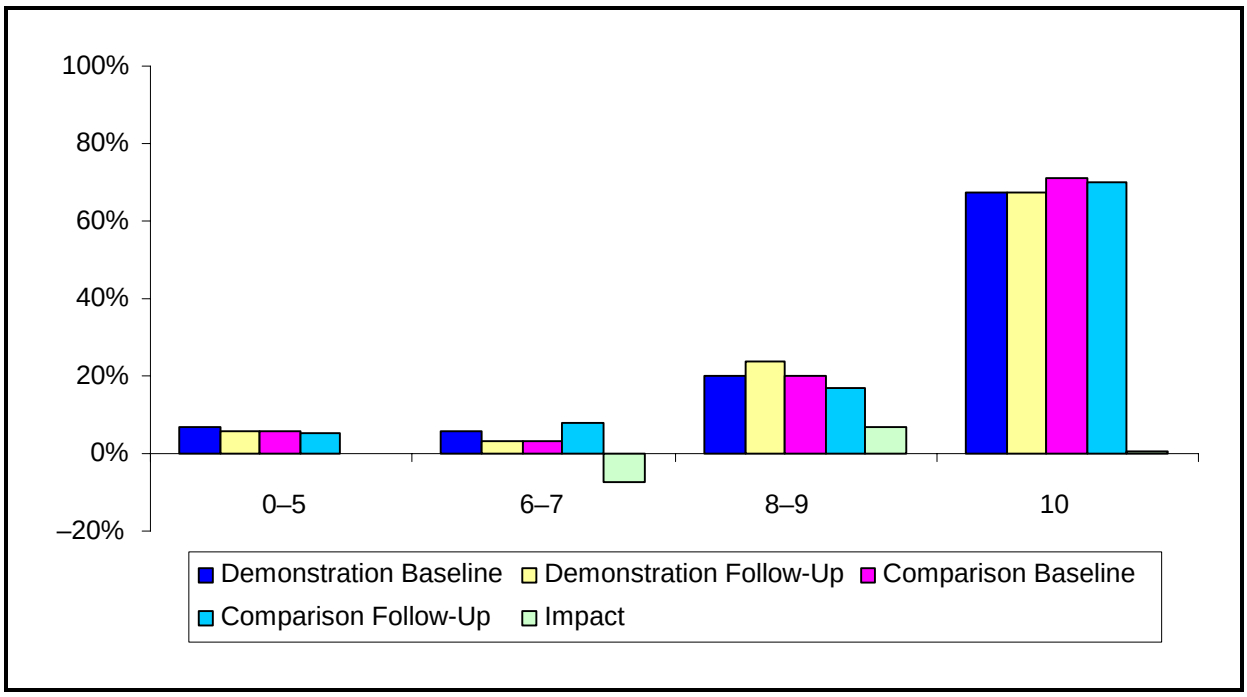
Figure 4-1. Oxygen Consumer Survey: Overall Satisfaction Ratings, All Users



The unadjusted data suggest slight increases in the highest rating, and the increase is slightly larger in Polk County, suggesting a small positive impact of the demonstration. Among Polk County oxygen users, the mean of the overall satisfaction variable remained almost constant from baseline to follow-up, moving from 9.26 to 9.29. The corresponding change in Brevard County is from 9.27 to 9.28. The demonstration's impact on satisfaction ratings of all oxygen users is not statistically significant.

Oxygen supplier satisfaction ratings for new oxygen users only are shown in Figure 4-2. Satisfaction levels are stable from baseline to follow-up in both Polk and Brevard Counties.

Figure 4-2. Oxygen Consumer Survey: Satisfaction Ratings—New Users Only



Because beneficiaries who were using oxygen prior to the start of the demonstration were allowed to continue with their existing supplier even if the supplier was part of the demonstration, new users may be most affected by the demonstration (see Section 3.1.2 for a fuller discussion of this issue). We again find no significant demonstration impacts on overall satisfaction.

In both sites at baseline and follow-up, over 95 percent of respondents indicated that they would be willing to recommend their supplier to a friend who needed oxygen service. Each site experienced an increase of approximately 1 percentage point in this measure from baseline to follow-up among all users. At follow-up in Polk County, all new users reported that they would recommend their supplier to a friend (up from 98 percent at baseline). The demonstration's impact on this measure was not statistically significant.

Quality of Equipment and Supplies. Respondents' ratings of the reliability of their oxygen equipment over the last 6 months showed little change from baseline to follow-up (Figure 4-3). The vast majority (90 percent to 95 percent) of respondents rated their equipment as "very reliable," with a slight (statistically insignificant) increase in this percentage from baseline to follow-up in the demonstration site. A related measure, the number of major equipment problems reported by all oxygen users in the last 6 months, also changed little from baseline to follow-up (Figure 4-4). The percentage reporting no major problems remained high throughout, ranging between 80 and 85 percent. Again, the demonstration's impact is statistically insignificant.

Figure 4-3. Oxygen Consumer Survey: Ratings of Reliability of Oxygen Equipment, All Users

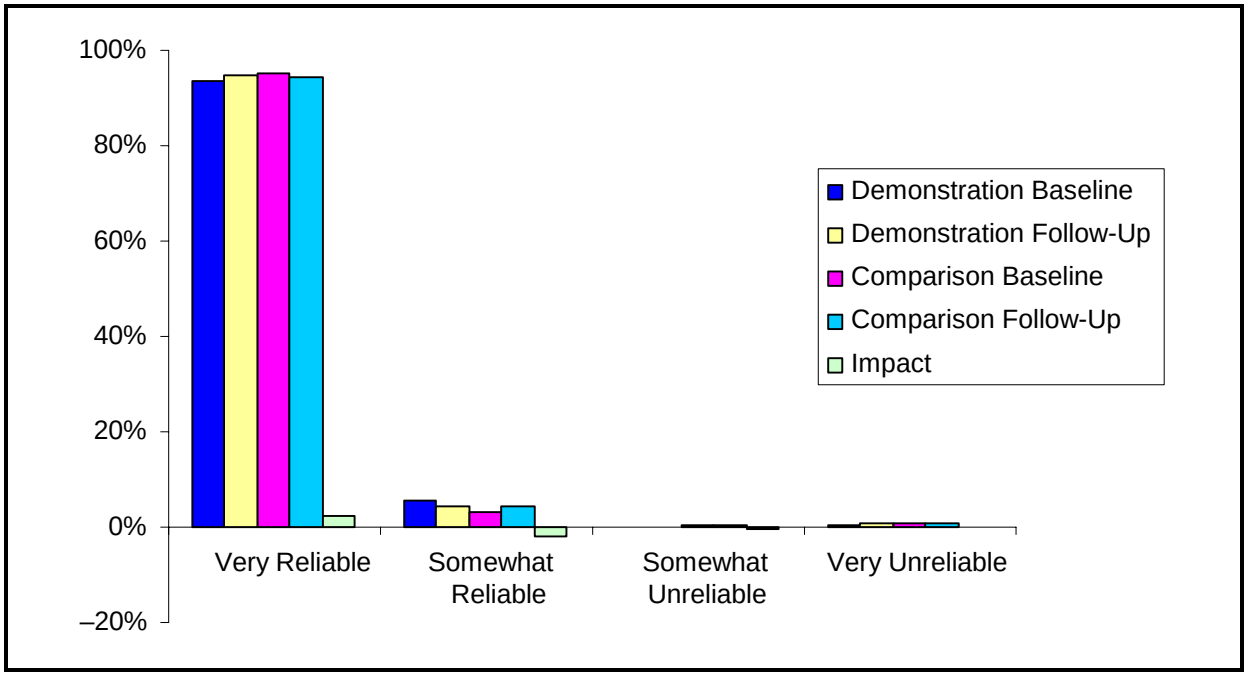
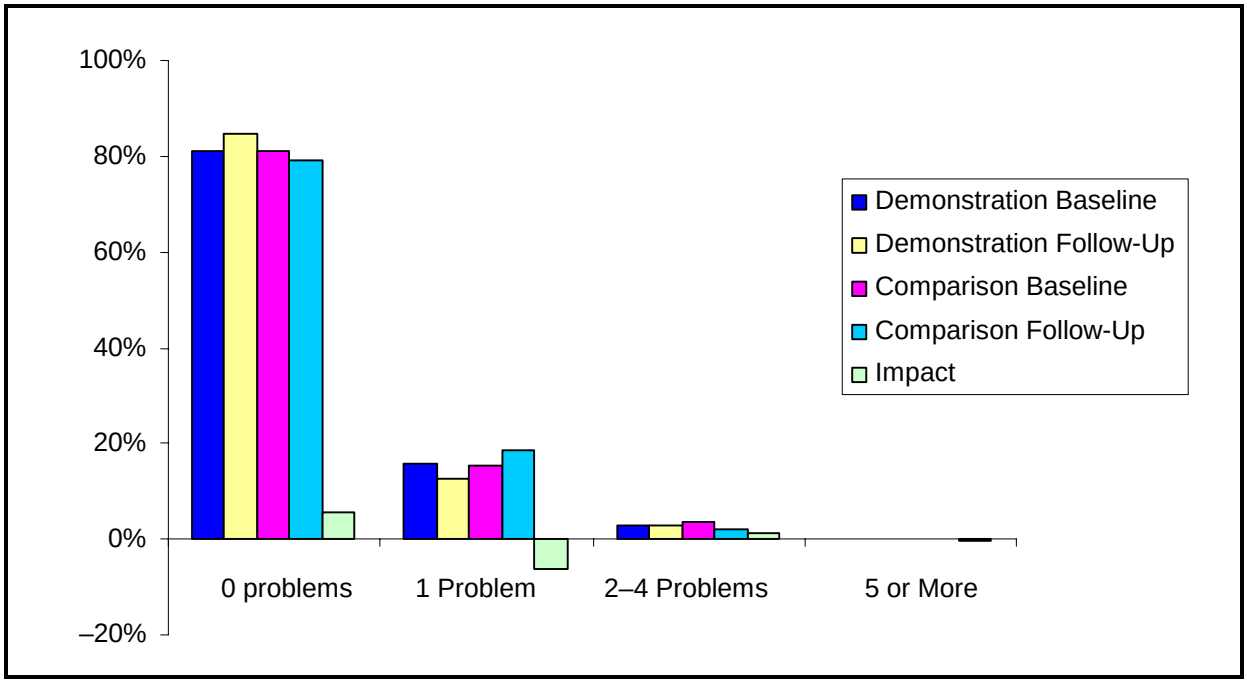


Figure 4-4. Oxygen Consumer Survey: Number of Major Problems with Equipment, Last 6 Months, All Users



The demonstration's impact is statistically significant among the subset of new users, indicating that the demonstration is associated with a decline in the number of major problems new beneficiaries had with their oxygen equipment. Our marginal effect analysis indicates that the presence of the demonstration decreases the average number of major equipment problems reported by new users in Polk County by 0.31. Hypothetically, this effect could result from suppliers offering higher quality products, more frequent equipment maintenance, or better training to beneficiaries under the demonstration. However, our analysis did not detect statistically significant demonstration impacts on beneficiaries' ratings of equipment reliability or the reported frequency of maintenance visits. Only one statistically significant impact on training was detected among oxygen users (an increase in training on how to get after-hours service among new users), and it seems unlikely that this alone could have generated a decline in major equipment problems.

Quality of Training. Beneficiaries' level of comfort when using their oxygen equipment may be largely dependent on the training they receive from their suppliers and the quality and reliability of their equipment. Four survey questions probed respondents' level of comfort performing various tasks associated with their oxygen equipment (i.e., regulating the flow of oxygen, cleaning the filter, attaching regulators, and operating a humidifier). Each of these variables behaved similarly from baseline to follow-up; Figure 4-5 presents one of these variables as an example. For all four questions, the majority of responses (between 70 and 87 percent) fell in the "very comfortable" category. The demonstration had no significant impact on these four variables.

Another question asked respondents to rate the training they received from their supplier when first obtaining their oxygen equipment (Figure 4-6). Of those who received training, over 82 percent rated their training as either "excellent" or "very good." The proportion rating their training "excellent" increased from baseline to follow-up in both the demonstration and comparison sites. There was no statistically significant demonstration impact on this variable.

Quality of Customer Service. Respondents were asked whether their supplier provides courteous service and whether they provide all the assistance or information that the beneficiary needs. In both sites and periods, most beneficiaries reported that they were "always" treated with courtesy (about 90 percent), supplier staff "always" explained things well to them (about 75 percent in Polk County), and they "always" got all the information they needed from their supplier (about 80 percent). No statistically significant demonstration effects were detected on these measures among all users. Among only new users, though, the demonstration had a statistically significant impact on improving the frequency with which suppliers explained issues clearly to beneficiaries. The marginal effect of the demonstration was a 20.1 percentage point

Figure 4-5. Oxygen Consumer Survey: Level of Comfort Controlling Rate of Oxygen Flow, All Users

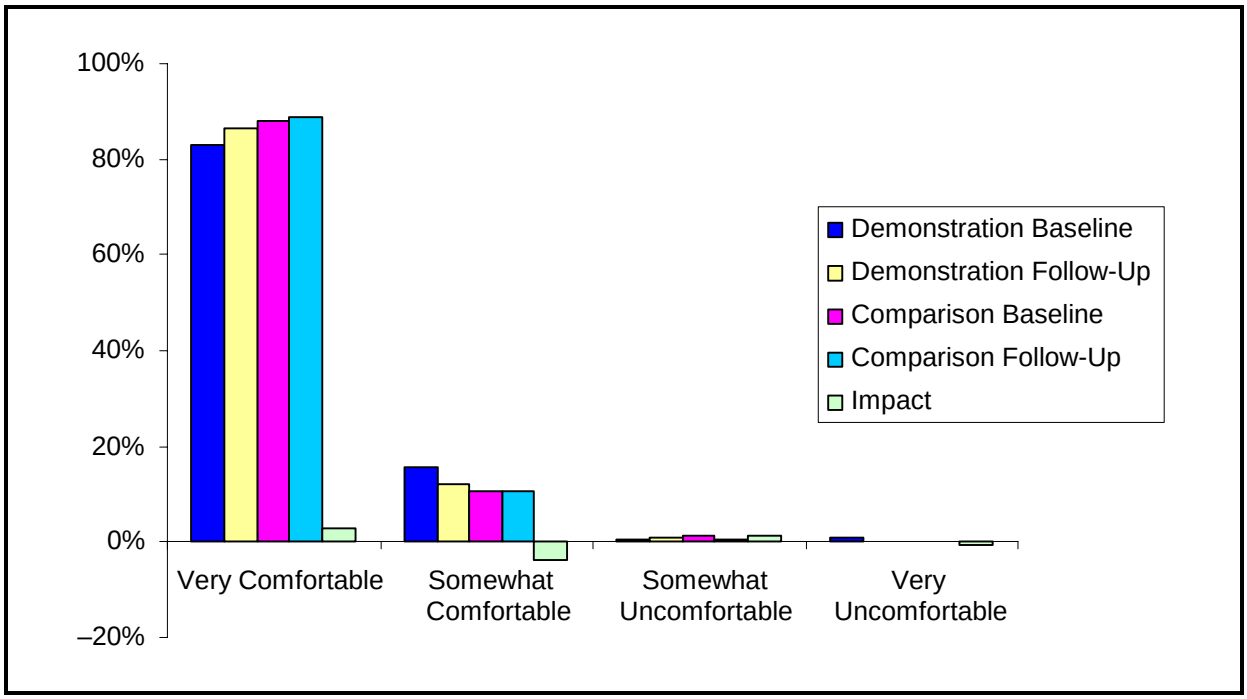
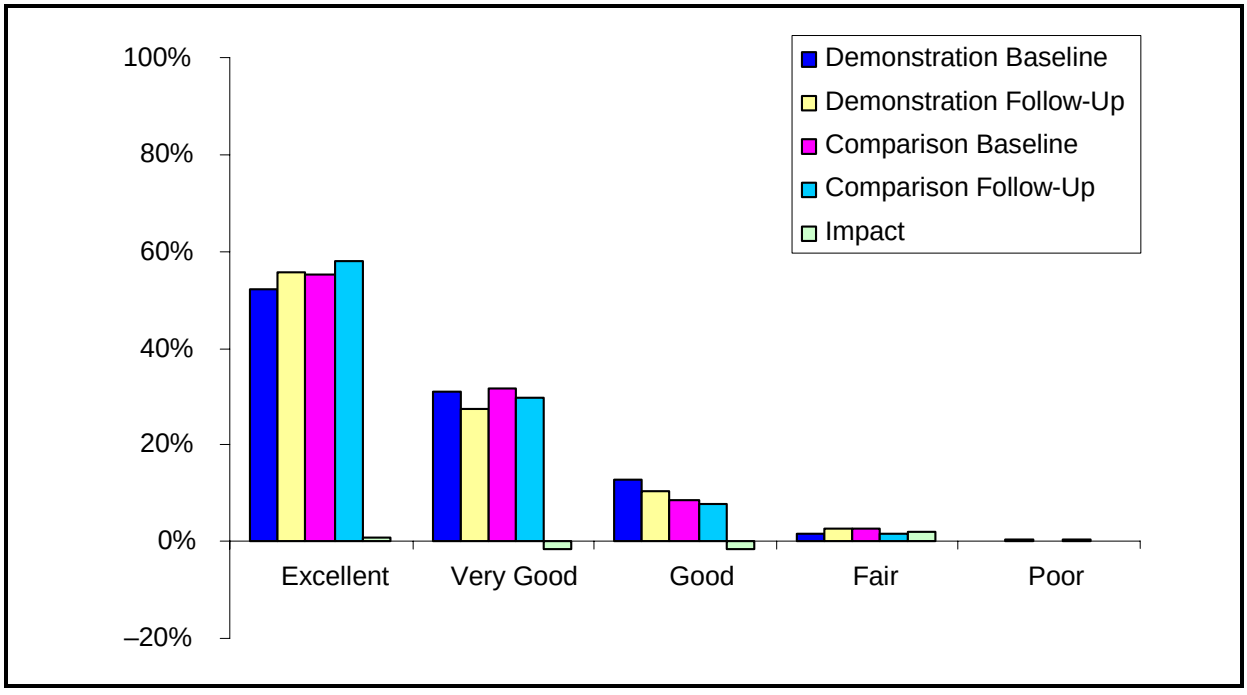


Figure 4-6. Oxygen Consumer Survey: Ratings of Training Given Initially by Oxygen Supplier, All Users



increase in the percentage of new users reporting that their suppliers "always" explained things in a way that they can understand. Unadjusted data show that the percentage of new oxygen users with this response increased from 73 to 80 percent in Polk County while falling from 89 to 67 percent in Brevard County.

The percentage of Polk County beneficiaries who contacted their supplier with a problem in the last 6 months fell from approximately 26 percent at baseline to 22 percent at follow-up. Brevard County responses were stable at approximately 26 percent. In both sites and periods, approximately 92 percent of those who had a problem reported that their supplier resolved the situation satisfactorily. The demonstration's impact on these measures was not statistically significant.

Changing Suppliers. The number of respondents who reported changing their oxygen supplier in the last year was very low, representing only 25 to 50 beneficiaries in each site and period (Figure 4-7). In both sites, the number changing suppliers dropped from baseline to follow-up, although there was no statistically significant demonstration impact. Table 4-2 displays the three most common reasons given by beneficiaries for changing their oxygen supplier in Polk and Brevard Counties, along with the percentage of such respondents who chose each reason.

4.1.2 Medical Equipment Consumer Survey Findings

The Medical Equipment Consumer Survey revealed few changes concerning quality-related issues. In Table 4-3, we present the quality variables by category, noting those for which the demonstration's impact is statistically significant. Our analysis detects only two significant demonstration impacts, and each of these are specific to individual product categories. Below, we present the major variables of interest.

Overall Satisfaction. Figure 4-8 displays satisfaction ratings for all medical equipment survey respondents, presenting the proportion of survey responses falling in each of four ranges of satisfaction ratings: 0 to 5, 6 to 7, 8 to 9, and 10. As with the oxygen users, there was a slightly more pronounced increase for the demonstration area in the unadjusted proportion of respondents giving the highest rating.

Mean satisfaction ratings for medical equipment suppliers increased from 8.13 at baseline to 8.32 at follow-up. When we disaggregate the results by product type, however, the change in mean satisfaction ratings is not consistently positive. Changes in mean ratings for each product category are detailed in Table 4-4. Mean satisfaction ratings in Polk County for suppliers of surgical dressings and enteral nutrition decreased the most in relation to those in the comparison site. These results come from small samples, and the demonstration's impact on these ratings was not statistically significant.

Figure 4-7. Oxygen Consumer Survey: Respondents Who Changed Supplier in Last 12 Months, All Users

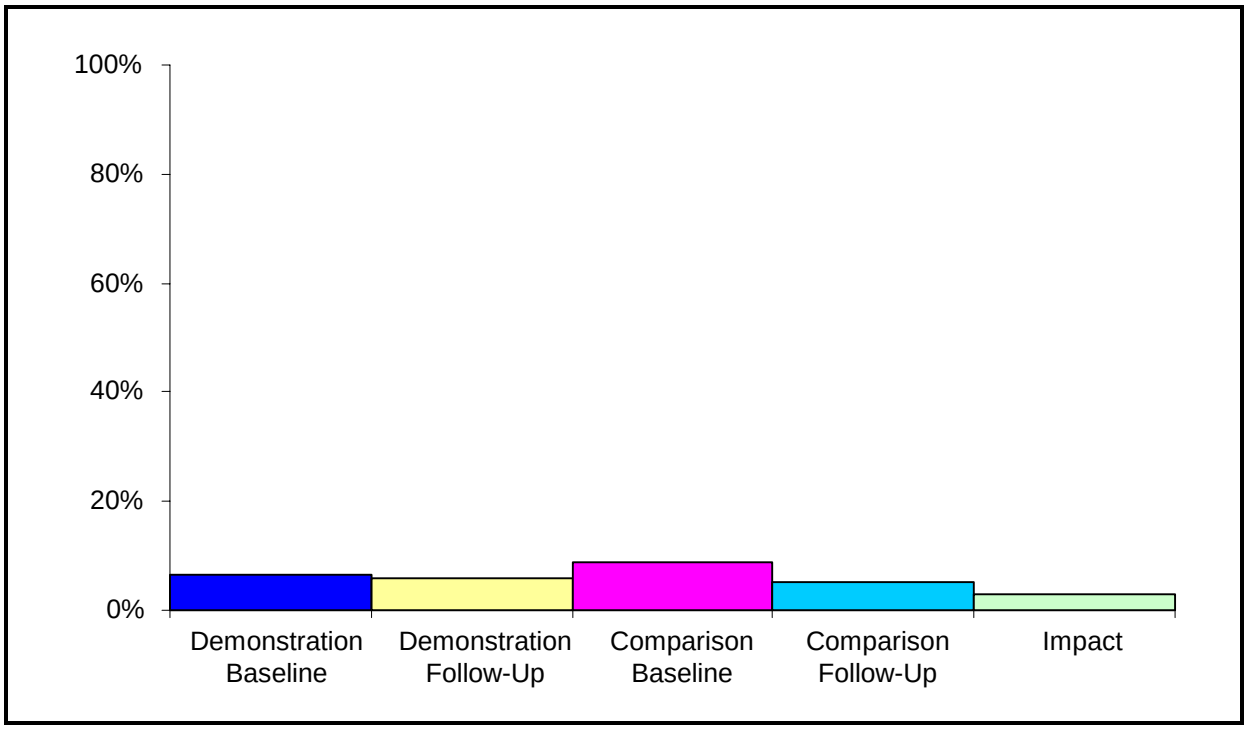


Table 4-2. Most Common Reasons for Changing Oxygen Supplier, All Users Who Changed Supplier

	Polk County		Brevard County	
Rank	**Baseline**	**Follow-Up**	**Baseline**	**Follow-Up**
1.	Moved residence (17.6%)	Moved residence (19.4%)	Unhappy with service quality (20.9%)	Moved residence (23.1%)
2.	Unhappy with service quality (17.6%)	Unhappy with service quality (16.1%)	New HMO uses a different supplier (14.0%)	New HMO uses a different supplier (11.5%)
3.	Supplier went out of business (11.8%)	Tie: Supplier went out of business; and Changed to supplier listed in the Medicare Demonstration Directory (12.9% each)	Moved residence (11.6%)	Unhappy with service quality (11.5%)

Table 4-3. Demonstration Impact on Quality Variables—Medical Equipment Consumer Survey

Category	Variable	Significant Impact?		Direction of Impact (if significant)	
		All Users	New Users	All Users	New Users
Overall Satisfaction	Overall satisfaction with supplier	No	No		
	Willingness to recommend supplier	No	No		
Quality of Equipment and Supplies	Equipment reliability rating	Yes[a]	No	Improvement in ratings of reliability	
	Number of major equipment problems, last 6 months	No	No		
	Equipment replaced due to malfunction, last 6 months	No	No		
Quality of Training	Rating of training given by supplier	No	No		
	Comfort level with equipment use	No	No		
	Comfort level with equipment maintenance	No	No		
Quality of Customer Service	Frequency of customer service courtesy	No	No		
	Frequency of customer service good explanation	No	No		
	Frequency of customer service thoroughness	No	No		
	Contacted supplier with a problem, last 6 months	No	No		
	Problem resolved satisfactorily	No	No		
	After-hours call to supplier, last 6 months	No	No		
	Frequency of after-hours customer service thoroughness	No	No		
	Type of assistance with insurance				
	Explain what insurance will pay for	No	No		
	Offer to bill Medicare/other insurance	No	No		
	Tell how to get information on insurance	Yes[b]	No	Increase in percent receiving information	
	Got documentation from physician for you	No	No		
	Did not receive any assistance	No	No		

[a]Statistically significant only among the subset of surgical dressings users.

[b]Statistically significant only among the subset of hospital bed equipment users.

Figure 4-8. Medical Equipment Consumer Survey: Overall Satisfaction Ratings, All Users

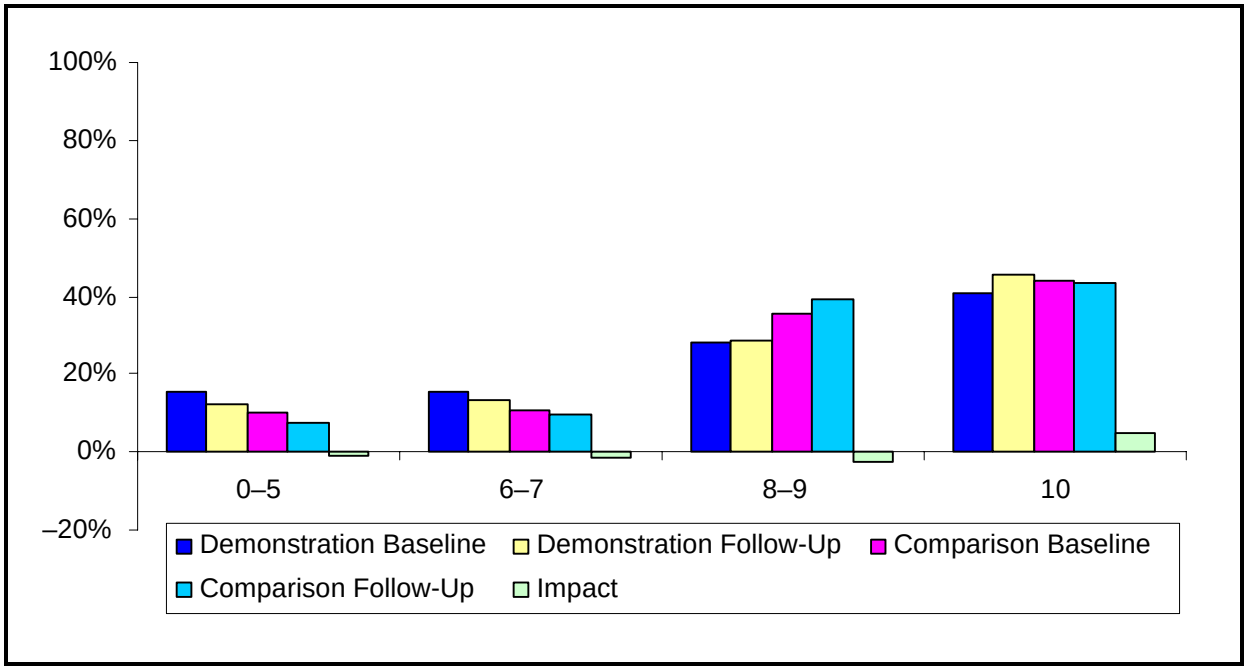
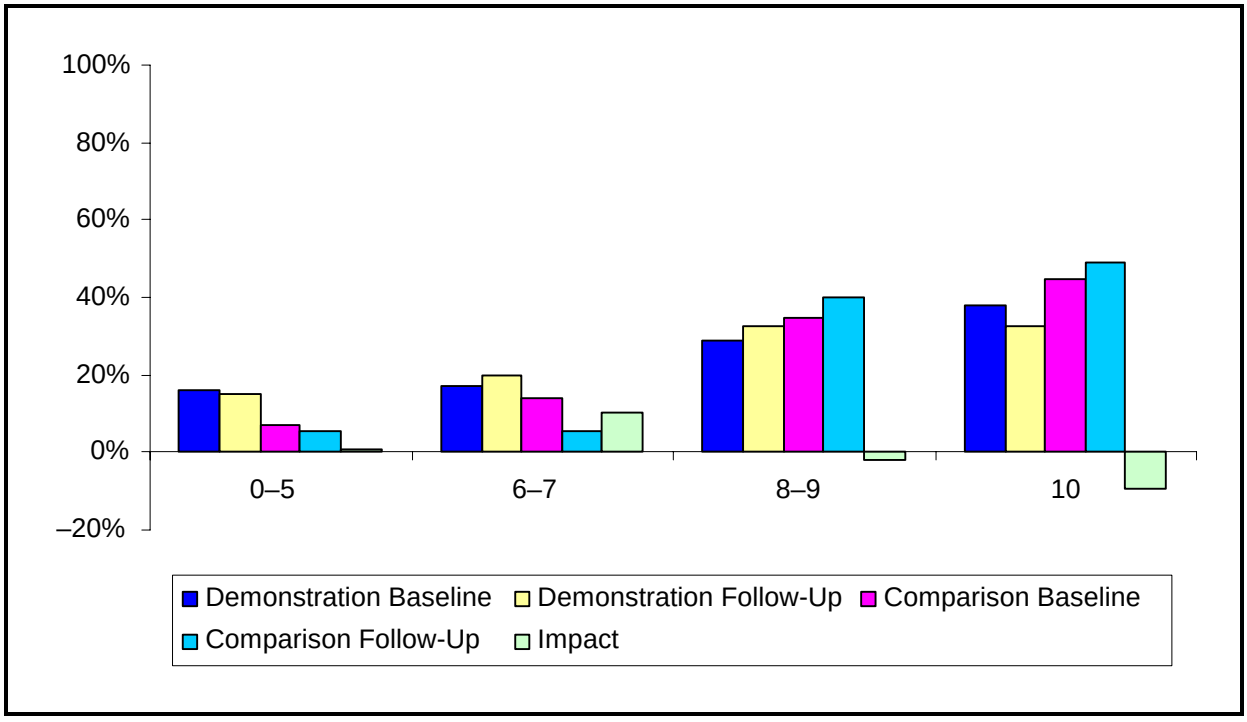


Table 4-4. Satisfaction Ratings: Medical Equipment Consumer Survey

Medical Equipment Consumer Survey	Demonstration Site			Comparison Site			Impact
	Baseline	Follow-Up	Follow-Up – Baseline	Baseline	Follow-Up	Follow-Up – Baseline	
All medical equipment types	8.13 n = 273	8.32 n = 296	0.19	8.55 n = 312	8.69 n = 286	0.14	0.05
Surgical dressings	8.47 n = 34	8.00 n = 31	–0.47	8.24 n = 38	9.21 n = 29	0.97	–1.44
Enteral nutrition	8.74 n = 31	8.70 n = 20	–0.04	8.60 n = 40	9.44 n = 36	0.84	–0.88
Hospital beds	7.98 n = 161	8.27 n = 177	0.29	8.52 n = 206	8.63 n = 187	0.11	0.18
Urological supplies	8.47 n = 93	8.43 n = 99	–0.04	8.52 n = 84	8.73 n = 80	0.21	–0.25

Figure 4-9 shows mean satisfaction ratings for new DMEPOS users only. The percentage of responses indicating the highest possible satisfaction rating fell by 5.1 percentage points among Polk County respondents. Brevard County responses, in comparison, increased by 4.3 percentage points. Although we placed more emphasis on results for new users because new users may be more sensitive to demonstration effects, the demonstration impact was not statistically significant in the regression analysis. Thus, this result does not provide reliable evidence of an adverse impact of the demonstration.

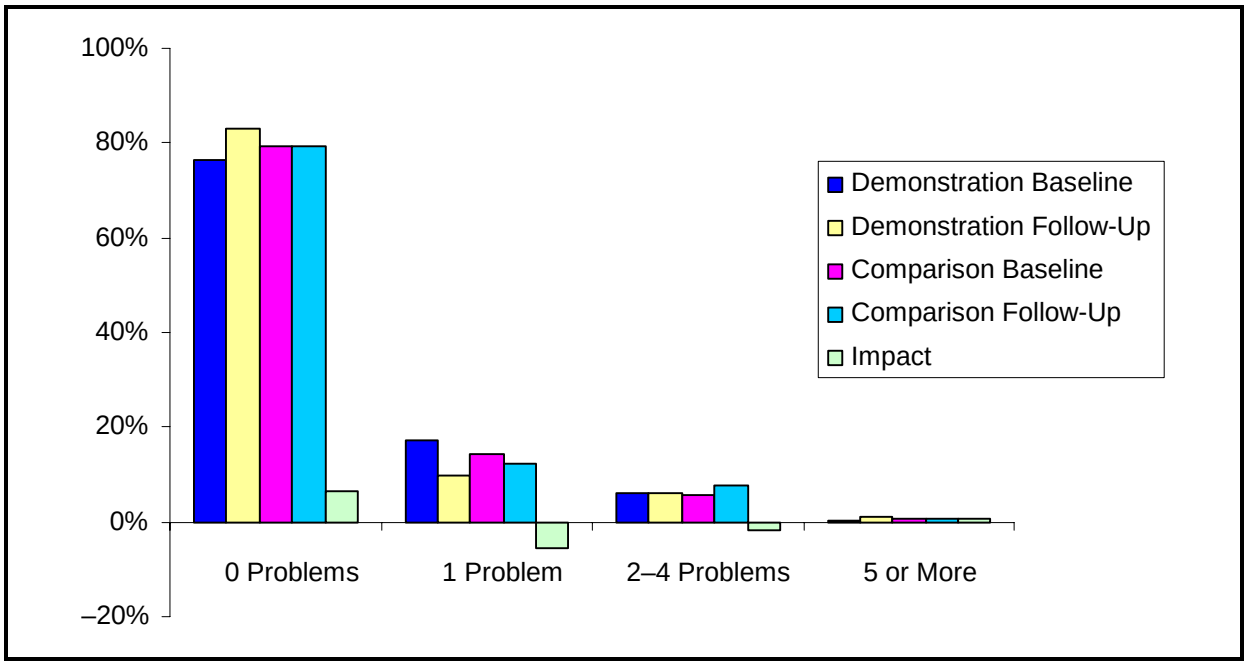
Figure 4-9. Medical Equipment Consumer Survey: Satisfaction Ratings—New Users Only



From baseline to follow-up in both the demonstration and comparison counties, the percentage of respondents indicating that they would recommend their supplier to a friend remained stable. Approximately 91 percent of Polk County respondents would recommend their suppliers, compared to about 94 percent in Brevard County. The demonstration's impact on this measure was not statistically significant.

Quality of Equipment and Supplies. The percentage of Polk County beneficiaries experiencing major problems with their medical equipment decreased from 23.6 percent to 17.0 percent between the baseline and follow-up surveys (Figure 4-10). Although the comparison site showed little change in this measure, there was no statistically significant demonstration impact.

Figure 4-10. Medical Equipment Consumer Survey: Number of Major Equipment Problems, Last 6 Months, All Users



Polk County beneficiaries' ratings of the reliability of their equipment showed improvement (Figure 4-11). The percentage rating their equipment as "very reliable" rose from 73.3 percent at baseline to 81.6 percent at follow-up. The demonstration's impact was significant only among the subset of surgical dressings users, indicating that equipment reliability has improved (as rated by beneficiaries) as a result of the demonstration. Marginal effect analysis indicates that the demonstration increased the percentage of surgical dressings users rating their equipment as "very reliable" by 26.2 points. Unadjusted data show that the percentage of surgical dressings users with the "very reliable" response rose from 61 to 83 percent in Polk County while falling from 83 to 74 percent in Brevard County. Interestingly, the reliability rating for surgical dressings improves, despite statistically significant declines associated with the demonstration's impact on one component of training and the probability of face-to-face contacts with the supplier among surgical dressings users.

Quality of Training. Three fourths (75.3 percent) of Polk County respondents at follow-up indicated that they were "very comfortable" taking care of their medical equipment, up from 65.3 percent at baseline (Figure 4-12). Results concerning how comfortable respondents were using their equipment were similar, but with a greater increase from baseline to follow-up in the "very comfortable" category. The demonstration's impact was not statistically significant on either of these measures.

Figure 4-11. Medical Equipment Consumer Survey: Ratings of Reliability of Medical Equipment, All Users

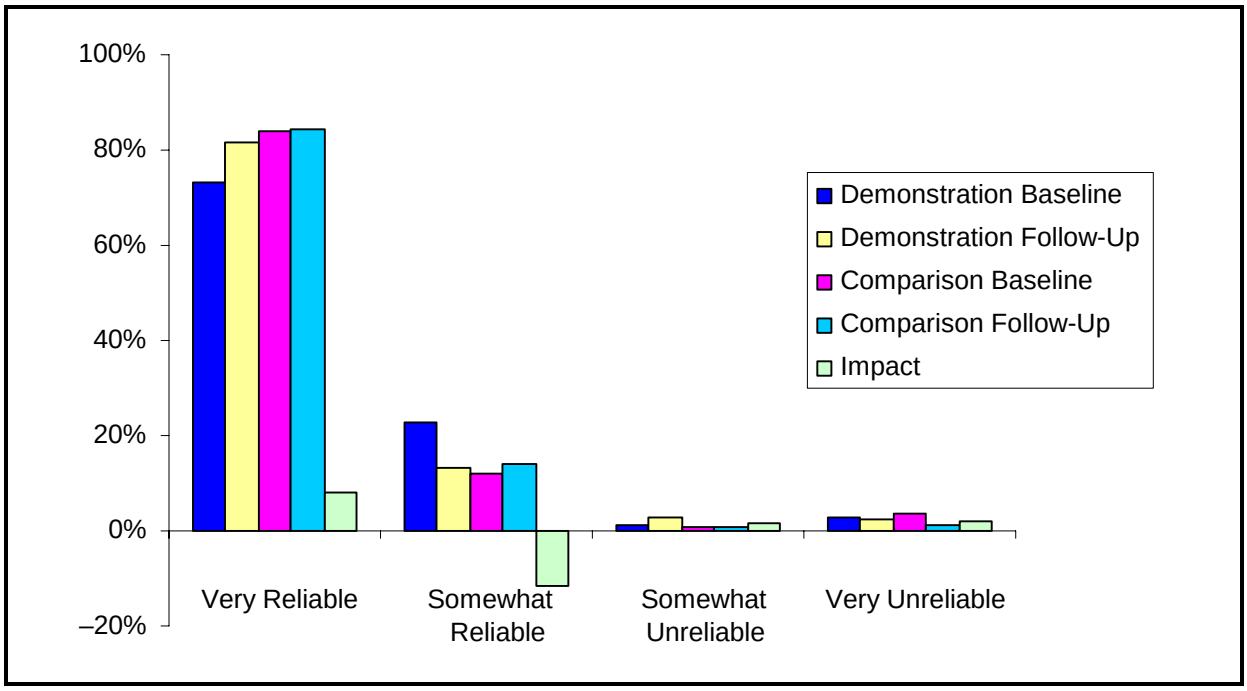
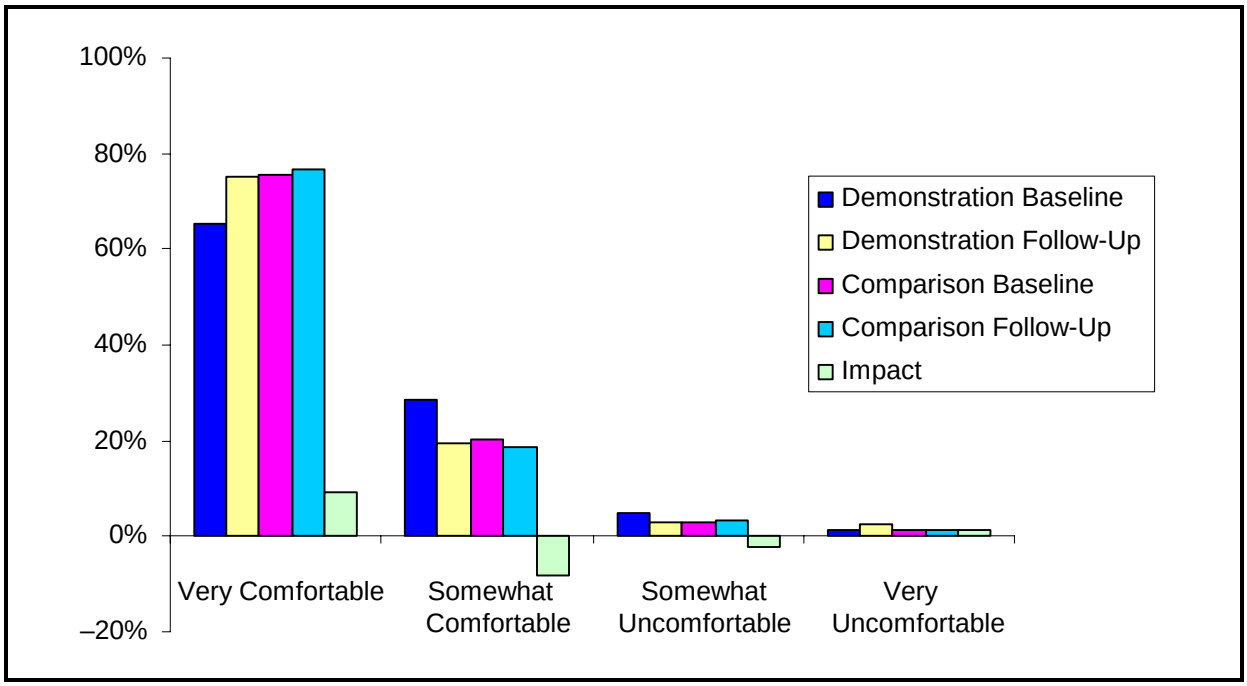
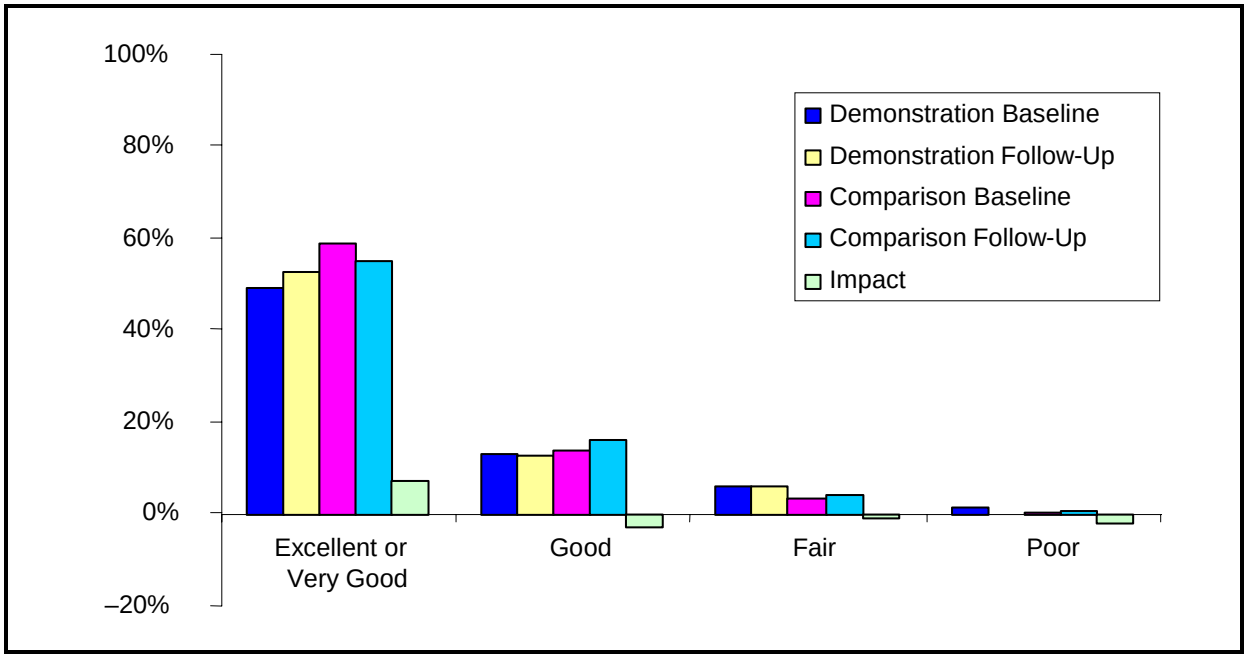


Figure 4-12. Medical Equipment Consumer Survey: Level of Comfort Taking Care of Equipment, All Users



Beneficiaries' high levels of comfort using their DMEPOS may be partly attributable to high quality training provided by suppliers when beneficiaries first receive their equipment and/or supplies. Most beneficiaries rated the training they received on their medical equipment as "excellent" or "very good" (Figure 4-13). The percentage of Polk County beneficiaries responding in these two categories rose from 49.2 percent at baseline to 52.5 percent at follow-up, although there was no statistically significant demonstration impact.

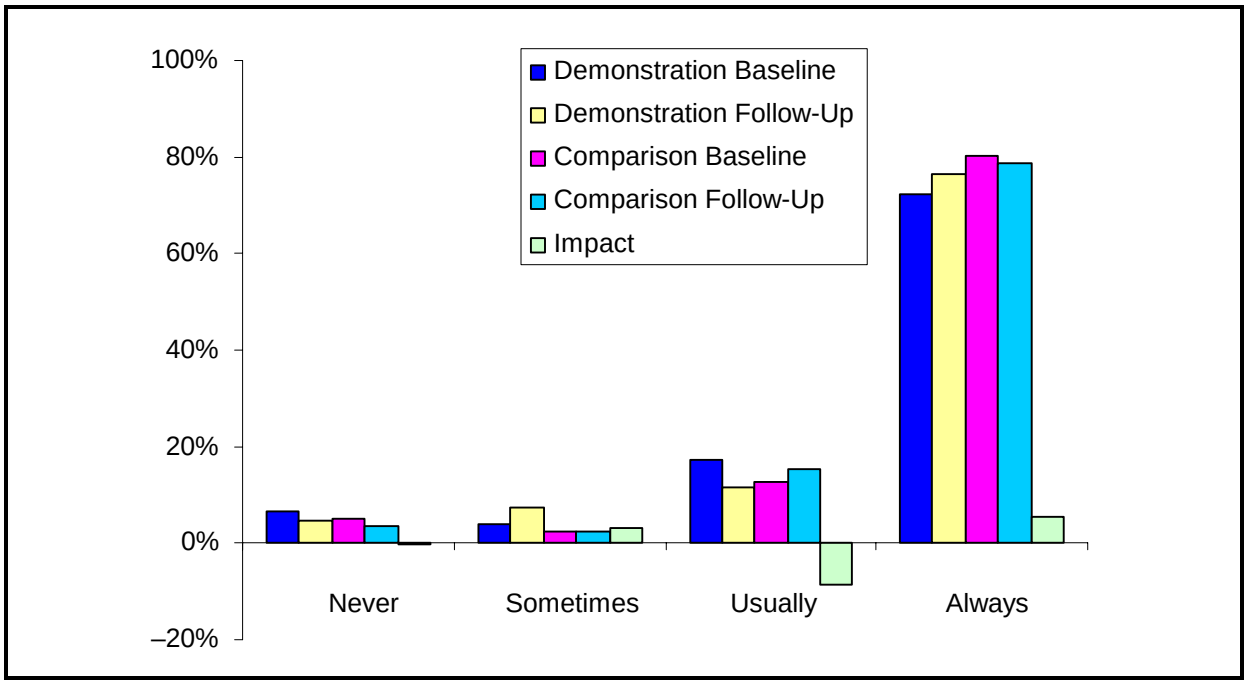
Figure 4-13. Medical Equipment Consumer Survey: Ratings of Training Given Initially by Medical Equipment Supplier, All Users



Quality of Customer Service. The majority of Polk County respondents at follow-up reported that they were "always" treated with courtesy (76.3 percent) (Figure 4-14), had things explained well to them (55.4 percent), and got all the help they needed from their supplier (59.5 percent). Each of these percentages represents an increase from baseline levels; however, there was no statistically significant demonstration impact.

Proportions of medical equipment users who contacted their suppliers with problems remained stable over the course of the demonstration, while the proportion who reported that these problems were satisfactorily resolved rose in Polk County by 5.4 percentage points. Suppliers' service call response times remained stable, both relative to baseline and relative to the comparison site. Polk County showed some improvements in suppliers' provision of after-hours assistance and help with insurance claims. Among all medical equipment users, the demonstration had no statistically significant impact on any of these measures. However, among

Figure 4-14. Medical Equipment Consumer Survey: Frequency with which Beneficiary was Treated with Courtesy by Supplier Staff, Last 6 Months, All Users



hospital bed users, the demonstration had a statistically significant impact on the percentage receiving instructions on how to get information on their insurance. The marginal effect of the demonstration was an increase of 14.2 percentage points in the percentage of hospital bed users receiving such instruction.

Changing Suppliers. Survey data indicate that the demonstration had no statistically significant impact on the proportion of beneficiaries who change their medical equipment suppliers (Figure 4-15). The percentage of Polk County respondents who reported changing their supplier in the past year increased marginally from 7.3 percent at baseline to 10.1 percent at follow-up.

Table 4-5 displays the three most common reasons given by beneficiaries for changing their medical equipment supplier in Polk and Brevard Counties, along with the percentage of such respondents who chose each reason. The percentages are based only on those individuals who changed suppliers (about 15 to 30 beneficiaries in each site during the baseline and follow-up surveys).

Figure 4-15. Medical Equipment Consumer Survey: Respondents Who Changed Supplier in Last 12 Months, All Users

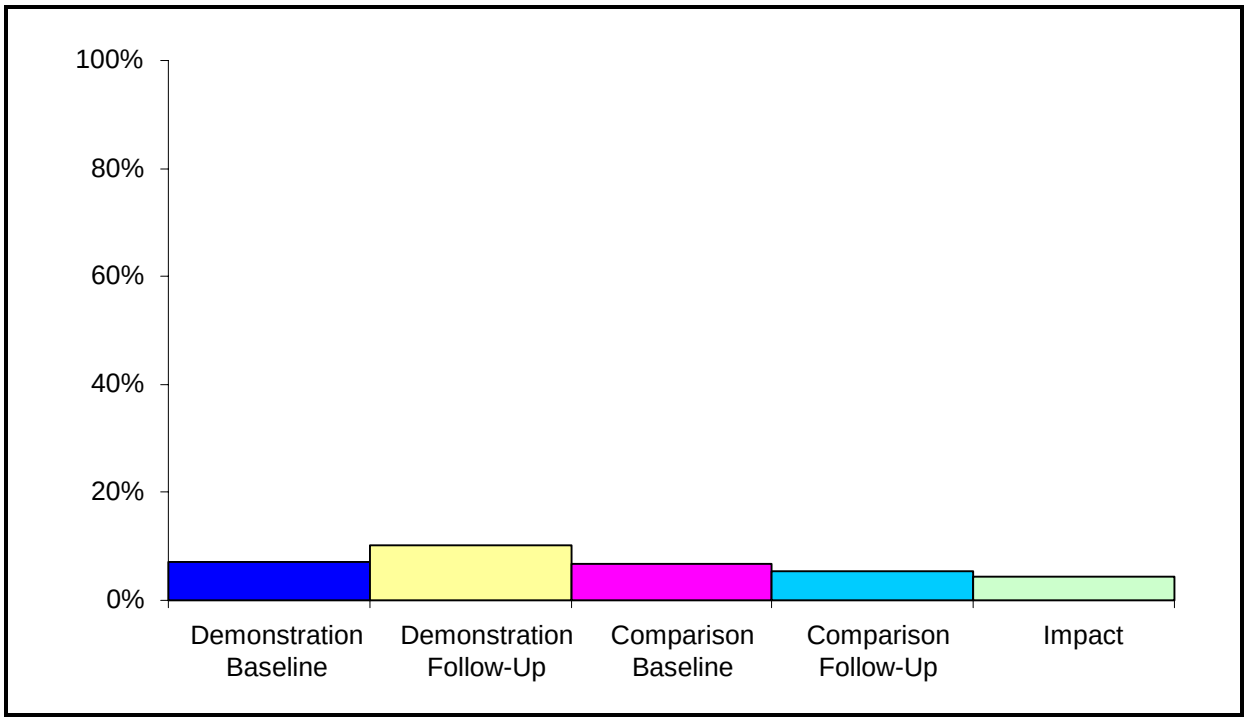


Table 4-5. Most Common Reasons for Changing Medical Equipment Supplier, All Users Who Changed Supplier

	Polk County		Brevard County	
Rank	**Baseline**	**Follow-Up**	**Baseline**	**Follow-Up**
1.	Unhappy with service quality (29.4%)	Unhappy with service quality (24.1%)	Moved residence (20.0%)	Moved residence (21.4%)
2.	Unhappy with service amount (17.6%)	Changed to supplier listed in the Medicare Demonstration Directory (20.7%)	Supplier went out of business (15.0%)	Unhappy with service quality (14.3%)
3.	New HMO uses a different supplier (17.6%)	Moved residence (17.2%)	New supplier costs less (10.0%)	New HMO uses different supplier (14.3%)

4.2 Urological Supplies

In the First-Year Annual Evaluation Report, we discussed suppliers' concerns that the reimbursements for certain HCPCS codes in the urological supplies category under the Polk County demonstration did not adequately cover the cost of some products within those codes. The incentive for the supplier to provide the least expensive item that qualified under a specific HCPCS code had existed since before the demonstration. However, lower reimbursement levels under the demonstration may have strengthened this incentive so that suppliers were willing to provide products of lower quality than they did in the past.

Fortunately, two factors work to diminish the incentive to provide lower-quality products as a way of maintaining profit levels. During Polk County site visits, suppliers indicated that they would be reluctant to make lower-quality substitutions because they feared their customers might not accept such products and therefore would go to a different supplier for their DMEPOS. Furthermore, beneficiaries could circumvent suppliers' desire to provide a lower-cost, lower-quality product by asking their physician to prescribe a specific brand or type of equipment.

Our findings from beneficiary surveys in Polk County do not indicate that beneficiaries using urological supplies experienced any negative impact on the quality of their equipment. However, the low number of responses that were directly related to urological supplies (only 99 in Polk County at follow-up) make it difficult to identify any statistically significant demonstration impacts. As seen in Table 4-4, the overall satisfaction ratings of urological supplies users in Polk County were stable from baseline to follow-up, and the demonstration's impact was insignificant in the regression.

The only statistically significant impact of the demonstration detected among the subset of respondents who use urological supplies was an increase in the percentage who reported receiving no training when receiving their equipment and supplies. As discussed in Section 3.1.3, this effect may be generated by the relative inexperience of some demonstration suppliers with urologicals, cost pressures related to underbidding, or an increase in mail delivery of urological supplies.

We will continue to monitor this issue in future site visits to Polk County. We will combine information on products and brands available to beneficiaries with that collected earlier in the demonstration to determine whether any substitution is occurring.

4.3 Site Visit Results

We discussed our methodology for conducting site visits in Section 3.3.1. Below, we describe our quality-related findings to date from interviews conducted during the three San Antonio site visits. Site visits to Polk County, Florida, were discussed in the First-Year Annual Evaluation Report.

4.3.1 Referral Agent Experience

Overall, referral agents believe that some of the demonstration suppliers have less well-trained staff and less experience with DMEPOS than those with whom they worked in the past. In general, they have not noticed changes in amount of paperwork, timeliness of delivery, services, or quality of products being provided.

Case managers reported some problems with new suppliers they used under the demonstration. The majority of these problems were related to wheelchairs and their accessories. One agent reported that a supplier inappropriately delivered items that were not ordered and billed the products incorrectly. Referral agents also said that some suppliers were unwilling to make chair adjustments after delivery or to reclaim poor quality products delivered to beneficiaries. Another agent reported that a beneficiary was given an improperly adjusted wheelchair because the supplier's staff did not know how to make the required adjustment. However, agents are usually successful in obtaining the products that a beneficiary needs by providing specific details to the supplier when ordering the product.

Case managers help ensure that the beneficiary is provided with quality equipment by monitoring the products that are delivered and intervening with the supplier when items do not meet specifications. As noted previously, referral agents also bolster the quality of products and services provided to beneficiaries by referring patients only to suppliers whose service they trust based on previous experience. If suppliers provide inaccurate orders or do not provide information about the beneficiary back to referral agents, referral agents avoid these suppliers in the future. Several of the wheelchair-related problems described above led agents to avoid the suppliers who were involved.

4.3.2 Supplier Perspectives

All suppliers reported that they did not receive many questions from beneficiaries about the demonstration. Some reported having difficulties with patient transfers resulting from the demonstration when beneficiaries either cannot remember or do not know if they have had capped-rental equipment such as a wheelchair or hospital bed previously. In such cases, the suppliers usually provide the equipment and may not recoup their cost if the beneficiary prematurely reaches the limit of the capped-rental reimbursement.

Suppliers generally have two perspectives concerning the demonstration's potential effect on quality. One group is concerned that other companies will provide lower cost, low-quality equipment to beneficiaries to maintain their profit margins. This group does not think that they would be able to compete with such companies because their clients will not accept lower quality products. This perspective often coincides with the belief that CMS's motivation for implementing this demonstration was less about improving quality than about lowering reimbursement levels.

On the other hand, some suppliers believe that the bidding process has improved quality in the market. They believe that before the demonstration some DME suppliers in the area were operating at very low levels of quality. Since some of these suppliers have now lost the ability to provide DMEPOS to Medicare beneficiaries, they believe the overall level of service quality in the market is likely to improve.

4.4 Multiple Winners

As in our first-year findings from Polk County, San Antonio site visits support the conclusion that selecting multiple winners allows demonstration suppliers to continue competing based on service and quality in order to attract and retain patients. As described above, referral agents went through a process early in the demonstration of familiarizing themselves with new suppliers, their service, and their product lines. When the agents were not satisfied with aspects of a supplier's products or services, they would stop referring beneficiaries to that supplier. This illustrates that suppliers must be responsive to the referral agents and patients or they will lose their referral sources. By the time of our interviews, all of the participating referral agents had found a demonstration supplier with whom they were satisfied.

4.5 Product Selection

Site visits permitted the collection of limited information from some of our supplier interviewees on the products available before and after the demonstration. From our discussions with referral agents and suppliers, we believe that quality distinctions may be drawn based on brand and model names supplied in three product categories: oxygen equipment and supplies, hospital beds and accessories, and wheelchairs and accessories. These are categories in which a small number of firms are dominant, and lesser-known brand names should be investigated for quality and cost to determine if a detrimental substitution could occur. In future analyses, we will compare the models of equipment commonly supplied before and after the demonstration to make quality distinctions.

For nebulizer drugs, however, product quality is less embodied in brand names than in the service provided with the product. There is little objective quality difference between generic drugs and their branded counterparts. Our conversations with suppliers indicate that they predominately supply generic versions of nebulizer drugs unless specifically directed otherwise by the physician. Quality for these products is more closely related to patient follow-up (to monitor the beneficiary's condition and need for additional supplies) and the education a beneficiary receives on dosage, self-administration, side effects, and who to call with questions.

For orthotics, there are two components to product quality: the basic orthosis that is provided and the service of a trained professional to adjust it and make necessary modifications to

ensure a comfortable fit while still functioning properly over time. Reimbursement for orthotics incorporates payment for both components. In addition to having licensed personnel, several of the demonstration suppliers also have the capability of adjusting the orthotics in-house. For these suppliers, the quality of their orthotics should be reflected in both the product and their willingness to monitor the patient over time and perform adjustments as necessary.

The product brands information we have collected to date is too limited to allow an analysis of product selection or quality changes under the demonstration. The DMEPOS Supplier Survey, which will be fielded in February 2002, will produce more comprehensive brands data as well as information on orthotics and nebulizer drug quality indicators.

The limited information we have collected indicates little change in the products being provided before and after the demonstration. Only a few suppliers reported changing the brand or model of the equipment they provide to Medicare beneficiaries since the demonstration began. Furthermore, most of these changes involved a switch from one well-known, high-quality brand to another based on negotiated prices or special offerings that suppliers receive from their equipment dealers.

4.6 Summary and Next Steps

Overall, beneficiaries in the Polk County demonstration site remain highly satisfied with their experiences with their DMEPOS suppliers. There were few statistically significant demonstration impacts on other measures of the quality of DMEPOS products and services. During site visits in San Antonio, some referral agents described incidents where demonstration suppliers provided wheelchair items that were not ordered or did not properly adjust the products they supplied. As the demonstration continues, we will evaluate whether these represent continued, systematic problems or isolated incidents that disappear as referral agents gain more experience with the demonstration and establish relationships with demonstration suppliers.

SECTION 5
COMPETITIVENESS OF THE MARKET

5.1 Introduction

In this section, we discuss the effects of the demonstration on the competitiveness of the DMEPOS markets in Polk County and San Antonio. The process of competitive bidding may reduce the number of suppliers that serve Medicare beneficiaries in these markets. For subsequent rounds of bidding to be successful, a sufficient number of bidders must be left in the market to induce competitive bids. Continued competition is also necessary to preserve beneficiary access and quality services. The effects of the demonstration are also obviously of interest to suppliers themselves. DMEPOS suppliers generally opposed competitive bidding prior to the demonstration project. The demonstration's impact on suppliers and on suppliers' feelings about competitive bidding will likely shape suppliers' attitudes for future policy discussions about competitive bidding.

We first present the results of Round 2 bidding in Polk County. Round 2 bidding is important because it represents the only repetition of bidding in the overall demonstration project. Next, we describe Polk County supplier perceptions about competition during Round 1 of the demonstration. Finally, we present information on the number of bidders and supplier perceptions about competition in San Antonio. Key findings in this section are as follows:

- Twenty-six firms submitted a total of 52 bids for the four product categories in Round 2 bidding in Polk County, and 16 suppliers (62 percent) were awarded demonstration status. There were nearly as many bidders in Round 2 (26) as in Round 1 (30), when 16 demonstration suppliers were also named.

- The number of firms submitting bids for urological supplies in Round 2 bidding in Polk County fell from 9 to 7, and the number of suppliers submitting bids for surgical dressings fell from 8 to 4. The reductions are worthy of attention because these product categories had the fewest winners and demonstration suppliers in the first round of the demonstration.

- Entry into and exit from the market are still possible in the presence of competitive bidding. Half of the Round 2 demonstration suppliers in Polk County also had demonstration status in Round 1, but half did not.

- Seventy-nine firms submitted a total of 169 bids for the five product categories in San Antonio. Overall, 65 percent of the suppliers that submitted bids won demonstration status in at least one product category. Within product categories, the number of winning bids ranged from 8 for orthotics to 32 for oxygen equipment and supplies.

5.2 Polk County—Round 2

Results of Round 2 bidding in Polk County provide important insights into the dynamic nature of competition in the DMEPOS market under Medicare competitive bidding. Round 2 bidding allows suppliers to adapt their behavior based on their experience and lessons learned during Round 1 of the demonstration. Round 2 also provides an opportunity to evaluate whether suppliers may enter or exit the demonstration. In this section, we briefly describe the results of Round 2 bidding, which were announced as we were preparing this report. As the evaluation continues, we will collect additional information on Round 2 bidding and provide additional analyses in our Final Evaluation Report. These analyses will include information on bidding decisions and strategies that will be gathered in future site visits, as well as data on individual bids.

5.2.1 Number of Bidders

Overall, Polk County attracted nearly as many bidders in Round 2 as in Round 1, and the same number of suppliers were awarded demonstration status (Table 5-1). Twenty-six suppliers submitted bids in at least one of the four product categories in Round 2, compared to 30 suppliers in Round 1, when there were five product categories. In both rounds, 16 suppliers achieved demonstration status in at least one product category. The number of firms submitting bids for oxygen equipment and supplies and hospital beds and accessories remained virtually the same, while the number of suppliers submitting bids for urological supplies fell from 9 to 7 and the number of suppliers submitting bids for surgical dressings was cut in half, falling from 8 to 4.

The reductions in bids for urological supplies and surgical dressings are worthy of attention because these product categories had the fewest bidders and the fewest suppliers in Round 1 of the demonstration. The relatively low level of allowed charges for these product categories ($94,000 for urological supplies and $85,000 for surgical dressings in 1999 versus $6.1 million for oxygen equipment and supplies and $575,000 for hospital beds and accessories) may explain why urological supplies and surgical dressings attracted fewer bids than oxygen equipment and hospital beds. Still, the reduction in bids for these product categories during Round 2 raises the question of whether sufficient competition—both at the bidding stage and among the suppliers subsequently awarded demonstration status—can be maintained under competitive bidding for product categories with relatively low allowed charges. Future competitions may need to consider design changes to avoid having small numbers of competitors.

Low profit margins in Round 1 of the demonstration may also partly explain why fewer suppliers submitted bids for urological supplies. It is difficult to fully evaluate the role of profit margins because we lack accurate information on supplier costs. The available evidence suggests that profit margins may have been quite narrow for urological supplies during Round 1 of the demonstration. In site visits during the first year, some of the demonstration suppliers of urological

Table 5-1. Bids, by Number of Firms and Product Categories

	Polk County—Round 1			Polk County—Round 2			San Antonio		
	Bids	Winners	Winning Percentage	Bids	Winners	Winning Percentage	Bids	Winners	Winning Percentage
Number of Firms	30	16	53%	26	16	62%	79	51	65%
By Product Category									
Oxygen equipment and supplies	23	13	57%	22	10	45%	42	32	76%
Hospital beds and accessories	19	10	53%	19	8	42%	44	24	55%
Enteral nutrition	24	7	50%	—	—	—	—	—	—
Urological supplies	9	5	56%	7	5	71%	—	—	—
Surgical dressings	8	4	50%	4	3	75%	—	—	—
Wheelchairs and accessories	—	—	—	—	—	—	46	23	50%
Orthotics	—	—	—	—	—	—	14	8	57%
Nebulizer drugs	—	—	—	—	—	—	33	11	33%
Total Bids	73	39	53%	52	26	50%	179	98	55%

supplies stated that they had bid too low because of their inexperience in the product category. Consequently, in our First-Year Annual Evaluation Report, we identified urological supplies as a category to watch for possible quality reductions and changes in bidding behavior.

Low profit margins are less plausible as an explanation for the reduction in the number of bids for surgical dressings. Because of a flaw in the design of the pricing mechanism used to set prices in Round 1 of the demonstration, most of the demonstration prices for surgical dressings were higher than the Medicare statewide fee schedule that would have been in effect in the absence of the demonstration. If a corrected pricing mechanism had been used (as it was in Round 2), the demonstration prices would have been lower than the Medicare statewide fee schedule. This suggests that the demonstration suppliers may have enjoyed relatively high profit margins in Round 1 of the demonstration. If so, high profit margins did not attract additional bidders in Round 2 of the demonstration.

As the evaluation continues, we will interview urological and surgical suppliers to determine why they did or did not bid during Round 2 of the demonstration. Their information should help us evaluate whether bidding design changes can increase the number of suppliers bidding on these product categories.

5.2.2 Entry and Exit

The list of Round 2 demonstration suppliers suggests that entry into and exit from the market are still possible in the presence of competitive bidding. Half of the demonstration suppliers selected in Round 2 were also demonstration suppliers in Round 1; the remaining half won demonstration status in Round 2 after not having demonstration status in Round 1. Two of the new demonstration suppliers had bid unsuccessfully in Round 1 of the demonstration, while the others had not bid. Among the demonstration suppliers in both rounds, there were relatively few changes in the product categories served. One supplier lost demonstration status for oxygen equipment and supplies, while a second supplier gained demonstration status for hospital beds and accessories and a third supplier added demonstration status for surgical dressings.

The changes in demonstration status appear to have had relatively little effect on the number of local suppliers serving Polk County. This result may be important because Polk County beneficiaries and referral agents told us during site visits that they preferred to use local suppliers. Among the 8 new demonstration suppliers in Round 2, 3 are located in Polk County, 2 are located in predominantly rural bordering counties, 2 are located elsewhere in Florida, and 1 is located out of state. Of the 9 demonstration suppliers in Round 1 that are not demonstration suppliers in Round 2, 2 had been acquired during the first round of the demonstration by a large national DME supplier that also had a large local presence in Polk County before the demonstration began. Of the remaining 7 Round 1 demonstration suppliers that are not demonstration suppliers in Round 2,

3 were located in Polk County and 4 were located in the neighboring metropolitan areas of Tampa or Orlando.

As the demonstration continues, we will collect additional information on entry into and exit from the demonstration. We will identify which Round 1 demonstration suppliers bid in Round 2 and which did not, and discuss why they made these choices.

5.2.3 Effects of Changes since the Demonstration Began

In our First-Year Evaluation Report, we identified several changes that occurred in the competitive environment in Polk County after the Round 1 demonstration prices took effect on October 1, 1999. A nondemonstration supplier acquired two demonstration suppliers, and one nondemonstration and two demonstration suppliers filed for bankruptcy protection. We concluded that the relationship between the acquisitions and the demonstration was not clear, while the bankruptcies were unrelated to the demonstration. Below, we discuss the effects of these changes on second-round bidding.

Lincare Holdings, Inc., was not initially selected as a demonstration supplier in Round 1 in Polk County, but it gained demonstration status after acquiring two demonstration suppliers. In Round 2, Lincare bid successfully. Lincare is one of the nation's largest DME suppliers and was a large supplier within Polk County before Round 1 of the demonstration began.

The two demonstration suppliers that filed for bankruptcy during Round 1 both successfully attained demonstration status in Round 2. Sun Healthcare Group, parent company of Round 1 demonstration supplier Sun Factors, had filed for bankruptcy in 1999, citing reductions in payments for its long-term care facilities. As part of its reorganization, Sun Healthcare changed the name of its DME subsidiary to Sun Care and began actively seeking buyers for the subsidiary. Sun Care bid successfully in Round 2 of the demonstration. Round 1 demonstration supplier Medi-Health Care filed for bankruptcy in 2000 for reasons unrelated to the demonstration. It also won demonstration status in Round 2.

In 2000, Integrated Health Services, the parent company of National Medical Equipment Suppliers, a nondemonstration supplier in Polk County, filed for bankruptcy. The company blamed reductions in reimbursement rates for nursing facilities. National Medical Equipment continued to provide DME services in Polk County but did not become a demonstration supplier in Round 2.

5.3 Supplier Perceptions about Competition during Round 1 in Polk County

To obtain information about competition in the market from suppliers, we mailed separate questionnaires to 9 DME suppliers who provide oxygen equipment and supplies, hospital beds and accessories, or enteral nutrition and 9 suppliers who provide urological supplies or surgical

dressings. We received responses from 3 of the 9 DME suppliers and 6 of the 9 urological/surgical dressings suppliers. Because of the small sample size and low response rate, the following results should be interpreted cautiously.

Medicare patient volume increased substantially for 5 of the 6 respondents who were demonstration suppliers. One demonstration supplier reported little change in volume. Two nondemonstration suppliers of urological supplies/surgical dressings reported that they stopped serving Polk County before the demonstration prices went into effect on October 1, 1999. They attributed this decision to the demonstration. A nondemonstration oxygen supplier continued to serve its previous Medicare customers in Polk County but reported declines in volume. These results are consistent with the demonstration design, which requires Medicare beneficiaries who start using demonstration products to select demonstration suppliers.

A different but related issue is the effect of the demonstration on suppliers' Medicare revenue. Revenue is the product of the Medicare price times Medicare volume. Even if Medicare volume goes up, Medicare revenues could fall if the demonstration prices are sufficiently lower than the Medicare fees in effect prior to the demonstration. Three of the 6 respondents who were demonstration suppliers reported increases in revenues of over 20 percent in Polk County, a fourth reported an increase in revenue between 0 and 20 percent, and a fifth reported no change. One demonstration supplier of urologicals reported a reduction in revenue because its prices were below costs. This supplier may have answered the question from the perspective of profits; its reported increases in volume should have brought higher revenues. Overall, these results suggest that some of the demonstration suppliers were able to increase their Medicare revenues despite the demonstration's price reductions.

Several demonstration suppliers perceived the market as being more competitive after the demonstration began. In contrast, one demonstration and one nondemonstration supplier thought the market was less competitive.

5.4 San Antonio

5.4.1 Number of Bidders

A total of 79 suppliers submitted bids in one or more product categories (Table 5-1), making a total of 169 bids across all five categories. Oxygen equipment and supplies, hospital beds and accessories, and wheelchairs and accessories each attracted more than 40 bids, and nebulizer drugs attracted 33 bids. In contrast, there were only 14 bids for orthotics, the product category with the lowest total allowed charges. Overall, 65 percent of the suppliers that submitted bids won demonstration status in at least one product category. Within product categories, the number of winning bids ranged from 8 for orthotics to 32 for oxygen equipment and supplies;

winning percentages ranged from 33 percent for nebulizer drugs to 76 percent for oxygen equipment and supplies.

5.4.2 Supplier Perceptions about Competition

During three site visits to San Antonio, we interviewed over 20 demonstration and nondemonstration suppliers. Many of our questions focused on the demonstration's effects on competition among suppliers at the bidding stage, competition among demonstration suppliers after the demonstration prices take effect, and the long-term competitiveness of the DME market.

With regard to competition at the bidding stage, a number of suppliers expressed concern about how the number of demonstration suppliers was determined. A serious concern for some suppliers was that they missed the composite bid cutoff by $1 or less yet were cut out of the market. Several of the nondemonstration suppliers we spoke with indicated that while they understood the need for winners and losers, they would have been willing to provide equipment at the demonstration prices. Others said that they saw no need for CMS to eliminate suppliers from the market; they felt that CMS should have determined a new fee schedule and then let suppliers decide whether they would provide to beneficiaries at the new levels. In contrast, some demonstration suppliers expressed disappointment that so many demonstration suppliers were selected; they thought that it would be hard to substantially increase their Medicare volume with so many demonstration suppliers selected. These concerns are almost unavoidable with competitive bidding: once the bidding is over, nondemonstration suppliers will wish that the competitive cutoff was a little less stringent, while demonstration suppliers will wish to face fewer competitors.

A few suppliers made plans to change the way they marketed themselves after they were named demonstration suppliers. Some suppliers headquartered in San Antonio in Bexar County began marketing themselves to Comal and Guadalupe Counties in the surrounding demonstration area after they won demonstration status. One supplier added a staff member to assist with marketing. Three suppliers reported increasing their efforts with referral agents to educate them on the demonstration and inform them of their demonstration status.

Opinions were generally mixed among suppliers as to how the demonstration might affect the competitiveness of the DMEPOS market in the longer term. Medicare comprised varying percentages of our interviewees' revenues, ranging from approximately 5 percent to 90 percent. Most suppliers we interviewed do not feel that they are dependent on revenue generated from Medicare for survival. However, at least one of the losing bidders expects that his company may have to go out of the DMEPOS business because of the demonstration. Other losing bidders reported that they will focus on generating revenues from nondemonstration products or non-Medicare patients. Some suppliers believed that since competitive bidding inherently eliminates a

number of suppliers from the Medicare market, competition among the remaining suppliers must be less than before the demonstration.

5.5 Summary and Next Steps

In Round 2 bidding in Polk County, competition appears vigorous for oxygen equipment and supplies and hospital beds and accessories, where nearly the same number of suppliers submitted bids as in Round 1. For urological supplies and surgical dressings, the number of bidders fell. We will continue to evaluate whether the decrease in bidders for these product categories has any impact on market competitiveness, access, or quality. Looking across all categories, there was both entry into and exit from the ranks of demonstration suppliers in Round 2 bidding. Half of the Round 2 demonstration suppliers had been demonstration suppliers in Round 1, but the other half had not.

After 8 months of the demonstration, there has been little apparent effect of the demonstration on the competitiveness of the DME market in San Antonio. A large number of suppliers bid in the demonstration, and from 8 to 32 demonstration suppliers were selected in each product category. Still, it is too early to evaluate if the demonstration will have long-term impacts on market competitiveness in San Antonio.

We will continue to evaluate the competitiveness of the market throughout the demonstration. During the next year, we will conduct a supplier survey in San Antonio to gain further insight into the effect of the demonstration on supplier competition. We intend to analyze the results of the survey in conjunction with claims data when the data become available. Both the claims and survey data will be collected in San Antonio and the comparison area. These data will allow us to characterize the supplier market in both the pre- and post-intervention periods and to evaluate the changes that have occurred in the local market. Data from the comparison area will help distinguish the effects of the demonstration in San Antonio from general trends that affect both San Antonio and other areas.

We will also collect information on competitiveness during future site visits to Polk County and San Antonio. Site visits to Polk County will focus on Round 2 bidding and subsequent competition among demonstration suppliers, while site visits to San Antonio will focus on supplier outcomes and competition.

SECTION 6
REIMBURSEMENT SYSTEM

6.1 Introduction

In the First-Year Annual Evaluation Report, we discussed the process of implementing the competitive bidding reimbursement system in Polk County. Based on the evidence from Polk County, we concluded the following:

- Competitive bidding can be successfully implemented.
- CMS and its contractor exerted major efforts to educate beneficiaries, suppliers, and referral agents about the demonstration.
- The information included about the demonstration in the RFB and Bidders Conference was useful to suppliers.
- The bid evaluation process did not simply focus on price; supplier capacity and quality were carefully considered during this process. The demonstration contractor has proposed methods for streamlining the bid evaluation process.
- Demonstration claims are being processed smoothly.
- The presence of an on-site Ombudsman has greatly facilitated implementation of the demonstration.

In preparation for this annual evaluation report, we examined the implementation process in San Antonio, Texas. Most of our findings echo the first-year conclusions regarding the Polk County site. In this section, we first discuss how the demonstration in San Antonio and the second round of the demonstration in Polk County differed from the first round of the demonstration in Polk County. Then, we briefly outline the implementation process in San Antonio and note the similarities to—and any differences from—the implementation in Polk County. Finally, we examine the costs of implementing competitive bidding for DMEPOS. Knowledge of these costs is essential for evaluating whether competitive bidding can produce Medicare cost savings; to evaluate this issue, the costs of implementation must be compared to any reductions in Medicare payments. Key findings are as follows:

- There were three major differences in demonstration design between Round 1 bidding in Polk County and subsequent rounds of bidding in San Antonio and Polk County. The weighting mechanism used to calculate the composite price was improved. The project design in San Antonio changed three of the product categories originally used in Polk County. Enteral nutrition was dropped as a product category in Round 2 bidding in Polk County.

- Although a couple of key milestones on the project schedule met with delay, competitive bidding was successfully implemented in San Antonio. Stakeholders were educated about the demonstration and received useful information. CMS and its contractor evaluated bids from 79 suppliers, more than twice as many as in Polk County. The delays that caused CMS to depart from its planned schedule were a 1-month delay in implementation relative to the tentative starting date of January 1, 2001, and delivery of the demonstration directories very close to the actual starting date of February 1, 2001. Delivering the directories in a more timely fashion would improve implementation of the demonstration.

- For the entire demonstration, CMS and contractor costs of implementation will total about $4.8 million between 1995 and 2002. About $1.2 million in costs were incurred in the development phase of the demonstration from September 1995 to June 1998 (15 months before the demonstration prices took effect). About $3.6 million, or $800,000 per year, in costs will be incurred during the operational phase of the demonstration from July 1998 until December 2002.

- The incremental costs of operating a second demonstration site are relatively low, ranging from $300,000 in a year when bidding occurs to $110,000 per year in nonbidding years.

- The costs of implementing the demonstration are about 40 percent lower than the projected $8.5 million reduction in Medicare allowed charges associated with the demonstration.

6.2 Changes in Demonstration Design

There were three major differences in design between Round 1 bidding in Polk County, Florida, and subsequent rounds of bidding in San Antonio and Polk County. First, the weighting mechanism used to calculate the composite price was modified before bidding began in San Antonio. Second, bidding in San Antonio covered two of the product categories in the first round of Polk County bidding, but three new product categories were also included. Third, enteral nutrition was dropped as a product category during Round 2 bidding in Polk County. Below, we describe each of these changes in greater detail.

6.2.1 Weighting

In our First-Year Evaluation Report, we identified several problems related to the product weights used in Round 1 bidding in Polk County. Product weights are used to calculate the composite bid for each demonstration product category. The composite bid is a way to aggregate a supplier's bids for each individual product into a single bid for the whole category that is comparable across bidders. A supplier's composite bid for the product category is calculated by multiplying the supplier's bid for each product by the product's weight and then summing the weighted bids across all products in the category. Each product's weight represents the share of

that product relative to all of the products in the category; the weights add to one for each category.

In Round 1 bidding in Polk County, the weight for each product was set equal to the product's share of allowed charges in the product category. We found that this weighting approach put too much weight on high-priced products so that bids for these products had an inordinate effect on the composite bid. This could cause three related problems to occur:

- The Round 1 weighting mechanism, combined with the formula to set prices for individual products, could cause prices to be set high. This problem actually occurred for surgical dressings. For many products, demonstration prices were set higher than the Medicare statewide fee schedule that would have been in effect in Florida. We found evidence to suggest that the demonstration prices would have been lower than the Medicare statewide fee schedule if an alternative weighting mechanism (see below) had been used.

- Under the Round 1 weighting mechanism, it was possible that a supplier offering lower allowed charges to CMS could have had a higher composite bid than a supplier offering higher allowed charges to CMS.

- The Round 1 weighting process did not adequately distinguish among HCPCS modifiers that are associated with new purchases, used purchases, and rental payments. In the case of enteral nutrition, the use of new purchase prices in the calculation of the composite bid had a significant effect.

Because of these problems, we recommended that the demonstration use an alternative weighting mechanism based on product volume. CMS adopted volume weighting for the San Antonio demonstration and Round 2 bidding in Polk County. In addition, for HCPCS codes with modifiers associated with new purchases, used purchases, and rental payments, the product weight was associated with the most commonly applied modifier. These changes appear to have resolved the problems associated with the Round 1 weights.

6.2.2 San Antonio Product Categories

Product categories in San Antonio, the second demonstration site, included oxygen equipment and supplies and hospital beds and accessories, which were both included in Round 1 of the Polk County demonstration. Three new product categories—wheelchairs and accessories, orthotics, and nebulizer drugs—were also included in San Antonio. Wheelchairs and accessories were included because this product category accounts for a relatively high share of DME expenditures. Orthotics were included to test competitive bidding for at least one type of prosthetics and orthotics. Ultimately, only orthotic products that required relatively little

customization were included in the demonstration.[1] Nebulizer drugs were included because of evidence that Medicare pays too much for these specific drugs and to test whether competitive bidding is an effective way to set Medicare payments in general.

6.2.3 Enteral Nutrition

Enteral nutrition was included in Round 1 bidding in Polk County but dropped from Round 2 bidding. CMS dropped enteral nutrition from Round 2 to focus on medical equipment and supplies used in a noninstitutional setting; most Medicare Part B enteral nutrition equipment and supplies are used by residents of nursing facilities in stays that are not covered by Part A. During Round 1 of the demonstration, nursing facilities were allowed to purchase enteral nutrition services (as well as urological supplies and surgical dressings) from nondemonstration suppliers that agreed to accept the demonstration fees and quality and service standards. Most nursing facilities continued to use their existing suppliers for enteral nutrition. During Round 1 site visits, we encountered no access or quality concerns related to enteral nutrition.

6.3 Implementation of the Demonstration in San Antonio

6.3.1 Publicity, Solicitation, and Education

CMS and its contractor undertook a series of efforts to publicize the demonstration and educate stakeholders about its rules and implications. Separate publicity and education efforts were aimed at beneficiaries and beneficiary advocacy groups, suppliers, and referral agents. Below, we describe the efforts aimed at each group.

- **Beneficiaries and Beneficiary Advocacy Groups**—A public meeting was held in San Antonio in March 2000 describing the demonstration. Representatives of beneficiary groups were invited to the meeting. A letter explaining the demonstration was sent to beneficiaries in San Antonio. This letter outlined why CMS was undertaking the demonstration, what the changes would mean for beneficiaries, how competitive bidding would work, and how Medicare would protect beneficiaries. A follow-up letter and a copy of the demonstration directory of providers were sent immediately prior to February 1, 2001, when the demonstration prices took effect. The letters and directory were available in both English and Spanish. Presentations at local gatherings (e.g., AARP groups, senior nutrition centers, health fairs) were made to provide opportunities for open questions and answers. A hotline was set up to allow the local Ombudsman to answer beneficiary questions. Numerous beneficiaries have used this hotline to discuss the implications of the demonstration for their health care needs. New Medicare beneficiaries were identified quarterly and sent materials on the demonstration.

[1] A few orthotics products that were classified as noncustomized when the RFB was issued were subsequently reclassified as customized.

- **Suppliers**—A letter was sent in March 2000 to all suppliers submitting DMEPOS claims for San Antonio beneficiaries in the previous 18 months, informing them of the demonstration and inviting them to attend a meeting in San Antonio on March 28 to discuss the demonstration. On May 5, 2000, the upcoming demonstration was announced in the *Commerce Business Daily*. This announcement explained the purpose of the competitive bidding demonstration and provided information on the upcoming bidding process, including contact information for obtaining an RFB package. The RFB, detailed instructions, and information regarding the Bidders Conference were sent out to all persons requesting these documents. A Bidders Conference was held 1 month before the bids were due to review bid procedures and answer technical questions. After bid evaluation was complete, CMS staff held a general debriefing with suppliers to discuss the results of the bid evaluation process. The on-site presence of the Ombudsman allowed the Ombudsman to personally visit suppliers to discuss the demonstration and answer technical questions both before and after the demonstration prices took effect.

- **Referral Agents**—Letters were sent to referral sources describing the demonstration, announcing that demonstration winners had been selected, and indicating that a directory would soon follow. In-service meetings were scheduled with hospital discharge planners, and one-on-one meetings were also scheduled with administrators of home health agencies and large physician groups to provide referral agents with detailed information concerning the demonstration, including a draft list of demonstration winners. Directories listing demonstration providers, their services, and service areas were sent to these agents in late January 2001. The on-site Ombudsman continued to meet with referral agents after the demonstration began.

During site visits, we found that most San Antonio stakeholders were generally satisfied with the publicity, solicitation, and education efforts of CMS and its contractor. However, some suppliers complained that the list of demonstration suppliers was not available at the general debriefing (at that time, some suppliers were still appealing their rejections). At least one supplier felt that the on-site Ombudsman should have spent more time with suppliers prior to implementation of the new prices. Finally, a number of stakeholders believed that it would have been helpful to receive the demonstration directory more in advance of the date when the new prices took effect.

Overall, the education efforts appeared to be nearly as effective in San Antonio as they were in Polk County. However, delays in delivery of the demonstration directory are a potential problem. Delivery delays complicate supplier planning and may hinder referral agents' ability to properly refer beneficiaries to demonstration suppliers in the early days of the demonstration. It seems reasonable to expect that beneficiaries and referral agents should have demonstration directories in hand at least 2 weeks before the demonstration prices take effect.

6.3.2 Management of the Bidding Process

A detailed RFB package was distributed to all suppliers that requested the materials, which contained the following information:

- Background information on why the competitive bidding demonstration was being conducted and how competitive bidding works to lower prices.
- Specific discussion of the DMEPOS Competitive Bidding Demonstration process, including how to formulate bids, how bids are evaluated, how demonstration prices are determined from bid prices, and post-award options.
- An outline of operational policies that would be in effect during the demonstration.
- Forms to be submitted to the DMERC for bid evaluation:
  - Form A: Application for Suppliers—contains general information about the supplier and its employees, including identifying information, categories of goods/services for which the supplier is submitting a bid, accreditation and licensure, number of employees, their training and certifications, methods for handling customer complaints and assessing customer satisfaction, presence of disaster and infection control plans, declarations regarding investigations or claims against the supplier, a list of references, and a list of financial institutions with which the supplier does business.
  - Form B: Bidding Sheets—Suppliers are asked to complete separate bid sheets for each category of goods/services on which they will be submitting a bid. Each bid sheet requests additional details on the processes of care for the particular good/service, counties that they will service during the demonstration, and bid prices for procedures included in the demonstration.
  - Form F: Financial Data—Suppliers who qualified within the competitive range are asked to provide detailed information from income statements and tax returns for the previous 2 years and accounts receivable summaries for the past 3 months.
- Forms to be used by bid evaluators and references:
  - Form C: On-Site Inspection Checklist—covers examination of physical property, licenses and certifications, staffing, inventory, patient files, and procedures.
  - Form D: Bank References—covers loan payments, returned checks, and credit-worthiness of supplier. The supplier completed the top half of the form and then forwarded it to the bank reference. The bank reference then completed the reference section and submitted the form to the demonstration contractor.
  - Form E: Referral Source References—requests information from references regarding customer service, deliveries, patient satisfaction, quality of products, and patient training. The supplier completed the top half of the form and then forwarded it to the referral source. The referral source then completed the reference section and submitted the form to the demonstration contractor.
- Appended materials:
  - Requirements and standards for demonstration suppliers

- 1998 Medicare utilization data for DMEPOS for Part B beneficiaries permanently residing in the San Antonio demonstration area (to assist suppliers in estimating demand)
- Financial ratios—an explanation of the financial ratios to be used to evaluate bidders
- Glossary of terms
- Evaluation tables—explaining how bids are evaluated and demonstration prices are calculated
- HCPCS codes and weights

A Bidders Conference was held on May 16, 2000, in San Antonio. Representatives from CMS and Palmetto GBA, the demonstration contractor, outlined the rationale for the demonstration, described demonstration rules and operating procedures, and reviewed the bidding process and RFB materials. A consultant from the DME industry made a short presentation on developing effective bidding strategies for the demonstration. During a question-and-answer period that lasted over an hour, CMS and Palmetto representatives responded to questions from the audience about the demonstration. Written responses to the questions were sent to attendees and made available on CMS's Internet site for the demonstration.

In general, the presentations in the Bidders Conference were clear and informative. During our site visits, suppliers reported that the Conference was useful, although a few suppliers felt that most of the material was already contained in the RFB and therefore questioned the value-added of the conference. The question-and-answer session gave suppliers a useful opportunity to raise questions about the bidding process and demonstration rules. CMS staff provided evidence from the Polk County demonstration that demonstration suppliers did not experience a large immediate increase in Medicare volume. This information was useful to bidders; some Round 1 bidders in Polk County had expected a huge immediate increase in volume that did not instantly materialize.

As in Polk County, most San Antonio suppliers felt that the RFB and Bidders Conference provided them with sufficient information for bid preparation. None of the suppliers indicated that there was additional information that CMS could have supplied that would have been helpful in bid formulation, although some noted that it would be interesting to have examples of bids submitted by Polk County suppliers. Some suppliers eventually pursued this idea by contacting companies in Polk County. Some suppliers commented on the confusing nature of the product weights, especially for wheelchairs and accessories where there were more items than in other product categories.

Bids were due June 23, 2000. As detailed in previous chapters, 79 suppliers submitted a total of 169 bids across the five product categories. During site visits, suppliers reported spending 20 to 300 hours in preparing their bids, with a median time of 45 hours. One supplier reported

problems in filling out the financial forms, but suppliers had few problems filling out the other forms.

Overall, management of the bidding process in San Antonio was very similar to management of the bidding process in Round 1 in Polk County. If anything, bidding may have proceeded more smoothly in San Antonio.

6.3.3 Selection of Winners

Bids were initially reviewed by Palmetto GBA staff for completeness and eligibility of bidders. Next, a bid evaluation panel of reimbursement and DMEPOS experts established a financially competitive range that included more than enough suppliers to serve the entire demonstration site. This was accomplished by arraying suppliers in each product category according to their composite bid price, comparing cumulative supplier volume (current and estimated capacity) with current utilization levels, and selecting a minimum number of suppliers. The possibility that some suppliers might drop out of the demonstration was considered, and the minimum number of suppliers was adjusted to account for this possibility.

The panel considered the capacity of these bidders and looked for natural breaks (if they existed) in the bid prices to select a cutoff price that determined the financially competitive range. The panel recommended cutoff points to CMS for approval, and CMS approved the cutoffs.

After the financially competitive range was established, only bidders below the cutoff price received further consideration for selection. Suppliers who made the cutoff completed Form F on Financial Data and received site visits by inspectors who completed Form C's On-Site Inspection Checklist. Palmetto GBA staff evaluated information on Forms D and E from bank and referral source references, respectively. Palmetto GBA obtained at least five references on each supplier. The panel used the information obtained from Forms C, D, E, and F to score the quality of each bidder in each of four areas: customer service and satisfaction, ethics, data collection and retention, and financial stability/creditworthiness. Based on experience from the first round of the Polk County bidding, where all members of the Bid Evaluation Panel examined the financial data, Palmetto GBA established a special panel of accounting and financial experts to evaluate the issues of financial stability/creditworthiness. Overall, the assessments resulted in a relatively wide distribution of scores ranging from poor (score of less than 70 total points out of 100) and average (70 to 79 points) to good (80 to 89 points) and excellent (> 90 points).

After quality was evaluated, the Bid Evaluation Panel recommended a preliminary list of demonstration suppliers. Suppliers in the financially competitive range with quality ratings of good to excellent were selected with no conditions. Several other suppliers in the financially competitive range with average quality ratings were selected conditionally; these suppliers were required to meet specific conditions to become demonstration suppliers. Seven suppliers in the

financially competitive range were not initially selected as demonstration suppliers. Under demonstration rules, these suppliers were allowed to file for reconsideration. Six of the suppliers filed for reconsideration. Ultimately, five of the six achieved demonstration status after providing supplemental information and/or correcting deficiencies. During the evaluation process, CMS had final responsibility for reviewing and approving the Bid Evaluation Panel's recommendations.

To set the new fee schedule, Palmetto GBA returned to the bid prices from all the suppliers who initially bid at or below the CMS-approved cutoff price. Their individual bids were combined to find a single price for each demonstration item.

Palmetto appeared to have benefited from its experience in evaluating bids during Round 1 bidding in Polk County. Use of a special financial panel streamlined that financial assessment. Nevertheless, with more than twice as many bidders in San Antonio as in the first round in Polk County, it took longer to evaluate the San Antonio bids. In part due to delays in the evaluation process and in part due to other factors, the implementation date for the demonstration was delayed from January 1, 2001, to February 1, 2001.

6.3.4 Administration and Monitoring

Processing System Changes

DMEPOS claims from San Antonio were already being processed by Palmetto GBA. Thus, there was no confusion as to where to send claims as a result of the new reimbursement system for San Antonio. However, significant computer system changes were necessary to accommodate the alternative reimbursement structure associated with the demonstration. Palmetto GBA worked directly with their programming contractor (VIPS) to create additional computer program modules to handle the new claims. All claims submitted to the DMERC must be screened to determine whether they are San Antonio claims.

The modified programs were developed prior to the beginning of the demonstration, and extensive system testing with mock claims was conducted to work out any program bugs. A procedure manual was developed specifically for the demonstration, and staff who would be dealing with San Antonio suppliers and beneficiaries received intensive training. In addition, internal education seminars were held for all Palmetto GBA staff to educate them about the demonstration, in case their department came into contact with some aspect of the demonstration or they received any "stray" calls. Since the implementation of the demonstration, there has been one unanticipated problem with the new claims processing modules. The program used to identify which DME claims are associated with beneficiaries eligible for the demonstration (i.e., those beneficiaries living in Bexar, Comal, and Guadalupe Counties) is based on the beneficiaries' zip codes. However, a few zip codes cross demonstration borders to include areas in

nondemonstration counties. As a result, some nondemonstration beneficiaries may be incorrectly identified as living within the demonstration area. To overcome this problem, the demonstration contractor has identified the problem zip codes. Claims for these zip codes are now processed manually so that their residents can be correctly sorted as demonstration and nondemonstration beneficiaries. Relatively few claims are involved.

Use of an On-Site Ombudsman

The Medicare Competitive Bidding Ombudsman took up residence in San Antonio in summer 2000. The Ombudsman was responsible for answering beneficiary, supplier, and provider inquiries on the hotline and providing education and outreach (town meetings, in-service meetings, and one-on-one visits) in the months prior to the February 1, 2001, start date for the demonstration. He was also responsible for coordinating and participating in bid evaluation site visits. Since the implementation of the demonstration, the Ombudsman continues to answer telephone inquiries and monitor demonstration suppliers through investigation of complaints and routine inspections.

Having on-site Ombudsmen dedicated to the demonstration has proven popular among beneficiaries, referral agents, and suppliers in both Polk County and San Antonio. Stakeholders believe that the Ombudsmen understand and are responsive to their concerns.

Site Monitoring

The Ombudsman has been responsible for monitoring the quality of products and services offered by the suppliers. A telephone hotline is used by many suppliers and beneficiaries to request information and to notify the Ombudsman of potential problems. In addition to the complaint-driven methods for assuring quality and service, the Ombudsman has conducted site visits to demonstration suppliers who received conditional approval to see that the conditions are being met. The Ombudsman will also conduct annual site visits to demonstration suppliers to review procedures, assure appropriate inventories, and check transactions records.

Relationship Between the Demonstration Contractor and CMS

The demonstration contractor, Palmetto GBA, is responsible for implementing and administering the demonstration on a day-to-day basis. In this role, Palmetto is responsible for designing the demonstration; educating beneficiaries, suppliers, and other stakeholders about the demonstration; soliciting and evaluating bids; processing claims; and responding to inquiries and complaints about the demonstration. Most demonstration staff work in Palmetto's Columbia, South Carolina, headquarters; an on-site Ombudsman resides and works in San Antonio. The Polk County Ombudsman resided in Polk County during Round 1 bidding and the first 12 months after

the demonstration fees took effect. She now works out of Palmetto's Columbia office but travels to Polk County frequently.

CMS staff maintain oversight responsibility for the demonstration, review all documents and Palmetto decisions, and make final decisions about demonstration design and policy. In each bidding round, CMS staff participate prominently in the announcement of competitive bidding, the Bidders Conference, and a general debriefing for bidders. CMS and Palmetto staff collaborate closely, with weekly teleconferences and occasional on-site meetings.

In both Polk County and San Antonio, the division of labor between Palmetto and CMS appears to have worked reasonably well. Palmetto has strong expertise in the areas of DMEPOS, claims processing and administration, beneficiary and supplier communication, and customer service. It makes sense to merge operations of the demonstration with Palmetto's existing DMERC operations to the full extent possible. CMS has provided appropriate oversight and retained ultimate responsibility for policy decisions. Communication and coordination between Palmetto and CMS have generally been effective. After completion of a longer than expected developmental period, the bidding process and implementation of the demonstration prices proceeded on schedule in Polk County.

In San Antonio, the division of labor between Palmetto and CMS may have contributed to the 1-month delay in implementation from January 1, 2001, to February 1, 2001. The CMS review of Palmetto selection recommendations necessarily—and properly—lengthens the period before demonstration suppliers can be announced, but in this case the final selection took longer than expected. If competitive bidding occurs in the future, it may be helpful to consider steps to streamline CMS review and/or lengthen the period allocated in the schedule for bid evaluation.

6.4 Costs of the Demonstration

As part of the overall evaluation of the competitive bidding demonstration, we have collected data on the costs of administering the system, including both initial implementation costs and ongoing operation costs. This section summarizes the information that we have collected to date and highlights a number of cost issues that need to be considered in implementing competitive bidding on a wide-scale basis.

6.4.1 Overall Costs of the Demonstration

We estimate that the overall costs of the demonstration over the life of the project (1995 to 2002) will be approximately $4.8 million (in Year 2000 dollars). Major cost categories include personnel ($2.3 million), computer software and upgrades necessary to accommodate the revised claims processing ($0.9 million), overhead costs ($0.8 million), and publishing/mailing of materials to beneficiaries and suppliers ($0.3 million) (see Table 6-1).

Table 6-1. Estimated Overall Costs of the Demonstration

Estimated DMERC Costs (in millions)		Estimated CMS Costs (in millions)	
Personnel	$1.8	Personnel and Travel[a]	$0.5
Publishing/Mailing	$0.3	Overhead	$0.1
Office/Telephone	$0.3		
Equipment	$0.1		
Computer Software	$0.9		
Travel	$0.1		
Overhead	$0.7		
Total Costs	$4.2	Total Costs	$0.6

[a]CMS travel costs too small to report separately.

6.4.2 Development Costs

Of the estimated $4.8 million in demonstration administration costs, about $1.2 million was spent in the development phase of the project (costs incurred between September 1, 1995, and July 1, 1998). These costs included computer software upgrades ($0.5 million), personnel ($0.4 million), and office/telephone expenses ($0.1 million). The development phase took longer than anticipated due, in part, to introduction of BBA in 1997.

6.4.3 Scaling the Learning Curve

Implementing a new reimbursement system required a substantial amount of learning on the part of the fiscal intermediary. As individuals and the organization gained experience with the demonstration and as policies and procedures were established, evidence suggests that they were able to process materials and conduct tasks more efficiently.

One example of this learning curve effect is provided by the costs associated with the first two Bid Evaluation Panels. The first Bid Evaluation Panel, convened to review the initial bids from the Polk County site, met for at least 3 weeks. Every evaluator read every bid. The process was slow and arduous to assure completeness, accuracy, and fairness. While these efforts were admirable, replication has allowed the staff to recognize time-saving steps and simplify procedures. Additional preparatory work by DMERC staff has also streamlined the process and reduced average Bid Evaluation Panel member time per application. During the first review cycle, we estimate an average of 16.4 Bid Evaluation Panel hours were spent reviewing each bid. During the second review cycle (for San Antonio), we estimate that time was reduced to 9.4 hours per bid.

In addition, auditors, accountants, and supervisors were substituted for many of the (more expensive) high-level administrators on the panel, further reducing costs.

6.4.4 Spreading the Fixed Costs

It is also clear from our examination of the costs associated with the demonstration that there may be considerable economies of scale associated with conducting competitive bidding. One example of the economies of scale achieved over the course of the demonstration is evident in the extremely small increase in overall costs of the DMERC with the addition of the second (San Antonio) site. Addition of this site resulted in an overall increase in costs of approximately $310,000 in the first full year. This includes the costs of hiring one additional full-time employee (the San Antonio Ombudsman), mailings to beneficiaries and suppliers, additional computer software upgrades, travel, telephone, equipment, and compensating the Bid Evaluation Panel for reviewing bids.

6.4.5 Cost Implications of a National Program

While it is difficult to extrapolate from a demonstration with two sites to a national program of competitive bidding, we believe that the cost data provide some important information from which to make cost projections. First, there are sizable fixed costs associated with fiscal intermediary knowledge of and involvement with the process. Modifying reimbursement software to accommodate competitive bidding and training personnel to handle modified claims requires a significant fixed investment. Efforts to implement competitive bidding on a nationwide basis should limit the number of fiscal intermediaries to economize on these fixed costs. This is unlikely to be a large problem for DMEPOS, where there are only four DMERCs nationwide.

The cost of establishing competitive bidding in additional markets is far lower than the fiscal intermediary's fixed costs. These costs were in the range of $100,000 to $310,000 per year for San Antonio, depending on whether the year in question was a "bidding year" (requiring the costs of the Bid Evaluation Panel and extensive mailings to beneficiaries and suppliers). Approximately $75,000 to $85,000 of these costs are semi-fixed, no matter what the size of the market (e.g., the salary of the Ombudsman, office/equipment, telephone). The balance (variable costs, including bid evaluation and mailings) will vary based on market parameters (e.g., number of beneficiaries, number of suppliers, number of bids received, and number of products/product categories). Based on the size of the San Antonio market, these variable administrative costs appear to average about $1.88 per beneficiary. However, these costs would likely be higher for smaller markets and, perhaps, somewhat smaller for larger markets.

It is also possible that a national program would require some costs that were not evident in the demonstration. For example, although individuals might be willing to serve a few weeks

every other year on a Bid Evaluation Panel, they might not be willing to undertake such a task on a full-time basis (as would be required with a national program). Thus, the resources available to the demonstration might not be available to a national program. Alternative models for bid evaluation that may be more or less costly might need to be considered. For example, under a national competitive bidding program, it might make sense to establish a full-time panel (or multiple panels) to evaluate bids. Individuals on these panels would need to be trained in the various aspects of bid evaluation. An administrative structure could coordinate the various competitive bidding processes across the country so that bid evaluations could be scheduled with the standing panel. Conceivably, such a dedicated structure could conduct the bid evaluations in a more cost-effective manner than an ad hoc committee that only meets every other year.

6.4.6 Demonstration Costs versus Demonstration Savings

Based on operating (nonstartup) costs of approximately $3.6 million over 4.5 years, we estimate that the competitive bidding program, as currently formulated, costs approximately $800,000 per year to run. Preliminary estimates (see Section 2) comparing demonstration prices to the fee schedules that would have been in effect and keeping utilization volume constant at predemonstration levels suggest that the demonstration will reduce Medicare allowed charges by approximately $8.5 million over that same time period.

Given the sizeable fixed costs associated with conducting the competitive bidding demonstration, it is likely that addition of further sites could enhance the cost savings associated with competitive bidding. We can base this statement on the costs and cost savings associated with the addition of the San Antonio site. The cost of adding San Antonio will be approximately $510,000 over 3 years (2000 to 2002). Estimated reductions in allowed charges in San Antonio will be approximately $4.4 million.

The continuing cost-effectiveness of adding additional sites (using a single DMERC) will depend on a number of key factors:

- The rate at which centralized DMERC costs increase with the addition of sites. Although our current data find very small cost increases associated with the addition of the San Antonio site, economic theory suggests that at some point these "increasing returns to scale" will be exhausted. Because we have only two data points, we cannot examine the *rate* of cost increases at any other scale. This is critical information for determining how many competitive bidding sites should be assigned to each DMERC.

- The volume of DMEPOS Medicare claims in a particular market. Because a large portion of the competitive bidding demonstration costs at the site level are relatively fixed, a minimum volume is necessary to generate sufficient savings to justify the demonstration costs.

- Sufficient number of suppliers in a particular market willing to lower prices to maintain their Medicare market share. Site visits to both Polk County and San Antonio revealed that suppliers whose business was comprised primarily of Medicare were highly motivated to submit competitive bids. Suppliers who served fewer Medicare enrollees (e.g., less than 30 to 40 percent of business) felt less pressure to submit bids and/or make significant price cuts.

6.5 Discussion

To date, our examination of the reimbursement system under competitive bidding supports the following preliminary conclusions:

- There were only three major changes in demonstration design between sites and rounds. Three new product categories were included in San Antonio to determine whether competitive bidding was applicable to those services. In order to focus on DMEPOS provided in the home, one product category that was typically provided to nursing home residents was dropped from Round 2 of the demonstration in Polk County. The weighting mechanism used to calculate composite bids and prices was refined to overcome problems that occurred in the first round of bidding in Polk County.

- For the most part, implementation of the demonstration in San Antonio was similar to implementation in Polk County, supporting our conclusion in the First-Year Annual Evaluation Report that competitive bidding can be successfully implemented. CMS and its contractor have been able to notify and educate stakeholders, solicit and evaluate bids, select winners, and implement the new reimbursement system in a relatively orderly fashion. However, there was a delay in delivering the demonstration directory in San Antonio; this problem should be avoided in any future demonstration.

- Implementing competitive bidding is by no means costless. We estimate that development, implementation, and operation of the demonstration will cost about $4.8 million for the period between 1995 and 2002. However, this total is less than the estimated $8.5 million reduction in Medicare allowed charges associated with the demonstration (this estimate assumes that volume remains constant at predemonstration levels). It is also likely that the incremental cost of operating competitive bidding at an additional site will be less than the average costs of operating two sites. This suggests that net program savings may increase if the number of sites is expanded.

SECTION 7
SUMMARY AND CONCLUSIONS

Based on approximately 2 years of operation, CMS's Competitive Bidding Demonstration for DMEPOS shows the potential to decrease Medicare expenditures. Competitive bidding has lowered the prices paid by Medicare for the large majority of DMEPOS products and services. Because we do not yet have data on utilization, we cannot definitively conclude that total DMEPOS allowed charges (the product of price times utilization) will fall. However, if utilization remains constant, we estimate that Medicare allowed charges for demonstration products will fall by nearly $8.5 million over the course of the demonstration, a reduction of 20 percent.

To date, we have no evidence of major adverse effects on beneficiary access to care, quality of products and services, or diversity of product selection. Our results for Polk County indicate that the demonstration has not been accompanied by major changes in beneficiaries' access to or quality of DMEPOS products and services. Beneficiaries' overall satisfaction with their service from DMEPOS suppliers has remained very high. The impact of the demonstration on satisfaction was not statistically significant in regression analyses. Similarly, the demonstration did not have a statistically significant impact on almost all of the access and quality measures included on Polk County beneficiary surveys. The demonstration design includes quality standards and provisions to maintain beneficiary access and these probably have helped to maintain access and quality.

Although the majority of our findings suggest that the demonstration has not reduced access or quality, a few isolated findings cause concerns. Survey data from Polk County indicated statistically significant declines in the provision of portable oxygen to new oxygen users and training for surgical dressing and urological supplies users, a possible shift away from suppliers making home deliveries, and less frequent routine maintenance visits to new medical equipment users. Some referral agents in San Antonio described incidents where demonstration suppliers provided wheelchair items that were not ordered or were not properly adjusted.

Industry competition has generally remained healthy in the presence of the demonstration. Seventy-nine suppliers submitted bids in San Antonio, and 26 suppliers submitted bids in Round 2 bidding in Polk County. Multiple winners were selected in each product category in each round of bidding. In Polk County, nondemonstration suppliers in Round 1 survived to bid successfully in Round 2. However, the falling number of bidders for urological supplies and surgical dressings raises questions about the feasibility of bidding for products with low allowed charges.

The demonstration has also shown that CMS can design, implement, and operate a reimbursement system that uses competitive bidding relatively efficiently. CMS and its contractor have been able to notify and educate stakeholders, solicit and evaluate bids, select winners, and

implement the new reimbursement system with relatively few problems. We estimate that developing, implementing, and operating the demonstration will cost about $4.8 million over a 7-year period ending in December 2002. This total is less than the estimated $8.5 reduction in Medicare allowed charges associated with the demonstration.

Although most of our findings from the evaluation thus far are positive, many important evaluation issues remain unresolved. The San Antonio demonstration, which has been underway for less than a year, includes different product categories that could be more susceptible to deteriorations in access or quality under competitive bidding. The San Antonio demonstration also provides a larger market in which to test the demonstration's effects on market competition over time. As noted in the previous paragraphs, our analyses have identified some concerns related to access, quality, and competition, and we will continue to monitor these over the duration of the demonstration. Furthermore, with only 2 years of experience under the demonstration, it is premature to conclude what the long-term effects of competitive bidding on the evaluation issues will be.

Our evaluation will continue throughout the duration of the demonstrations in Polk County and San Antonio, and we will collect extensive information on the demonstration's impacts over time. We will issue the Final Evaluation Report in 2003, shortly after the demonstration concludes on December 31, 2002.

SECTION 8
REFERENCES

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GLOSSARY

Adjusted Bid Price:	The supplier's bid price for a demonstration product multiplied by the supplier's ratio.
Adjustment Factor:	The ratio of the supplier's composite bid price to the cutoff composite bid price chosen by CMS for the product category. Used to calculate the demonstration fee schedule from each winning supplier's bids.
Allowed Charges:	The Medicare approved charge for a procedure. Medicare typically pays 80 percent of the allowed charge. The beneficiary is responsible for the remaining 20 percent.
Austin–San Marcos Metropolitan Statistical Area (MSA):	The external comparison group to San Antonio. It was chosen because it matches San Antonio on several key characteristics including location in Texas, a multiple-county MSA, Medicare population, number of DME suppliers, and managed care penetration. It is used to identify what changes are due to the demonstration project and what changes may be general trends. (Since Wilson County [the least-populated county in the San Antonio MSA] is not included in the demonstration site, we do not include Caldwell County [the least-populated county in Austin–San Marcos] in the comparison site.)
Beneficiary:	Person receiving Medicare benefits.
Beneficiary Copayment:	The percentage of covered medical expenses for which the beneficiary is responsible. For Medicare Part B, the copayment equals 20 percent of the maximum Medicare allowance.
Bid Evaluation Panel (BEP):	Group of individuals selected by CMS to evaluate and score, by assigning points, bidders' proposals. The panel is made up of experienced Palmetto Government Benefits Administrator DMEPOS staff and subcontractors. The panel recommends a preliminary list of demonstration suppliers; these recommendations are approved and/or amended by CMS staff.
Bid Price:	The amount for which a supplier offers to provide a demonstration item to Medicare and designated beneficiaries during the demonstration cycle.
Bidders Conference:	A meeting sponsored by CMS and designed to provide potential bidders technical details of the demonstration and the bidding forms. CMS will respond to questions about the procurement.

Bidding Round: The period of time ranging from the release of the Request for Bids through selection of the Demonstration Suppliers.

Brevard County: The external comparison group to Polk County. It was chosen because it matches Polk County on several key characteristics including location in Florida, a single-county Metropolitan Statistical Area, Medicare population, number of DME suppliers, and managed care penetration. It is used to identify what changes are due to the demonstration project and what changes may be general trends.

Brokering Arrangement: The practice by nondemonstration suppliers of referring requests for demonstration products to a demonstration supplier of their choice.

CMS: Centers for Medicare & Medicaid Services. Formerly the Health Care Financing Administration.

Commerce Business Daily: A daily list of U.S. government procurement invitations, contract awards, subcontracting leads, sales of surplus property, and foreign business opportunities.

Comparison Site: An area without the demonstration that is used to identify which changes in the demonstration site are due to the demonstration project and which changes may be general trends. Brevard County was chosen as the comparison site for the Polk County demonstration. Austin–San Marcos, including Bastrop, Hays, Travis, and Williamson Counties, was chosen as the comparison site for the San Antonio demonstration. These sites were chosen because of their similarities to the demonstration site on several key characteristics including location, Medicare population, number of DME suppliers, and managed care penetration.

Competitive Bidding: A process by which individuals or organizations contend against each other to win a contract by offering the best value to the customer. The prices and terms offered are compared and a subset of bidders selected to supply items and services. It allows the customer to take advantage of marketplace dynamics that are likely to lower prices.

Competitive Environment: Factors affecting competition between suppliers.

Competitive Range: Phrase used to describe the subset of suppliers whose composite bid prices equal or are less than the cutoff composite bid price for the product category.

Composite Bid Price:	The sum of the supplier's weighted bid prices for each demonstration product in the product category.
Consolidated Billing:	A comprehensive billing requirement, similar to the one that has been in effect for inpatient hospital services for more than a decade, under which a skilled nursing facility is responsible for billing Medicare for virtually all of the services that its residents receive.
Cutoff Composite Bid Price:	The dollar amount that suppliers' composite bid prices must be equal to or less than for their bids to be in the competitive range.
Cutoff Supplier:	The bidder whose composite bid price equals the cutoff composite bid price for the product category.
Debriefing:	A meeting sponsored by CMS and designed to notify bidders of the bid evaluation results.
Demonstration Cycle:	Preceded by a bidding round, a demonstration cycle is the period of time ranging from the establishment of demonstration prices until the next demonstration cycle begins or the current demonstration cycle ends.
Demonstration Procedure:	A specific DMEPOS item selected for the demonstration. Each demonstration procedure is identified by its HCFA Common Procedure Coding System code.
Demonstration Site:	The geographic region selected in which to conduct the demonstration. It may consist of all or part of a Metropolitan Statistical Area.
Demonstration Supplier:	A bidding supplier chosen by CMS to provide one or more product categories to designated beneficiaries.
Designated Beneficiaries:	Specific Medicare Part B beneficiaries who are included in the demonstration because they permanently reside in the demonstration site.
DMEPOS:	Durable Medical Equipment, Prosthetics, Orthotics, and Supplies.
DMERC:	Durable Medical Equipment Regional Carrier.
Estimated Volume:	The quantity of a demonstration product that Medicare paid for on behalf of beneficiaries during a given year or quarter.
Exempt Status:	Suppliers of DMEPOS who are exempt from the demonstration, such as physicians.

FAMED:	Florida Association of Medical Equipment Dealers.
FDA:	Food and Drug Administration.
Federal Acquisition Regulation System:	Created to establish uniform policies and procedures for certain government acquisition contracts and developed in accordance with the requirements of the Office of Federal Procurement Policy Act of 1974, as amended in 1985.
Fee Schedule:	A list of maximum payments for specified Medicare services based on the relative value of the procedure.
Financial Ratios:	Financial variables for suppliers that are used to determine the financial viability of bidding suppliers.
GAO:	General Accounting Office.
HCFA:	Health Care Financing Administration. Now the Centers for Medicare & Medicaid Services (CMS).
HCPCS:	HCFA Common Procedure Coding System.
Herfindahl Index:	A measure of industry concentration. It equals the sum of the squared market shares for each firm in the market.
HMO:	Health Maintenance Organization.
Medicare Reimbursement:	Eighty percent of the maximum Medicare allowance.
Medicare+Choice:	A broader array of health plans in addition to original Medicare and health maintenance organizations that includes preferred provider organizations, provider sponsored organizations, private fee-for-service plans, and a medical savings account.
Metropolitan Statistical Area:	A statistical standard developed by the U.S. Census Bureau for use by federal agencies in the production, analysis, and publication of data on geographic areas dominated by a city.
National Claims History (NCH):	Medicare claims.
Nondemonstration Supplier:	A supplier that is not eligible for Medicare reimbursement when providing demonstration products to designated beneficiaries. Nondemonstration suppliers may provide certain demonstration products for designated-beneficiary residents in skilled nursing facilities but will only be reimbursed according to demonstration prices.

NSC:	National Supplier Clearinghouse.
Ombudsman:	A person in the demonstration site designated to coordinate educational and outreach efforts, answer questions, and receive and investigate complaints from beneficiaries, suppliers, and providers.
Palmetto GBA:	Palmetto Government Benefits Administrators, the demonstration contractor and Durable Medical Equipment Regional Carrier for Florida and Texas.
Pivotal Bid:	The dollar amount, chosen by CMS, that suppliers' composite bid prices must be equal to or less than for their bids to be in the competitive range.
Polk County, Florida:	The geographic region selected in which to conduct the first DMEPOS demonstration. Polk County is a single county Metropolitan Statistical Area.
PPS:	Prospective Payment System.
Product Category:	A bidding unit for the demonstration. Each product category is a group of demonstration products.
Product Code:	A unique number, part of the HCFA Common Procedure Coding System, that identifies the products and procedures to be reimbursed by Medicare.
Product Weight:	A demonstration product's estimated volume during the prior year or quarter divided by the product category's estimated volume during the same year or quarter.
Projected Allowed Charges:	The allowed charges expected under a certain set of circumstances.
Prospective Payment System:	Federal prospective payment rates applicable to Medicare Part A skilled nursing facility services. Payment rates will encompass all costs of furnishing covered skilled nursing services (i.e., routine, ancillary and capital-related costs) not associated with operation-approved educational activities.
Referral:	When a Medicare beneficiary is referred to a DMEPOS supplier for medically necessary services.

Referral Agent:	Someone responsible for referring beneficiaries to DMEPOS suppliers. Referral agents may be hospital discharge planners, home health agency nurses, social workers, or physician office staff.
Rental Episode:	The continuous period of time during which a beneficiary rents an item from a supplier.
Request For Bids:	A formal procurement process by which CMS is requesting eligible Medicare DMEPOS suppliers to propose their most favorable prices for items and services included in the demonstration.
RFB:	Request for Bids.
San Antonio, Texas:	The geographic region selected in which to conduct the second DMEPOS demonstration. The demonstration site covers three counties within the San Antonio Metropolitan Statistical Area: Bexar, Comal, and Guadalupe.
Sanction:	An official action by the Office of the Inspector General that bars a supplier from participating in the Medicare program during a specific time period or indefinitely.
Service Area:	A subset of the demonstration site that suppliers may bid to serve.
SNF:	Skilled Nursing Facility.
Subcontracting:	An agreement where a demonstration supplier allows a nondemonstration supplier to provide demonstration products. The demonstration supplier is responsible for the quality of the products provided by the nondemonstration supplier.
Supplier Agreement:	Document a potential demonstration supplier signs to agree formally to the obligations of its participation in the demonstration.
Supplier Ratio:	The ratio of the supplier's composite bid price to the cutoff composite bid price chosen by CMS for the product category.
Transition Policies:	Provisions of the demonstration project that allow beneficiaries to continue receiving oxygen equipment and supplies and nebulizer drugs from their original supplier regardless of the supplier's demonstration status. These provisions also allow beneficiaries to maintain preexisting rental agreements for enteral nutrition equipment, hospital beds and accessories, and wheelchairs and accessories.

Volume Weight: A demonstration product's estimated allowed charges during the prior year or quarter divided by the product category's estimated allowed charges during the same year or quarter.

Weighted Bid Price: The supplier's bid price for a demonstration product multiplied by the product's weight.

APPENDIX A
DEMONSTRATION FEE SCHEDULE FOR POLK COUNTY AND SAN ANTONIO

Table A-1. Oxygen Equipment and Supplies—Polk County

HCPCS Code	Modifier[a]	Description	Round 1		Round 2	
			Demonstration Allowance	1999 Medicare Statewide Fee Schedule	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
E0424	RR	Stationary compressed gaseous oxygen system; includes contents (per unit), regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing; 1 unit = 50 cubic ft. (Rental)	$181.59	$213.11	$175.25	$213.75
E0431	RR	Portable gaseous oxygen system; includes regulator, flowmeter, humidifier, cannula or mask, and tubing (Rental)	$33.44	$35.97	$30.88	$36.08
E0434	RR	Portable liquid oxygen system; includes portable container, supply reservoir, humidifier, flowmeter, refill adapter, contents gauge, cannula or mask, and tubing (Rental)	$33.63	$35.97	$31.71	$36.08
E0439	RR	Stationary liquid oxygen system; includes use of reservoir, contents (per unit), regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing; 1 unit = 10 lbs. (Rental)	$184.01	$213.11	$179.97	$213.75
E0442		Oxygen contents, liquid, per unit (for use with owned liquid stationary systems or when both a stationary and portable liquid system are owned; 1 unit = 10 lbs.)	$98.37	$138.53	$106.39	$138.95
E0443		Portable oxygen contents, gaseous, per unit (for use only with portable gaseous systems when no stationary gas or liquid system is used; 1 unit = 5 cubic ft.)	$14.05	$18.20	$14.84	$18.25
E1390[b]	RR	Oxygen concentrator, capable of delivering 85 percent or greater oxygen concentration at the prescribed flow rate (Rental)	$175.10 (0.81)	$213.11	$170.36	$213.75

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

[b]E1390 replaces HCPCS codes E1400, E1401, E1402, E1403, and E1404. The Round 1 demonstration allowance shown is the arithmetic mean of these five Round 1 allowances, followed by the standard deviation. The 1999 Medicare statewide fee schedule was identical for each of these component codes.

Table A-2. Hospital Beds and Accessories—Polk County

HCPCS Code	Modifier[a]	Description	Round 1 Demonstration Allowance	Round 1 1999 Medicare Statewide Fee Schedule	Round 2 Demonstration Allowance	Round 2 2001 Medicare Statewide Fee Schedule
E0250	RR	Hospital bed, fixed height, with any type side rails, with mattress	$62.58	$93.25	$64.78	$99.87
E0255	RR	Hospital bed, variable height (hi-lo), with any type side rails, with mattress	$72.01	$107.10	$72.60	$114.70
E0256	RR	Hospital bed, variable height (hi-lo), with any type side rails, without mattress	$59.94	$75.24	$63.13	$80.58
E0260	RR	Hospital bed, semi-electric (head and foot adjustment), with any type side rails, with mattress	$95.66	$136.14	$95.74	$145.81
E0261	RR	Hospital bed, semi-electric (head and foot adjustment), with any type side rails, without mattress	$85.07	$111.03	$85.16	$118.92
E0265	RR	Hospital bed, total electric (head, foot, and height adjustment), with any type side rails, with mattress	$106.44	$162.06	$106.84	$173.57
E0266	RR	Hospital bed, total electric (head, foot, and height adjustment), with any type side rails, without mattress	$97.89	$143.98	$99.16	$154.21
E0271	NU	Mattress, innerspring (new)	$131.80	$180.01	$130.95	$192.79
E0271	UE	Mattress, innerspring (used)	$98.85	$140.63	$98.21	$150.61
E0271	RR	Mattress, innerspring (rental)	$13.18	$18.70	$13.10	$20.03
E0272	NU	Mattress, foam rubber (new)	$135.66	$182.15	$137.20	$195.09
E0272	UE	Mattress, foam rubber (used)	$101.75	$136.61	$102.90	$146.31
E0272	RR	Mattress, foam rubber (rental)	$13.57	$18.22	$13.72	$19.51
E0295	RR	Hospital bed, semi-electric (head and foot adjustment), without side rails, without mattress	$80.04	$103.25	$80.69	$110.58
E0298[b]	RR	Hospital bed, heavy-duty, extra wide, with any type side rails	Not bid	Not bid	$199.65	$301.92
E0910	RR	Trapeze bars, A/K/A patient helper, attached to bed, with grab bar	$15.89	$19.07	$15.17	$20.43
E0940	RR	Trapeze bar, freestanding, complete with grab bar	$24.17	$29.39	$23.78	$31.48

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

[b]E0298 replaces HCPCS code K0456.

Table A-3. Urological Supplies—Polk County

HCPCS Code	Description	Round 1		Round 2	
		Demonstration Allowance	1999 Medicare Statewide Fee Schedule	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
A4310	Insertion tray without drainage bag and without catheter (accessories only)	$5.30	$6.26	$5.99	$6.70
A4312	Insertion tray without drainage bag with indwelling catheter, Foley type, two-way, all silicone	$13.71	$17.20	$15.96	$18.43
A4314	Insertion tray with drainage bag with indwelling catheter, Foley type, two-way latex with coating (Teflon, silicone, silicone elastomer, or hydrophilic, etc.)	$17.20	$20.50	$19.12	$21.96
A4315	Insertion tray with drainage bag with indwelling catheter, Foley type, two-way, all silicone	$17.62	$21.39	$20.80	$22.91
A4320	Irrigation tray with bulb or piston syringe, any purpose	$4.16	$5.08	$4.71	$5.44
A4323	Sterile saline irrigation solution, 1,000 ml.	$6.05	$7.68	$7.31	$8.22
A4324[a]	Male external catheter, with adhesive coating, each	$1.79	$2.07	$2.11	$2.22
A4325[a]	Male external catheter, with adhesive strip, each	$1.43	$1.72	$1.69	$1.84
A4331[a]	Extension drainage tubing, any type, any length, with connector/adapter; for use with urinary leg bag or urostomy pouch, each	$3.00	$3.04	$3.28	$3.25
A4333[a]	Urinary catheter anchoring device, adhesive skin attachment	$1.86	$2.10	$3.06	$2.25
A4338	Indwelling catheter; Foley type; two-way latex with coating (Teflon, silicone, silicone elastomer, or hydrophilic, etc.), each	$8.49	$11.70	$10.21	$12.53
A4344	Indwelling catheter; Foley type; two-way all silicone, each	$12.44	$15.28	$13.58	$16.37
A4351	Intermittent urinary catheter; straight tip, each	$1.41	$1.73	$1.66	$1.85

(continued)

Table A-3. Urological Supplies—Polk County (continued)

HCPCS Code	Description	Round 1		Round 2	
		Demonstration Allowance	1999 Medicare Statewide Fee Schedule	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
A4352	Intermittent urinary catheter; Coude (curved) tip, each	$4.20	$5.20	$5.06	$5.57
A4353	Intermittent urinary catheter; with insertion supplies	$5.23	$6.66	$5.96	$7.14
A4356	External urethral clamp or compression device (not to be used for catheter clamp), each	$35.54	$43.52	$43.16	$46.61
A4357	Bedside drainage bag, day or night, with or without anti-reflux device, with or without tube, each	$7.55	$9.25	$8.94	$9.90
A4358	Urinary leg bag; vinyl, with or without tube, each	$5.02	$6.33	$6.01	$6.78
A4364	Adhesive for ostomy or catheter: liquid (spray, brush, etc.), cement, powder or paste: any composition (e.g., silicone, latex etc.), per oz.	Not bid	Not bid	$7.00	$2.67
A4402	Lubricant, per ounce	Not bid	Not bid	$0.96	$1.45
A4455	Adhesive remover or solvent (for tape, cement, or other adhesive), per ounce	Not bid	Not bid	$1.48	$1.24
A5102	Bedside drainage bottle with or without tubing, rigid or expandable, each	$18.28	$21.53	$25.53	$23.06
A5112	Urinary leg bag; latex	$26.04	$33.02	$32.90	$35.36
A6265	Tape, all types, per 18 sq. in.	$0.12	$0.12	$0.20	$0.12

[a]A4324 and A4325 replace HCPCS codes K0410 and K0411; A4331 and A4333 replace HCPCS codes K0280 and K0407.

Table A-4. Surgical Dressings—Polk County

HCPCS Code	Description	Round 1		Round 2	
		Demonstration Allowance	1999 Medicare Statewide Fee Schedule	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
A6196	Alginate dressing, wound cover, pad size 16 sq. in. or less each dressing	$7.47	$7.01	$7.01	$7.51
A6197	Alginate dressing, wound cover, pad size more than 16 sq. in. but less than or equal to 48 sq. in., each dressing	$15.88	$15.68	$14.99	$16.79
A6199	Alginate dressing, wound filler, per 6 inches	$6.73	$5.04	$6.05	$5.40
A6209	Foam dressing, wound cover, pad size 16 sq. in. or less, without adhesive border, each dressing	$8.03	$7.14	$7.34	$7.64
A6210	Foam dressing, wound cover, pad size more than 16 sq. in. but less than or equal to 48 sq. in., without adhesive border, each dressing	$17.97	$19.00	$18.77	$20.35
A6211	Foam dressing, wound cover, pad size more than 48 sq. in., without adhesive border, each dressing	$25.87	$28.01	$27.04	$30.00
A6212	Foam dressing, wound cover, pad size 16 sq. in. or less, with any size adhesive border, each dressing	$8.96	$9.25	$9.03	$9.90
A6216	Gauze, nonimpregnated, nonsterile, pad size 16 sq. in. or less, without adhesive border, each dressing	$0.07	$0.05	$0.09	$0.05
A6219	Gauze, nonimpregnated, pad size 16 sq. in. or less, with any size adhesive border, each dressing	$1.40	$0.91	$0.99	$0.97
A6220	Gauze, nonimpregnated, pad size more than 16 sq. in. but less than or equal to 48 sq. in., with any size adhesive border, each dressing	$3.12	$2.46	$2.55	$2.63
A6222	Gauze, impregnated, other than water or normal saline, pad size 16 sq. in. or less, without adhesive border, each dressing	$2.88	$2.03	$2.23	$2.18
A6223	Gauze, impregnated, other than water or normal saline, pad size more than 16 sq. in. but less than or equal to 48 sq. in., without adhesive border, each dressing	$2.92	$2.30	$2.35	$2.47
A6234	Hydrocolloid dressing, wound cover, pad size 16 sq. in. or less, without adhesive border, each dressing	$7.84	$6.24	$6.38	$6.68

(continued)

Table A-4. Surgical Dressings—Polk County (continued)

HCPCS Code	Description	Round 1		Round 2	
		Demonstration Allowance	1999 Medicare Statewide Fee Schedule	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
A6235	Hydrocolloid dressing, wound cover, pad size more than 16 sq. in. but less than or equal to 48 sq. in., without adhesive border, each dressing	$16.58	$16.05	$15.20	$17.19
A6236	Hydrocolloid dressing, wound cover, pad size more than 48 sq. in., without adhesive border, each dressing	$29.34	$25.99	$26.19	$27.83
A6237	Hydrocolloid dressing, wound cover, pad size 16 sq. in. or less, with any size adhesive border, each dressing	$9.41	$7.54	$7.91	$8.08
A6240	Hydrocolloid dressing, wound filler, paste, per fluid ounce	$12.83	$11.68	$12.74	$12.51
A6242	Hydrogel dressing, wound cover, pad size 16 sq. in. or less, without adhesive border, each dressing	$6.06	$5.79	$5.49	$6.20
A6243	Hydrogel dressing, wound cover, pad size more than 16 sq. in. but less than or equal to 48 sq. in., without adhesive border, each dressing	$11.18	$11.75	$11.11	$12.58
A6244	Hydrogel dressing, wound cover, pad size more than 48 sq. in., without adhesive border, each dressing	$28.36	$37.46	$34.25	$40.12
A6248	Hydrogel dressing, wound filler, gel, per fluid ounce	$14.47	$15.49	$13.63	$16.59
A6251	Specialty absorptive dressing, wound cover, pad size 16 sq. in. or less, without adhesive border, each dressing	$2.35	$1.90	$1.84	$2.03
A6252	Specialty absorptive dressing, wound cover, pad size more than 16 sq. in. but less than or equal to 48 sq. in., without adhesive border, each dressing	$3.42	$3.10	$2.87	$3.32
A6253	Specialty absorptive dressing, wound cover, pad size more than 48 sq. in., without adhesive border, each dressing	$6.46	$6.05	$6.06	$6.48
A6258	Transparent film, more than 16 sq. in. but less than or equal to 48 sq. in., each dressing	$5.79	$4.10	$3.93	$4.39
A6402	Gauze, nonimpregnated, sterile, pad size 16 sq. in. or less, without adhesive border, each dressing	$0.15	$0.12	$0.13	$0.12
A6405	Gauze, elastic, sterile, all types, per linear yard	$0.51	$0.32	$0.35	$0.34
A6406	Gauze, nonelastic, sterile, per linear yard	$0.96	$0.76	$0.80	$0.82

Table A-5. Oxygen Equipment and Supplies—San Antonio

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
E0424	RR	Stationary compressed gaseous oxygen system; includes contents (per unit), regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing; 1 unit = 50 cubic ft. (Rental)	$190.47	$229.49
E0431	RR	Portable gaseous oxygen system; includes regulator, flowmeter, humidifier, cannula or mask, and tubing (Rental)	$31.64	$36.08
E0434	RR	Portable liquid oxygen system; includes portable container, supply reservoir, humidifier, flowmeter, refill adapter, contents gauge, cannula or mask, and tubing (Rental)	$33.81	$36.08
E0439	RR	Stationary liquid oxygen system; includes use of reservoir, contents (per unit), regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing; 1 unit = 10 lbs. (Rental)	$197.18	$229.49
E0441		Oxygen contents, gaseous (for use with owned gaseous stationary systems or when both a stationary and portable gaseous system are owned)	$114.95	$159.75
E0442		Oxygen contents, liquid, per unit (for use with owned liquid stationary systems or when both a stationary and portable liquid system are owned; 1 unit = 10 lbs.)	$112.23	$159.75
E0443		Portable oxygen contents, gaseous, per unit (for use only with portable gaseous systems when no stationary gas or liquid system is used; 1 unit = 5 cubic ft.)	$13.77	$18.25
E1390	RR	Oxygen concentrator, capable of delivering 85 percent or greater oxygen concentration at the prescribed flow rate (Rental)	$186.40	$229.49
E1405	RR	Oxygen and water vapor enriching system with heated delivery	$227.81	$263.04
E1406	RR	Oxygen and water vapor enriching system without heated delivery	$215.96	$248.36

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

Table A-6. Hospital Beds and Accessories—San Antonio

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
E0250	RR	Hospital bed, fixed height, with any type side rails, with mattress	$73.06	$96.70
E0255	RR	Hospital bed, variable height (hi-lo), with any type side rails, with mattress	$86.89	$116.20
E0260	RR	Hospital bed, semi-electric (head and foot adjustment), with any type side rails, with mattress	$119.26	$166.10
E0261	RR	Hospital bed, semi-electric (head and foot adjustment), with any type side rails, without mattress	$100.06	$135.45
E0265	RR	Hospital bed, total electric (head, foot, and height adjustment), with any type side rails, with mattress	$141.71	$197.71
E0266	RR	Hospital bed, total electric (head, foot, and height adjustment), with any type side rails, without mattress	$126.08	$175.66
E0271	NU	Mattress, innerspring (new)	$152.74	$203.63
E0272	NU	Mattress, foam rubber (new)	$144.30	$183.01
E0280	NU	Bed cradle, any type	$32.08	$37.78
E0290	RR	Hospital bed, fixed height, without side rails, with mattress	$59.95	$73.93
E0292	RR	Hospital bed, variable height, hi-lo, without side rails, with mattress	$67.26	$83.13
E0294	RR	Hospital bed, semi-electric (head and foot adjustment), without side rails, with mattress	$100.74	$129.23
E0295	RR	Hospital bed, semi-electric (head and foot adjustment), without side rails, without mattress	$96.10	$125.96
E0298[b]	RR	Hospital bed, heavy-duty, extra wide, with any type side rails	$257.90	$300.67
E0305	RR	Bed side rails, half length	$13.98	$17.60
E0310	NU	Bed side rails, full length	$127.01	$180.44
E0910	RR	Trapeze bars, A/K/A patient helper, attached to bed, with grab bar	$16.12	$19.78
E0940	RR	Trapeze bar, freestanding, complete with grab bar	$27.93	$34.39

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

[b]E0298 replaces HCPCS code K0456.

Table A-7. Wheelchairs and Accessories—San Antonio

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
E1031	RR	Rollabout chair, any and all types with castors 5″ or greater	$39.44	$49.96
K0001	RR	Standard wheelchair	$42.25	$54.03
K0002	RR	Standard hemi (low seat) wheelchair	$60.33	$80.94
K0003	RR	Lightweight wheelchair	$66.52	$88.62
K0004	RR	High strength, lightweight wheelchair	$97.26	$132.19
K0006	RR	Heavy-duty wheelchair	$95.77	$124.05
K0007	RR	Extra heavy-duty wheelchair	$135.29	$176.56
K0015	NU	Detachable, nonadjustable height armrest, each	$128.37	$179.72
K0016	NU	Detachable, adjustable height armrest, complete assembly, each	$77.54	$96.66
K0020	NU	Fixed, adjustable height armrest, pair	$38.69	$45.95
K0021	NU	Anti-tipping device, each	$40.17	$55.27
K0023	NU	Solid back insert, planar back, single density foam, attached with straps	$71.37	$88.64
K0024	NU	Solid back insert, planar back, single density foam, with adjustable hook-on hardware	$94.04	$104.93
K0025	NU	Hook-on headrest extension	$56.15	$70.59
K0028	NU	Manual, fully reclining back	$356.88	$458.75
K0030	NU	Solid seat insert, planar seat, single density foam	$61.82	$79.99
K0031	NU	Safety belt/pelvic strap, each	$30.07	$40.99
K0032	NU	Seat upholstery for ultralightweight or high strength lightweight wheelchair	$33.59	$38.58
K0033	NU	Seat upholstery for wheelchair type other than ultralightweight or high strength lightweight wheelchair	$33.59	$38.58
K0034	NU	Heel loop, each	$12.26	$15.83

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

(continued)

Table A-7. Wheelchairs and Accessories—San Antonio (continued)

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
K0035	NU	Heel loop with ankle strap, each	$19.56	$24.66
K0036	NU	Toe loop, each	$13.37	$16.67
K0037	NU	High mount flip-up footrest, each	$37.80	$47.64
K0038	NU	Leg strap, each	$19.13	$24.00
K0039	NU	Leg strap, H style, each	$41.20	$53.29
K0040	NU	Adjustable angle footplate, each	$56.87	$73.86
K0041	NU	Large size footplate, each	$42.45	$52.34
K0042	NU	Standard size footplate, each	$27.61	$36.03
K0043	NU	Footrest, lower extension tube, each	$15.39	$19.32
K0045	NU	Footrest, complete assembly	$44.74	$56.00
K0048	NU	Elevating legrest, complete assembly	$87.28	$111.03
K0049	NU	Calf pad, each	$20.66	$25.56
K0052	NU	Swingaway, detachable footrests, each	$71.49	$91.43
K0053	NU	Elevating footrests, articulating (telescoping), each	$81.82	$100.90
K0054	NU	Seat width of 10″, 11″, 12″, 15″, 17″, or 20″ for a high strength, lightweight, or ultralightweight wheelchair	$83.60	$103.50
K0055	NU	Seat depth of 15″, 17″, or 18″ for a high strength, lightweight, or ultralightweight wheelchair	$77.80	$94.07
K0056	NU	Seat height less than 17″ or equal to or greater than 21″ for a high strength, lightweight, or ultralightweight wheelchair	$75.45	$94.07
K0057	NU	Seat width 19″ or 20″ for heavy-duty or extra heavy-duty wheelchair	$93.56	$122.85
K0059	NU	Plastic coated handrim, each	$26.35	$31.37

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

(continued)

Table A-7. Wheelchairs and Accessories—San Antonio (continued)

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
K0062	NU	Handrim with 8 to 10 vertical or oblique projections, each	$50.23	$60.32
K0063	NU	Handrim with 12 to 16 vertical or oblique projections, each	$65.61	$80.57
K0064	NU	Zero pressure tube (flat free inserts), any size, each	$25.16	$30.07
K0066	NU	Solid tire, any size, each	$19.74	$23.98
K0067	NU	Pneumatic tire, any size, each	$26.61	$34.40
K0068	NU	Pneumatic tire tube, each	$5.60	$5.82
K0070	NU	Rear wheel assembly, complete, with pneumatic tire, spokes or molded, each	$141.64	$181.17
K0071	NU	Front caster assembly, complete, with pneumatic tire, each	$82.33	$108.06
K0072	NU	Front caster assembly, complete, with semi-pneumatic tire, each	$52.48	$65.04
K0073	NU	Caster pin lock, each	$26.58	$33.11
K0075	NU	Semi-pneumatic caster tire, any size, each	$27.46	$35.18
K0077	NU	Front caster assembly, complete, with solid tire, each	$45.14	$58.21
K0079	NU	Wheel lock extension, pair	$42.06	$55.81
K0080	NU	Anti-rollback device, pair	$117.65	$155.10
K0081	NU	Wheel lock assembly, complete, each	$31.50	$40.24
K0100	NU	Wheelchair adapter for amputee, pair (device used to compensate for transfer of weight due to lost limbs to maintain proper balance)	$70.10	$85.54
K0101	RR	One-arm drive attachment, each	$31.84	$39.47
K0103	NU	Transfer board, <25”	$37.50	$46.33
K0104	NU	Cylinder tank carrier, each	$92.94	$117.49
K0106	NU	Arm trough, each	$83.01	$105.99
K0195	RR	Elevating legrests, pair (for use with capped rental wheelchair base)	$16.86	$20.84
K0452	NU	Wheelchair bearings, any type	$5.51	$6.48

[a]Modifier code definitions: RR = rental, UE = used equipment, and NU = new equipment.

Table A-8. General Orthotics—San Antonio

HCPCS Code	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
L1800	Knee orthosis, elastic with stays, prefabricated, includes fitting and adjustment	$51.92	$65.38
L1810	Knee orthosis, elastic with joints, prefabricated, includes fitting and adjustment	$64.99	$78.85
L1815	Knee orthosis, elastic or other elastic type material with condylar pad(s), prefabricated, includes fitting and adjustment	$59.03	$73.98
L1820	Knee orthosis, elastic with condylar pads and joints, prefabricated, includes fitting and adjustment	$84.49	$106.06
L1825	Knee orthosis, elastic knee cap, prefabricated, includes fitting and adjustment	$42.45	$54.05
L1830	Knee orthosis, immobilizer, canvas longitudinal, prefabricated, includes fitting and adjustment	$51.76	$64.49
L1832	Knee orthosis, adjustable knee joints, positional orthosis, rigid support, prefabricated, includes fitting and adjustment	$336.12	$448.19
L1850	Knee orthosis, Swedish type, prefabricated, includes fitting and adjustment	$191.06	$245.37
L1902	Ankle-foot orthosis, ankle gauntlet, prefabricated, includes fitting and adjustment	$59.84	$78.46
L1906	Ankle-foot orthosis, multiligamentus ankle support, prefabricated, includes fitting and adjustment	$68.83	$88.65
L1930	Ankle-foot orthosis, plastic, prefabricated, includes fitting and adjustment	$177.27	$232.53
L2112	Ankle-foot orthosis, fracture orthosis, tibial fracture orthosis, soft, prefabricated, includes fitting and adjustment	$329.74	$417.56
L2114	Ankle-foot orthosis, fracture orthosis, tibial fracture orthosis, semi-rigid, prefabricated, includes fitting and adjustment	$373.66	$483.39
L2116	Ankle-foot orthosis, fracture orthosis, tibial fracture orthosis, rigid, prefabricated, includes fitting and adjustment	$458.17	$579.11
L2132	Knee-ankle-foot orthosis (KAFO), fracture orthosis, femoral fracture cast orthosis, soft, prefabricated, includes fitting and adjustment	$488.25	$670.87

(continued)

Table A-8. General Orthotics—San Antonio (continued)

HCPCS Code	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
L2134	KAFO, fracture orthosis, femoral fracture cast orthosis, semi-rigid, prefabricated, includes fitting and adjustment	$597.77	$839.07
L2136	KAFO, fracture orthosis, femoral fracture cast orthosis, rigid, prefabricated, includes fitting and adjustment	$732.31	$949.96
L2180	Addition to lower extremity fracture orthosis, plastic shoe insert with ankle joints	$85.96	$115.11
L2182	Addition to lower extremity fracture orthosis, drop lock knee joint	$67.23	$84.57
L2210	Addition to lower extremity, dorsiflexion assist (planar flexion resist), each joint	$39.89	$49.55
L2220	Addition to lower extremity, dorsiflexion and planar flexion assist/resist, each joint	$53.53	$64.40
L3650	Shoulder orthosis, figure of eight design abduction restrainer, prefabricated, includes fitting and adjustment	$36.37	$46.88
L3660	Shoulder orthosis, figure of eight design abduction restrainer, canvas and webbing, prefabricated, includes fitting and adjustment	$57.86	$74.15
L3670	Shoulder orthosis, acromio/clavicular (canvas and webbing type), prefabricated, includes fitting and adjustment	$66.43	$84.69
L3700	Elbow orthosis, elastic with stays, prefabricated, includes fitting and adjustment	$51.40	$67.14
L3720	Elbow orthosis, double upright with forearm/arm cuffs, free motion, custom-fabricated	$439.18	$547.34
L3730	Elbow orthosis, double upright with forearm/arm cuffs, extension/flexion assist, custom-fabricated	$613.20	$800.57
L3800	Wrist hand finger orthosis, short opponens, no attachments, custom-fabricated	$111.37	$114.25
L3805	Wrist hand finger orthosis, long opponens, no attachment, custom-fabricated	$219.61	$266.74
L3810	WHFO, addition to short and long opponens, thumb abduction ('C') bar	$40.22	$46.75
L3825	WHFO, addition to short and long opponens, M.P. extension stop	$46.83	$58.95
L3840	WHFO, addition to short and long opponens, spring swivel thumb	$49.84	$60.46
L3850	WHFO, addition to short and long opponens, action wrist, with dorsiflexion assist	$74.12	$89.81

(continued)

Table A-8. General Orthotics—San Antonio (continued)

HCPCS Code	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
L3855	WHFO, addition to short and long opponens, adjustable M.P. flexion control	$78.44	$101.38
L3860	WHFO, addition to short and long opponens, adjustable M.P. flexion control and I.P.	$123.66	$153.89
L3980	Upper extremity fracture orthosis, humeral, prefabricated, includes fitting and adjustment	$213.62	$265.55
L3982	Upper extremity fracture orthosis, radius/ulnar, prefabricated, includes fitting and adjustment	$222.63	$299.66
L3984	Upper extremity fracture orthosis, wrist, prefabricated, includes fitting and adjustment	$205.42	$260.70
L3985	Upper extremity fracture orthosis, forearm, hand with wrist hinge, custom-fabricated	$325.24	$421.63
L3995	Addition to upper extremity orthosis, sock, fracture or equal, each	$23.51	$30.77
L4350	Pneumatic ankle control splint (e.g., aircast), prefabricated, includes fitting and adjustment	$55.66	$67.76
L4360	Pneumatic walking splint (e.g., aircast), prefabricated, includes fitting and adjustment	$162.54	$204.12
L4380	Pneumatic knee splint (e.g., aircast), prefabricated, includes fitting and adjustment	$63.41	$79.19
L4392	Replacement, soft interface material, static ankle-foot orthosis (AFO)	$18.10	$18.66
L4396	Static AFO, including soft interface material, for positioning, pressure reduction, may be used for minimal ambulation, prefabricated, includes fitting and adjustment	$110.96	$133.03
L4398	Foot drop splint, recumbent positioning device, prefabricated, includes fitting and adjustment	$51.24	$61.22

Table A-9. Nebulizer Drugs—San Antonio

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
E0590		Dispensing fee covered drug administered through DME nebulizer	$4.88	$5.19
J2545		Pentamidine isethionate, inhalation solution, per 300mg, administered through DME	$91.53	$110.45
J7608	KO	Acetylcysteine, inhalation solution administered through DME, unit dose form, per gram (single drug unit dose formulation)	$4.61	$5.24
J7608	KQ	Acetylcysteine, inhalation solution administered through DME, unit dose form, per gram (second or subsequent drug of a multiple drug unit dose formulation)	$4.19	$5.05
J7618		Albuterol, all formulations including separated isomers, inhalation solution administered through DME, concentrated form, per 1 mg	$0.11	$0.15
J7619	KO	Albuterol, all formulations including separated isomers, inhalation solution administered through DME, unit dose form, per 1 mg (single drug unit dose formulation)	$0.32	$0.49
J7619	KQ	Albuterol, all formulations including separated isomers, inhalation solution administered through DME, unit dose form, per 1 mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.14	$0.15
J7628		Bitolterol mesylate, inhalation solution administered through DME, concentrated form, per milligram	$0.27	$0.26
J7631	KO	Cromolyn sodium, inhalation solution administered through DME, unit dose form, per 10 mg (single drug unit dose formulation)	$0.22	$0.23
J7631	KQ	Cromolyn sodium, inhalation solution administered through DME, unit dose form, per 10 mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.18	$0.19
J7636	KO	Atropine, inhalation solution administered through DME, unit dose form, per milligram (single drug unit dose formulation)	$0.35	$0.25
J7636	KQ	Atropine, inhalation solution administered through DME, unit dose form, per milligram (second or subsequent drug of a multiple drug unit dose formulation)	$0.23	$0.17
J7638	KO	Dexamethasone, inhalation solution administered through DME, unit dose form, per milligram (single drug unit dose formulation)	$0.16	$0.15

[a]Modifier code definitions: KO = single drug unit dose formulation, KQ = second or subsequent drug of a multiple drug unit dose formulation.

(continued)

Table A-9. Nebulizer Drugs—San Antonio (continued)

HCPCS Code	Modifier[a]	Description	Demonstration Allowance	2001 Medicare Statewide Fee Schedule
J7638	KQ	Dexamethasone, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.11	$0.10
J7639	KO	Dornase alpha, inhalation solution administered through DME, unit dose form, per mg (single drug unit dose formulation)	$13.91	$15.68
J7639	KQ	Dornase alpha, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$13.84	$15.66
J7644	KO	Ipratropium bromide, inhalation solution administered through DME, unit dose form, per mg (single drug unit dose formulation)	$2.55	$3.46
J7644	KQ	Ipratropium bromide, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$2.51	$3.31
J7659	KO	Isoproterenol HCl, inhalation solution administered through DME, unit dose form, per mg (single drug unit dose formulation)	$0.64	$0.35
J7659	KQ	Isoproterenol HCl, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.61	$0.32
J7669	KO	Metaproterenol sulfate, inhalation solution administered through DME, unit dose form, per 10 mg (single drug unit dose formulation)	$1.07	$1.14
J7669	KQ	Metaproterenol sulfate, inhalation solution administered through DME, unit dose form, per 10 mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.52	$0.26
J7681	KO	Terbutaline sulfate, inhalation solution administered through DME, unit dose form, per mg (single drug unit dose formulation)	$1.91	$2.01
J7681	KQ	Terbutaline sulfate, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$1.84	$1.93
J7683		Triamcinolone, inhalation solution administered through DME, concentrated form, per mg	$0.06	$0.04
J7684	KO	Triamcinolone, inhalation solution administered through DME, unit dose form, per mg (single drug unit dose formulation)	$0.11	$0.08
J7684	KQ	Triamcinolone, inhalation solution administered through DME, unit dose form, per mg (second or subsequent drug of a multiple drug unit dose formulation)	$0.06	$0.04

[a]Modifier code definitions: KO = single drug unit dose formulation, KQ = second or subsequent drug of a multiple drug unit dose formulation.

APPENDIX B

MARGINAL EFFECTS OF THE DEMONSTRATION ON ACCESS- AND QUALITY-RELATED VARIABLES

This appendix describes our methodology for calculating the marginal effects of the demonstration on access- and quality-related survey variables. Tables B-1 and B-2 display estimates of these marginal effects along with regression-estimated coefficients, p-values, and predicted values in the absence of the demonstration for each dependent variable in the Oxygen Consumer Survey and the Medical Equipment Consumer Survey, respectively. Table B-3 contains similar information for each dependent variable for which the demonstration had a statistically significant impact among a subset of survey responses.

The calculation of marginal effects utilizes the coefficients estimated in the regression analysis of our model (see Section 3.1.2). We use three distinct regression techniques depending on the nature of the dependent variable. For variables that are continuous (such as equipment delivery times and distance from the beneficiary's home to their supplier), we use ordinary least-squares (OLS) regression. For dependent variables defined as a binomial choice (such as whether a maintenance visit occurred in the last 30 days or whether a beneficiary uses portable oxygen), we use a logistic regression technique. For variables that are ordinal in nature, we use an ordered logistic regression technique. These ordinal variables are generated by survey questions such as "How would you rate the reliability of the equipment you use?" where response choices are "very reliable," "somewhat reliable," "somewhat unreliable," and "very unreliable."

We use a t-test to determine if the coefficient of the *Impact* variable on each access-related outcome is statistically significant at the 5 percent level. Where the *Impact* variable is statistically significant, we say that the presence of the demonstration had an observable effect on the measure of beneficiary access. In Tables B-1 and B-2, statistically significant demonstration effects are relatively uncommon; the significant results are highlighted in bold. Only statistically significant results from the subset analyses are shown in Table B-3; therefore, these results are not highlighted in bold.

For dependent variables analyzed using OLS regression, β_3 (the coefficient of the *Impact* term) can be directly interpreted as the demonstration's marginal effect. Logistic and ordered logistic regressions are not linear functions of the explanatory variables, so β_3 cannot be directly interpreted as a marginal effect in these regressions. We calculate these marginal effects using Stata® software, at the means of the independent variables.

For dependent variables estimated using logistic regressions, Stata calculates the marginal effect of the demonstration as the discrete change in the dependent variable as the *Impact* variable

moves from 0 to 1. The dependent variables in our logistic regressions are all 0/1 variables, with means that indicate the percentage of respondents with a positive response (or, the probability that a respondent answers the survey question affirmatively). Therefore, Stata's marginal effect can be interpreted straightforwardly as a point increase in the percentage of respondents with a positive (1) response for the dependent variable.

For ordered logistic regressions, Stata requires a specification of the outcome for which a marginal effect is to be calculated. For each dependent variable, we specify the most positive response outcome (e.g., "very reliable," "always," an overall satisfaction rating of "10," etc.) because the majority of responses on each of these variables fall in these categories. With this specification, Stata calculates the marginal effect of the demonstration as the increase in the probability of this most positive response outcome. Interpretation of these effects is therefore similar to that used with logistic regressions. Note that this methodology will allow the sign (+/-) of the marginal effect to be opposite of the *Impact* term's coefficient. For example, a particular dependent variable measures a respondent's comfort level using their oxygen conserving device with a 1 to 4 rating of comfort. A response of "1" indicates that the respondent is very comfortable, and a response of "4" indicates that the respondent is very uncomfortable. The coefficient of the *Impact* term for this variable is negative, indicating that the demonstration makes the respondent more likely to choose 1, the lowest numeric response, which corresponds to "very comfortable." The probability of choosing "very comfortable" in the absence of the demonstration is 0.650; the marginal effect of the demonstration is to increase this probability by 0.063.

B.1 Predicted Values in the Absence of the Demonstration

In order to provide a baseline from which to judge the marginal effect of the demonstration, we calculate predicted values for each dependent variable in the absence of the demonstration. For dependent variables estimated using OLS and logistic regressions, we employ the regression-estimated coefficients of each independent variable. We multiply these coefficients by the means of each independent variable at follow-up in Polk County under the assumption that *Impact* equals zero. We sum these terms to calculate $\beta'x$. For variables estimated using OLS regression, $\beta'x$ equals the predicted value of the dependent variable in the absence of the demonstration because of the linear nature of OLS. For variables estimated using nonlinear logistic regression, we employ the following formula to calculate the predicted value using $\beta'x$:

$$\text{Value in Absence of Demonstration} = e^{\beta'x}/(1+e^{\beta'x})$$

For the theoretical background of this formula, see Greene (1993, pp. 636-638).

For dependent variables estimated using ordered logistic regressions, we calculate predicted values in the absence of the demonstration as the percentage of responses falling in the most positive response category (as described above) at follow-up in Polk County under the assumption that *Impact* equals zero. To calculate these values, we take the unadjusted percentage of responses falling in the most positive category at follow-up in Polk County and subtract the marginal effect of the demonstration, as calculated by Stata. Therefore, for variables estimated using ordered logistic regression, the predicted value in the absence of the demonstration represents the percentage of responses that would have fallen in the most positive category if the demonstration had not existed. This allows for easier interpretation of the marginal effects calculation for ordered logistic regression variables.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Had major change in therapy requiring new equipment, last 6 months?	**0/1 (No/Yes)**	**Logistic**	**0.646**	**0.042**	**0.058**	**0.041**
Use more than one supplier to get oxygen equipment/supplies?	0/1 (No/Yes)	Logistic	0.315	0.021	0.010	0.516
Time since last respiratory checkup	Number of days since last checkup	Ordinary least-squares (OLS)	3.884	67.622	3.884	0.478
Current use of a stationary oxygen system	0/1 (No/Yes)	Logistic	–0.350	0.977	–0.014	0.442
Type of stationary system used —Oxygen concentrator	0/1 (No/Yes)	Logistic	–0.001	0.977	–0.000	0.998
Type of stationary system used—Liquid cylinder	0/1 (No/Yes)	Logistic	–0.165	0.062	–0.008	0.662
Type of stationary system used—Compressed gas tank	**0/1 (No/Yes)**	**Logistic**	**0.685**	**0.051**	**0.061**	**0.033**
Ran out of stationary oxygen supplies, past 6 months	Number of times ran out of supplies	OLS	–0.033	0.062	–0.033	0.326
Current use of a portable oxygen system	0/1 (No/Yes)	Logistic	–0.389	0.809	–0.080	0.057
Type of portable system used—Portable gas tank	0/1 (No/Yes)	Logistic	0.507	0.726	0.062	0.093
Type of portable system used—Portable liquid cylinder	0/1 (No/Yes)	Logistic	0.048	0.269	0.009	0.851
Current use of an oxygen conserving device	0/1 (No/Yes)	Logistic	0.239	0.581	0.057	0.333
Comfort level using oxygen conserving device	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	–0.278	0.650 Prob(Rating=1)	0.063	0.367

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Frequency of receiving portable refills	Number of times per year receiving refills	OLS	0.120	16.338	0.120	0.949
Number of portable refills received at each interval	Number of refills at each interval	OLS	0.167	3.897	0.167	0.573
Ran out of portable oxygen supplies, past 6 months	Number of times ran out of supplies	OLS	0.003	0.109	0.003	0.959
Overall rating of satisfaction with supplier experience	Ordinal satisfaction ratings (0=worst, 10=best)	Ordered logistic	0.059	0.698 Prob(Rating=10)	0.013	0.753
Willing to recommend supplier to friend?	0/1 (No/Yes)	Logistic	0.023	0.971	0.001	0.964
Initial equipment delivery time	Number of days between order and delivery	OLS	–0.008	0.412	–0.008	0.932
Orderer of equipment—Beneficiary self-ordering	0/1 (No/Yes)	Logistic	–0.133	0.667	–0.033	0.493
Orderer of equipment—Caregiver	0/1 (No/Yes)	Logistic	–0.135	0.148	–0.016	0.595
Orderer of equipment—Home health nurse or agency	**0/1 (No/Yes)**	**Logistic**	**0.876**	**0.016**	**0.052**	**0.036**
Orderer of equipment—Doctor	0/1 (No/Yes)	Logistic	–0.053	0.291	–0.012	0.782
Method of equipment receipt—Supplier delivery	0/1 (No/Yes)	Logistic	–0.117	0.958	–0.007	0.746
Method of equipment receipt—Supplier mails to home	0/1 (No/Yes)	Logistic	–0.681	0.127	–0.038	0.052
Method of equipment receipt—Pick up from supplier	0/1 (No/Yes)	Logistic	–0.196	0.040	–0.009	0.619
Method of equipment receipt—Home health agency delivery	**0/1 (No/Yes)**	**Logistic**	**0.852**	**0.039**	**0.080**	**0.006**

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Distance to supplier	Number of miles from home to supplier	OLS	–0.120	10.822	–0.120	0.880
Time and energy used obtaining DMEPOS	Ordinal ratings (1=no time/energy, 4=a lot of time/energy)	Ordered logistic	0.032	0.625 Prob(Rating=1)	–0.007	0.862
Rating of training given by supplier	Ordinal ratings of training (1=excellent, 5=poor)	Ordered logistic	0.016	0.575 Prob(Rating=1)	–0.004	0.927
Type of training from supplier—Written instructions	0/1 (No/Yes)	Logistic	–0.307	0.653	–0.073	0.093
Type of training from supplier—Showed how to use	0/1 (No/Yes)	Logistic	–0.048	0.920	–0.002	0.904
Type of training from supplier—Chose a good place	0/1 (No/Yes)	Logistic	–0.191	0.659	–0.044	0.303
Type of training from supplier—Showed how to put together	0/1 (No/Yes)	Logistic	–0.258	0.823	–0.045	0.229
Type of training from supplier—Showed how to maintain	0/1 (No/Yes)	Logistic	0.304	0.749	0.048	0.161
Type of training from supplier—Showed how to use safely	0/1 (No/Yes)	Logistic	0.264	0.757	0.038	0.242
Type of training from supplier—Showed how to replace parts	0/1 (No/Yes)	Logistic	0.044	0.811	0.006	0.850
Type of training from supplier—Told how to get service	0/1 (No/Yes)	Logistic	–0.162	0.823	–0.024	0.480

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Type of training from supplier—Told how to get after-hours assistance	0/1 (No/Yes)	Logistic	0.200	0.725	0.033	0.352
Type of training from supplier—None (received no training)	0/1 (No/Yes)	Logistic	0.097	0.023	0.002	0.865
Frequency of supplier maintenance visits	Number of visits per 6 months	OLS	0.178	5.080	0.178	0.679
Had a maintenance visit in last 30 days?	0/1 (No/Yes)	Logistic	–0.232	0.680	–0.050	0.233
Frequency of visits from supplier's respiratory therapist	Number of visits per 6 months	OLS	0.227	1.111	0.227	0.438
Comfort level—controlling oxygen flow	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	–0.083	0.853 Prob(Rating=1)	0.009	0.776
Comfort level—using humidifier	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	0.116	0.807 Prob(Rating=1)	–0.019	0.735
Comfort level—attaching regulators	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	0.063	0.727 Prob(Rating=1)	–0.012	0.816
Comfort level—cleaning filter	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	0.190	0.882 Prob(Rating=1)	–0.023	0.502

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Number of contacts with supplier over last 6 months	Number of contacts with supplier	OLS	–0.179	3.597	–0.179	0.398
Frequency that supplier treated with courtesy and respect	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	0.164	0.888 Prob(Rating=4)	0.012	0.614
Frequency that supplier explained things understandably	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	0.190	0.731 Prob(Rating=4)	0.030	0.464
Frequency that supplier gave all information/help needed (thoroughness)	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	–0.045	0.799 Prob(Rating=4)	–0.006	0.872
Made a complaint to supplier, last 6 months?	0/1 (No/Yes)	Logistic	–0.088	0.242	–0.016	0.666
Complaint settled satisfactorily?	0/1 (No/Yes)	Logistic	–0.722	0.973	–0.037	0.392
Able to contact supplier by telephone?	0/1 (No/Yes)	Logistic	–0.066	0.995	–0.000	0.943
Made an after-hours call to supplier, last 6 months?	0/1 (No/Yes)	Logistic	–0.180	0.178	–0.025	0.447
Frequency of after-hours customer service thoroughness	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	–0.375	0.856 Prob(Rating=4)	–0.059	0.512
Supplier service call response time	Number of days until response	OLS	0.154	1.148	0.154	0.173

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-1. Regression Outcomes: Oxygen Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Equipment reliability rating	Ordinal reliability ratings (1=very reliable, 4=very unreliable)	Ordered logistic	–0.457	0.930 Prob(Rating=1)	0.019	0.249
Major problems with equipment, last 6 months	Number of major problems, last 6 months	OLS	–0.038	0.253	–0.038	0.482
Equipment replaced due to malfunction, last 6 months?	0/1 (No/Yes)	Logistic	–0.130	0.182	–0.021	0.549
Assisted by supplier with insurance, last 6 months?	0/1 (No/Yes)	Logistic	–0.303	0.831	–0.058	0.445
Type of insurance help—Explanation of payment	0/1 (No/Yes)	Logistic	0.166	0.355	0.040	0.378
Type of insurance help—Offer to bill Medicare/other insurance	0/1 (No/Yes)	Logistic	–0.125	0.769	–0.021	0.580
Type of insurance help—Told how to get information	0/1 (No/Yes)	Logistic	0.288	0.143	0.041	0.247
Type of insurance help—Obtained supporting documentation	0/1 (No/Yes)	Logistic	0.177	0.353	0.044	0.347
Type of insurance help—None (received no help)	0/1 (No/Yes)	Logistic	0.203	0.149	0.027	0.430
Changed supplier, last 6 months?	0/1 (No/Yes)	Logistic	0.539	0.032	0.035	0.135

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-2. Regression Outcomes: Medical Equipment Consumer Survey, All Respondents

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Had major change in condition requiring new equipment, last 6 months?	0/1 (No/Yes)	Logistic	–0.139	0.191	–0.022	0.636
Use more than one supplier to get medical equipment/supplies?	0/1 (No/Yes)	Logistic	–0.075	0.308	0.011	0.780
Overall rating of satisfaction with supplier experience	Ordinal satisfaction ratings (0=worst, 10=best)	Ordered logistic	0.146	0.409 Prob(Rating=10)	0.036	0.503
Willing to recommend supplier to friend?	0/1 (No/Yes)	Logistic	0.203	0.908	0.011	0.667
Initial equipment delivery time	Number of days between order and delivery	OLS	0.020	1.966	0.020	0.940
Orderer of equipment—Beneficiary self-ordering	**0/1 (No/Yes)**	**Logistic**	**–0.635**	**0.514**	**–0.122**	**0.043**
Orderer of equipment—Caregiver	0/1 (No/Yes)	Logistic	0.288	0.183	0.062	0.323
Orderer of equipment—Home health nurse or agency	0/1 (No/Yes)	Logistic	–0.407	0.168	–0.056	0.218
Orderer of equipment—Doctor	0/1 (No/Yes)	Logistic	0.237	0.317	0.053	0.392
Method of equipment receipt—Supplier delivery	0/1 (No/Yes)	Logistic	–0.355	0.719	–0.072	0.210
Method of equipment receipt—Supplier mails to home	0/1 (No/Yes)	Logistic	0.189	0.133	0.017	0.640
Method of equipment receipt—Pick up from supplier	0/1 (No/Yes)	Logistic	–0.042	0.213	–0.006	0.892
Method of equipment receipt—Home health agency delivery	0/1 (No/Yes)	Logistic	0.278	0.117	0.037	0.408

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-2. Regression Outcomes: Medical Equipment Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Distance to supplier	Number of miles from home to supplier	OLS	1.418	11.991	1.418	0.243
Received more equipment/supplies than needed?	0/1 (No/Yes)	Logistic	0.426	0.056	0.030	0.360
Received less equipment/supplies than needed?	0/1 (No/Yes)	Logistic	0.158	0.112	0.015	0.672
Time and energy used obtaining DMEPOS	Ordinal ratings (1=no time/energy, 4=a lot of time/energy)	Ordered logistic	–0.205	0.398 Prob(Rating=1)	0.051	0.372
Rating of training given by supplier	Ordinal ratings of training (1=excellent, 5=poor)	Ordered logistic	–0.222	0.295 Prob(Rating=1)	0.053	0.390
Type of training from supplier—Written instructions	0/1 (No/Yes)	Logistic	–0.042	0.320	–0.009	0.872
Type of training from supplier—Showed how to use	0/1 (No/Yes)	Logistic	0.197	0.522	0.045	0.448
Type of training from supplier—Chose a good place	0/1 (No/Yes)	Logistic	0.393	0.158	0.074	0.170
Type of training from supplier—Showed how to put together	0/1 (No/Yes)	Logistic	0.051	0.223	0.009	0.862
Type of training from supplier—Showed how to maintain	0/1 (No/Yes)	Logistic	0.120	0.218	0.024	0.660
Type of training from supplier—Showed how to use safely	0/1 (No/Yes)	Logistic	0.371	0.283	0.089	0.142
Type of training from supplier—Showed how to replace parts	0/1 (No/Yes)	Logistic	–0.037	0.183	–0.005	0.912

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-2. Regression Outcomes: Medical Equipment Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Type of training from supplier—Told how to get service	0/1 (No/Yes)	Logistic	0.245	0.373	0.061	0.315
Type of training from supplier—Told how to get after-hours assistance	0/1 (No/Yes)	Logistic	0.331	0.232	0.070	0.215
Type of training from supplier—None (received no training)	0/1 (No/Yes)	Logistic	0.064	0.263	0.011	0.829
Frequency of supplier maintenance visits	Number of visits per 6 months	OLS	–0.138	1.428	–0.138	0.817
Had a maintenance visit in last 30 days?	0/1 (No/Yes)	Logistic	0.211	0.081	0.020	0.589
Comfort level—using equipment/supplies	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	–0.197	0.690 Prob(Rating=1)	0.037	0.469
Comfort level—taking care of equipment/supplies	Ordinal comfort ratings (1=very comfortable, 4=very uncomfortable)	Ordered logistic	–0.449	0.667 Prob(Rating=1)	0.081	0.113
Number of contacts with supplier over last 6 months	Number of contacts with supplier	OLS	–0.060	2.492	–0.060	0.839
Frequency that supplier treated with courtesy and respect	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	0.225	0.725 Prob(Rating=4)	0.037	0.506
Frequency that supplier explained things understandably	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	0.242	0.486 Prob(Rating=4)	0.059	0.468

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-2. Regression Outcomes: Medical Equipment Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Frequency that supplier gave all information/help needed (thoroughness)	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	–0.020	0.577 Prob(Rating=4)	–0.005	0.954
Made a complaint to supplier, last 6 months?	0/1 (No/Yes)	Logistic	–0.116	0.271	–0.021	0.677
Complaint settled satisfactorily?	0/1 (No/Yes)	Logistic	1.134	0.566	0.119	0.133
Able to contact supplier by telephone?	0/1 (No/Yes)	Logistic	–0.392	0.950	–0.025	0.418
Made an after-hours call to supplier, last 6 months?	0/1 (No/Yes)	Logistic	–0.075	0.054	0.005	0.881
Frequency of after-hours customer service thoroughness	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	0.996	0.363 Prob(Rating=4)	0.216	0.381
Supplier service call response time	Number of days until response	OLS	–0.299	2.745	–0.299	0.458
Equipment reliability rating	Ordinal reliability ratings (1=very reliable, 4=very unreliable)	Ordered logistic	–0.468	0.751 Prob(Rating=1)	0.063	0.138
Major problems with equipment, last 6 months	Number of major problems, last 6 months	OLS	–0.089	0.414	–0.089	0.391
Equipment replaced due to malfunction, last 6 months?	0/1 (No/Yes)	Logistic	–0.428	0.165	–0.044	0.228
Assisted by supplier with insurance, last 6 months?	0/1 (No/Yes)	Logistic	–0.456	0.778	–0.098	0.287
Type of insurance help—Explanation of payment	0/1 (No/Yes)	Logistic	0.187	0.358	0.046	0.469

(continued)

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-2. Regression Outcomes: Medical Equipment Consumer Survey, All Respondents (continued)

Dependent Variable	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Type of insurance help—Offer to bill Medicare/other insurance	0/1 (No/Yes)	Logistic	0.423	0.725	0.071	0.160
Type of insurance help—Told how to get information	0/1 (No/Yes)	Logistic	0.687	0.080	0.076	0.089
Type of insurance help—Obtained supporting documentation	0/1 (No/Yes)	Logistic	0.444	0.273	0.106	0.091
Type of insurance help—None (received no help)	0/1 (No/Yes)	Logistic	0.025	0.122	0.003	0.945
Changed supplier, last 6 months?	0/1 (No/Yes)	Logistic	0.477	0.061	0.033	0.311

Note: Variables where the coefficient of the demonstration impact is statistically significant are highlighted in bold.

Table B-3. Regression Outcomes: Significant Demonstration Impacts among Sample Subsets

Dependent Variable	Subset (Survey)[a]	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Portable system use	New users (OX)	0/1 (No/Yes)	Logistic	–1.117	0.786	–0.269	0.025
Oxygen conserving device use	New users (OX)	0/1 (No/Yes)	Logistic	2.064	0.320	0.365	0.017
Type of training from supplier—Told how to get after-hours assistance	New users (OX)	0/1 (No/Yes)	Logistic	1.316	0.645	0.160	0.025
Frequency that supplier explained things understandably	New users (OX)	Ordinal frequency ratings (1=never, 4=always)	Ordered logistic	2.004	0.594 Prob(Rating=4)	0.201	0.002
Major problems with equipment, last 6 months	New users (OX)	Number of major problems, last 6 months	OLS	–0.306	0.416	–0.306	0.048
Method of equipment receipt—Supplier delivery	New users (ME)	0/1 (No/Yes)	Logistic	–1.672	0.921	–0.350	0.017
Had a maintenance visit in last 30 days?	New users (ME)	0/1 (No/Yes)	Logistic	–1.848	0.461	–0.122	0.042
Orderer of equipment—Beneficiary self-ordering	Hospital bed users (ME)	0/1 (No/Yes)	Logistic	–1.417	0.430	–0.158	0.001
Type of insurance help—Told how to get information	Hospital bed users (ME)	0/1 (No/Yes)	Logistic	1.065	0.067	0.142	0.036
Type of training from supplier—None (received no training)	Urologicals users (ME)	0/1 (No/Yes)	Logistic	0.940	0.309	0.230	0.047

(continued)

[a]OX = Oxygen Consumer Survey, ME = Medical Equipment Consumer Survey

Table B-3. Regression Outcomes: Significant Demonstration Impacts among Sample Subsets (continued)

Dependent Variable	Subset (Survey)[a]	Description of Values	Regression Type	Coefficient (Demonstration Impact on Variable)	Value in Absence of Demonstration	Marginal Effect of Demonstration	P Value
Type of training from supplier—Showed how to maintain	Surgical dressings users (ME)	0/1 (No/Yes)	Logistic	–2.082	0.567	–0.278	0.032
Equipment reliability rating	Surgical dressings users (ME)	Ordinal reliability ratings (1=very reliable, 4=very unreliable)	Ordered logistic	–2.040	0.571 Prob(Rating=1)	0.262	0.035
Number of contacts with supplier over last 6 months	Surgical dressings users (ME)	Number of contacts with supplier	OLS	–1.897	4.361	–1.897	0.046
Supplier service call response time	Surgical dressings users (ME)	Number of days until response	OLS	–2.061	3.348	–2.061	0.033

[a]OX = Oxygen Consumer Survey, ME = Medical Equipment Consumer Survey