Report to Congress

on the

Evaluation of the Medical Adult Day Services Demonstration

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I. Background and Summary of Findings

A. Overview

This Report to Congress (RTC) presents the findings of an independent evaluation of the Centers for Medicare & Medicaid Services' (CMS) Medical Adult Day Services Demonstration. The demonstration was conducted by five home health agencies in five states from August 1, 2006 through July 31, 2009, and examined the effects of allowing Medicare home-health services to be delivered in medical adult day-care (MADC) facilities (called "centers" herein) rather than only in a beneficiary's home. This RTC constitutes the final evaluation of the demonstration and includes analysis of the full 36 months of the demonstration on implementation measures and the first 30 months on cost and outcome measures. Only 30 months of cost and outcome data were available due to the need to conduct analyses in July 2009. Only participants starting by December 2007 could be included in the analysis, which required a year of claims after the start date, plus six months to have complete claims in the CMS data system.

This report examines, among other things, the following:

- Implementation of the service model;
- Beneficiary participation patterns;
- Beneficiary satisfaction with the model;
- Effects on MADC and home health agency finances;
- Effects on use of services and quality of care;
- Cost offsets to expanding the delivery of home health services to MADC settings.

B. Congressional Mandate

Congress mandated the demonstration under Section 703 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (Public Law 108-173). The demonstration permitted a home health agency "directly or under arrangements with a medical adult day-care facility, to provide medical adult day-care services as a substitute for a portion of home health services that would otherwise be provided in the beneficiary's home." (See Appendix A for the full text of the legislation.) Section 703(b)(1) of the law, in general, directed that home health agencies be paid 95% of what they would otherwise have been reimbursed by Medicare for an

episode of care, and it also prohibited home health, or a MADC center, under arrangements with a home agency, from separately charging beneficiaries for MADC services that were part of a home health plan of care. Section 703(h) of the statute directed the Secretary of Health and Human Services to conduct an evaluation of the clinical effectiveness and cost-effectiveness of the demonstration. Currently, Medicare coverage for home health services is limited to providing the services in a beneficiary's home. The central purpose of the demonstration was to test whether allowing portions of the Medicare home health benefit to be delivered in MADC centers affected beneficiary outcomes and the costs of delivering home health services.

C. Implementation of the Demonstration

This section describes how the legislation was implemented. First, it describes the Medicare home health benefit and MADC services, including the impact of the current requirement that beneficiaries be at home to receive home health services. Second, it describes how home health agencies and MADC centers collaborated to offer demonstration services, including how the demonstration was offered to beneficiaries. Finally, it describes the evaluation of the demonstration.

Medicare home health and medical adult day care. Medicare home health services include skilled nursing, physical therapy, speech therapy, occupational therapy, medical social work, and home health aide services. Services are provided without patient copays. Generally, Medicare covers home health care when four conditions are met:

- The patient is in need of intermittent skilled nursing services, or needs physical therapy or speech therapy services, or has a continuing need for OT services;
- A physician orders the care;
- The patient is under the care of a physician and has a plan of care established and periodically reviewed by the physician;
- Beneficiaries are "homebound," which is defined as the normal inability to leave the home; leaving takes a considerable and taxing effort, and absences are for an infrequent and short duration, or to receive medical care, to attend religious service or to attend a licensed/certified adult day care program.
- The patient must receive services from a home health agency participating in Medicare.

Medicare pays home health agencies a prospective amount for each 60-day period of care (called an "episode"). Beneficiaries can receive as many episodes of care as necessary, as long as they continue to meet home health eligibility requirements.

The services provided by MADC centers vary by state, but core services generally include meals, activities and games, trips in the community, nursing, and transportation to and from the center. Some state Medicaid programs also cover physical and other therapies, nutrition, social work, bathing, grooming, medication administration, and other services. The MADC "day" typically lasts from 5 to 7 hours. Compared to average Medicare beneficiaries, individuals that use MADC tend to be older, more often receiving Medicaid, more physically and cognitively disabled, and have more chronic illnesses.

Under current law, home health patients can attend a MADC center and still meet the homebound criterion, but they need to be at home to receive Medicare home health services. This requirement may disrupt beneficiaries' access to MADC and also affect family caregivers' reliance on MADC for respite. First, home health patients cannot set up a reliable schedule to attend MADC, since it is difficult for home health agencies to tell them much in advance when home health services will be delivered. Given the need to arrange transportation and the capacity constraints at MADC centers, a "drop in" model is not likely to be feasible. Second, not being able to attend MADC may also interrupt family caregivers' use of MADC for respite. This may be especially important for working caregivers who have been using MADC for respite prior to the home health episode.

How Medicare home health services were delivered in MADC centers. Under the demonstration, home health agencies were allowed to deliver a portion of a patient's Medicare home health services in a MADC center. This could be done either through MADC centers owned by the home health agency or through contracts with independent centers. Medicare home health services could be delivered either by qualified MADC staff or by staff of the sponsoring home health agency. Agencies were allowed to market the new service model to referral sources (primarily hospitals, physicians, and elder services agencies), and they were allowed to establish exclusion criteria for patients who would not be appropriate for the new

service model. The agencies then offered non-excluded patients who began a home health episode the option to participate in the demonstration. On a patient-by-patient basis, home health agencies were allowed to choose whether to deliver all or part of a participant's home health services in the MADC center.

Participation in the demonstration by beneficiaries was voluntary, but home health agencies were allowed to exclude home health patients that were not appropriate to receive MADC services. Pursuant to the statute's requirements, participating beneficiaries were not charged for MADC services furnished under the plan of care.

Participating home health agencies did not pay for additional days of MADC services when home health services were not being delivered there. Although Medicare does not cover MADC, states may cover MADC as an optional or waiver service under Medicaid, through Older American Act funds, and/or through state funds. Beneficiaries that do not qualify for public funding may pay for care out-of-pocket. Thus some participants could and did receive additional days of MADC beyond the days paid by home health agencies.

The demonstration operated for three years in five selected home health agencies serving the following cities and nearby areas:

- Milwaukee, Wisconsin (WI) - Aurora Visiting Nurses Association and a single MADC center owned by Aurora. A total of 80 beneficiaries participated in the demonstration at this site, representing 8% of the Medicare beneficiaries receiving home health services from Aurora during the study period.
- Pittsburgh, Pennsylvania (PA) - Landmark Home Health and seven MADC centers under contract. A total of 281 beneficiaries participated in the demonstration at this site, representing 16% of the beneficiaries receiving home health services from Landmark during the study period.
- St Petersburg, Florida (FL) - Neighborly Care Network and four MADC centers owned by Neighborly. A total of 160 beneficiaries participated in the demonstration at this site, representing 17% of the beneficiaries receiving home health services from Neighborly during the study period.

- Brooklyn, New York (NY) - Metropolitan Jewish Health Care and one MADC center owned by Metropolitan. A total of 39 beneficiaries participated in the demonstration at this site, representing 14% of the beneficiaries receiving home health services from Metropolitan during the study period.
- McAllen, Texas (TX) - Doctors Care Home Health and 17 to 25 MADC centers under contract. A total of 455 beneficiaries participated in the demonstration at this site, representing 46% of the beneficiaries receiving home health services from Doctors during the study period.

Metropolitan withdrew from the demonstration in February 2008 (18 months into the demonstration) and Aurora withdrew in October 2008 (25 months in). The other three sites operated for the full three years of the demonstration.

Evaluation of the demonstration. CMS contracted with Brandeis University to evaluate the demonstration. The evaluation question underlying the demonstration was whether home health outcomes could be improved if beneficiaries received some of their home health services in MADC centers. The improvements could derive either from the way home health was delivered in MADC centers, from participation in regular MADC activities, or some combination of the two. The main policy questions addressed by the demonstration are:

- Can sponsors successfully recruit beneficiaries for the demonstration?
- Is it feasible to deliver home health services in MADC centers?
- Are patients interested in and satisfied with this service model?
- How does this model affect the finances of agencies participating in the demonstration?
- What are the effects on quality of care, the use of home health services, and overall Medicare costs?

Brandeis conducted the evaluation through a series of interrelated activities. In Phase 1, the evaluation team completed case studies of the five demonstration sites. The goals of case studies were to assess the implementation process and to understand beneficiaries' experience with the new benefit. This included the experience of beneficiaries who were offered the demonstration but declined ("decliners") as well as those who accepted the offer and participated in the

demonstration ("participants"). Whether they were decliners or participants, both groups were patients of the home health agencies. To prepare the case studies, the team reviewed implementation protocols, assessment forms, contracts, and other documents. Then the team visited each of the demonstration sites to interview professional staff and beneficiaries.

Phase 1 of the evaluation also included a preliminary descriptive analysis of the services provided by the five home-health agencies and the beneficiaries they served. The beneficiary analysis included the mix of patients by gender, and whether they were:

- Excluded from the demonstration and why;
- Offered participation and agreed to participate or not;
- Recent MADC users prior to beginning their home health care.

During Phase 2, Brandeis implemented a phone-based satisfaction survey aimed at a sample of patients at the participating sites. The survey assessed the experiences and satisfaction of participants and decliners with home health services delivered in the home. Separate survey questions asked only of participants covered satisfaction with home health services delivered in the MADC, as well as satisfaction and experiences with MADC services.

During Phase 2 of the evaluation, Brandeis also conducted statistical analyses that drew on the Outcome and Assessment Information Set (OASIS), home health agency Medicare claims, and home health agency patient data from the CMS Data Center using the Data Extract System (DESY). Claims for demonstration participants included an indicator of whether each home health service was delivered in the home or a MADC, which allowed an analysis of service delivery patterns. The analysis also focused on the use and cost of home health services among demonstration participants and matched comparison
subjects. The comparison subjects resided in the market areas of the participating home health agencies, but they were not served by these agencies. The statistical analysis addressed questions related to impact on quality and health and functional-status outcomes, impact on health utilization, and impact on Medicare costs. A separate analysis used Medicare cost report data to assess changes in the populations served and the financial status of participating home health agencies. Brandeis concluded this phase with a synthesis of findings from the case

studies, descriptive analyses, analyses of cost and quality, and the satisfaction survey to assess the possible effects of implementing the demonstration model as well as how the model might be improved.

D. Summary of Findings

Evaluation results show that it was possible to recruit beneficiaries for the demonstration model, but it was difficult for home health agencies to use the demonstration as a way to increase referrals. Case study results indicate that it was feasible to deliver home health services in MADC centers, and the most successful model was to use home health agency staff or staff with experience in home health. Analyses of indicators of place of service on home health claims found that about half of home health services for participants were delivered in MADC centers, and half continued to be delivered at home. Results from face-to-face interviews and the telephone survey indicate that home health patients that were older and in poorer health were more likely to decline participation in the demonstration. Participants were highly satisfied with the MADC demonstration services, and their satisfaction with home health services was similar to beneficiaries who declined to participate in the demonstration. Participants overwhelmingly expressed a desire to continue at the MADC center after their episode of care.

There is no evidence from quantitative analyses that used matched comparison beneficiaries of either cost savings for Medicare or improvements in beneficiary functional status. However, the findings should be interpreted with caution due to small sample sizes at the FL and PA sites, and to numbers of episodes per patient at the at the TX site that are much higher than the other sites. First, evaluation analyses of Medicare claims at the three sites with adequate numbers of participants for analysis found no evidence that the demonstration reduced Medicare expenditures. The Florida and Pennsylvania sites showed no difference in expenditures, while the Texas site showed substantial increases in Medicare expenditures, primarily due to large increases in home health utilization. Second, evaluation analyses of data from OASIS assessments performed by home health agencies found that the demonstration did not lead to greater improvement or less decline in beneficiary functional status or selected health conditions. In fact, participants in the Florida site showed decrements in functional status relative to

comparison beneficiaries. Finally, there appeared to be no evidence that the demonstration had a positive effect on the finances of either home health agencies or MADC centers.

II. Principal Components of the Report

This report addresses:

- The implementation of the demonstration, including marketing and service delivery, and the characteristics of participating beneficiaries;
- Medicare patients' views of the care they received from demonstration providers;
- Effects of the demonstration on home health agency and MADC finances;
- Effects of the demonstration on the use of home health services, the quality of care, and Medicare expenditures.

A. Implementation of Marketing and Service Delivery

The evaluation examined implementation of the demonstration by analyzing participating sites' operational protocols, tracking participation data submitted by sites to the evaluator, and visiting each of the sites. The sites' operational protocols detailed marketing plans, patient-exclusion criteria, and operational and clinical arrangements between home health agencies and MADC centers. In the fall of 2007, the evaluation team conducted site visits, which included observations at MADC centers. The team also interviewed home health agency staff, MADC center staff, aging network staff (i.e., state and local staff managing services funded through the Older Americans Act and related state funding), six beneficiary participants, and four decliners at each site. The beneficiaries were selected randomly by gender from active participants and then recruited by the evaluators. Most of the interviews were conducted in beneficiaries' homes.

To help the evaluators to understand participation patterns, demonstration home health agencies reported the following data monthly for each patient starting a 60-day home health payment episode: patient Medicare identification number, patient gender, whether the patient was offered participation, reason for exclusion if excluded, whether the patient accepted or declined participation, and whether the patient had used MADC in the prior month. These patient data were linked to Medicare claims. These data were analyzed to identify and compare patterns of

exclusion by home health agencies, and to compare prior MADC use and home health utilization patterns among patients that participated and declined to participate.

The evaluation team explored service-delivery issues that included:

- Staffing of home health services in MADC;
- Changes if any in home health intake, care planning, and discharge;
- Coordination of care;
- Effects on quality.

B. Satisfaction among Beneficiaries that Participated Versus Declined

The evaluation assessed beneficiary satisfaction through interviews during the site visits and through a telephone survey conducted in the final year of the demonstration.[1] In both the interviews and the survey, the objectives were: (1) to collect health status and demographic information, assess satisfaction with home health services, and determine out-of-pocket costs for home-based and community-based services; and (2) to compare interview and survey results for participants and decliners. Additionally, the interviews and survey asked participants but not decliners about their experiences and satisfaction with MADC services and with home health services delivered in the MADC centers.

C. Effects on Home Health Agency and MADC Finances

The evaluation collected information on the effects of the demonstration on agency finances through interviews with administrators of home health agencies and MADC centers during site visits, and through review of Medicare cost reports submitted by home health agencies to CMS. The demonstration model anticipated that the demonstration would increase referrals to participating home health agencies, and also that the delivery of services in MADC centers would realize efficiencies. Those efficiencies would primarily come from reducing staff travel costs and also through quicker rehabilitation in centers that were staffed and equipped to provide and reinforce therapies. Family members often support compliance with therapies provided in

[1] The survey was approved by OMB (approval # 0938-1017).

the home. The central question for home health agencies was whether potential savings on travel and therapy outcomes would offset the extra costs of paying the MADC center per diem, the 5% loss in Medicare reimbursement, and any other costs associated with the demonstration. The question for MADC centers was whether the demonstration improved finances through increased census, and whether these improvements were offset by additional expenses.

The analysis of Medicare home health agency cost report data included the:

- Number of skilled nursing visits provided to Medicare patients and total skilled nursing visits;
- Total visits provided to Medicare patients and to all patients;
- Number of unduplicated Medicare and total patients;
- Total Medicare episodes;
- Total patient revenue;
- Net revenue (revenue minus cost) attributable to service to patients.

These variables were used to construct indicators of the scale of the home health agencies participating in the demonstration (i.e., total visits and total patient revenues), commitment to Medicare (proportion of total visits provided to Medicare patients), and the service approach. The latter involved the episodes per unduplicated Medicare patient, the proportion of total Medicare visits that were skilled nursing visits, and the visits per Medicare episode.

The evaluation design included consideration of the impact of the demonstration on other home health agencies in the market area. The design called for examining trends in the share of Medicare and total home health patient services held by the demonstration agencies compared to other agencies in each market, and on the competitiveness of the home health sector in each market. However, it proved impossible to develop consistent market-area definitions for the demonstration agencies.[2] In any event, the amount of service provided under the demonstration

[2] A combination of factors led to this situation: differences by agency in whether they reported their service area in terms of Core Based Statistical Areas (CBSAs) or Metropolitan Statistical Areas (MSAs), overlapping but not contiguous areas with potential comparison agencies, changes during 2006 and 2007 in the CBSA/MSA reporting systems, and differences in large agencies between the county of the agency's address and the county served in the demonstration. Given these factors, it was impossible to

was extremely small relative to the markets in which these agencies operated, and thus market effects were likely minimal.

D. Effects on Home Health Quality and Service Use and Medicare Costs

The objectives of this analysis were to examine how coverage of home health services in MADC centers affected patient utilization of Medicare services, Medicare spending on home health services, and the quality of home health services. Two types of analyses were conducted. The first compared participants to decliners and to patients who were not offered participation. Statistical tests were used to assess how these groups differed in terms of health care utilization before and after their episodes of home health care.

Second, to better estimate a demonstration effect in a situation where selection may be an issue, participants were matched, based on gender, age group, and HCC (Hierarchical Condition Categories) indicators,[3] to a comparison group of similar subjects who received home health services from non-participating home health agencies in the same market areas. This comparison group analysis looked at the effects of the demonstration on Medicare expenditures and on Medicare home health quality. Difference-in-difference multivariate regression models were used and included covariates for age group, gender, and Medicare DCG (Diagnostic Cost Groupings) risk score.[4] These models assessed whether changes in Medicare expenditures for home health, hospitals, skilled nursing facilities, outpatient, and physician services from the year directly prior to the date of participants' first home health episode (or the pseudo-start date for comparisons) were significantly different for these matched groups. These models were also used to compare quality of care. The evaluation team used data from Medicare OASIS files to construct scales for activities of daily living, instrumental ADLs, and cognitive/behavioral status, as well as individual measures for ambulation, incontinence, and medical problems. These quality measures were used as outcomes in the regression analyses, which determined whether

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consistently define a set of the agencies that truly overlapped with the market area of the Demonstration agencies.

[3] Hierarchical Condition Categories are a set of 184 diagnosis categories used for Medicare risk adjustment.

[4] Medicare's DCG risk score makes use of a beneficiary's prior diagnoses to estimate relative annual medical care expenditures compared to those of an average Medicare beneficiary. As such, the DCG may be used in regressions as a measure of the beneficiary's health condition.

participants or comparisons were doing better in that domain on the follow-up home health assessment compared to the initial assessment. Both expenditure and quality analyses were conducted separately for each agency's market area because the demonstration was implemented so differently at each site.

III. Main Findings

A. Implementation of Marketing and Service Delivery

Marketing, participation, and characteristics of beneficiaries served: The levels of beneficiary participation in the demonstration sites appeared to be a function of several factors. The factors, which are discussed individually below, are the:

- Home health agency's outreach to referral sources;
- Number of home health patients served by the agency, including new and continuing patients;
- Number of episodes per patient in the agency;
- Rate of not offering the demonstration to new patients;
- Acceptance rate among patients offered the demonstration;
- Proportion of those offered who had prior MADC experience;
- Reasons beneficiaries chose to participate or not.

The final part of this section analyzes Medicare claims to show how patients who were excluded differed from patients who were offered, and how participants differed from decliners.

Outreach. Home health agency staff believed at the outset of the demonstration that the demonstration would increase referrals from their current referral sources such as hospitals, nursing homes, physicians, and state home-care programs. All sites initiated marketing and information campaigns to these referral sources, including meetings, brochures, and receptions. Despite these efforts, all sites reported that the demonstration generated few if any additional patients from these sources. The major barriers to securing referrals to the demonstration were that referral sources were too busy to learn about the demonstration, and/or that it took too much time for the referrers to explain to beneficiaries how the demonstration operated.

New patients. Without increases in referrals, the participating home health agencies focused on offering the demonstration to eligible patients already receiving home health services, to patients starting new episodes of care at their agencies, and to beneficiaries attending the participating MADC centers who were already receiving home health or who might be eligible to start new home health episodes. Sites trained and used a range of staff to distinguish excluded patients from eligible patients, and to offer the demonstration to the eligible ones. Staff who performed these functions included regular home health assessment nurses, home health marketing staff, demonstration managers, and MADC center staff. The numbers of new home health patients starting care at the sponsoring agencies were thus one measure of their potential for recruiting beneficiaries for the demonstration, and these numbers differed sharply by site (Section 1 of Table 1). The NY site, which dropped out first, had the lowest numbers (16 new patients per month), but the WI site, which also dropped out, had the second highest patient flow (37 new patients per month).

Episodes per patient. Another factor affecting participation in the demonstration was whether patients tended to have single or multiple episodes of home health care at the participating agencies. Participants qualifying for a single episode had to leave the demonstration after 60 days at most, while a participant who qualified for a subsequent episode could continue in the demonstration. The average episodes per patient varied substantially across sites, from a low of just 1.05 at the NY site, compared to WI (1.15), FL (1.34), PA (1.89), and TX (4.46). Given that a beneficiary may benefit from MADC services independent of home health services, having multiple episodes and continuing in MADC could affect patient outcomes. Also, beneficiaries' interest in the demonstration could be affected by their knowing in advance that they were or were not likely to qualify for multiple episodes, and thus continuing participation in MADC.

Excluded patients. Sites could decide not to offer the demonstration to current and new home health patients whom they did not consider appropriate for the service model. Reasons for not offering differed by site but included the patient being too physically sick (e.g., having a compromised immune system), too disabled (bedfast, not able to travel, not able to sit for long periods), sufficiently mentally impaired to be a danger to themselves and others, and living too far away from centers. The NY site excluded patients who needed less than two skilled services,

because the home health agency could not achieve enough savings on one service to offset the MADC rate of $165 per day, which was more than twice the rate of any other site ($60 in FL, $53 in PA, $44 in WI, and $26 in TX). The rates of exclusion also differed by site. Three sites (FL, TX, and PA) offered the demonstration to 90% or more of home health patients starting new episodes of care, while WI and NY offered it much less often (to 53% and 55% of new patients respectively) (Section 2 of Table 1).

Acceptance rates. The Texas site had the highest rate of acceptance (42% of new episodes offered participation) while the acceptance rates at the other sites ranged from 13% to 24% of the episodes with an offer (Section 3 of Table 1). The high rate of acceptances at the TX site was likely related to the site's high rate of multiple episodes.

Table 1: Participation Data[1]

	Florida	*Wisconsin*	*New York*	*Texas*	*Pennsylvania*
1. HHA[2] patients[3] and episodes of care					
New HHA patients	952	996	281	995	1723
Months of operational data	32	27	18	33	32
New HH patients per month	30	37	16	30	54
Episodes of care	1276	1149	294	4433	3256
Average episodes/patient	1.34	1.15	1.05	4.46	1.89
2. Offering the demonstration or not					
Total episodes	1276 (100%)	1149 (100%)	294 (100%)	4433 (100%)	3256 (100%)
Episodes with offer	1154 (90%)	608 (53%)	163 (55%)	4418 (100%)	3033 (93%)
Episodes without offer	122 (10%)	181 (16%)	131 (45%)	12 (0%)	147 (5%)
Missing data on offer	0 (0%)	360 (31%)	0 (0%)	3 (0%)	76 (2%)
3. Accepting the demonstration or not					
Total episodes with offer	1154 (100%)	608 (100%)	163 (100%)	4418 (100%)	3033 (100%)
Episodes with decline	947 (82%)	483 (79%)	124 (76%)	2561 (58%)	2641 (87%)
Episodes with acceptance	207 (18%)	91 (15%)	39 (24%)	1857 (42%)	392 (13%)
Missing data on accept/decline	0 (0%)	34 (6%)	0 (0%)	0 (0%)	0 (0%)
4. MADC use among participants in prior 14 days					
Total Participants	160 (100%)	80 (100%)	39 (100%)	455 (100%)	281 (100%)
Used MADC	106 (66%)	28 (35%)	1 (3%)	353 (78%)	8 (3%)
No MADC use	54 (34%)	51 (64%)	38 (97%)	91 (20%)	273 (97%)
Missing data	0 (0%)	1 (1%)	0 (0%)	11 (2%)	0 (0%)
5. MADC use among decliners in prior 14 days					
Total Decliners	698 (100%)	394 (100%)	120 (100%)	539 (101%)[4]	1472 (100%)
Used MADC	12 (2%)	7 (2%)	2 (2%)	58 (11%)	0 (0%)
No MADC use	686 (98%)	386 (98%)	118 (98%)	467 (87%)	1472 (100%)
Missing data	0 (0%)	1 (0%)	0 (0%)	14 (3%)	0 (0%)
6. Enrollment totals					
# of beneficiaries participating	160	80	39	455	281
Episodes per participant	1.29	1.14	1.00	4.08	1.40
Estimated months of participation (episodes x 2)	413	182	78	3713	787
Average participants per month	13	7	4	113	25
7. Gender of beneficiaries (% female)					
New HHA patients	69%	59%	70%	51%	65%
Demonstration participants	59%	58%	69%	46%	74%

[1] The data are available from the inception of the demonstration in August 2006 to the time each site stopped reporting participation data. The start and end dates and months of reporting by site are as follows: NY (October 2006 to March 2008 – 18 months); WI (August 2006 to October 2008 – 27 months); PA and FL (August 2006 to March 2009 – 32 months); and TX (August 2006 to April 2009 – 33 months).
[2]HHA= home health agency
[3]Patients include both eligible and ineligible beneficiaries (i.e., every new Medicare patient entering the HHA during the period).
[4] Totals may not equal 100% due to rounding.

Prior use of MADC. The percent of participants who used MADC in the 14 days prior to joining the demonstration differed sharply, with TX (78%) and FL (66%) at the high end, WI (35%) in the middle, and PA (3%) and NY (3%) at the low end (Section 4 of Table 1). Thus the FL, TX,

and WI sites were able to draw many of their participants from the MADC population, while the PA and NY sites were not. The rates of prior MADC use among beneficiaries that chose to decline participation were much lower: 2% or less at the PA, FL, WI, and NY sites, and 11% at the TX site (Section 5 of Table 1).

Participation totals. The forgoing factors combined to produce very different numbers of unique total participants, episodes per participant, and average estimated monthly demonstration participants across the sites (Section 6 of Table 1). Sites did not report their average numbers of participants, so they were calculated as follows. First, the number of episodes was multiplied by two, which is the maximum number of months in an episode. This is a high estimate because it assumes that every episode went for the full 60-day maximum, which was not always the case due to deaths and to completions of care plans in less than 60 days. Next, this number was divided by the number of months of data reported (see Section 1 of Table 1) to yield conservative estimates of the average number of participants each month for each site.

The two sites that dropped out early (NY and WI) had the fewest participants, the fewest episodes per participant, and by far the lowest average monthly number of participants (4 and 7 participants respectively). In contrast, the TX site had by far the highest number of beneficiaries participating (455), the highest number of episodes per participant (4.08), and the highest estimated number of participants per month (113). At the TX site, the combination of a large number of participating MADC centers, high rates of offering the demonstration, and high acceptance rates (perhaps influenced by multiple episodes and high rates of prior MADC use among participants), yielded participation totals that far exceeded the other sites. The PA and FL sites were intermediate: Florida, with an estimated 13 average participants per month, benefited from relatively high rates of prior MADC use but had relatively few episodes per participant. The PA site, with 25 estimated average participants per month, benefited from relatively high episodes per participant but found few new participants in its MADC centers.

Gender mix. Section 7 of Table 1 shows the proportion of women among each home health agency's new patients and among its demonstration participants. At the FL, WI, NY, and PA sites, most of the new home health patients were female (range 59%-70%), as were the

participants (range 58%-74%). In contrast, women composed only 51% of the TX agency's new patients and only 46% of demonstration participants.

Reasons for accepting and declining. The face-to-face interviews with participants showed that their reasons for accepting related to the benefits of attending a MADC center, including getting out of the house, socializing with others, activities at the MADC centers (e.g., music, trips, games, beauty parlor), meals, and most of all, respite to family caregivers. The interviews with decliners revealed that the two major reasons for not participating were that they were either too sick or too healthy to attend the MADC. On the one hand, some said they declined because they were too weak to leave home, take transportation, and participate in the typical five to seven hours of activity. On the other hand, others declined because they expected to regain their independence during the home health episode and did not think they needed adult day care. At the NY and WI sites, some patients declined for fear of losing their Medicaid-paid personal care attendants. Both staff and beneficiary respondents cited Medicaid rules that in some circumstances prohibited same-day receipt of attendant care and MADC.

The survey asked decliners why they did not participate in the demonstration. Of the 209 respondents who answered this question (representing 80% of the decliner survey sample), 30% reported that they declined to receive their HH benefits in the MADC because they preferred to be home, had home care, and/or simply did not want or need MADC. The next most common reasons for declining were being too disabled to attend MADC (21%), already attending MADC (11%), not in need of MADC (10%), not remembering being offered (6%), transportation problems (4%), and other reasons (18%). All but one person of the 11% who declined because they were already attending MADC were at the TX site, which had a high proportion of beneficiaries already attending MADC five days a week through Medicaid funding. Some of the MADC centers in the TX site's service area were participating in the demonstration and some were not.

Differences between beneficiaries that were excluded, that participated, and that declined. The evaluation’s analysis of Medicare claims (based on earlier analyses from the Interim Report) found no consistent differences between beneficiaries that were excluded, that participated, and

that declined either in terms of the percent that used selected Medicare services or the total expenditures on those services in the year prior to and after starting home health (Table 2). At the WI site, the excluded tended to have higher utilization and expenditures than those offered in three categories (pre-demonstration outpatient expenditures and post-demonstration inpatient use and expenditures), and decliners tended to have higher utilization and expenditures than participants (post-demonstration outpatient and inpatient claims and post inpatient expenditures). In NY, those who were excluded had higher home health utilization and claims in the year after they began their home health episode. There were no patterns in the other sites that pointed to the demonstration participants being higher or lower users of Medicare services than the average Medicare patients that entered the home health agencies.

Table 2: Comparisons of Patients that Were Excluded, that Declined, and that Participated[1]

	FL	*WI*	*NY*	*TX*	*PA*
Home health					
Expenditures in year before episode				D>P	
Use in year after start of episode			E>O		
Claims in year after start of episode			E>O		
Outpatient					
Use in year before episode		P>D			
Expenditures in year before episode	O>E	E>O			O>E D>P
Use in year after start of episode					E>O
Claims in year after start of episode		D>P		P>D	
Inpatient					
Use in year before episode					D>P
Expenditures in year before episode	D>P				
Use in year after episode		E>O D>P			
Expenditures in year after episode		E>O D>P			

[1]E = Patients who were excluded. O = Patients who were offered. D= Decliners.
P = Participants. Significance: Only differences significant at the .05 level are reported.

Service Delivery: Several issues were encountered in setting up service delivery systems. Each is listed here and addressed below. The issues were:

- Whether home health or MADC staff would deliver home health services in the MADC centers;
- How home health intake, care planning, and discharge would be managed;
- How care would be coordinated;
- How quality of care would be maintained.

Staff delivering home health services in MADC centers. The most common pattern for delivering home health services in the MADC centers was to use home health staff rather than MADC staff. The home health agencies in PA, FL, and WI all brought in their own nursing and therapy staff (or individual home health professionals under contract) to deliver skilled home health services in the MADC centers. The TX site initially used MADC nurses to provide home health nursing services and its own staff to provide therapy services, but it eventually stopped using MADC nurses at many centers after learning that the centers' nurses were not adequately trained to provide home health services. The NY site used MADC staff to provide all nursing and therapy services, but its MADC center hired nurses and therapists with home health experience to provide these services. Thus the NY approach was consistent with the decisions of other sites that having experience with Medicare home health rules and documentation was necessary to provide home health services under the demonstration. Only two of the sites provided home health aide services in the MADC centers: WI with certified aides from the home health agency, and NY with experienced MADC aides.

Intake, care planning, and discharge. Home health agency respondents reported small but important changes in their intake, care planning and discharge processes. First, home health agencies modified their intake processes to identify patients who were eligible for the demonstration and to present an informed choice about joining. The changes were described above in Section III.A., Implementation of Marketing and Service Delivery.

Second, the home health staff prepared care plans using the same standard Medicare criteria and services as for regular home health patients, but the staff needed to specify in the care plans which services would be delivered in the MADC and which would occur in the home. Home health staff had many more logistics to manage for the MADC setting compared to delivering

services at home. Staff had to obtain doctors' orders for both home health care and MADC, had to advise MADC centers of days of attendance, and had to process and pay bills from the centers. They also had to coordinate communications and care plans with MADC staff, and rearrange home health services quickly when participants did not show up in MADC centers as scheduled to receive home health services there.

Third, all sites reported that discharge was more difficult for some demonstration participants than it typically was for home health patients receiving all services at home. The reason was that most participants wanted to continue to attend MADC, and the MADC and home health staff often tried to help them do so. The great majority of the 30 participants interviewed during the site visits wanted to continue attending day care, and it seemed that two-thirds would: 13 through Medicaid and seven by paying privately. Both the MADC staff and home health staff tried to help the rest find other sources of public funding, but they were usually disappointed by ineligibility and/or waiting lists for these programs. Staff respondents in home health agencies reported that in some cases families were concerned and advocated that the demonstration staff consider extending episodes of care. Both participants and family members enjoyed the benefits of attending MADC, and another episode would extend the demonstration financing of the service.

Care coordination. Respondents in both home health agencies and MADC centers reported that the demonstration introduced the challenge of coordinating home health services delivered in the home with services delivered in the centers. No conflicts were reported with delivering MADC and home health services: When home health was scheduled, participants simply left their MADC activity to receive care. The most common problem was how to provide home health services to participants who did not attend day care when scheduled. These missed appointments were due to illness, transportation problems, or a beneficiary’s choice to stay home. The home health agencies devised systems for the MADC staff or the home health clinician to report absences to the home health care coordinator. This coordinator then tracked down the reason for the absence and rescheduled the service for the home or scheduled a new MADC visit.

Quality. The only potential quality of care issue that arose in the site visits was related to the effectiveness of physical and occupational therapy in the home versus the MADC setting. Having dedicated MADC therapy space and equipment reportedly improved outcomes, but only the WI and NY centers offered this. The other sites did not have such space and equipment, they did not have therapists on staff, and they did not routinely offer therapy services in their MADC models. Home health staff at several sites, including one that used a MADC center with dedicated space and equipment, reported that therapy outcomes were better at home for patients who had mild to moderate dementia. This was because family members were at home but not at the MADC center to learn and reinforce training. Except at the NY site, where MADC staff provided home health therapies, it was uncommon for MADC staff to be sufficiently involved in the home health therapy visit to learn how to reinforce training. Some staff believed that slower progress in therapy in MADC centers for patients with dementia led to more home health therapy services and less progress within the episode.

Summary. None of the changes in service delivery was difficult for home health agencies or MADC centers to address, but the changes did involve new and extra work, particularly for home health staff and managers.

B. Satisfaction of Beneficiaries

Methods: The evaluation assessed beneficiary satisfaction through in-person interviews with participants (6 per site) and decliners (4 per site) during site visits that occurred a little more than a year into operations, and through a telephone survey of participants and decliners during the third year of the demonstration. In total, 1,219 beneficiaries were invited to participate in the satisfaction survey, representing 871 decliners and 348 participants (Table 3). A three-point satisfaction scale (Very satisfied, Somewhat satisfied, Dissatisfied) was administered to MADC participants regarding MADC services. A four-part question about home health services was administered regarding Medicare home health received in the home (asked of both decliners and participants) and home health received in the MADC center (participants only). The four-part question asked respondents whether (1) "the nurses give good care," (2) "the therapists give good care," (3) "I get good information about conditions and treatments," and (4) "they showed up when they said they would."

The evaluation team used unadjusted, bivariate analysis to compare the satisfaction with home health services received in the home for beneficiaries who participated in the demonstration compared to beneficiaries who declined to participate. Like the other satisfaction question, responses were very skewed toward satisfaction with home health, and respondents were categorized as "very satisfied" if they said yes to three of the four questions and "not very satisfied" if they said yes to two or fewer questions.

The analysis of satisfaction with MADC services included an examination of select subgroups – defined by age, health status and other factors – to assess if and how satisfaction of participants differed by selected factors.

Table 3: Survey Sample and Response Rates by Site and Respondent Type

	FL	***WI***	***TX***	***PA***	***Total***
Survey sample					
Decliners	160 (78%)	45 (90%)	336 (59%)	330 (84%)	871 (71%)
Participants	45 (22%)	5 (10%)	236 (41%)	62 (16%)	348 (29%)
Total	205 (100%)	50 (100%)	572 (100%)	392 (100%)	1219 (100%)
Survey response					
Decliners	51 (65%)	9 (82%)	127 (48%)	75 (68%)	262 (57%)
Participants	27 (35%)	2 (18%)	135 (52%)	35 (32%)	199 (43%)
Total	78 (100%)	11 (100%)	262 (100%)	110 (100%)	461 (100%)
Response rate					
Decliners	32%	20%	38%	23%	30%
Participants	60%	40%	57%	56%	57%
Total	38%	22%	46%	38%	38%

At three of the four sites (FL, WI and PA), the evaluation team's goal for the survey was to interview two decliners for each participant to maximize statistical power given lower than expected demonstration participation rates at these sites. In TX the goal was to interview an equal number of participants and decliners. Invitations were mailed monthly between June 2008 and March 2009 to waves of the sample that were completing their home health episodes. Surveyors followed up the mailings by phoning beneficiaries to determine their willingness to participate in the survey. These efforts yielded an overall response rate of 38%, representing 461 survey participants. Due to the withdrawals of the NY site six months before the survey and the WI site two months into the survey, there were no survey data from NY and only 11 respondents from WI. Thus, survey data adequate for site-specific analysis were available for only the FL

(78 respondents), PA (110 respondents), and TX (262 respondents) sites. Together, these three sites represent 450 survey respondents.

Survey response rates varied by respondent type. Among participants, the response rate was 57% while the response rate among decliners was 30%. The lower response rate among decliners was due to two main factors. Compared to participants, decliners were more difficult to recruit into the survey. Additionally, the survey team's follow-up efforts among decliners depended on the response rate among participants, and the team attempted to maintain the target participant-to-decliner ratios. Consequently, the decliners were liberally sampled to accommodate unpredictable response rates among participants. Across sites, response rates varied. WI yielded the lowest overall response rate (22%) and TX had the highest (46%). Because of the very low number of survey respondents in WI, this site is not included in the analyses that follow. Although there were more respondents in PA and FL, the numbers are still too low to support multivariate analyses of differences in satisfaction across sites or between participants and decliners.

Characteristics of respondents: Table 4 compares survey respondents who participated in the demonstration with survey respondents who declined to participate according to demographic characteristics, health status, and other characteristics (such as living arrangement, Medicaid status, etc.). The findings indicate that these two groups differed significantly in age and health status. On average, decliners were significantly older than participants (mean age 77 compared to 74). Compared to participants, decliners were also significantly more likely to have one or more of the following health conditions: diabetes, congestive heart failure, specified heart arrhythmias, chronic obstructive pulmonary disease (COPD), and renal failure. These findings are consistent with the sample of beneficiaries interviewed during the site visits, in which decliners tended to be more frail, old, and sick.

For all other characteristics examined, the team observed no significant differences between participants and decliners. Among both groups, for instance, slightly more than half were female, almost 30% lived alone, a little over one-third reported being able to walk independently,

and 46% had Medicaid. In summary, among survey respondents, declining to participate in the demonstration was independent of all factors examined except age and health status.

Table 4: Characteristics of Participants Versus Decliners (N=461)

Variables and Significance[1]	***Participants***	***Decliners***	***Total***
Demographics			
Female	53.3%	56.6%	55.1%
Mean age*	74.12	77.23	75.93
Other			
Lives alone	28.8%	29.4%	29.1%
Walks independently	39.4%	35.5%	37.2%
Mean number of 5 activities need help with[2]	2.19	2.15	2.17
Receives Medicaid	45.9%	45.7%	45.8%
Patient/caregiver received training from HHA	32.9%	33.8%	33.4%
Health Status			
Diabetes without complications*	20.3%	25.2%	24.0%
Congestive heart failure**	18.0%	31.9%	28.7%
Specified heart arrhythmias**	11.3%	26.0%	22.5%
Vascular disease	10.9%	13.2%	12.7%
Chronic obstructive pulmonary disease**	13.6%	24.5%	21.9%
Renal failure**	8.8%	15.9%	14.2%

[1]Significance results were based on Fisher exact test for differences in proportions, and T-test for differences in means. + = p <.10; * = p < .05; ** = p < .01; *** = p<.001
[2]Activities include bathing, dressing, using the toilet, shopping, and being able to take medications independently.

Table 5 compares several demographic measures for survey respondents across the three sites with adequate survey data. It shows no differences in the proportions living alone but that a slightly but significantly higher proportion of females were surveyed in FL. It also shows that the TX respondents were significantly more likely to walk independently, to be covered by Medicaid, and to be younger than respondents at the other two sites.

Table 5: Site Comparisons of Characteristics of Survey Samples

Variables and Significance[1]	***PA***	***FL***	***TX***	***Total***
Lives alone	32%	33%	27%	29%
Female+	45%	67%	54%	55%
Walks independently**	26%	33%	44%	38%
Medicaid participant**	8%	29%	69%	47%
Mean age**	80.5	80.2	72.0	75.9

[1]Significance results were based on Fisher exact test for differences in proportions, and T-test for differences in means. + = p <.10; * = p < .05; ** = p < .01; *** = p<.001

Experience with home health services: Both participants and decliners received home health services from the participating agencies. The decliners received all their home health services at home under the traditional home health model, while participants received home health services in the MADC centers as well as in their homes.

Table 6 compares participants and decliners with respect to their level of satisfaction with home health services delivered in the home and whether the home health agency provided training or education to beneficiaries or their caregivers. The findings indicate that these two groups did not differ significantly in either category. Nearly 90% of the combined groups said "yes" to three of the four satisfaction items concerning the home health services they received at home, and one-third indicated that they or their caregiver received training or education from the home health agency as part of their episode of care.

A separate analysis (not shown) found that there were no significant differences in satisfaction with home health services across the three sites with adequate survey data (TX, PA and FL). This suggests that the demonstration model did not disrupt the home health agencies' normal patterns of care around home-based services and education and training, at least from the perspective of beneficiaries. During the site visits, home health agency staff expressed some concern that the demonstration's delivery of services in MADC centers limited access to caregivers and by extension limited the staff's ability to provide training and education to this group. This was because home health staffs were less often in the patient's home and caregivers seldom were in the MADC centers during home health visits. Staff were also concerned that the

mix of home-based and MADC-based home health services disrupted care continuity in cases where different staff were used to provide services in these different settings.

Table 6: Experiences of Participants Versus Decliners with Home Health Services

Variables and Significance[1]	*Participants (N=199)*	*Decliners (N=262)*	*Total (N=461)*
Satisfaction with HH services delivered in home[2]			
Very satisfied ("Yes" on 3 of 4 items)	117 (87%)	223 (90%)	340 (89%)
Not very satisfied ("Yes" on 2 or fewer items)	18 (13%)	25 (10%)	43 (11%)
Total	135 (100%)	248 (100%)	383 (100%)
Patient/caregiver received training from HHA			
Yes	54 (33%)	69 (34%)	123 (33%)
No	110 (67%)	135 (66%)	245 (67%)
Total	164 (100%)	204 (100%)	368 (100%)

[1]Significance results were based on Fisher exact test for differences in proportions, and T-test for differences in means. Differences between participants and decliners were not significant at the 0.05 level.
[2]Items included whether (1) "the nurses give good care," (2) "the therapists give good care," (3) "I get good information about conditions and treatments," and (4) "they showed up when they said they would."

Satisfaction with services in the MADC: In addition to their satisfaction with home health services delivered in the home, the survey asked participants but not decliners about their satisfaction with several aspects of the home health services delivered in the MADC centers, as well as their satisfaction with the "overall experience" in the centers. Table 7 suggests that the overwhelming majority of participants (86%) were very satisfied with the home health services they received in the MADC centers. Similarly, when asked to rate their satisfaction with MADC, 82% were very satisfied. This is consistent with what was reported by the sample of participants and their caregivers interviewed during the site visits.

The analysis also examined whether satisfaction with the overall experience in the MADC differed for different types of beneficiaries. Table 8 compares participants who were very satisfied with their MADC experience against beneficiaries who were not very satisfied according to demographic and other characteristics (such as the living arrangement, Medicaid status, etc). The findings indicate that satisfaction with the MADC experience was independent of a beneficiary's gender, residential status, ability to move around independently, need for

assistance with daily activities (such as bathing and dressing), and Medicaid enrollment. With respect to age, however, participants who reported being very satisfied with their overall experience in the MADC center were on average significantly younger than participants who reported that they were not very satisfied (mean age 72.9 compared 81.1 respectively).

Table 7: Satisfaction of Participants with Services Delivered in MADC Centers

	Sample	***Percent***
Satisfaction with HH services delivered in MADC[1]		
Very satisfied ("Yes" on 3 of 4 items)	157	86%
Somewhat satisfied ("Yes" on 2 items)	14	7%
Dissatisfied ("Yes" on 1 or zero items)	11	6%
Total (does not equal 100 due to rounding)	182	99%
Overall satisfaction with MADC[2]		
Very satisfied	160	82%
Somewhat satisfied	30	15%
Dissatisfied	5	3%
Total	195	100%

[1] Items included whether (1) "the nurses give good care," (2) "the therapists give good care," (3) "I get good information about conditions and treatments," and (4) "they showed up when they said they would."

[2] Respondents were asked: How satisfied were you with your overall experience in the MADC? Very satisfied? Somewhat satisfied? Dissatisfied?

The analysis was not able to examine whether satisfaction with the overall experience of MADC differed by beneficiary health status. This was because the number of beneficiaries who reported being not very satisfied with the MADC experience was too small to support a statistical comparison. It is possible that among Medicare home health patients, the MADC setting is less well-suited for older beneficiaries and for beneficiaries in poorer health. This is consistent with what staff reported during the case study site visits: Among beneficiaries who were reported to have withdrawn from the demonstration, most did so because they were too sick and weak.

Table 8: Satisfaction of Participants with MADC Experience by Sub-Group (N=199)

Variables and Significance[1]	*Total Participants*	*Very Satisfied Participants*	*Not Very Satisfied Participants*
Demographics			
Female	53.8%	56.2%	41.2%
Mean age*	74.11	72.9	81.1
Other			
Lives alone	29.4%	30.8%	22.9%
Walks independently	39.2%	41.5%	28.6%
Mean # of 5 activities need help with[2]	2.19	2.18	2.23
Receives Medicaid	46.4%	41.2%	47.5%

[1]Significance results were based on Fisher exact test for differences in proportions, and T-test for differences in means. + = p <.10; * = p < .05; ** = p < .01; *** = p<.001
[2]Activities include bathing, dressing, using the toilet, shopping, and being able to take medications independently.

Other Experience with MADC: In addition to overall satisfaction with services, the survey asked participants about their experiences with other dimensions of attending the MADC centers. With respect to traveling to and from the MADC center, 69% relied on van services provided by the MADC center. Only 14% reported relying on family or friends for transport (Table 9). When asked how well their transportation arrangements worked, the overwhelming majority (85%) reported that it worked very well. For most participants (84%), there was also no cost associated with their transportation to and from the MADC center.

These findings are somewhat counter to what was reported by the participants who were interviewed during the site visits. Among that group, beneficiaries from at least two sites (PA and FL) expressed dissatisfaction with the transport services provided under the demonstration. Complaints included the cost associated with the service (at one site), imprecise pick-up and drop-off times, and the length of transport time. It is possible that transport services improved between the time of the site visits and the implementation of the satisfaction survey. It is also possible that the satisfaction survey results are skewed by the disproportionately large sample from TX. The sample of beneficiaries interviewed during the site visit to TX did not complain about transportation.

Under the demonstration, the home health agency paid the MADC for the days a participant attended a MADC center to receive scheduled home health services. If participants wanted to attend the MADC center on additional days, they could do so but needed to find another funding source to pay (their own funds, Medicaid, etc). Only 15% of participants reported paying for additional days in the MADC centers (Table 9).

Table 9: Experience of Participants in the Demonstration (N=199)

	Sample	*Percent*
Transport to and from MADC		
Bus/van from program	134	69%
Family/friend	28	14%
Bus/van and family/friend	17	9%
Other	16	8%
Total	195	100%
How well transport works		
Very well	159	85%
OK	20	11%
Not very well	8	4%
Total	187	100%
Costs associated with transport		
Yes	26	16%
No	141	84%
Total	167	100%
Paying for any days in MADC		
Yes	29	15%
No	166	85%
Total	195	100%
Would like to keep going to MADC		
Yes	183	93%
No	13	7%
Total	196	100%
If yes, willing to pay for MADC		
Yes	58	32%
Yes, I already pay	17	9%
No	79	43%
No – a public program pays	28	15%
Total	182	99%[1]

[1]Totals do not equal 100% due to rounding.

Consistent with findings that most participants were very satisfied with their experiences in the MADC, more than nine out of ten (93%) reported that they would like to continue attending the MADC center after their episode of home health care ended. Of those who wanted to keep attending the MADC, however, participants were split in their willingness to pay to attend a MADC center. While 41% were willing to pay (and among them, some were already paying to

attend the MADC center on non-demonstration days), 43% were not willing to pay. Another 15% reported that they were not willing to pay because a public program was already paying for their attendance. This is consistent with what was reported by the sample of beneficiaries interviewed during the site visits, where many expressed a strong desire to continue going to the MADC center, but few were willing or able to pay for the service.

A separate analysis of open-ended questions (not shown in a table) found that what participants most liked about MADC was socializing, activities and games (true for 70% of the 190 participants answering this question). The next most common response was "everything" (10%). What respondents did not like about MADC included food (27% of 120 participants answering this question), activities (15%), and not wanting to leave home (10%), often due to physical problems. More than a quarter (26%) said there was nothing they did not like about MADC. When asked how the "demonstration was good for you," the most common answer was "everything" (28% of 129 respondents). The next-most common responses were that the:

- Caregiver received time off (22%);
- Respondent enjoyed getting out of the house and socializing (19%);
- Participant received good care and felt better for it (17%).

It is worth noting that only the third of these three specific responses refers to care, which may include home health care, while the first two refer to things that MADC provides.

Out-of-pocket costs: Both the survey and the in-person interviews asked beneficiaries about out-of-pocket costs for home-based and community-based services (HCBS), including MADC services. According to the participants interviewed, the demonstration reduced out-of-pocket expenditures for HCBS for a relatively small number of beneficiaries in two categories. These involved (1) beneficiaries already attending and paying for MADC themselves, and (2) those that had been paying for in-home care and that did not need to pay for it when they went to day care. However, at the PA, WI, and FL sites, there were new transportation costs associated with day care for some participants. This typically was approximately $2.50 to $5.00 per trip on a subsidized senior citizens van. Fees were generally set on a sliding scale based on income. Medicaid beneficiaries rode for free.

A separate analysis (not shown in a table) found that among survey respondents, 37% had paid helpers in the home. More of the respondents who declined to participate had paid helpers (42%) than participants (31%), and the difference was statistically significant. The helpers for both groups were usually paid by public programs (79%), which left only 21% that had to pay for their helpers themselves. Among the 60% of respondents that had out-of-pocket costs and that reported their spending levels (N=22), the range was $12 to $750 per week, with a median of $110 and a mean of $236. There were no differences in out-of-pocket costs for participants and decliners.

Limitations of the survey and interviews: The results of the survey could be biased if beneficiaries who chose not to respond had unsatisfactory results with their home health care or their MADC. The relatively high overall response rate achieved among participants (57 percent) mitigates, but does not eliminate, this possibility for this group. Other limitations include relatively high non-response rates to cost-related questions and the necessarily subjective nature of responses to some questions. Another problem is common in studies of individuals' satisfaction with health services: It is usual for very high proportions of respondents to be generally satisfied with what they receive. This hampers detection and analysis of ways in which beneficiaries may be less than satisfied. Finally, the results of the survey analysis are based on unadjusted, bivariate comparisons of participants and decliners and as such do not control for potential differences between these two groups that might affect satisfaction, such as health status, caregiver support, income, etc. The evaluation team did not use adjusted, multivariate models to estimate satisfaction because the data set did not support the specification of adequate variables to control for these differences. Given this, conclusions from the analysis of beneficiary satisfaction need to be treated cautiously since it is not possible to determine whether satisfaction outcomes are due to demonstration effects or other unmeasured differences between participants and decliners.

Summary: Results from the satisfaction survey suggest a very high level of satisfaction with the demonstration among most participants. The Medicare services delivered by the demonstration home health agencies to patients – whether in the home or the MADC – were rated very highly.

In fact, levels of satisfaction were comparable to patients who were receiving home health services outside the demonstration.

The two groups for whom the demonstration model may be less well suited are older patients and patients in poor health. It was these two groups that were most likely to decline to participate in the demonstration. Furthermore, older patients who did participate were more likely to be dissatisfied with their experience in the MADC center compared to their younger counterparts.

In addition to high levels of satisfaction with home health services delivered under the demonstration, participants were also very satisfied with their overall experience in the MADC centers, including the transportation to and from the centers. Overwhelmingly, participants expressed a desire to continue attending a MADC center after the demonstration was complete, but they were split in their willingness and ability to pay for these services. Staff members that tried hard to secure alternate funding of MADC services for beneficiaries who wanted to continue attending a center echoed this tension.

C. Effects on Home Health Agency and MADC Finances

During the site visits, staff members at all home health agencies reported that for several reasons the demonstration was contributing to financial losses rather than surpluses. This was due primarily to the 5% reduction in Medicare reimbursement and to the added costs of operating the demonstration, e.g., in marketing to agencies and patients and in managing information and patient care. Additionally, except for the Texas site, there were seldom a sufficient number of participants to realize the efficiencies of avoiding staff travel costs by delivering home health services in a MADC center to multiple patients in sequence. The MADC staff interviewed during site visits reported that the financial advantages of the very small increases in their census associated with the demonstration were offset by small increases in their costs (mostly administrative time) from participating.

Medicare cost report data add perspectives to these reports from home health agency staff. However, cost report data have several limitations in providing understanding of the effects of the demonstration. First, the most recent cost reports available are for agencies' 2007 fiscal

years. This is less than half way into the demonstration, but it is the same period when the site staff interviews were conducted. Second, cost reports cover an entire home health agency. In three of the demonstration agencies, the demonstration occurred in only small sub-divisions of very large agencies. Demonstration participants represented less than 1% of the Medicare patients served by the NY and WI agencies, and 5% of patients served by the PA agency. Because Medicare cost reports cannot provide any plausible evidence of the demonstration's impact on these three agencies, cost report analysis for them is not included in this report.

Given these limitations, the cost report data show the following patterns at the two remaining sites (TX and FL) in terms of the proportion of agency patients that were Medicare, the proportion of the agency's patients that were in the demonstration, the agency's focus on nursing versus other services, the number of episodes per patient, and the agency's revenues:

- Texas: Doctors Care Home Health started and ended the period as a home health agency serving nearly 100% Medicare patients, and demonstration participants represented about 22% of the agency's patients in 2007.[5] It was the demonstration agency with the highest proportion of its visits in skilled nursing – more than 70% throughout the period. The agency sharply increased the number of episodes per patient for all Medicare beneficiaries served from 1.0 in 2004 to 2.7 in 2007. Its total patient revenue increased by a factor of five between 2004 and 2007, but the sharpest increases came before the demonstration. Net revenue as a percent of total revenue (margin) was zero in 2004, spiked to 13% in 2005, fell to 2% in 2006, and then fell back to near zero in 2007.

- Florida: Neighborly Care Network was focused almost exclusively on Medicare patients both before and during the demonstration, and demonstration participants represented

[5]The estimate was calculated as follows. The 12 months of 2007 represented 36% of the total months (33) that Doctors participated in the demonstration; 36% of the 455 participants in the demonstration at Doctors is 165 participants for 2007. Overall, Doctors took in 672 new Medicare patients in 2007. The agency's total Medicare patients for the year would be the new patients plus the patients that were already being served at the start of 2007, which is estimated as one-twelfth of the 672, or 56 patients, yielding a total of 738 patients served. Therefore, 165 equals 22% of the 738 Medicare patients Doctors served in 2007. Figures on participants and demonstration months are from Table 1. Figures for Doctors' 2007 patients are from cost reports. The estimates for the FL site used the same calculations.

about 13% of the agency's patients in 2007. Skilled nursing as a proportion of agency visits increased from 2004 to 2006 (to 55%) and then fell in 2007. Episodes per patient for all Medicare beneficiaries served fell after implementation from 1.4 per patient in 2006 to 1.0 in 2007. Patient revenue rose steadily, with an increase of about 80% over 2004 by 2007. Patient revenues net of patient costs appear to be inconsistent for this agency for 2006 and 2007.[6]

Summary: The two agencies in which demonstration patients were a significant proportion of business (FL and TX) had no clear patterns in the variables tracked with the onset of the demonstration. The TX agency continued its sharp increase in total revenue and episodes per patient, but its net revenue fell. The FL agency experienced modest growth in revenues, and its episodes per patient fell after implementation. After implementation, the data for the FL agency show a jump in net revenues to more than 80% in 2006 and 2007. These may be reporting errors.[6]

D. Effects on Home Health Service Use, Medicare Expenditures, and Quality of Care

Overview: The evaluation team used Medicare eligibility and Part A and B claims (but not Part D) data to assess the effects of the demonstration on the utilization of home health services, including an analysis of whether home health services were delivered in the MADC centers or in the participants' homes. The team also used claims data to identify a comparison sample of home health patients in the Medicare fee-for-service system in areas served by the demonstration sites to assess the effects of the demonstration on Medicare expenditures and on the quality of home health care delivered to participants. These analyses are presented in turn below.

Effects on the Use of Home Health Services: The evaluation team's goals in this analysis were to answer two questions:

- How many beneficiaries were indicated to be demonstration participants based on the appearance of the demonstration's billing code in their Medicare records?

[6] Reported data show an increase in margin from negative 10% in 2004 to positive 10%, 85%, and 85% in 2005, 2006, and 2007 respectively. Reconciling the inconsistencies was beyond the scope of this evaluation.

- Among these participants, how was service delivery distributed between the home and the MADC center, as indicated by a special code on the claim?

The evaluation also analyzed the average number of each home health service delivered in the two settings.

Findings from this analysis are reported in Table 10. Part A of the table shows the total number of visits for each home health service provided by each site from the beginning of the demonstration through the end of 2008. For all sites, nursing and physical therapy (PT) were the predominant services. Part B of Table 10 shows the percent of home health visits provided in MADC centers for each site for all participants. For example, at the FL site, 59% of all PT visits occurred in MADC centers. The remaining 41% were therefore provided in beneficiaries' homes. Across all sites, nearly half of all visits (49%) were provided in MADC centers. The NY site was on the high end, providing 60% of all visits in its MADC center, and the FL site was on the low end, providing 39% of all visits in its MADC centers. By service type, PT visits were most likely to be provided in the MADC center, and home health aide visits the least likely. Only two sites (NY and WI) provided home health aide services in the MADC centers. The remaining three sites (FL, PA, and TX) provided home health aide services exclusively in the home setting. During site visit interviews, home health staff gave a number of reasons why such a significant proportion of home health services for participants continued to be delivered at home, including:

Table 10: Enrollees, Services, and Place of Service[1] by Site (8/1/06-12/31/08)

Site	*Enrollees*	*Episodes*	*PT*	*OT*	*ST*	*Nursing*	*SW*	*HH Aide*	*Total*
			A. Number of Visits Provided to Demonstration Enrollees						
FL	118	237	1,671	82	67	1,694	53	150	3,717
NY	28	42	253	72	8	217	5	139	694
PA	101	197	1,441	688	151	1,525	6	33	3,844
WI	34	57	392	236	52	484	45	336	1,545
TX	370	1,923	5,080	175	96	26,210	132	660	32,353
Total	651	2,456	8,837	1,253	374	30,130	241	1,318	42,153
			B. Average Percentage of Visits Delivered in MADC Centers						
FL	118	237	59%	39%	52%	24%	9%	0%	39%
NY	28	42	70%	86%	100%	55%	80%	35%	60%
PA	101	197	44%	41%	52%	40%	0%	0%	42%
WI	34	57	53%	53%	52%	45%	47%	59%	52%
TX	370	1,923	85%	69%	45%	45%	14%	0%	51%
Total	651	2,456	72%	50%	51%	44%	20%	19%	49%
			C. Mean Number of Visits per Demonstration Episode						
FL	118	237	7.1	0.3	0.3	7.1	0.2	0.6	15.7
NY	28	42	6.0	1.7	0.2	5.2	0.1	3.3	16.5
PA	101	197	7.3	3.5	0.8	7.7	0.0	0.2	19.5
WI	34	57	6.9	4.1	0.9	8.5	0.8	5.9	27.1
TX	370	1,923	2.6	0.1	0.0	13.6	0.1	0.3	16.8
Total	651	2,456	3.6	0.5	0.2	12.3	0.1	0.5	17.2
			D. Mean Number of Visits in MADC Center per Demonstration Episode						
FL	118	237	4.2	0.1	0.1	1.7	0.0	0.0	6.2
NY	28	42	4.2	1.5	0.2	2.8	0.1	1.2	10.0
PA	101	197	3.2	1.4	0.4	3.1	0.0	0.0	8.1
WI	34	57	3.6	2.2	0.5	3.8	0.4	3.5	14.0
TX	370	1,923	2.2	0.1	0.0	6.2	0.0	0.0	8.5
Total	651	2,456	2.6	0.3	0.1	5.4	0.0	0.1	8.4
			E. Mean Number of Visits at Home per Demonstration Episode						
FL	118	237	2.9	0.2	0.1	5.5	0.2	0.6	9.5
NY	28	42	1.8	0.2	0.0	2.3	0.0	2.1	6.5
PA	101	197	4.1	2.1	0.4	4.6	0.0	0.2	11.4
WI	34	57	3.2	1.9	0.4	4.7	0.4	2.4	13.1
TX	370	1,923	0.4	0.0	0.0	7.4	0.1	0.3	8.3
Total	651	2,456	1.0	0.3	0.1	6.9	0.1	0.4	8.7

[1]PT: Physical Therapy; OT: Occupational Therapy; ST: Speech Therapy; SW: Social Work; HH Aide: Home Health Aide.

- Almost all initial nursing visits were conducted at home;
- Sometimes participants were too sick and weak to attend MADC early in their episodes;
- It took time to set up transportation and complete application/admission processes for MADC;
- Sometimes participants became ill and stayed at home after starting MADC;

- Patients who started MADC were allowed to change their minds about attending and receive home health services at home for the rest of their episodes.

Part C of Table 10 shows the mean number of visits for each service per episode by site. With the exception of WI, the sites were remarkably similar in the mean number of visits delivered per episode of care (ranging between 15.7 and 19.5 visits). The mean number of visits per episode for WI participants was 27.1. This is consistent with what was reported during the case study visit in WI: At least initially, staff at this site tended to order more services for demonstration participants, particularly home health aide services, because of staff's ease of access to beneficiaries in the MADC setting, which was located in the same building as the home health agency. In fact, the relatively high number of visits per episode provided by the WI site was largely due to aide services delivered both at home and at the MADC center.

Part D of the table shows the mean number of visits for each service delivered in the MADC centers, and part E shows the mean number of visits for each service delivered in beneficiaries' homes. Parts D and E highlight how sites varied in their division of home-based and MADC-based visits by type of service. For example, almost all PT visits at the TX site occurred in the MADC setting, while in PA and WI, PT visits were more evenly split between the home and the MADC setting. Sites were more consistent in their delivery of nursing services. With the exception of FL, close to half of all nursing visits occurred in the MADC centers. Nursing services in FL were more likely to be delivered in the home, which is consistent with this site's serving a slightly sicker population.

In sum, all sites utilized the demonstration model, delivering a range of home health services in the MADC settings. At the same time, despite this new option, home-based services remained a significant delivery mode for all sites. On average, for a variety of reasons, half of all visits continued to take place in the home. Four of the five sites were also similar in the number of visits provided per episode (range of 15.7 to 19.5 visits). The exception was the WI site, which tended to provide more visits per episode overall (27.1) and particularly in the MADC center (14.0). All sites were similar in that the dominant services delivered were nursing and PT. Where sites differed most was in how they managed particular services. For instance, all sites

except PA delivered most PT service in the MADC centers, and three sites (TX, PA, and FL) delivered home health aide services exclusively in the home. These sites' MADC centers were not equipped or staffed to provide grooming or bathing services, which were the most common aide services delivered at the NY and WI sites.

Effects on Beneficiary Health Expenditures and Functional Status: By altering the setting for provision of home health services from the home to a MADC center, the demonstration aimed to reduce Medicare service expenditures while enhancing (or at least not diminishing) outcomes for beneficiaries. The evaluation team's quantitative analysis of Medicare expenditures assessed whether the demonstration affected a beneficiary's need for health services covered by Medicare, both in total and by type of service. The team's quantitative analysis of health and functional status assessed whether the demonstration affected a beneficiary's capacity for independent living.

The evaluation team used a standard quasi-experimental design to estimate demonstration effects on Medicare expenditures and health and functional status outcomes. The steps in performing the analysis involved identifying the participants to be included, selecting a comparison group of home health patients in the community, collecting expenditure data from Medicare claims files, collecting functional and health status data from Medicare's Outcome and Assessment Information Set (OASIS) files, conducting multivariate regression analysis, and determining whether data could be pooled across sites. Each of these steps is detailed below.

Participant identification. The evaluation team identified demonstration participants using the rosters provided by the demonstration sites. The beneficiary Medicare identification number provided on these rosters was also used to identify participants' Medicare claims. Because of the need to have a full year of claims after the start of a beneficiary's home health episode, and because of the 6-month lag between the submission of claims and the availability of full paid claims records in DESY, only participants starting episodes by December 31, 2007 could be included in the analyses of financial and functional status. Using the Medicare identification number provided by the sites, the evaluation team was able to determine the Medicare claims for 61 of 68 participants in PA, 79 of 102 participants in FL, and 270 of 277 participants in TX who

met the cut-off date criterion. The early cut-off date of December 31, 2007 is the explanation for why the sample sizes for the regression analyses are lower than the total numbers participating in the demonstration as shown in Table 10. Because of low numbers of participants, the NY and WI sites' participants could not be used for the statistical analyses.

Comparison group. The team identified a comparison group of Medicare home health patients who were served by home health agencies located in the same market areas as the demonstration providers. The comparison patients were selected to match demonstration participants exactly with respect to gender and age group, and HCC (Hierarchical Condition Categories) indicators[7].

Collection of expenditure data. The team collected and summed Medicare expenditures for home health, physician, inpatient, outpatient, and skilled nursing facility services for participants for the 365 days prior to the start of their first home health episode in the demonstration and for the 365 days after that date. For the comparison beneficiaries, the team collected data on the same measures prior to and after a pseudo-start date, which was determined as the start of a home health episode in the same year as the matched participant's start date. When a comparison beneficiary had multiple home health episodes in the year, the pseudo-start date was selected so that the comparison beneficiary had the same number of prior home health episodes as the matching participant. The team used CMS's Data Extract System (DESY) to access the Medicare claims.

Collection of functional and health-status data. Data on health and functional status outcomes for participants and comparison patients were derived from Medicare's OASIS data elements. Although Medicare protocol calls for home health beneficiaries to receive OASIS assessments at the beginning of their episode, at each subsequent payment authorization (commonly at 60-day intervals), and at discharge, the evaluation team was not able to find the required pre- and post-start OASIS assessments for all demonstration and comparison subjects.[8] As a result, the

[7] Hierarchical Condition Categories are a set of 184 diagnosis categories used for Medicare risk adjustment.

[8] Specifically, 75 demonstration participants and 122 comparisons in Texas, 23 demonstration participants and 40 comparisons in Florida, and 14 demonstration participants and 31 comparisons in Pennsylvania failed to have records in OASIS with dates after demonstration start date (pseudo-start date

functional status analyses in this report were based on 195 participants and 148 comparison subjects in TX; 39 participants and 27 comparison subjects in PA; and 68 participants and 28 comparison subjects in FL. Individual OASIS items ranged in value from 0 to 1 for no/yes questions and from 0 to 5 for other questions. Using 18 of these items, the evaluation team developed simple scales in three categories: activities of daily living (ADLs - 7 measures), instrumental ADLs (6), and cognitive/behavioral (5). For each category, the scale was constructed by adding the values for each question and then dividing by the maximum possible score. A higher value for a scale indicates that the beneficiary was assessed as having more problems in that assessment domain. These scales together with 6 individual measures for ambulation (1), incontinence (2), and medical problems (3) were used as outcomes in the regression analyses. If a beneficiary's value for one of these scales decreased between the pre- and post-demonstration periods, this means that the patient was doing better in that domain on the follow-up assessment compared to the initial assessment. Cronbach's alpha statistics were computed for these scales and showed that they achieved high reliability. Details of the items included in the scales and the results of reliability analysis are included in Appendix C.

Regression analysis. The evaluation team examined the difference between the demonstration groups and the comparison groups by comparing the *change* in each outcome measure (i.e., expenditures for Medicare services and functional status) from the prior period to the post period. This is called a "difference-in-difference" analysis. Regression analysis was used to adjust individual beneficiary outcome variables for other factors affecting health services utilization and expenditure. Covariates to adjust for these factors included age, gender, number

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in the case of comparisons). One possible reason for these omissions was that the beneficiary either died or was readmitted to a hospital. In such a circumstance, the home health agency might not have had the opportunity to perform its usual discharge processing. However, analyses of Medicare inpatient claims and the vital statistics file (providing date of death, if applicable) indicate that these were not major causes of the missing assessments. Only 7 study subjects in Texas, 10 subjects in Florida, and 2 subjects in Pennsylvania died or directly entered a hospital upon their home health discharge. A second contributing factor was that even when appropriately dated OASIS records on study subjects were found, they did not always include complete assessment information. This problem was more prevalent for IADL and cognitive function items and also more common among comparison subjects than demonstration participants. In Texas 119 demonstration participants and 80 comparisons had OASIS discharge assessments with important functional status information missing. Similarly, in Florida 15 demonstration participants and 10 comparisons had discharge OASIS assessments with important assessment information missing, and in Pennsylvania the numbers were 7 demonstration participants and 4 comparisons.

of prior home health episodes, and medical co-morbidity, as measured by Medicare's Diagnostic Cost Groups (DCG) score. The team also included random effects for each beneficiary to adjust for correlation between their pre- and post-period expenditures. To isolate the impact of demonstration participation, each regression model included indicator variables for demonstration status (participant versus comparison subject), time period (post versus pre demonstration), and the interaction of these two variables. Only the estimated coefficients for the interaction terms are reported below, because these represent the impact of the demonstration taking into account the other factors. The table in Appendix C presents the definitions of all outcome variables and all independent variables. It also reports the means and standard deviations for each of the variables by site.

Site-specific analyses. The analysis of the demonstration's impact on expenditures and beneficiary outcomes was conducted separately for each demonstration site before considering whether demonstration and comparison groups for each site could be pooled. The site case studies revealed varying approaches to implementing the demonstration, and there were substantial differences across the demonstration service areas in the composition of the Medicare population and area health expenditures. It became clear as the quantitative analysis proceeded that pooled analysis was not warranted.

Demonstration impacts on Medicare expenditures. Table 11 summarizes the findings from the multivariate regressions regarding the demonstration's impact on Medicare expenditures.[9] First, the coefficients for the demonstration effect on total Medicare expenditures (expressed in average annual Medicare expenditures per person) indicate that there is no evidence of expenditure savings from the demonstration. On the contrary, at all three sites the effect on total

[9] The size of the analysis groups in Tables 11 and 12 differ from each other and from the figures on participants reported in Table 1. The explanations for this are as follows. First, the participant numbers reported in Section 4 of Table 1 include all participants starting as late as March and April 2009. In contrast, the analyses conducted for Tables 11 and 12 required a full year of claims data after a participant's start date in the demonstration, and this required a December 2007 cut-off date. For example, the 540 individuals in the analysis sample for TX in Table 11 include 270 participants plus 270 matched comparisons. There are only 270 TX participants (compared to the 455 participants in Table 1) because the analysis sample start dates had to be much earlier, The figures in Table 12 are smaller yet because of both an earlier cut-off date than spring 2009 and the unavailability of full OASIS data for some participants and comparisons, as explained in Footnote 8 on page 41.

Medicare expenditures is positive, indicating that adjusted prior-year to post-year expenditure changes for demonstration participants were on average higher than adjusted expenditure changes for comparison subjects. For participants from the TX agency, the difference was of sufficient size and the group was large enough to produce a significant result. The mean difference-in-difference statistic was $5,398, indicating that the year-to-year change in Medicare expenditures for the participants was $5,398 higher on average than the year-to-year change in total expenditures for the matched control group. This finding was significant at the 0.001 level, which means that there is only one chance in 1,000 that there is actually no difference between the year-to-year changes for demonstration and comparison beneficiaries. For the other two agencies analyzed, the demonstration effects were also positive but not significant even at the 0.10 level.

Table 11: Effects of MADC Demonstration on Medicare Expenditures[1]

Services	***Florida*** *(N=158)*	***Texas*** *(N=540)*	***Pennsylvania*** *(N=122)*
Home Health	$531	$5,861**	$2,486**
Inpatient	$2,748	-$632	$2,025
Outpatient	$369	-$42	-$309
Physician	$970	$40	-$778
Skilled Nursing Facility	-$111	$172	-$1,809
Total Medicare	$4,507	$5,398**	$1,614

[1]Demonstration effect (Observation of participant in Post Period = 1). Significance: + = p <.10; * = p < .01; ** p < .001

Second, the demonstration-effect coefficients by service type denote their contribution toward the overall demonstration effect. For the TX and PA sites, the largest and only significant contributions to overall expenditure increases came from home health services. Year-to-year changes in home health expenditures for participants in TX were on average $5,861 higher than the year-to-year changes for comparisons (Table 11). The $5,861 difference is based on a year-to-year increase for TX participants of $8,381, more than three times the $2,520 increase of comparisons. Similarly, in PA the change in participant home health expenditures was $2,486 higher than the equivalent change for comparisons (a year-to-year increase for PA participants of $3,976 compared to a $1,490 increase for comparisons). Although for these two agencies, the net changes across the other four service types were negative ($462 less for TX and $871 less for

PA), the expenditures for home health services increased so much that the total effects of the demonstration on expenditures were positive (significantly positive in the case of TX).

In FL, the pattern was distinctly different. Although expenditures for all service types except skilled nursing facilities increased more for FL demonstration participants than FL comparisons, the major contribution came from inpatient claims, which accounted for over 60% of the total demonstration effect. The $531 difference in home health spending change between participants and comparisons was not significant. The year-to-year increases were $3,329 for participants and $2,798 for comparisons.[10]

These differentially higher expenditures were derived from regression models which adjusted for demographic, health, and prior service utilization factors. These adjustment factors are not displayed in Table 11, but their effects are worth noting. First, the gender and age variables had only minor and usually not significant effects. Second, the variable for prior number of home health episodes was usually highly significant in models concerning home health expenditures, and consequentially this variable affected overall expenditures as well. Third, demonstration participants in all three sites had more certifications for home health care in their first year under the demonstration than their comparisons. The mean number of certifications of demonstration and comparison beneficiaries in the year after the start of the home health demonstration were 1.72 for participants versus 1.53 for comparisons in FL, 1.75 versus 1.67 in PA, and 4.47 versus 3.46 in TX. In the case of Texas this difference was large enough to be significant.

Further, given the large number of recertifications, it is not surprising that a substantial percentage of demonstration participants at each site came from beneficiaries that the home

[10] For the TX site, the mean home health spending in the year before the index episode was $3,729.49 versus $12,111.05 in the year after, for a difference of $8,381.56. For the TX comparisons, the figures are $6,183.66 pre, $8,703.83 post, and $2,520.17 difference. The difference between participants and comparisons was therefore $5,861.39. For the PA site participants, the figures are $1,778.35 pre, $5,754.33 post, for a difference of $3,975.98. For the PA comparisons, the figures are $2,116.13 pre, $3,606.42 post, for a difference of $1,490.30. The difference between participants and comparisons was therefore $2,485.68. For the FL participants, the figures are $1,750.71 pre, $5,079.76 post, for a difference of $3,329.05. For the FL comparisons, the figures are $2,718.76 pre, $5,516.68 post, for a difference of $2,797.92. The difference between participants and comparisons was therefore $531.13.

health agencies had served previously as patients: 34 out of 79 (43%) in FL, 30 out of 61 (49%) in PA, and 151 out of 270 (56%) in TX. Third, as might be expected, the variable for medical co-morbidity at start date (specified by DCG score) had a significantly positive effect on overall expenditures for all sites. For the FL site, higher DCG scores at start date were associated only with higher inpatient expenditures. For the TX and PA sites, higher DCG scores at start date predicted significantly higher expenditures for all service types except skilled nursing facilities. One factor on which the participants and comparison beneficiaries may have differed for which no data are available for comparisons is whether they were MADC users. This might account for some of the differential change in expenditure patterns.

Demonstration impact on hospitalization. Using Medicare inpatient claims, the evaluation team determined for each participant and comparison patient whether he or she experienced a hospitalization in the year prior to the start date or pseudo-start date and in the year after this date. This allowed the team to use hierarchical logistic regression to estimate the impact of the demonstration on the probability of hospitalization. The same set of variables employed in the Medicare expenditure analyses were used to adjust for beneficiary differences. This analysis (not shown in a table) found small increases in the likelihood of hospitalization among demonstration participants, but none of the effects reached statistical significance at the 0.10 level. The only variable consistently significant in the three models (highly significant in the case of FL and TX) was the health condition variable (the DCG score), a variable specifically included in the model as a risk adjustor.

Demonstration impact on the quality of care. Table 12 provides key findings from multivariate regressions on OASIS functional status outcomes for each of the three sites in the analysis. The regression analysis provides no evidence that the demonstration led to greater improvement (or less decline) in functional status or among selected medical outcomes for its participants. For the FL site, the evidence suggests that demonstration participants improved differentially less than comparison patients in ADLs (0.329), IADLs (0.516), bladder incontinence (0.364), and pain (0.532). The positive scores indicate differentially less improvement for participants than comparison patients in these areas of functioning. There were no significant quality impacts at the PA or TX sites.

Summary. The results of the quantitative analyses of Medicare expenditures and quality of care do not show any advantages for the demonstration in either area compared to outcomes in non-demonstration home health agencies. In fact, there are several instances in which the findings tend to show poorer outcomes for the demonstration: higher overall Medicare expenditures at the TX site, higher home health expenditures at the TX and PA sites, and poorer quality outcomes in several domains at the FL site. The high costs at the TX site may be due to that site's relatively high numbers of home health episodes per participant, which were discussed in Sections III.A and III.C. There is nothing in other sections of the evaluation to explain the quality findings for the FL site.

Table 12: Effects of the MADC Demonstration on Health and Functional Status[1]

Outcomes[2]	*Florida (N=96)*	*Texas (N=343)*	*Pennsylvania (N=66)*
7 OASIS ADL items	.329+	.011	.161
6 OASIS IADL items	.516**	.020	.095
Ambulation	.163	.095	.189
Cognitive/behavior	.104	-.065	.094
Bowel incontinence	.087	.087	.089
Bladder incontinence	.364**	.079	.123
Short of breath	-.166	-.020	-.218
Urinary tract infection	.019	.015	-.046
Frequency of pain	.532*	-.044	.152

[1]Demonstration effect (Observation of participant in Post Period = 1). Significance: + = p <.10; * = p < .01; ** p < .001
[2]See Appendix C for definitions of outcome items.

For several reasons, the health and functional status findings must be interpreted with caution. First, there are no findings from two of the demonstration sites, whose numbers of participants were too small to evaluate with multivariate methods. Among the other sites, missing post-start OASIS assessments among both participants and comparisons could introduce selection bias in the samples of beneficiaries that were analyzed. Finally, the sample sizes at two of the other sites (PA and FL) were adequate but smaller than desirable for a highly discerning quality of care analysis.

With regard to expenditures, inadequate sample size was not the issue. The evidence consistently pointed toward differentially higher expenditures for demonstration participants. Indeed, one site (TX) showed statistically significant evidence of increases in total Medicare expenditures. The significant increase in home health spending in PA was offset by decreases for other services and did not demonstrate a significant increase in total spending. It should also be noted that quasi-experimental designs, such as the one employed in the quantitative portion of the evaluation, might contain unobserved biases that influence findings. Only a randomized controlled trial, not possible for this demonstration evaluation, would be able to overcome all concerns about bias.

IV. Summary of Results and Conclusions

This section summarizes the results of the evaluation regarding the implementation of the demonstration, home health agency finances, beneficiary satisfaction, and impacts on Medicare costs, quality and service utilization. Conclusions include recommendations for how to allow delivery of home health services in MADC centers should this policy be adopted.

A. Demonstration Implementation

Four findings stand out regarding the implementation of the demonstration. First, it is feasible to deliver Medicare home health services in MADC centers, but doing so effectively appears to require professionals with home health experience. Coordinating the delivery of home health services with beneficiaries' attendance at MADC centers adds work for home health staff. Although participants agreed to receive home health services in MADC centers, about half of home health services for participants continued to be delivered at home.

Second, there is a subset of the Medicare home health patient population who agreed to receive home health services in MADC centers and who found aspects they liked about this model. First, compared to other home health patients who declined to participate, the subset that agreed to participate generally had similar levels of chronic physical and/or cognitive disabilities, but they had fewer chronic health conditions and were somewhat younger. Second, results of the survey indicated what participants liked about the model related to MADC itself: getting out of the house, social activities, and respite for family caregivers. Finally, participants who were

younger tended to be more satisfied with their MADC experience than participants who were older.

Third, working collaboratively, home health agencies and MADC centers were able to identify and recruit the target population among beneficiaries who were not previously using MADC as well as among beneficiaries already using MADC. However, at four of the five sites in the demonstration, the target population was relatively small, and participation tended to be short-term due to single home health episodes and inability to find a way to pay for MADC after the demonstration payments ended. Only the TX site was able to recruit large numbers of participants. This seemed to be related to its operation in an area with widespread use of Medicaid-funded MADC, and where multiple home health episodes for Medicare beneficiaries were common. The TX site had 17 to 25 MADC centers under contract, compared to 7 in PA, 4 in FL, and one each in NY and WI. Fully 78% of the TX participants were in MADC in the 30 days prior to starting the demonstration, versus 66% in FL, 35% in WI, and 3% in both PA and NY.

Fourth, the beneficiaries who were excluded from participation in the demonstration by the home health agencies generally did not differ from those that were offered participation in terms of their utilization of and expenditures for Medicare services. In turn, those that were offered but declined to participate generally did not differ from those that accepted the offer. The exception was the WI site, where participants tended to have lower pre- and post-utilization and expenditures than beneficiaries that were excluded and that declined. Interviews and survey data suggested decliners were more likely to perceive themselves as unsuitable for MADC attendance.

B. Beneficiary Satisfaction

Generally, Medicare beneficiaries were very satisfied with both home health and MADC services, according to in-person interviews and the telephone survey. First, nearly 90% of both participants and decliners who were surveyed were very satisfied with the home health services they received in their homes, as indicated by their saying "yes" on three of dimensions of satisfaction. Second, 82% of participants were "very satisfied" with their "overall experiences"

in MADC, and 86% were very satisfied with the home health services they received in the MADC. Fully 93% of participants wanted to continue with MADC. The things participants liked most often about MADC were the activities and socialization and the time off for their caregivers at home. The thing they liked least was the food. Beneficiaries who declined to participate in the demonstration had similarly high levels of satisfaction with home health services received at home.

C. Effects of the Demonstration on Home Health Agency and MADC Finances

There was no evidence from either cost reports or site visit interviews that the demonstration improved home health agency finances. On the contrary, site staff reported negative effects on finances due to the 5% reduction in Medicare reimbursement for participants and the extra costs of operating the demonstration, including paying the MADC centers their daily charges on the days participants attended. Cost reports submitted by home health agencies to Medicare were inconclusive but did not contradict the home health agency reports. In the years after the demonstration began, net revenues were unchanged or falling at all participating agencies that had credible data. The financial impact of the demonstration on participating MADC centers was reported by MADC staff to be small, primarily because the demonstration had minimal effects on their daily census.

D. Effects of the Demonstration on Use of Home Health Services, Medicare Expenditures, and Quality of Care

There was no evidence that the demonstration reduced Medicare expenditures or improved the quality of home health care. On the contrary, for the limited number of expenditure and quality measures for which there were significant differences for participants and comparison groups, the demonstration tended to increase overall Medicare expenditures (in TX) and expenditures on home health services (in TX and PA). The cost increases in TX appear to be associated in part with high numbers of home health episodes per participant relative to comparison beneficiaries. Quality measures showed no differences between participants and comparisons in TX and PA, but quality outcomes in FL were poorer for participants for ADLs, IADLs, bladder incontinence, and frequency of pain. Due to the small number of participants and comparison beneficiaries in the analyses, these findings should be interpreted with caution.

E. Conclusions and Recommendations

The Demonstration sites case study shows that it is possible to provide Medicare home health services in MADC centers and that a significant minority of new home health patients may be interested in this model. When they were offered MADC at the start of their Medicare home health episodes at no cost to themselves, beneficiaries agreed to participate between 13% and 24% of the time at four of the five sites. At the TX site, where MADC was widely used and available in the community through Medicaid funding, beneficiaries agreed to participate in 42% of new episodes. Those who chose the demonstration reported high rates of satisfaction with both attending MADC and receiving their home health in the MADC.

However, there was no evidence that the demonstration reduced Medicare expenditures or improved quality of care. In fact, in relation to matched comparison groups, overall Medicare expenditures were increased at the TX demonstration site, and home health quality was lower on several measures at the FL demonstration site. No differences between comparison groups and participants were found on these measures at the other sites. There was also no evidence that the demonstration improved home health agency finances. Instead, finances may have been negatively affected through increased costs and decreased revenues.

These findings from the quantitative analysis of demonstration impacts on expenditures and quality need to be interpreted with caution, primarily due to the small study groups at the PA and FL sites and to the fact that only three sites are included in the quantitative analysis. Having small study groups decreases that chance of identifying significant findings, and having few agencies increases the chance that characteristics of agencies interacted with the demonstration model to affect results in idiosyncratic ways. These findings from the quantitative analysis should also be weighed against the positive findings concerning satisfaction reported by participants in the survey and in face-to-face interviews. They pointed to the benefits of the socialization and activities at the MADC centers and the respite the service gave to family caregivers. Staff members at both home health agencies and MADC centers echoed these reports.

The decision about whether to continue to explore or expand the demonstration model for delivering home health services is a matter for policy makers. If further testing is desired, it would be useful to expand the testing to a larger sample, and to more accurately identify comparable patient characteristics, which would support more reliable conclusions concerning expenditure and quality outcomes. Additionally, if there is additional testing, it is recommended that four components of the design and implementation of the MADC benefit be modified:

- Beneficiary choice;
- Home health service delivery;
- MADC collaboration;
- Payment to the MADC.

First, home health agencies would need a consistent approach to offer beneficiaries the choice to be served in a MADC center. This would involve ensuring that agencies ask new patients if they are in adult day care and if they would prefer to receive some or all of their home health services there. Agencies would also have to determine if this would be feasible and appropriate given each patient's clinical, financial, and in-home support situation.

Second, home health agencies would need to ensure that their services are appropriately delivered in MADC centers. The conservative approach to ensuring quality would be to require Medicare services to be provided by staff of certified home health agencies. This was the approach that most demonstration sites used.

Third, collaboration between home health agencies and day-care centers would be required. The demonstration experience shows that having home health providers serve their patients in MADC centers does not require substantial participation by MADC providers in clinical care. It does, however, require some logistical coordination of days of attendance, transportation, making participants available for treatments, providing space for treatments, and notifying home health providers promptly about absences.

Finally, including the demonstration's requirement that the home health agency pay for the day in the MADC appears to undermine financial feasibility and limit the appeal of the model for home

health agencies. Conversely, removing this requirement would mean that only patients who can obtain Medicaid payment for MADC or who can pay out of pocket could participate.

Appendix A

Text of Section 703 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003

SEC. 703. DEMONSTRATION PROJECT FOR MEDICAL ADULT DAY-CARE SERVICES.

(a) ESTABLISHMENT- Subject to the succeeding provisions of this section, the Secretary shall establish a demonstration project (in this section referred to as the `demonstration project') under which the Secretary shall, as part of a plan of an episode of care for home health services established for a medicare beneficiary, permit a home health agency, directly or under arrangements with a medical adult day-care facility, to provide medical adult day-care services as a substitute for a portion of home health services that would otherwise be provided in the beneficiary's home.

(b) PAYMENT-

(1) IN GENERAL- Subject to paragraph (2), the amount of payment for an episode of care for home health services, a portion of which consists of substitute medical adult day-care services, under the demonstration project shall be made at a rate equal to 95 percent of the amount that would otherwise apply for such home health services under section 1895 of the Social Security Act (42 U.S.C. 1395fff). In no case may a home health agency, or a medical adult day-care facility under arrangements with a home health agency, separately charge a beneficiary for medical adult day-care services furnished under the plan of care.

(2) ADJUSTMENT IN CASE OF OVERUTILIZATION OF SUBSTITUTE ADULT DAY-CARE SERVICES TO ENSURE BUDGET NEUTRALITY- The Secretary shall monitor the expenditures under the demonstration project and under title XVIII of the Social Security Act for home health services. If the Secretary estimates that the total expenditures under the demonstration project and under such title XVIII for home health services for a period determined by the Secretary exceed expenditures that would have been made under such title XVIII for home health services for such period if the demonstration project had not been conducted, the Secretary shall adjust the rate of payment to medical adult day-care facilities under paragraph (1) in order to eliminate such excess.

(c) DEMONSTRATION PROJECT SITES- The demonstration project established under this section shall be conducted in not more than 5 sites in States selected by the Secretary that license or certify providers of services that furnish medical adult day-care services.

(d) DURATION- The Secretary shall conduct the demonstration project for a period of 3 years.

(e) VOLUNTARY PARTICIPATION- Participation of medicare beneficiaries in the demonstration project shall be voluntary. The total number of such beneficiaries that may participate in the project at any given time may not exceed 15,000.

(f) PREFERENCE IN SELECTING AGENCIES- In selecting home health agencies to participate under the demonstration project, the Secretary shall give preference to those agencies that are currently licensed or certified through common ownership and control to furnish medical adult day-care services.

(g) WAIVER AUTHORITY- The Secretary may waive such requirements of title XVIII of the Social Security Act as may be necessary for the purposes of carrying out the demonstration project, other than waiving the requirement that an individual be homebound in order to be eligible for benefits for home health services.

(h) EVALUATION AND REPORT- The Secretary shall conduct an evaluation of the clinical and cost-effectiveness of the demonstration project. Not later than 6 months after the completion of the project, the Secretary shall submit to Congress a report on the evaluation, and shall include in the report the following:

(1) An analysis of the patient outcomes and costs of furnishing care to the medicare beneficiaries participating in the project as compared to such outcomes and costs to beneficiaries receiving only home health services for the same health conditions.

(2) Such recommendations regarding the extension, expansion, or termination of the project as the Secretary determines appropriate.

(i) DEFINITIONS- In this section:

(1) HOME HEALTH AGENCY- The term `home health agency' has the meaning given such term in section 1861(o) of the Social Security Act (42 U.S.C. 1395x(o)).

(2) MEDICAL ADULT DAY-CARE FACILITY- The term `medical adult day-care facility' means a facility that--

(A) has been licensed or certified by a State to furnish medical adult day-care services in the State for a continuous 2-year period;

(B) is engaged in providing skilled nursing services and other therapeutic services directly or under arrangement with a home health agency;

(C) is licensed and certified by the State in which it operates or meets such standards established by the Secretary to assure quality of care and such other requirements as the Secretary finds necessary in the interest of the health and safety of individuals who are furnished services in the facility; and

(D) provides medical adult day-care services.

(3) MEDICAL ADULT DAY-CARE SERVICES- The term `medical adult day-care services' means--

(A) home health service items and services described in paragraphs (1) through (7) of section 1861(m) furnished in a medical adult day-care facility;

(B) a program of supervised activities furnished in a group setting in the facility that--

(i) meet such criteria as the Secretary determines appropriate; and

(ii) is designed to promote physical and mental health of the individuals; and

(C) such other services as the Secretary may specify.

(4) MEDICARE BENEFICIARY- The term `medicare beneficiary' means an individual entitled to benefits under part A of this title, enrolled under part B of this title, or both.

Appendix B: Glossary

ADL – activities of daily living, such as bathing, dressing, using the toilet, and eating.

CMS – Centers for Medicare & Medicaid Services.

DCG (Diagnostic Cost Groupings) – a model used by CMS to adjust payments to providers based on the costs associated with diagnoses of the provider's patients. See www.cms.hhs.gov/Reports/downloads/pope_2000_2.pdf for more information.

Decliners – Medicare beneficiaries who were patients at the home health agencies in the demonstration and who declined the offer to participate in the demonstration.

HCC (Hierarchical Condition Categories) – a set of 184 diagnosis categories used for Medicare risk adjustment. See www.cms.hhs.gov/Reports/downloads/pope_2000_2.pdf for more information.

IADL – Instrumental activities of daily living, such as cleaning, cooking, shopping, and taking medications.

MADC – Medical Adult Day Care.

Participants – Medicare beneficiaries who were patients at the home health agencies in the demonstration and who accepted the offer to participate in the demonstration.

Patients – Medicare beneficiaries who received services from the home health agencies participating in the demonstration. Patients include those who were not offered participation, as well as those who were offered and accepted (participants) and who were offered and chose not to participate (decliners).

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses

(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)

		Florida				Texas				Pennsylvania		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
Total expenditures, pre-Demonstration	Sum of beneficiary's total Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$18,134	$20,825	158		$13,143	$16,164	540		$26,955	$30,845	122
Total expenditures, post-Demonstration	Sum of beneficiary's total Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$20,633	$22,324	158		$21,088	$22,204	540		$22,928	$24,712	122
Total expenditures, pre- and post	Combine pre- and post-enrollment total expenditures	$38,767	$31,411	158		$34,231	$30,747	540		$49,883	$45,001	122
Home health expenditures, pre-Demonstration	Sum of beneficiary's Home Health Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$2,235	$5,262	158		$4,957	$6,621	540		$1,947	$3,043	122
Home health expenditures, post-Demonstration	Sum of beneficiary's Home Health Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$5,298	$8,750	158		$10,407	$8,135	540		$4,680	$3,526	122
Home health expenditures, pre- and post	Combine pre- and post-enrollment Home Health expenditures	$7,533	$13,216	158		$15,364	$12,265	540		$6,628	$5,111	122

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)												
(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)												
		Florida				**Texas**				**Pennsylvania**		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
Inpatient expenditures, pre-Demonstration	Sum of beneficiary's Inpatient Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$8,276	$12,874	158		$4,823	$10,596	540		$18,404	$24,261	122
Inpatient expenditures, post-Demonstration	Sum of beneficiary's Inpatient Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$7,797	$14,014	158		$6,284	$14,315	540		$13,009	$16,627	122
Inpatient expenditures, pre- and post	Combine pre- and post-enrollment Inpatient expenditures	$16,073	$19,486	158		$11,107	$18,389	540		$31,413	$31,537	122
Outpatient expenditures, pre-Demonstration	Sum of beneficiary's Outpatient Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$877	$1,393	158		$1,275	$3,657	540		$1,192	$3,429	122
Outpatient expenditures, post-Demonstration	Sum of beneficiary's Outpatient Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$948	$1,953	158		$1,687	$4,804	540		$1,447	$3,979	122
Outpatient expenditures, pre- and post	Combine pre- and post-enrollment Outpatient expenditures	$1,825	$2,447	158		$2,962	$7,737	540		$2,640	$6,902	122

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)											
(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)											
		Florida				**Texas**				**Pennsylvania**	
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
Skilled Nursing Facility expenditures, pre-Demonstration	Sum of beneficiary's SNF Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$2,827	$7,134	158		$88	$1,183	540		$2,622	$6,381	122
Skilled Nursing Facility expenditures, post-Demonstration	Sum of beneficiary's SNF Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$3,448	$8,267	158		$304	$2,921	540		$1,720	$5,126	122
Skilled Nursing Facility expenditures, pre- and post	Combine pre- and post-enrollment SNF expenditures	$6,275	$10,936	158		$393	$3,423	540		$4,342	$9,593	122
Physician Services expenditures, pre-Demonstration	Sum of beneficiary's Physician Services Medicare expenditures for the 365 days prior to enrollment or pseudo-enrollment date	$3,919	$4,673	158		$2,000	$4,255	540		$2,790	$6,626	122
Physician Services expenditures, post-Demonstration	Sum of beneficiary's Physician Services Medicare expenditures for the 365 days after enrollment or pseudo-enrollment date	$3,142	$3,157	158		$2,406	$5,445	540		$2,072	$3,819	122
Physician Services expenditures, pre- and post	Combine pre- and post-enrollment Physician Services expenditures	$7,061	$6,320	158		$4,406	$8,833	540		$4,862	$9,004	122

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)												
(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)												
		Florida				**Texas**				**Pennsylvania**		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
ADL - baseline	Scale computed from initial and followup assessments - based on seven OASIS measures for Activities of Daily Living: (M0640) Current Grooming (M0650) Current Ability to Dress Upper B (M0660) Current Ability to Dress Lower B (M0670) Current Bathing (M0680) Current Toileting (M0690) Current Transferring (M0710) Current Feeding/Eating	1.18	0.71 (Chronbach's Alpha: .92)	95		1.22	0.47 (Chronbach's Alpha: .91)	338		1.42	0.92 (Chronbach's Alpha: .94)	64
ADL - followup		1.20	0.81	83		1.22	0.55	334		1.09	0.99	61
IADL - baseline	Scale computed from initial and followup assessments - based on six OASIS measures for Instrumental Activities of Daily Living: (M0720) Current Preparing Light Meal; (M0740) Current Laundry; (M0750) Current Housekeeping; (M0760) Current Shopping; (M0770) Current Ability to Use Telephone; (M0780) Current Management of Oral Medications	2.03	0.79 (Chronbach's Alpha: .90)	91		1.33	0.55 (Chronbach's Alpha: .87)	266		1.86	0.79 (Chronbach's Alpha: .90)	60

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)

(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)

		Florida				Texas				Pennsylvania		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
IADL - followup		1.90	0.96	76		1.20	0.69	144		1.72	0.87	57
Ambulation - baseline	(M0700) Current Ambulation/Locomotion from OASIS	1.29	0.67	95		1.11	0.53	338		1.63	1.12	64
Ambulation - followup		1.29	0.97	83		1.05	0.57	334		1.46	1.26	61
Urinary incontinence - baseline	(M0520) Urinary Incontinence from OASIS	0.57	0.56	91		0.90	0.37	268		0.48	0.57	60
Urinary incontinence - followup		0.48	0.53	78		0.79	0.42	196		0.46	0.50	57
Bowel incontinence - baseline	(M0540) Bowel Incontinence from OASIS	0.30	0.81	94		0.24	0.66	336		0.42	1.03	62
Bowel incontinence - followup		0.33	0.89	81		0.28	0.76	333		0.30	0.81	60
Short of breath - baseline	(M0490) Patient Dyspneic/Short of Breath	0.85	1.01	95		2.03	0.52	338		0.91	0.83	64

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)												
(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)												
		Florida				**Texas**				**Pennsylvania**		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
Short of breath - followup		0.76	0.98	83		1.96	0.63	334		0.80	0.81	61
Urinary tract infection - baseline	(M0510) Urinary Tract Infection	0.07	0.25	91		0.05	0.22	261		0.12	0.32	60
Urinary tract infection - folllowup		0.04	0.20	75		0.01	0.12	142		0.04	0.19	57
Frequency of pain - baseline	(M0420) Frequency of Pain	0.55	0.83	95		1.96	0.63	338		0.97	1.08	64
Frequency of pain - followup		0.70	0.95	83		1.72	0.79	334		0.70	0.95	61
Cognitive/Behavior - baseline	Scale computed from initial and followup assessments - based on five OASIS measures for Cognitive and Behavioral Function: (M0410) Speech; (M0570) When Confused; (M0560) Cognitive Functioning; M0580) When Anxious; (M0620) Frequency of Behavior Problems	1.40	0.98 (Chronbach's Alpha: .80)	91		1.25	0.69 (Chronbach's Alpha: .79)	266		0.81	0.71 (Chronbach's Alpha: .74)	60
Cognitive/Behavior - followup		1.38	1.02	76		0.98	0.72	144		0.82	0.81	57

Appendix C: Descriptive Statistics for Expenditure and Quality Regression Analyses (con't)												
(NOTE: These statistics are for the full groups of participants and fee-for-service comparison beneficiaries. If data on some variables were missing, regression analyses were based on subsamples of these groups.)												
		Florida				**Texas**				**Pennsylvania**		
Outcome Measures	**Definition**	**mean**	**sd**	**N**		**mean**	**sd**	**N**		**mean**	**sd**	**N**
Independent Variables												
Baseline participant status	=1 if observation is for a Demonstration participant; = 0 for members of comparison group	0.50	0.50	158		0.50	0.50	540		0.50	0.50	122
Time period	=1 if observation is for post-enrollment period, whether for Demonstration or comparison beneficiary; otherwise =0	0.50	0.50	158		0.50	0.50	540		0.50	0.50	122
Demonstration effect	=1 if observation is for a Demonstration participant for the post-enrollment period; otherwise = 0	0.25	0.43	158		0.25	0.43	540		0.25	0.43	122
Age category	0 for 30-34, 1 for 35-39, 2 for 36-39 …. 12 for 90+	9.65	1.40	158		7.54	2.25	540		9.46	0.36	122
Gender	=1 if beneficiary is female	0.52	0.50	158		0.57	0.50	540		0.85	1.62	122
DCG score	Regression-based estimate of beneficiary's Medicare expenditure next year (e.g., 2.0 implies expenditure is estimated to be twice the average community-based Medicare beneficiary)	1.52	1.25	158		1.18	1.11	540		2.34	1.86	122
Number of prior episodes	Count of all home health episode in year of enrollment before index enrollment	0.68	1.16	158		2.20	2.52	540		0.89	1.25	122