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Evaluation of Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration:

Results of the Medicare Health Services Survey

Third Annual Report

Prepared for

David Bott, Ph.D.
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244-1850

Prepared by

Kevin Smith, M.A.
Shulamit Bernard, Ph.D.
Galina Khatutsky, M.S.
Nancy T. McCall, Sc.D.
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709

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EVALUATION OF MEDICARE CARE MANAGEMENT FOR HIGH COST BENEFICIARIES (CMHCB) DEMONSTRATION:

RESULTS OF THE MEDICARE HEALTH SERVICES SURVEY

THIRD ANNUAL REPORT

Authors: Kevin Smith, M.A.
Shulamit Bernard, Ph.D.
Galina Khatutsky, M.S.
Nancy T. McCall, Sc.D.

Project Director: Nancy T. McCall, Sc.D.

Scientific Advisor: Janet Mitchell, Ph.D.

Federal Project Officer: David Bott, Ph.D.

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EXECUTIVE SUMMARY

E.1 Introduction

The purpose of this Centers for Medicare & Medicaid Services (CMS) project is to independently evaluate six voluntary care management organizations (CMO) participating in the Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration. The principal objective of this demonstration is to test a pay-for-performance contracting model and new intervention strategies for Medicare fee-for-service (FFS) beneficiaries, who are high-cost and who have complex chronic conditions, with the goals of reducing future costs, improving quality of care and quality of life, and improving beneficiary and provider satisfaction. The desired outcomes of all six programs include a reduction in unnecessary ER visits and hospitalizations, improvement in evidence-based care, and avoidance of acute exacerbations and complications.

Six organizations operate programs under the CMHCB demonstration:

- Care Level Management (CLM)
- RMS Disease Management and its Key to Better Health program (KTBH)
- The Health Buddy Consortium (HBC) comprised of Health Hero Network, the American Medical Group Association, Bend Memorial Clinic, and Wenatchee Valley Medical Center
- Texas Tech University Health Sciences Center (TTUHSC) and its Texas Senior Trails program (TST)
- Montefiore Medical Center (MMC)
- Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH).

The CMO programs have been designed to incorporate relevant features from current private sector disease management and provider-based case management programs, such as supplying physicians with timely, actionable clinical information about their patients; providing clinical decision support for beneficiaries and providers based on evidence-based guidelines; promoting care coordination; and guiding and encouraging beneficiaries in managing their chronic illness. Success in changing beneficiary behavior should result in better “control” of their chronic conditions and a reduction in anticipated functional decline. Better control of their chronic conditions should reduce acute exacerbations that can lead to acute care interventions. Because hospitalizations, including frequent readmissions, are a major driver of costs among the CMHC beneficiaries, it is highly unlikely that the CMO programs will be able to reduce costs without reducing acute care utilization. We hypothesize that improved communication with their health care team, the impact of education and coaching interventions, and better self-management skills will increase the CMHCB intervention beneficiaries’ satisfaction with their ability to cope with their chronic health care condition(s) and mitigate functional decline.

This report presents the results of the Medicare Health Services Survey that is one of the components of the overall CMHCB evaluation. We surveyed a sample of beneficiaries in each program separately to determine the impact of the intervention on physical functioning, mental functioning, self-care behaviors, and beneficiary experiences with care.

Following are the primary research questions to be addressed by the beneficiary survey:

- Does the CMHCB program help beneficiaries to cope better with their chronic conditions than beneficiaries in the comparison group?
- Does the program improve self-management behavior?
- Does the CMHCB program result in better physical and mental functioning than would otherwise be expected?

The CMHCB programs reflect a dynamic process of system change intended to lead to behavioral change and to improved health outcomes. Program effects are estimated by comparing the experiences of intervention group members to those for randomized controls or matched comparison group beneficiaries. Further, the overall design of the CMHCB demonstration follows an intent-to-treat model, so that the underlying population for the survey sample included all beneficiaries assigned to the intervention regardless of their level of participation in the demonstration program.

E.2 Comparison Group Selection Methodology

Two of the CMO programs were community-based (CLM and KTBH) and four of the programs were institution-based (HBC, TST, MMC and MGH). In the community-based sites, beneficiaries meeting the site’s inclusion and exclusion criteria were randomly assigned to the intervention and control groups. In the institution-based sites, a comparison group was identified to match the members of each intervention group. Our approach to constructing a comparison group was designed to replicate as closely as possible the steps involved in forming the intervention group. The process involved first designating geographic areas, then physician groups serving beneficiaries in those areas and, finally, individual beneficiaries.

E.3 Survey Domains

The overall design of the CMHCB demonstration follows an intent-to-treat model, so that the underlying population for the survey sample included all beneficiaries assigned to the intervention regardless of their level of participation in the demonstration program, as well as all control group members. For that reason, the survey contained measures relevant to all beneficiaries in the demonstration regardless of their intervention or control/comparison group status. The beneficiary survey was designed to obtain assessments directly from beneficiaries about key outcomes of beneficiary ***experience and satisfaction with care, self-management***, and ***physical and mental function***.

Measures of Experience and Satisfaction with Care. One of the important CMHCB demonstration outcomes is beneficiary satisfaction. The measures in this domain included questions on how successful providers were in helping beneficiaries cope with a chronic condition, helpfulness of discussions on various health topics, discussions of treatment choices, and ratings of communication with health care team and getting answers to questions quickly. These items were drawn from the Clinician and Group Adult Primary Care Ambulatory CAHPS® Survey. In addition, items on medication support and treatment options were included from the Multimorbidity Hassles scale.

Self-Management Measures. Chronic disease self-management interventions begin by helping the patient set goals and make plans to address those goals, and helping patients manage their illness by practicing behaviors that may affect their health and well-being. The self-management domain included items on setting health care goals and making health care plans, three items related to *Self-Efficacy* **(**confidence in taking medications, planning meals according to dietary guidelines, and engaging in physical exercise), and *Self-Care Activities* (the weekly frequency of the same three behaviors).

Physical and Mental Health Function. Self-reported health status and function are important outcome measures that are not available through claims data. To assess the impact of the CMHCB demonstration on beneficiary function, the survey included two broad constructs: (1) physical and mental functioning, measured by the summary Physical Health Composite (PHC) and Mental Health Composite (MHC) scores derived from the Veterans RAND-12 (VR-12) instrument and Patient Health Questionnaire-2 (PHQ-2) scores, and (2) activities of daily living (ADLs), measured by the ADL difficulty score and the ADL help score.

E.4 Survey Design and Implementation

Beneficiaries were eligible for the survey if: 1) they were members of the starting intervention or control/comparison group populations, and 2) they met the criteria for inclusion in quarterly monitoring reports at the time the frame was identified. We surveyed beneficiaries by mail with a telephone follow-up of nonrespondents. Because the sites initiated their recruitment efforts at different times, the data collection process was divided into two waves so that the follow-up interval (which ranged from 19-20 months after each program started) is similar for all sites. Wave 1 consisted of the CLM, KTBM, HBC and TST sites. Wave 2 consisted of the MMC and MGH sites. Overall response rates for sample beneficiaries were computed for each CMHCB site after eliminating beneficiaries who died by the time the survey was mailed. The response rates are presented in Table E-1.

Table E-1
Completed Medicare Health Services Survey beneficiary surveys and response rates by CMO

CMO	Intervention group surveys	Control/comparison group surveys	CMO response rate (%)
CLM	251	253	61.9
KTBH	236	272	61.7
HBC	343	330	81.7
TST	286	332	73.7
MMC	252	256	62.8
MGH	285	305	71.0

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Response rates ranged from 61.6% to 81.7%; the lowest rates occurred in CLM and KTBH, the two randomized CMOs.

E.5 Findings

Analyses were conducted separately for each of the six CMOs comparing the responses of intervention and control/comparison group beneficiaries. We conducted response propensity analyses, descriptive and scaling analyses, and ANCOVA modeling for intervention effects, controlling for a number of baseline characteristics.

In the report, we group the findings to correspond to the following key research questions:

Do the CMHCB programs lead to higher levels of beneficiary satisfaction with their care experience than is reported by beneficiaries in the control/comparison group?

Overall, it is not uncommon among the elderly to see high satisfaction ratings. A great majority of beneficiaries surveyed rated their experience as “excellent” or “very good” or “good.” Across the six measures of satisfaction and experience with care and across the six MCOs, we observe two statistically significant positive intervention effects at two sites. For both CLM and MGH, beneficiaries in the intervention group rated discussions of treatment choices and communication with providers higher than their counterparts in the control/comparison groups.

None of the CMOs had an effect on the overall satisfaction item, the rating of overall experience coping with their chronic condition. Additionally, the CMHCB intervention was not associated with any significant differences in the number of helpful discussion topics, getting answers to questions, or the number of frustrating problems that patients experience in getting comprehensive care for chronic illnesses. Moreover, the analysis revealed one negative intervention effect for KTBH on discussing treatment choices.

Do the CMHCB programs result in greater engagement in health behaviors?

Assisting beneficiaries to set goals and develop a care plan are two of the key objectives in disease management. While the proportion of beneficiaries receiving help on these two outcomes ranged widely from a low of 39% to high of 69% across different CMOs, no intervention effects were found for these two measures.

For self-efficacy, beneficiaries typically reported levels of confidence to take medications as prescribed, plan healthy meals and snacks, and exercise two or three times weekly with mean ratings averaging from 3.1 to 4.6 (3 = moderately confident of their ability to perform self-care activities) out of a maximum of 5 (extremely confident). Of the all significance tests conducted to examine intervention effects on 3 beneficiary self-efficacy outcomes, only one unfavorable effect was found. This was a difference in the confidence level of TST intervention beneficiaries to manage their prescription medications.

We found variation by type of activity in the compliance rates among both the intervention and control groups for self-care activities. For example, reported baseline rates for taking medications as prescribed were quite high ranging from 6.6 to 6.8 days per week, leaving little room to find meaningful differences between the intervention and control groups; on the other hand, getting 30 minutes of continuous exercise ranged from 2.7 to 3.2 days per week.

Of the all significance tests to detect an intervention effect for the three self-care activities, there were two statistically significant findings. The CLM intervention group reported more days during the week when the beneficiary exercised 30 minutes while HBC intervention beneficiaries reported more days during the prior week of taking medication as prescribed.

Do the CMHCB programs affect physical or mental health functioning?

Not unexpectedly, survey respondents were found to be relatively frail with PHC scores ranging from 27 to 33 and MHC scores ranging from 36 to 40. These two scores are normalized to a standard population mean of 50. On average, beneficiaries reported having difficulty performing two to three activities of daily living. Among the five physical and mental health outcomes examined across the CMOs, the ANCOVA estimation revealed four statistically significant positive intervention effects. Both CLM and MGH had higher PHC scores in the intervention group compared to the control/comparison group with the difference around 2 points. Members of the KTBH intervention group reported lower PHQ-2 scores, indicating fewer depressive symptoms than the control group. At MMC, intervention group respondents reported fewer limitations in the activities of daily living (ADLs) on average than those in the comparison group.

E.6 Conclusions

Overall, our findings show that beneficiaries in the CMHCB intervention groups did not report more favorable experiences getting help to set goals, create a care plan, or cope with a chronic condition compared with the control groups. With only few exceptions, the interventions had little impact on the frequency of self-care activities or self-efficacy to perform these activities. We also did not find consistent significant differences in beneficiary physical and mental functioning with the exception of two CMOs where beneficiaries reported better physical health and another where beneficiaries reported fewer depressive symptoms. A summary of statistically significant intervention effects for all survey outcomes across CMOs is shown in Table E-2.

Table E-2
Medicare Health Services Survey: Estimated intervention effects
Summary of results across CMOs

Outcome	CLM	KTBH	HBC	TST	MMC	MGH
Experience and satisfaction with care						
Helping to cope with a chronic condition						
Number of helpful discussion topics						
Discussing treatment choices	+	-				++
Communicating with providers	++					+
Getting answers to questions quickly						
Multimorbidity Hassles score						
Self-management						
Percent receiving help setting goals						
Percent receiving help making a care plan						
Self-efficacy ratings						
Take all medications				-		
Plan meals and snacks						
Exercise 2 or 3 times weekly						
Self-care activities						
Prescribed medications taken			+			
Followed healthy eating plan						
30 minutes of continuous physical activity	+					
Physical and mental health function						
PHC score	+					++
MHC score						
PHQ-2 score		+				
Number of ADLs difficult to do					++	
Number ADLs receiving help						

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Overall, both the intervention and control beneficiaries in the CMHCB demonstration reported high levels of satisfaction with their care. Prior research has shown that Medicare fee-for-service beneficiaries are generally satisfied with their health care and our findings are consistent with those observations (Bernard and Urig, 2002; Safran et al., 2006). However, our ANCOVA analysis findings indicate that none of the CMOs were associated with a significant positive intervention effect on the general beneficiary satisfaction with their care outcome. The principal satisfaction question asked beneficiaries how well their health care team helped them to cope with their chronic condition.

Several significant intervention effects were found for some of the remaining outcomes. Two CMOs had statistically significant associations with the experience and satisfaction with care domain. Care Level Management demonstrated positive intervention effects for two satisfaction outcomes: one related to helpfulness of discussing treatment choices and one on communication with providers. MGH demonstrated positive intervention effects for the same two satisfaction outcomes. KTBH showed a negative intervention effect on helpfulness of discussing treatment choices. HBC, TST, and MMC showed no statistically significant intervention effects on any of the beneficiary care experience outcomes. None of the CMOs were associated with getting answers to questions quickly, suggesting that the CMHCB demonstration sites were not able to improve this aspect of beneficiary relationship with providers for their intervention group. Multimorbidity Hassles scores, used to measure frustrating problems that patients experience in getting comprehensive care, were relatively low for all beneficiaries, and none of the individual sites were associated with a significant effect on these scores.

Another goal of disease management is to increase compliance with appropriate self-care behaviors among the chronically ill. Being in any of the CMO intervention groups was not associated with help setting goals and making plans to address care needs or reporting greater confidence in performing health-related behaviors (self-efficacy). There was one negative finding with TST intervention beneficiaries reporting less confidence in their ability to manage medications as compared with those in their comparison group.

Beneficiaries in two CMO intervention groups reported higher levels of self-care behaviors. Health Buddy Consortium beneficiaries reported a higher rate of compliance with prescribed medications. In terms of other self-care activity outcomes, CLM beneficiaries in the intervention group reported more days of exercise than those in the control group.

Lastly, the survey instrument included five important physical and mental health functioning measures. In this domain, we found four positive intervention effects; in two CMOs (Care Level Management and MGH), the intervention group reported better physical health than the control group as measured by the PHC scores. KTBH showed fewer depressive symptoms for the intervention group compared to the control group measured by PHQ-2 scores. In addition, MMC members in the intervention group reported fewer ADL limitations than those in the comparison group. None of the CMOs had a statistically significant association with the level of help with ADLs.

In summary, none of the six CMOs included in the beneficiary survey analyses demonstrated consistently positive intervention effects across both domains of satisfaction with care experience and self-management activities. One of the six CMOs, CLM, had positive satisfaction intervention effect for at least one measure in each of the three domains. However, none of the CMOs achieved a positive intervention effect on all five of the satisfaction measures. The remaining CMOs showed mixed results. The focus of the CMHCB demonstration interventions was largely on impacting beneficiary behavior to better manage their chronic illness. Yet these results show little evidence of changes in self-efficacy or self-care.

CHAPTER 1
INTRODUCTION AND BACKGROUND ON THE MEDICARE CARE MANAGEMENT FOR HIGH COST BENEFICIARIES DEMONSTRATION

1.1 Introduction and Research Questions

The purpose of this Centers for Medicare & Medicaid Services (CMS) project is to independently evaluate six voluntary care management organizations (CMO) participating in the Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration. The principal objective of this demonstration is to test a pay-for-performance contracting model and new intervention strategies for Medicare fee-for-service (FFS) beneficiaries, who are high-cost and who have complex chronic conditions, with the goals of reducing future costs, improving quality of care and quality of life, and improving beneficiary and provider satisfaction. The desired outcomes of all six programs include a reduction in unnecessary ER visits and hospitalizations, improvement in evidence-based care, and avoidance of acute exacerbations and complications.

This evaluation uses the chronic care model developed by Wagner et al., 1998 as the conceptual foundation for the evaluation as the CMHCB programs are provider-directed care models. This model is designed to address systematic deficiencies and provides a standard framework that has been lacking in the area of disease management. The model identifies six elements of a delivery system that lead to improved care for individuals with chronic conditions: the community, the health system, self-management support, delivery system design, decision support, and clinical information systems. (Glasgow, et al., 2001; Wagner, 2002; Wagner, et al., 2001) According to the model, patients are better able to actively take part in their own care and interact productively with providers when these components are developed, leading to improved functional and clinical outcomes.

The CMO programs have been designed to incorporate relevant features from current private sector disease management and provider-based case management programs, such as supplying physicians with timely, actionable clinical information about their patients; providing clinical decision support for beneficiaries and providers based on evidence-based guidelines; promoting care coordination; and guiding and encouraging. Success in changing beneficiary behavior should result in better "control" of their chronic conditions and a reduction in anticipated functional decline. Better control of their chronic conditions should reduce acute exacerbations that can lead to acute care interventions. Because hospitalizations, including frequent readmissions, are a major driver of costs among the CMHC beneficiaries, it is highly unlikely that the CMO programs will be able to reduce costs without reducing acute care utilization. RTI hypothesizes that improved communication with their health care team, perceived helpfulness of education and coaching interventions, and increased self-management skills concomitant with a reduction in acute exacerbations will increase the CMHCB intervention beneficiaries' overall rating of satisfaction with their ability to cope with their chronic health care condition(s) and mitigation in functional decline.

This third annual project report presents the results of the Medicare Health Services Survey, one of the components of the overall CMHCB evaluation. We surveyed a sample of beneficiaries in each program and contrasted them with a comparison group of similar beneficiaries from the same geographic area to determine the impact of the intervention on a variety of outcomes. We assessed intervention effects on physical functioning, mental functioning, self-care behaviors, and beneficiary experiences with care. We evaluated overall satisfaction with their care experience by asking beneficiaries to rate how well their health care team helped them to cope with their clinical condition(s). We also evaluated satisfaction with two other components of their care experience, which are key elements of all of the CMHCB programs. Beneficiaries were asked to rate the helpfulness of specific activities employed by many of the CMHCB such as educational materials mailed to their home as well as discussions about medications, diet, exercise, and coping with stress or sadness. These items are consistent with chronic disease management and the CMHCB program interventions. Beneficiaries were also asked to rate communication with their health care team using items from the Ambulatory Care CAHPS® survey.

Following are the primary research questions to be addressed by the beneficiary survey:

- Does the CMHCB program help beneficiaries to cope better with their chronic conditions than beneficiaries in the comparison group?
- Does the program improve self-management behavior?
- Does the CMHCB program result in better physical and mental functioning than would otherwise be expected?

The CMHCB programs reflect a dynamic process of system change leading to behavioral change leading to improved health outcomes. This demonstration calls for a pre/post, intervention/comparison analytic approach to provide maximum analytic flexibility. Further, the overall design of the CMHCB demonstration follows an intent-to-treat model, so that, the underlying population for the survey sample included all beneficiaries assigned to the intervention regardless of their level of participation in the pilot program. For that reason, the survey contained measures relevant to all beneficiaries in the pilot regardless of their intervention or comparison group status.

1.2 Characteristics of the Participating Organizations and Targeted Populations

Medicare beneficiaries with multiple progressive chronic diseases are a large and costly subgroup of the Medicare population. The Congressional Budget Office (CBO) estimated that in 2001 high-cost beneficiaries, i.e., those in the top 25% of spending, accounted for 85% of annual Medicare expenditures (Congressional Budget Office, 2005). Three categories of high-cost users, beneficiaries with multiple chronic conditions, those who were hospitalized, or those who had high total costs, had expenditures that were twice as high as expenditures for a reference group. Subsequent years of costs remained higher than the reference group; however, total expenditures declined the most for those beneficiaries who were identified as high-cost due to a hospitalization. Subsequent costs were virtually unchanged for beneficiaries with multiple chronic conditions.

Further, these beneficiaries currently must navigate a health care system that has been structured and financed to manage their acute, rather than chronic health problems. When older patients seek medical care their problems are typically treated in discrete settings rather than being managed in a holistic fashion (Todd, et al., 2001; Anderson 2002). Because Medicare beneficiaries have multiple conditions, see a variety of providers, and often receive conflicting advice from them, there is concern that there is a significant gap between what is appropriate care for these patients and the care they actually receive (McGlynn, et al., 2003; Jencks, et al., 2003). The CMHCB demonstration has been designed to address current failings of the health care system for chronically ill Medicare FFS beneficiaries.

The principal objective of this demonstration is to test new models of care for Medicare beneficiaries, who are high-cost and who have complex chronic conditions, with the goals of reducing future costs, improving quality of care, and improving beneficiary and provider satisfaction. On July 6, 2005, CMS announced the selection of six organizations to operate programs in the CMHCB demonstration:

- Care Level Management (CLM)
- RMS Disease Management and its Key to Better Health program (KTBH)
- The Health Buddy Consortium (HBC) comprised of Health Hero Network, the American Medical Group Association, Bend Memorial Clinic, and Wenatchee Valley Medical Center
- Texas Tech University Health Sciences Center (TTUHSC) and its Texas Senior Trails program (TST)
- Montefiore Medical Center (MMC)
- Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)

These programs offer a variety of models including "support programs for healthcare coordination, physician and nurse home visits, use of in-home monitoring devices, provider office electronic medical records, self-care and caregiver support, education and outreach, behavioral health care management, and transportation services."

The care management organizations seek to engage beneficiaries in their programs based upon some combination of the following criteria: high costs in the previous year(s), high risk scores using the prospective Hierarchical Coexisting Condition (HCC) risk adjustment model, or a particular claims-based clinical profile. The organizations are also able to restrict their population to a specific geographic area or to a particular set of providers.

Beneficiary participation in the CMHCB demonstration is voluntary and will not change the scope, duration, or amount of Medicare FFS benefits currently received. Beneficiaries do not pay any charge to receive CMHCB demonstration program services. CMHCB organizations receive a monthly administrative fee per participant and may participate in a gain-sharing arrangement, contingent upon improvements in quality, beneficiary and provider satisfaction, and savings to the Medicare program. Participating organizations are held at risk for all fees (or gain-sharing) based on the performance of the full population of eligible beneficiaries assigned to the intervention group (an "intent-to-treat" model). CMS has developed the CMHCB demonstration with considerable administrative risk as an incentive to reach targeted beneficiaries and their providers and to improve care management (i.e., 2.5% savings requirement).

The CMO programs target beneficiaries with a variety of chronic conditions, such as chronic kidney disease, diabetes, and heart failure (HF). The targeted beneficiaries are likely to have multiple co-morbid chronic conditions; consequently, most programs are implementing a holistic approach to care management that addresses beneficiary needs, regardless of the associated condition. CMS is testing programs in six geographic areas.

1.2.1 Overview of CMHCB Programs

Care Level Management (CLM)

Care Level Management (CLM) is a privately owned, independent company that provides in-home physician care and is headquartered in Woodland Hills, California, with additional offices in southern and northern California, Arizona, Texas, and Florida. The CLM demonstration serves Alameda, Contra Costa, San Francisco, San Mateo, Los Angeles, Orange, and Riverside counties and San Diego city in California. It also serves Bexar, Atascosa, Bandera, Comal, Guadalupe, Kendall, Medina, and Wilson counties in Texas, and Brevard, Indian River, Osceola, Seminole, Orange counties in Florida. Much of CLM's market has language and ethnic barriers, socio-economic issues, lack of support systems, and other challenging social issues.

CLM's mission is to provide home-based care and 24/7 access to a personal visiting physician (PVP) to beneficiaries with multiple chronic conditions who are at high risk for multiple hospital admissions. CLM's Personal Visiting Physician Delivery System (PVPDS) is supported by clinical resources, such as nurse care managers, nurse practitioners, and systems, such as an electronic medical record, that allow PVPs to care for their patients. A key element of this model is bi-directional communication between the patient and the PVP—physicians make appointments to see their patients on a routine basis and patients are asked to call their PVP when problems arise. The model depends heavily on the PVP's ability to bond with his or her patients so they are comfortable contacting the PVP when they experience early symptoms of an exacerbation (i.e., a time when a PVP can manage the condition by providing care in the home and avoid an unnecessary hospitalization). This ongoing relationship with patients also allows PVPs to understand the issues that put patients at risk for acute health events and initiate interventions that decrease these risks.

RMS Disease Management and its Key to Better Health Program (KTBH)

RMS Disease Management was formed in 1996 as part of Baxter, a global medical products and services company with expertise in medical devices, pharmaceuticals and biotechnology. In 1997 RMS signed its first contract to provide chronic kidney disease (CKD) care management services for Humana, and in 2002, DaVita, Inc. acquired RMS, which operates the disease management organization as a wholly owned subsidiary. DaVita, Inc. is a publicly traded company with $3 billion in annual revenue, 65% of which is obtained through contracts with Medicare and Medicaid. DaVita, Inc. provides support to almost 100,000 dialysis patients via approximately 1,250 dialysis centers in 41 states and the District of Columbia. Headquartered in Vernon Hills, Illinois, RMS is the largest renal disease management organization in the country.

RMS developed the “Key to Better Health” (KTBH) program to serve Medicare fee-for-service beneficiaries with CKD eligible for the CMHCB demonstration in Suffolk, Nassau, and Queens, New York. This market is densely populated with a large number of Medicare beneficiaries, high health care costs, and a moderate proportion of Hispanic, African American, and Asian beneficiaries.

The KTBH program draws on the core elements of RMS’s other disease management offerings, with adaptations to meet the needs of the older, sicker population eligible for the program. The core of the intervention is one-on-one health services coordinator (HSC) support provided via telephone and/or in-person visits complemented by support from the KTBH program pharmacist, social worker, and dietician, and access to a 24-hour HSC hotline. Participants with heart failure (HF) who are at risk for hospitalization also have the opportunity to receive a Cardiocom telemonitoring scale that transmits information about an individual’s weight and health status to the KTBH program on a daily basis to monitor changes that indicate the development of an acute exacerbation of the condition. Participants may receive any or all of these services during the demonstration program, depending on their needs throughout the period.

Health services coordinators engage in the following core activities to support program participants:

1. Conduct initial and continuous risk evaluation of participant medical and psychosocial needs, such as laboratory tests or access to eldercare for a spouse;

2. Coordinate care through the development of a care plan that summarizes participant needs and outlines action plans to ensure that issues are addressed in a timely way;

3. Educate participants about slowing the progression of renal disease, the benefits of early referral to a nephrologist, management of comorbid conditions, and treatment options for renal disease such as preparation for renal replacement therapy;

4. Coordinate medication therapy management, which includes patient education about medications, discussion of issues of compliance with medication regimens, and identification of inappropriate drug regimens; and

5. Monitor participant status during each interaction either by telephone or in-person visit to detect changes in health status, psychosocial needs, and medical therapy, so that care plans may be adjusted to continually address issues pertinent to each participant.

In addition to these five core activities, the demonstration is also comprised of dietician support, social work support, telemonitoring support, and non-clinical support such as assistants who will call patients on a routine basis to help them stay connected with the program even when they do not require clinical attention. Further, a key focus of the HSCs is to recommend referral to a nephrologist as appropriate for participants who reach stage IV CKD.

The Health Buddy Consortium (HBC)

The Health Buddy Consortium (HBC) is comprised of Health Hero Network, the American Medical Group Association, Bend Memorial Clinic, and Wenatchee Valley Medical Center collaborating to deliver care management services to high-cost Medicare beneficiaries with diabetes, heart failure (HF), and/or chronic obstructive pulmonary disease (COPD). The consortium is coordinated by a medical technology company, Health Hero Network (HHN), which was founded in 1996 and headquartered in California. The HBC receives support from the American Medical Group Association (AMGA) to implement the Health Buddy Consortium Program's consistent chronic care management process at two multi-specialty practices, Bend Memorial Clinic in Central Oregon and Wenatchee Valley Medical Center in North Central Washington.

This program serves primarily rural areas with its demonstration population widely dispersed over a large geographic area; Chelan, Grant, Okanogan, and Douglas counties in Washington, and the sparsely populated counties of Deschutes, Jefferson, Crook, Lake, and Harney in Oregon. The area has a high concentration of the elderly with 40% of the population qualifying for Medicare.

The disease management demonstration involves the use of a proprietary appliance—the Health Buddy Consortium—in participants' homes to collect information on vital signs, symptoms, behaviors and knowledge of individuals' health conditions and transmit to multi-specialty medical groups. The model ensures daily communication between the participant and health care system. Health care information is reported to health care professionals through Health Buddy Consortium Desktop application, which can be programmed to analyze patient responses, review patient trend data, produce patient reports, view large population of patients on a single screen, and send alerts that can be customized to specific practices. Participants who are unable to use the Health Buddy Consortium appliance interact with care managers via telephone calls and office visits. Providers use information provided through Health Buddy Consortium to spot problems early to help ensure participants stay healthy and avoid hospitalization.

Texas Tech University Health Sciences Center (TTUHSC) and its Texas Senior Trails program (TST)

The Texas Senior Trails program was a consortium of three organizations: Texas Tech Physician Associates (TTPA), Texas Tech University Health Sciences Center (TTUHSC), and TrailBlazer Health Enterprises, LLC. The consortium was formed for the sole purpose of developing and implementing a CMHCB program to deliver care management services to high-cost Medicare beneficiaries. TTPA is the primary risk contractor responsible for the financial performance of the demonstration. TTUHSC is a multi-specialty group originally founded in Lubbock in 1969 due to inadequate medical services available on the South Plains and Panhandle of Texas. Later, satellite campuses and clinics were opened in other West Texas cities, including Amarillo. TTUHSC is a key clinical partner and provides administrative coordination. Trailblazer Health Enterprises is a wholly owned subsidiary of Blue Cross Blue Shield of South Carolina and is headquartered in Dallas, Texas with more then 1,600 employees. Trailblazers is the Medicare fiscal intermediary for Texas and will share financial risk with TTPA.

The region covered by the Texas Senior Trails program was 48 counties in northwestern Texas, typically referred to as the Texas Panhandle and South Plains. This geographic area is racially diverse with a large Hispanic population and is largely medically underserved. The target region is rural, approximately 46,000 square miles, has a population of almost 838,000, and has 122,000 Medicare beneficiaries. Approximately 16% of the population falls below the federal poverty line, one quarter have no health insurance, and the population as a whole have significant social needs.

The overarching goal of the TST program is to help participants take an active role in their health and receive timely access to appropriate health and social services. TST uses a holistic approach to deliver its multidisciplinary care management intervention to help coordinate health and social services for participants with multiple co-morbid chronic conditions. They also provide participants with access to a variety of other services provided by nurse care managers and staff from TTUHSC's schools of medicine, nursing, and pharmacy. Using a combination of telephonic and in-person support services, the TST program provides the following services to participants:

- Facilitate patient relationships with physicians and help patients comply with physician care plans, including receipt of preventive and routine care;
- Guidance and support to reduce emergency room utilization, as appropriate;
- Hospital discharge planning support;
- Support patient adherence to medication regimens;
- Education related to self-management activities to decrease risk for acute exacerbations of chronic diseases;
- Resources to address mental health issues such as depression, and social issues such as transportation needs;
- Access to a multidisciplinary clinic; and
- Targeted care management support for nursing home residents.

Subsequent to our site visit, TST decided to terminate its CMHCB program. TST remains in the evaluation up to the point of its termination on July 31, 2007, and will be included in all analyses.

Montefiore Medical Center (MMC)

Montefiore Medical Center (MMC) is an integrated delivery system that provides patient care, conducts research, and serves as a teaching hospital for the Albert Einstein College of Medicine. MMC provides a full continuum of health care services primarily to residents of the Bronx and Westchester County, New York. MMC has a partnership with the Montefiore Independent Practice Association (IPA), which is the only entity in New York State that is eligible to enter risk arrangements with health plans. The IPA directly manages a population of

100,000 people and an additional 50,000 individuals through indirect risk arrangements, including approximately two-thirds of the Medicare Advantage population in the Bronx. A care management organization was established as a corporate subsidiary to MMC in 1996 to serve as a managed services organization. The organization understands that the factors that lead to hospitalization are often psychosocial in nature and are relevant to a variety of chronic conditions. So they have developed the Care Guidance program to help participants access the medical care and social services they need to maintain health and avoid unnecessary hospitalization, regardless of condition.

This demonstration serves the area of Bronx, NY, a racially-mixed population with a high proportion of Hispanics (48%) and African Americans (31%). Furthermore, 25% of the elderly population is poor, 60% of the elderly population does not speak English as their primary language, and 50% of the aged, non-institutionalized population reports having a functional limitation.

The Care Guidance program includes four major components: (1) facilitating access to and coordination of care by providing access to MMC medical health care professional, facilitating communication between providers and the care guidance team, providing care for depression when appropriate, and providing money for transportation to health care providers; (2) implementing chronic care management by ensuring that care delivered adheres to guidelines developed by MMC, providing education materials for participants and family/caregivers, and providing telemonitoring equipment to monitor weight, other biomarkers, and symptoms; (3) implementing community-based palliative care by ensuring timely referral to palliative care; and (4) implementing medication noncompliance/polypharmacy review whereby a pharmacist supports patients and providers and MMC partners with a large community pharmacy to deliver prescriptions and support enrollment in the New York state drug benefit program.

Massachusetts General Hospital and Massachusetts General Physician Organization (MGH)

Massachusetts General Hospital is one of the founding members of Partners HealthCare, an integrated health system in Boston, Massachusetts, established in 1994, whose mission is to provide high-quality health care and advance care through biomedical research, and to educate future leaders of the health care professions. The region covered by the MGH care management program is five counties in Massachusetts—Essex, Middlesex, Norfolk, Plymouth, and Suffolk. The majority of the target population is white with both highly affluent as well as very poor individuals. Within the targeted geographic area, there is a high inpatient and ER census coupled with a sharp decline in the number of primary care physicians in recent years.

MGH’s disease management demonstration provides practice-based care management (PBCM) services using emerging information technology solutions to improve the quality of care delivered to high-cost Medicare fee-for-service beneficiaries. This demonstration program follows the “High Performing Medicine Initiative” started in 2003, which involves practice-based care management services to high-cost Medicare beneficiaries. Care managers, who are assigned to each MGH physician office, develop relationships with program participants to provide support across the continuum of care. Care managers provide patient education and connect patients with resources to address medical and psychosocial needs to help prevent acute exacerbations of disease and associated inpatient admissions and emergency room visits. The PBCM program also includes components to address mental health issues, evaluate complex pharmaceutical regimens, and support end-of-life decision making. In addition to improving the quality of care and outcomes for Medicare beneficiaries, the MGH PBCM program aims to improve the quality of work life for primary care physicians and thereby ultimately attracting more physicians to the field of primary care.

1.3 Comparison Group Selection Methodology

Two of the CMO programs were community-based (CLM and KTBH) and 4 of the programs (HBC, TST, MMC and MGH) were institution-based. In the community-based sites, beneficiaries meeting the site's inclusion and exclusion criteria were randomly assigned to the intervention and control groups. In the institution-based sites, a comparison group was identified to match the members of each intervention group. This section describes the methodology that was developed to create the comparison groups.

Our approach to constructing a comparison group was designed to replicate as closely as possible the steps involved in forming the intervention group. The process involved first designating geographic areas, then physician groups serving beneficiaries in those areas and, finally, individual beneficiaries. The general sequence of steps, presented in Table 1, was as follows:

Table 1
Comparison group selection

Step	Intervention group	Comparison group
1. Identify geographic service area	Counties or ZIP codes served by intervention physicians	Counties or ZIP codes with similar social, demographic, health care utilization, and hospital market characteristics
2. Select physician group practices (PGPs)	PGPs that implement the intervention	Other PGPs providing similar services in the comparison areas
3. Select eligible beneficiaries	a. Apply General Exclusion criteria to all beneficiaries residing in intervention area. b. Apply cost and HCC score criteria	a. Apply same General Exclusion criteria to all beneficiaries residing in comparison area. b. Apply cost and HCC score criteria
4. Select beneficiaries loyal to PGP	Apply loyalty criteria to beneficiaries (usually based on number or proportion of visits to intervention PGPs)	Apply same loyalty criteria to comparison PGPs
5. Match comparison group to intervention group	Determine distribution of loyal intervention beneficiaries by cost, HCC risk scores, or diagnosis groups	Stratify the comparison pool by the intervention categories; randomly sample one comparison beneficiary for every intervention beneficiary in that stratum.

Comparison Areas. Most of the sites were concerned about the potential for contamination of their intervention activities into areas close to their PGPs. In addition, the intervention PGPs tended to serve a large share of the beneficiaries in their target areas. As a result, geographic comparison areas were counties or ZIP codes in other regions of a state that had demographic and health care utilization characteristics similar to those in the intervention area. The exceptions were the Texas Tech and Montefiore sites in which the intervention and comparison areas were the same. This was done due to concerns that health care access and utilization patterns in other areas were significantly different from the intervention area.

Comparison PGPs. Once the geographic area for a comparison group had been defined, the most challenging task was to identify PGPs that were similar to the intervention group practices. We initially asked sites to identify PGPs they were familiar with in the designated comparison areas. This approach was pilot tested in two counties in Washington. The results of the pilot indicated that this approach would not yield enough potential comparison beneficiaries, and that the effort would need to be expanded to more comparison counties and more PGPs.

We then devised a more systematic, claims-based approach to identifying comparison PGPs that did not require them to be nominated individually by the sites. The claims-based approach identified high volume primary care PGPs through their Tax Identification Numbers (TINs). We began with the intervention TINs, examining the proportion of their total physician payments broken down by 24 Berenson-Eggers Type of Service (BETOS) categories. Office visits and diagnostic laboratory testing were consistently the two services provided most often by intervention clinics. We established a threshold of a minimum of 20% of total payments from office visits which effectively eliminates single-specialty practices.

We then applied this threshold to the highest beneficiary volume TINs in each comparison county. This produced a set of TINs/PGPs that were similar to the intervention PGPs with respect to their focus on primary care. If the pool of comparison was still too small, we added more comparison counties and applied the TIN approach to them as well.

Beneficiary Matching. Because the primary outcome in this demonstration is the per beneficiary per month (PBPM) Medicare cost, it was critically important that the intervention and comparison groups be equivalent to each other in terms of these costs at the start of the project. To enhance cost equivalence, the final step in the selection process was to match comparison group beneficiaries to intervention group members on PBPM costs over the previous 12 months. The matching was done by defining 3-5 cost ranges, determining the distribution of these ranges in the intervention group, and then randomly selecting the same number of comparison beneficiaries as intervention beneficiaries in each category. This produced a final comparison group that was the same size as the intervention group. As a final check, the two groups were also compared on a range of health status, payment category, and health care utilization variables.

The definitions used to implement each of the steps in this process varied considerably from one site to the next. Table 2 summarizes the features of each site. The number of sampled beneficiaries was smaller for some CMOs than for others. The sample sizes are largely a function of the total number of Medicare beneficiaries residing in a geographic area and the stringency of the loyalty definition and exclusion critieria.

1.4 Organization of Report

This report is organized as follows. In Chapter 2, we present the research design for the survey, including the conceptual framework and analytic methods, which guided the development of the survey instrument, followed by the survey instrument design. In Chapter 3, we describe the sample framework and sampling procedures, the survey implementation schedule and process, response rates and analysis of survey response. In Chapter 4, we present the results of the survey separately for each participating organization by describing ANCOVA-estimated intervention effect results for each of the survey outcomes. We conclude with a discussion of the survey results across programs and summary of results for each program separately in Chapter 5.

Table 2
Comparison group selection process by CMO

Characteristic	HBC	TST	MF	MGH
Intervention area	Four counties in the state of Washington and five counties in Oregon	48 counties in the panhandle region of northern Texas	16 ZIP codes in the Bronx, NY surrounding the medical center	Five counties in the Boston metropolitan area
Comparison area	9 comparison counties in Washington; 12 comparison counties in Oregon	Same 48 counties as the intervention group.	16 ZIP codes in lower Manhattan and Brooklyn	Same 5 counties as intervention area
Intervention PGPs	Physicians associated with the Wenatchee Valley Clinic in Washington or the Bend Memorial Clinic in Oregon.	4 PGPs comprising the Texas Tech network	96 physicians affiliated with the medical center	184 physicians affiliated with MGH
Comparison PGPs	18 PGPs in Washington and 17 PGPs in Oregon. Selected by choosing the largest PGPs in each county that met BETOS matching criteria	4 PGPs selected on the basis of beneficiary volume and BETOS service criteria	19 office-based PGPs in comparison ZIP codes	307 physicians affiliated with four academic medical centers
Loyalty definition	At least 2 visits or a plurality of all visits to one of the designated PGPs	At least 2 visits or a plurality of all visits to one of the designated PGPs, unless 8 visits or more had been made to a non-intervention PGP	Physician loyalty (2 or more visits) OR inpatient loyalty (plurality of inpatient visits)	Physician loyalty (2 or more visits) AND hospital loyalty (majority of visits)
Variables used for comparison group matching	3 diagnostic groups by 3 expenditure tertiles (9 strata)	5 expenditure quintiles	5 expenditure quintiles	3 HCC risk score groups by 3 expenditure tertiles (9 strata)
Number of beneficiaries per group	964 in Washington; 660 in Oregon Intervention = 1,624 Comparison = 1,623	Intervention = 5,063 Comparison = 5,106	Intervention = 2,974 Comparison= 1,836	Intervention = 2,619 Comparison = 2,755

CHAPTER 2
SURVEY DESIGN AND ANALYSIS

2.1 Conceptual Framework

The CMHCB programs' principal strategy to improve quality of care while reducing costs is by empowering Medicare beneficiaries to better cope with their chronic disease(s) and manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as promote more effective interaction with their primary health care provider. The CMHCB programs hypothesized that lifestyle changes and better communication with providers would mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

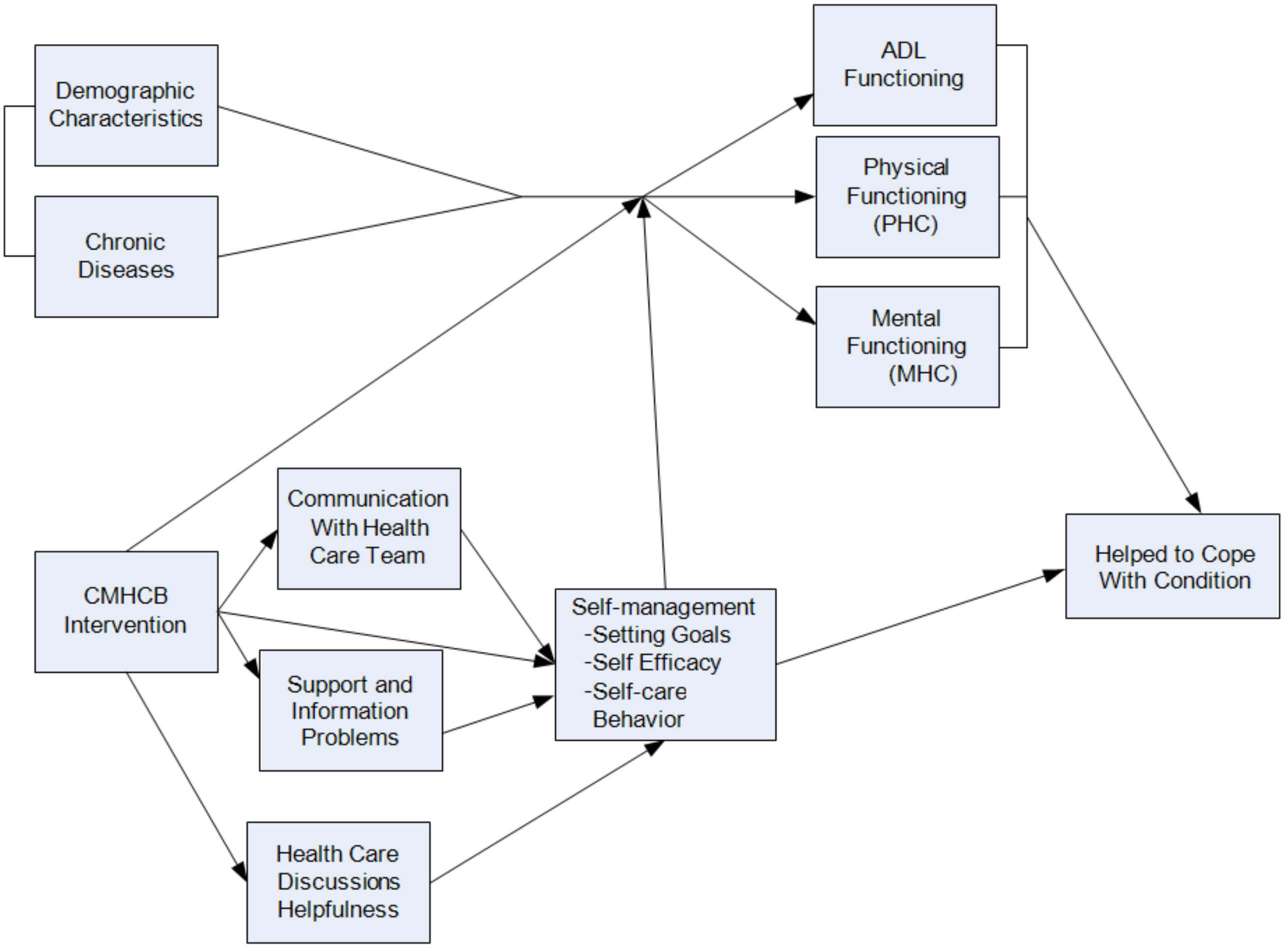
The primary outcomes examined in the beneficiary survey are experience of care, self-management, and physical and mental function. The conceptual framework for this survey is depicted in ***Figure 1,*** which traces hypothesized effects of the CMHCB intervention leading to these outcomes. We anticipate that the intervention's more intensive disease management activities will lead to greater levels of service helpfulness and greater self-efficacy. This in turn will increase the frequency with which intervention beneficiaries engage in self-care activities, resulting in better functioning and higher satisfaction levels than in the comparison group.

A copy of the beneficiary survey instrument is provided in ***Appendix A***.

2.2 Survey Instrument Design

The beneficiary survey was designed to obtain assessments directly from beneficiaries about key outcomes of beneficiary ***experience of care, self-management***, and ***physical and mental function.*** We asked beneficiaries the extent to which their health care providers helped them to cope with their chronic condition. We supplemented this item with questions related to two key components of the CMHCB interventions, helpfulness of discussions with their health care team, and quality of communication with their health care team. In addition, the survey instrument collected information about beneficiary ***self-care*** frequency and ***self-efficacy*** related to medications, diet, and exercise and 3 CAHPS-related measures on communication with health care providers. Lastly, the survey instrument included four physical and mental health functioning measures.

Figure 1
Beneficiary survey conceptual framework



NOTES: ADL=Activities of daily living; CMHCB=Care Management for High Cost Beneficiaries; MHC=Mental Health Composite; PHC=Physical Health Composite

2.2.1 Measures of Experience and Satisfaction with Care

The impact of the CMO interventions is critically dependent on the relationships between beneficiaries and their health care teams. The first set of survey measures assesses several dimensions of the interactions between beneficiaries and providers. These items were worded to be applicable to all beneficiaries, regardless of their intervention or participation status. As a result, questions referred to a beneficiary’s “health care team” (defined as nurses, case managers, doctors, and/or pharmacists with whom they interacted, either in-person or telephonically) rather than to the name of the MCO.

***Helping to Cope with a Chronic Condition*—**The single item “How would you rate your experience with your health care providers in helping you cope with your condition?” provides an overall satisfaction rating. Ratings are made on a five-point scale (1=poor, 2=fair, 3=good, 4=very good, 5=excellent).

***Helpfulness of Discussions with the Health Care Team*—**This section addresses services received during the prior 6 months. Five types of services are addressed: (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The services could be provided through in-person visits, telephone calls, or by mail. Each service is rated on a four-point scale ranging from “very helpful” to “not helpful.” A fifth response option identifies services that had not been discussed. Responses are summarized by counting the number of discussion topics rated as “very” or “somewhat” helpful so that the score for this item ranges from zero (for no items helpful) to five (for all items helpful).

***Discussing Treatment Choices*—**This item assesses a specific aspect of communication with providers by asking beneficiaries whether their health care team talks to them about pros and cons of their medical treatment or health care in general. Ratings are made on a four-point scale (1=definitely no, 2=somewhat no, 3=somewhat yes, 4=definitely yes).

***Communication with Health Care Team*—**Beneficiary communication is an important dimension of experience and satisfaction. Six communication items from the Clinician and Group Adult Primary Care Ambulatory CAHPS® Survey were included in the questionnaire. These items assess how often the team (1) explained things in a way that was easy to understand, (2) listened carefully, (3) spent enough time with the beneficiary, (4) gave easy-to-understand instructions about what to do to take care of health problems, (5) seemed informed about up-to-date health issues, and (6) showed respect. Six frequency options (always, almost always, usually, sometimes, almost never, and never) are converted into CAHPS composite scores ranging from 0 (never to all items) to a maximum of 100 (always to all items).

***Getting Answers to Questions Quickly*—**This measure includes two survey items assessing how quickly the health care team gets back to beneficiaries with answers to their medical questions. The questions ask how often beneficiaries get answers the same day during office hours or, if they call after regular office hours, how often did their questions get answered. Six frequency options (always, almost always, usually, sometimes, almost never, and never) are converted into composite scores ranging from 0 (never to all items) to a maximum of 100 (always to all items).

***Medication Support and Information about Treatment Options*—**The Multimorbidity Hassles scale is designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses (Parchman et al., 2005). Unlike disease-specific or physician-specific measures, this instrument was developed to be broadly applicable to patients with single or multiple conditions. Of the 16 items in the full scale, we selected the first six questions which focus on problems concerning medications and treatment options. Example items are “lack of information about treatment options” and “side effects from my medications.” Each item is rated on a five-point scale ranging from “no problem” to “a very big problem.” The total Hassles score is the sum of the scores for the individual items and can range from 0 to 24. A higher score indicates more problems. Cronbach's alpha was 0.94 for the full scale. In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005).

2.2.2 Self-Management Measures

Patient self-management has been shown to be critical to health outcomes, particularly in chronic disease management (Hibbard et al., 2007). Chronic disease self-management interventions begin by helping the patient set goals and make plans to address those goals, and helping patients manage their illness by practicing behaviors that may affect their health and well-being.

Setting Health Care Goals—The question asks whether someone from the team had "helped you SET GOALS to take care of your health problems in the past 6 months." This item is answered either yes or no.

Making Health Care Plans—A second yes or no item asks whether someone had "helped you MAKE A PLAN to take care of your health problems."

Self-Efficacy—Self-efficacy refers to the confidence that one can perform health promotion activities. Previous research has shown that self-efficacy is a key determinant of adherence to recommended behaviors, and self-efficacy expectations are a key target of many health care interventions. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. These items were drawn in part from the Confidence in Diabetes Self-Care Scale (Van Der Ven et al., 2003). Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Self-Care Activities—A goal of chronic disease management is to promote patient compliance with self-care behaviors that may help to maintain or improve health status. Health-promoting behavior is assessed by the frequency with which beneficiaries engage in the same three self-care activities that are evaluated for self-efficacy. These items were adapted from the Summary of Diabetes Self-Care Activities instrument (Toobert et al., 2000). Respondents indicate the number of days (0–7) in the past week that they performed each self-care activity.

2.2.3 Physical and Mental Health Function

Self-reported health status and function are important outcome measures that are not available through claims data. To assess the impact of the CMHCB demonstration on beneficiary function, the survey included two broad constructs: (1) physical and mental functioning, and (2) activities of daily living. Measurement of these constructs is described in detail below.

Physical and Mental Function. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument (Kazis 2004). The VR-12 consists of 12 items, half of which reflect physical function and half that are indicators of mental function. We used the RAND-12 scoring algorithm (Hays, 1998) to compute summary Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. Higher scores indicate higher levels of functioning. The scoring algorithm is based on Item Response Theory scaling yielding composite scores that may be correlated with one another. The algorithm also imputes scores for no more than one missing item in each composite.

Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), a widely used depression screening tool (Kroenke et al., 2003). The PHQ-2 consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range form 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation.

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. Respondents were first asked if they had any difficulty performing each activity. Possible responses were that they were unable to perform, had difficulty, or did not have difficulty doing the activity. They were then asked if they needed help from another person to perform the activity with responses of yes or no. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or were unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score ranges from zero to six.

2.2.4 Background Characteristics

The final section of the questionnaire collects information about demographic characteristics such as race (Hispanic and black status), educational attainment in years, living arrangements—whether beneficiaries are living alone, with a spouse or a relative, presence and type of health insurance coverage in addition to Medicare, and proxy information.

2.3 Cognitive Testing of the Survey Instruments

Given that many of the questions have been used in other surveys of Medicare beneficiaries, we conducted limited cognitive testing of the draft instruments prior to the baseline survey with nine beneficiaries who met the eligibility criteria. The tests were conducted during June and July 2006.

Cognitive testing is a qualitative research methodology commonly used during the survey instrument development process to identify problems with the questions or response options so they may be improved before the survey is fielded. Cognitive testing examines such issues as wording of items, response options, the order of questions, and question formatting, and improves the reliability and accuracy of survey responses. During these interviews, participants were asked to “think aloud,” describing their thought processes as they answered survey items. The interviewers also asked “probe” questions designed to elucidate the question-answering process. We conducted the cognitive testing in North Carolina. RTI obtained Institutional Review Board (IRB) approval for recruiting participants, conducting interviews, and reporting the results to CMS.

Cognitive testing resulted in a small number of minor changes to the survey instrument. We tested the use of the terms “sure” and “confident” for the self-efficacy questions; “sure” was chosen for use in the survey. Because most items were drawn from standard questionnaires, we did not change their wording. Once finalized, the survey instruments were translated into Spanish by a language specialist.

2.4 Analytic Methods

We conducted a series of statistical analyses to explore intervention-comparison differences and CMHCB intervention effects.

Response Propensity Analysis—We analyzed response rates to determine whether survey participation was influenced by intervention status or other background characteristics. This response propensity analysis is based on a logistic regression model in which the binary outcome is coded 1 if the sampled beneficiary completed the survey and 0 if the beneficiary did not return a survey. The explanatory variables in the model consist of factors that are available for all beneficiaries from secondary sources, such as demographic characteristics, HCC scores, and intervention status. The predicted probability of response was incorporated in the sample weights for the study.

We also present the c statistic, a measure of discriminatory power, for each model. The c statistic is the probability that an intervention subject will have a higher response probability than a comparison subject in any randomly selected pair of subjects. The statistic is also equivalent to the area under the curve (AUC) in receiver operating curve analysis. Values of c may range from 0.5 (no discrimination) to 1.0 (perfect discrimination). Values larger than 0.75 are frequently regarded as indicating acceptable discrimination for diagnostic tests.

Descriptive and Scaling Analyses—The next step in the analysis was to compute descriptive statistics (means, standard deviations, and frequency distributions) for all survey variables. Several outcomes, such as the RAND-12 physical and mental composite scores and the CAHPS scales, have established procedures for computing summary scores. In each CMHCB site, we compared the mean scores by intervention and control/comparison status for all outcome measures and covariates.

ANCOVA Model for Intervention Effects—We estimated weighted regression models to examine the effects of the CMO interventions on the outcomes appearing in the conceptual model. The research design for this evaluation involves only a single follow-up survey administered approximately 18 months after the program interventions were first implemented. Baseline levels of the individual study outcomes are not available. To increase the precision of the intervention effect estimates, we constructed multivariable regression models consisting of a broad set of beneficiary characteristics as explanatory covariates. Many of these covariates are drawn from claims data, while other background characteristics are reported in the survey questionnaire.

Two key indicators of initial status are the HCC risk score and per beneficiary per month expenditures. Both of these variables are measured at time of each program’s “go live” start date. The following covariates were used:

- demographic characteristics (age, gender, Hispanic ethnicity, African American, years of education);
- Medicaid/dual eligible status;
- beneficiary lives alone;
- other health insurance coverage (in addition to Medicare or Medicaid);
- proxy respondent; and
- mail survey (versus telephone survey).

Proxy and mail status are included to capture any systematic differences in responses attributable to response mode. Previous research indicates that, compared to telephone surveys, mail surveys frequently elicit less favorable ratings of health status.

A general Analysis of Covariance (ANCOVA) model for the intervention analyses is

$$Y= a + b_1X_1 + b_kX_k + e$$

where

Y = outcome measure;

X_1 = intervention status (1 = intervention, 0 = control or comparison);

X_k = a vector of k covariates;

b_1 and b_k = regression coefficients to be estimated;

a = an intercept term; and

e = an error term.

In this model, coefficient b_1 estimates the overall effect of the intervention in an intent-to-treat analysis. The covariate coefficients correspond to direct effects of the mediating variables depicted in Figure 1. Models in this general format were estimated separately for each CMO to test the impact of the program in each site. A logistic regression model consisting of the same set of covariates was used for dichotomous outcomes.

The covariates in the model increase the precision of an intervention effect estimate by accounting for other sources of variation in the outcome measure. As described in Section 1, the intervention and comparison beneficiaries in four nonrandomized CMOs were initially matched on either diagnostic status or Medicare expenditure levels. No stratification or matching was done for the two randomized sites. The covariate adjustments therefore control for other factors that may affect beneficiary outcomes and help to further level the playing field when evaluating the impact of the CMHCB programs.

CHAPTER 3
SURVEY IMPLEMENTATION

3.1 Sampling Frame

The first step in the design process was to identify a sample frame for the survey in each of the six demonstration sites. Beneficiaries were eligible for the survey if: 1) they were members of the starting intervention or comparison group populations, and 2) they met the criteria for inclusion in quarterly monitoring reports at the time the frame was identified. Beneficiaries who were "carved-out" of the original starting population and those who met any of the original project exclusion criteria (deaths, loss of Part A or B coverage, enrollment in a Medicare Advantage plan, etc.) were ineligible for the survey frame. Members of supplementary refresh groups were not eligible because of their limited exposure to intervention activities. To maximize the number of eligible respondents in the frame, we performed an EDB run prior to sampling to identify decedents and other beneficiaries who have recently become ineligible.

3.2 Data Collection Procedures

We surveyed beneficiaries by mail with a telephone follow-up of nonrespondents. We used a multiple-mode, multiple-contact approach that has proven very successful on surveys conducted with the Medicare population and incorporates suggestions from Jenkins and Dillman's best mail survey practices guidelines (Jenkins and Dillman, 1997).

This protocol is based on the following sequence:

- prenotification letter (double-sided, in English and Spanish),
- first questionnaire mailing 1 week after the prenotification letter is mailed,
- thank you/reminder postcard 1 week after the first questionnaire is mailed,
- second questionnaire mailing 3 weeks after the first questionnaire is mailed,
- follow-up telephone contacts for nonrespondents with working telephone numbers, and
- overnight questionnaire mailing to sample members for whom no telephone number can be obtained.

Participation in the survey was voluntary, and no incentives or remuneration were given to sample members.

Because the sites initiated their recruitment efforts at different times, the data collection process was divided into two waves so that the follow-up interval is similar for all sites. Wave 1 consisted of the CLM, KTBM, HBC and TST sites. The initial survey mailing for this wave began in June 2007. Wave 2 consisted of the MMC and MGH sites.

Table 3 presents the survey data collection process and schedule.

Table 3
Medicare Health Services Survey data collection process and schedule

Data collection step	Wave 1	Wave 2
Prenotification letter (double-sided, in English and Spanish)	6/11/2007	1/7/2008
First questionnaire mailing, one week after the prenotification letter is mailed	6/18/07-6/19/07	1/14/08-1/15/08
Thank you/reminder postcard, one week after the first questionnaire is mailed	7/2/2007	1/28/2008
Second questionnaire mailing, three weeks after the first questionnaire is mailed	7/23/2007	2/20/2008
Begin outbound telephone follow-up of non-respondents	8/18/2007	3/15/2008
Overnight questionnaire mailing to sample members for whom no telephone number can be obtained	9/6/2007	4/3/2008
Conclude outbound telephone follow-up of non-respondents	10/7/2007	5/4/2008

NOTES:

Wave 1 included beneficiaries from CLM, KTBH, HBC, and TST.

Wave 2 includes MMC and MGH.

We requested that CMS provide the names, addresses, and telephone numbers for the sampled beneficiaries. This information was loaded into a survey contact file. Each beneficiary was identified by an eight-digit RTI study identification number for tracking purposes. This file also contained site and group codes. The dispositions of all contacts with sampled beneficiaries were recorded to compute survey response rates.

3.3 Sample Size

The CMHCP RFP called for a total of 3,600 completed baseline surveys. Because analyses were conducted separately for each program, we proposed to distribute the survey sample evenly across the six CMOs. The target was therefore 300 completed surveys per site for intervention and for comparison population.

Based on our recent experience with a similar survey for beneficiaries in the Medicare Health Support Project, the projected survey response rate was 70%. From the sample frame for each group, we randomly selected 300/.7=429 beneficiaries per group in each site. The size of the total sample was therefore 5,148 beneficiaries.

3.4 Statistical Power

The sample sizes for the CMHCB survey were fixed by budgetary constraints. To assess the analysis implications of obtaining 300 completed interviews per group, we evaluated the magnitude of the intervention vs. comparison group difference that could be reliably detected with this design. The targeted sample size permits us to detect effect sizes (Cohen's d) of 0.23 or more for continuous outcome measures (power=.80, alpha=.05, two-sided tests). For a binary outcome, this is equivalent to the difference between percentages of 61% in the intervention group and 50% in the comparison group. The covariates in the ANCOVA models further increase the precision of coefficient estimates, allowing us to detect even smaller effects for many outcomes.

3.5 Survey Weights

In each CMO, the survey sample was randomly selected from the starting population for each intervention and comparison/control group. As a result, the within-group probability of selection was the same for all beneficiaries. Response weights were computed as the inverse of the probability of response predicted from each site's response propensity model. These weights were then re-scaled to reflect the actual number of survey respondents. Because the propensity models generally had comparatively low discriminatory power, most of the propensity-adjusted weights were close to 1.0. As a result, the survey results weighted for response propensity were very similar to unweighted results.

3.6 OMB Clearance

We prepared and submitted to CMS the Office of Management and Budget (OMB) clearance package containing justification for the project, a description of the study design, the sampling strategy, anticipated respondent burden and response rate, data collection methods, and analysis plans. The package was submitted to OMB in June 2006 and approved on March 2, 2007.

3.7 Survey Response Rates

Response rates for sample beneficiaries were computed for each CMHCB site after eliminating beneficiaries who died by the time the survey was mailed (N=131). Reasons for nonresponse were broken down by site. Response rates for each CMO are presented in chapter 4. These rates ranged from 61.6% to 81.7%. The lowest rates occurred in the two randomized CMOs. Table 4 presents the survey dispositions by CMO.

Table 4
Disposition of Medicare Health Services Survey by CMO

Wave 1

	Total		CLM		KTBH		HBC		TST	
Survey dispositions	N	%	N	%	N	%	N	%	N	%
Complete interviews	2,303	69.8	504	61.9	508	61.7	673	81.7	618	73.7
Final language barrier	54	1.6	35	4.3	17	2.1			2	0.2
Physically/mentally incapable	134	4.1	32	3.9	53	6.4	23	2.8	26	3.1
Unable to obtain telephone #	201	6.1	72	8.8	64	7.8	33	4.0	32	3.8
Refused	217	6.6	41	5.0	77	9.3	60	7.3	39	4.6
Other nonresponse	392	11.9	130	16.0	105	12.7	35	4.2	122	14.5
Total	3,301	100.0	814	100.0	824	100.0	824	100.0	839	100.0

Wave 2

	Total		MMC		MGH	
Survey dispositions	N	%	N	%	N	%
Complete interviews	1,098	67.0	508	62.8	590	71.0
Final language barrier	1	0.1			1	0.1
Physically/mentally incapable	48	2.9	27	3.3	21	2.5
Unable to obtain telephone #	43	2.6	11	1.4	32	3.9
Refused	115	7.0	41	5.1	74	8.9
Other nonresponse	335	20.4	222	27.4	113	13.6
Total	1,640	100.0	809	100.0	831	100.0

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

3.8 Survey Response Analysis

We conducted multivariate analyses for each participating CMO to check for potential nonresponse biases. This response propensity analysis examined the influence of beneficiary characteristics on the probability that a sampled beneficiary completed the survey (see section 2.4). The propensity models, estimated by logistic regression, were comprised of a set of individual characteristics available for all beneficiaries. We computed HCC risk scores corresponding to the start of the programs in each site. Decedents were removed from the analyses. Explanatory variables in the model included age groups, Medicaid status, baseline HCC risk score, gender, the availability of a telephone number from SSA records, and intervention/control group indicator. The resulting response propensity models are presented in Chapter 4 separately for each CMO.

The response propensity results differed across the sites. The likelihood of response was lower for the youngest and oldest beneficiaries (compared to those aged 65-70) and considerably lower for those with Medicaid (about 2-8% of the beneficiaries in each site had Medicaid). HCC risk scores were negatively associated with response in several sites. These results are consistent with other surveys of the Medicare population, which typically find lower response rates for those with the poorest health status. There were two sites in which there were significantly different response rates for intervention beneficiaries compared to the controls group.

The availability of a telephone number was associated with a higher response rate in only one site. The site-specific telephone number availability rates ranged from 65% to 90%.

While two or more variables were found to be related to response in each site, the overall discriminatory power of the propensity models was generally low. Values of the c statistic ranged from only 0.585 to 0.622. This suggests that predicted response probabilities did not vary greatly among respondents in any of the CMOs.

Table 5 presents the response rates by CMO and by intervention/comparison status.

Table 5
Completed Medicare Health Services Survey beneficiary surveys and response rates by CMO

CMO	Intervention group surveys	Control/comparison group surveys	CMO response rate (%)
CLM	251	253	61.9
KTBH	236	272	61.7
HBC	343	330	81.7
TST	286	332	73.7
MMC	252	256	62.8
MGH	285	305	71.0

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

CHAPTER 4
MEDICARE HEALTH SERVICES SURVEY FINDINGS

4.1 Medicare Health Services Survey Results for CLM

This section presents the results of the Medicare Health Services Survey data analysis for CLM. First we present the results of the response propensity modeling, we then present descriptive statistics separately for intervention and control groups, and ANCOVA-adjusted intervention effects, with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental function. The full ANCOVA models are presented in Appendices A-1 to A-3. Overall, we present results for 19 survey outcomes. We wrap up this section with a summary of results for CLM and conclusions.

4.1.1 Response Propensity Analysis

The response rate for CLM was 61.9%. Logistic regression results of the response propensity analysis are presented in Table 6. These results for CLM indicate that beneficiaries on Medicaid had a lower probability of responding to the Medicare Health Services Survey. Availability of a telephone number from SSA records improved the probability of responding. The likelihood of responding was not influenced by intervention/control group status in this site.

Table 6
CLM response propensity analysis results

	CLM	
Variable	Coefficient	Stat. sign.
Intercept	0.168	
Medicaid	-1.052	**
Age 71 to 79	0.328	
Age 80 or more	-0.149	
Age under 65	0.191	
Baseline HCC risk score	-0.067	
Female	0.163	
Telephone known	0.463	*
Intervention group	0.040	
c statistic = .619		

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program:req006

4.1.2 Descriptive Statistics

Descriptive statistics for the CLM are presented in Table 7 separately for the intervention and control groups with statistical significance tested for each variable. The CLM program is community based with random assignment for the intervention and the control groups. Overall, with the exception of the proportion of people living alone, there are no statistically significant differences between the two groups for CLM. Intervention group has a significantly higher proportion of those living alone than control group (28% versus the 20%). CLM beneficiaries are about 74 years old on average, are 52% female and have 13 years of schooling on average. Around a quarter of CLM beneficiaries are minorities (Hispanic and Black), with 77% having other health insurance coverage in addition to Medicare. A quarter of CLM beneficiaries used a proxy to respond to the survey. Almost 7 percent of intervention group members have Medicaid and about 4 percent in the control group have Medicaid, but the difference is not statistically significant. The baseline HCC score for both groups exceeds 2.6, indicating that CLM beneficiaries are more than twice as expensive as average Medicare beneficiaries nationally. PBPM is slightly over $3,000 for CLM beneficiaries. Over 80 percent of CLM members responded by mail. The rest were interviewed via the telephone.

Table 7
Medicare Health Services Survey respondents
Descriptive statistics
Care Level Management
(N = 504)

Covariate	N	All beneficiaries	Intervention group	Control group	Stat. sig.
Age (Mean Years)	504	73.8	73.8	73.8	
Female (%)	504	51.8	51.8	51.8	
Hispanic (%)	451	16.4	14.9	18.0	
Black (%)	493	7.0	8.7	5.4	
Years of education	475	13	13	13	
Live alone (%)	493	23.8	27.8	19.8	*
Other health insurance coverage (%)	472	76.8	79.4	74.2	
Proxy respondent (%)	504	27.3	25.4	29.2	
Medicaid beneficiary (%)	504	5.5	6.6	4.3	
HCC score at baseline (Mean)	504	2.66	2.69	2.63	
PBPM for base year ($)	503	3,192	3,159	3,224	
Completed survey by mail (%)	503	81.1	82.1	80.1	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq000

4.1.3 Experience and Satisfaction with Care

The first measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their satisfaction with communication with their health care team and how quickly they get answers to their questions. Lastly, beneficiaries responded to a set of questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 8 displays the satisfaction and experience with care measures for CLM.

Table 8
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
Care Level Management
(N = 504)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.84	3.71	0.19	
Number of helpful discussion topics (0 to 5)	2.23	2.04	0.20	
Discussing treatment choices (1 to 4)	3.21	3.05	0.23	*
Communicating with providers (0 to 100)	77.7	72.9	6.55	**
Getting answers to questions quickly (0 to 100)	68.2	63.7	4.90	
Multimorbidity Hassles score (0 to 24)	3.23	3.51	-0.44	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 3.8 for the intervention group, or about midway between “very good” and “good” ratings. The average score for the control group was about 3.7. Over 62 percent of the beneficiaries rated their experience as “excellent” or “very good” and approximately a third selected “good.”[1] It is not uncommon among the elderly to see high

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[1] Results are not presented.

satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured.

For this overall satisfaction measure, we observe no statistically significant intervention effect for CLM.

Those with higher per beneficiary per month Medicare expenditures report significantly higher ratings on overall satisfaction outcome than beneficiaries with lower PBPMs. Overall, the set of predictors available from the survey and claims data do not provide much explanatory power for this satisfaction measure: the R-square for the model is 0.054. The full details of this analysis are presented in the Appendix Table A-1.

Number of helpful discussion topics. For this item, beneficiaries were asked to evaluate five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was comparable between the intervention and the controls groups (2.2 and 2.0 respectively).

For this measure, we observe no statistically significant intervention effect for CLM.

The number of helpful topics significantly declines with age. Otherwise, the set of predictors available from the survey and claims data does not provide much explanatory power for this satisfaction measure: the R-square for the model is 0.030. The full details of this analysis are presented in the Appendix Table A-1.

Discussing treatment choices. For this item, beneficiaries were asked whether health care team talked about pros and cons of each treatment choice with answers ranging from 1 “definitely no” to 4 “definitely yes”. The mean score for the intervention group was 3.2, compared to 3.0 for the control group. For CLM, we observe a statistically significant positive intervention effect on this satisfaction item, indicating that CLM members in the intervention group were more likely to receive feedback on the pros and cons of their treatment choices than those in the control group.

Intervention versus control status is the only significant variable in the model. No other demographic, health, or other beneficiary characteristic obtained from the survey or claims influenced this outcome. The R-square for the model is a low 0.042. The full details of this analysis are presented in the Appendix Table A-1.

Satisfaction with communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating always to all items in the composite. CLM showed somewhat high average communication scores with almost 78 for the intervention group and about 73 for the control group. CLM showed a statistically significant positive intervention effect on the communication score, with an adjusted score 6.6 points higher in the intervention group compared with the control group.

Intervention versus control status is the only significant variable in the model. No other demographic, health, or other beneficiary characteristic seems to influence this outcome and the model's R-square is 0.066. The full details of this analysis are presented in the Appendix Table A-1.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. The composite score was somewhat higher in the intervention than the control groups (68 and 64 respectively), but this difference was not statistically significant.

None of the other covariates in the model provided any explanatory power for this outcome. The model's R-square is 0.046. The full details of this analysis are presented in the Appendix Table A-1.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses. It is measured on a scale from 0 to 24. Higher scores indicate more problems. CLM showed relatively low Multimorbidity Hassles scores for intervention and control groups (3.2 and 3.5 respectively). In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for CLM.

None of the other covariates in the model proved significant. The set of predictors available from the survey and claims data does not provide much explanatory power for this satisfaction measure: the R-square for the model is 0.030. The full details of this analysis are presented in the Appendix Table A-1.

Overall, across the 6 measures of experience and satisfaction with care, we observe two statistically significant positive intervention effects for CLM. CLM demonstrated significantly higher scores for communication with health care team and in discussions of beneficiary treatment choices for the intervention group. For four other measures of experience and satisfaction with care, we found that the effects were in the desired positive direction but not statistically significant (positive sign for the first 5 measures and a negative sign for the Hassles score). In general, the set of available predictors, which were obtained from both the survey and beneficiaries' Medicare claims, does not provide much explanatory power for the experience and satisfaction with care measures. The R-squares for the models were low and ranged from 3% to 7%.

4.1.4. Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 9 displays the self-management measures for CLM.

Table 9
Medicare Health Services Survey: Estimated intervention effects
Self-Management
Care Level Management
(N = 504)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	62.7	54.0	6.1	
Percent receiving help making a care plan	59.6	51.9	3.9	
Self-efficacy ratings				
Take all medications (1 to 5)	4.32	4.20	0.20	
Plan meals and snacks (1 to 5)	3.90	3.83	0.15	
Exercise 2 or 3 times weekly (1 to 5)	3.62	3.40	0.20	
Self-care activities				
Prescribed medications taken (mean # of days)	6.70	6.64	0.06	
Followed healthy eating plan (mean # of days)	5.00	5.17	-0.03	
30 minutes of continuous physical activity (mean # of days)	3.21	2.78	0.63	*

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. Sixty three percent of CLM beneficiaries in the intervention group reported receiving help setting goals compared to 54 %, although the difference is not statistically significant. Similarly, 60% of CLM beneficiaries in the intervention group reported receiving help making a care plan compared to 52 %, where the difference is also not statistically significant. These results reveal that CLM's intervention did not significantly affect either the percentage of beneficiaries who had received help to set goals for self-care management, or the proportion of beneficiaries reporting that they had help from their health care team in making health care plans.

The other covariates provided little explanatory power in the model for receiving help setting goals. In terms of receiving help with care plan, Hispanic CLM beneficiaries and beneficiaries with higher PBPM expenditures are significantly less likely to receive such a service. The full details of this analysis are presented in the Appendix Table A-2.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, CLM beneficiaries typically reported relatively high levels of self-efficacy with mean ratings averaging from 3.4 to 4.3 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed (4.3 for the intervention group versus 4.3 for the control group), and the lowest scores were for getting exercise two or three times per week (3.6 for the intervention group versus 3.4 for the control group).

For CLM, we observe no significant intervention effects for any of the self-efficacy measures.

In terms of other characteristics, Black CLM beneficiaries, CLM beneficiaries without additional insurance coverage, proxy respondents and those with higher baseline HCC score are less likely to express confidence about planning their meals and snacks, and those with higher PBPM expenditures were more likely to express confidence about this outcome. Females, proxy respondents and those with higher baseline HCC score are also less likely to express confidence about exercise. The full details of this analysis are presented in the Appendix Table A-2.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7.

The reported compliance rate for self-care activities ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates among other activities (exercise). For example, the mean number of days that beneficiaries said they take their medications as prescribed ranged from 6.7 to 6.6 out of 7 days, but the mean number of days that beneficiaries said they have 30 minutes of continuous physical activity ranged from 3.2 to 2.8 days.

For self-care activities, we observe one positive intervention effect for CLM for the frequency of maintaining 30 minutes of continuous exercise. No statistically significant intervention effects were found for CLM for prescription medications and dietary guidelines.

In terms of other characteristics, Black and proxy CLM respondents and respondents with higher baseline HCC score are less likely to be compliant with their prescribed medications, and those with higher PBPM expenditures are more likely to follow their medication regiment. Mail CLM respondents were less likely to adhere to health eating plans, and females, proxy respondents and respondents with higher baseline HCC score were significantly less likely to engage in physical activity. The full details of this analysis are presented in the Appendix Table A-2.

4.1.5. Physical and Mental Health Functioning

Physical and Mental Function. Table 10 displays the mental and physical functioning outcomes. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental

Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range form 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

Table 10
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
Care Level Management
(N = 504)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	30.3	28.4	2.1	*
MHC score (mental health, mean =50, std=10)	38.8	37.6	1.7	
PHQ-2 score (depression, 0 to 6)	1.93	2.14	-0.26	
Number of ADLs difficult to do (0 to 6)	2.72	2.79	-0.03	
Number ADLs receiving help (0 to 6)	1.68	1.67	0.00	

NOTES:

ADLs are activities of daily living.

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

On average, CLM participants reported better mental health than physical health functioning which is consistent with the general Medicare population. The mean PHC score for the intervention group was 30.3, significantly higher when compared to 28.4 for the control group. The ANCOVA results revealed that this is the only one statistically significant intervention effect for physical and mental functioning outcomes.

The mean MHC score for the intervention group was 38.8 and the PHQ-2 score of 1.9, compared to 37.6 and 2.1 for the control group. For mental health outcomes, there was no difference in mental health functioning as a result of the CLM intervention.

Among other characteristics, PHC scores for CLM beneficiaries are significantly lower for females, proxy respondents, those with lower baseline HCC score and for those who completed the survey by mail. MHC scores are also significantly lower for females and proxy respondents. CLM beneficiaries with higher PBPM expenditures had significantly higher MHC scores. As higher PHQ scores indicate greater depressive symptoms, the depressive symptoms decline with age, years of education and increase in PBPM spending, but increase significantly for proxy respondents. The full details of this analysis are presented in the Appendix Table A-3.

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or was unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items.

On average, CLM respondents reported limitations on 2.7-2.8 activities of daily living (ADLs) and received help with an average of 1.7 ADLs.

There was no significant difference in ADL difficulties or help as a result of the intervention.

For CLM members, when other characteristics are held constant, females report significantly more ADL limitations than males, blacks report more than members of other races, and proxy respondents more than self-respondents. As expected, those with higher baseline HCC score also report significantly higher levels of functional impairment. Survey respondents in CLM with higher PBPM spending reported significantly fewer ADL limitations and fewer ADLs they received help with. CLM members who have additional health insurance coverage report fewer ADL limitations than those who only have Medicare. In terms of needing help with ADLs, the patterns are similar: females, proxy respondents, and members with higher baseline HCC score report needing help on a significantly higher number of ADLs. Those with additional health coverage also report needing help with fewer ADLs. The full details of this analysis are also presented in the Appendix Table A-3.

4.1.6. Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as improve beneficiary interaction with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

In summarizing CLM's effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning, survey results indicate that CLM achieved at least one positive intervention effect in each of the three survey domains. We found 4 statistically significant positive intervention effects on 19 CMHCB demonstration survey outcome measures for CLM. The summary of survey analysis results for CLM is presented in Table 11.

Table 11
Medicare Health Services Survey: Estimated intervention effects
Summary of results
Care Level Management
(N = 504)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	+
Communicating with providers	++
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	
Followed healthy eating plan	
30 minutes of continuous physical activity	+
Physical and mental health function	
PHC score	+
MHC score	
PHQ-2 score	
Number of ADLs difficult to do	
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

For experience and satisfaction with care, there were positive intervention effects for CLM on discussing treatment choices and communicating with providers. We do not observe any intervention effects for the overall measure related to helping beneficiaries cope with their chronic condition, for number of helpful discussion topics, getting answers quickly or any difference in the Multimorbidity Hassles score.

No effects were found for CLM in any of the self-efficacy measures. For self-care activities, we observe one positive intervention effect for CLM for the frequency of maintaining 30 minutes of continuous exercise. No statistically significant intervention effects were found for CLM for self-care activities such as prescription medications and dietary guidelines.

Among 5 physical and mental function measures, we observe one significant improvement in the PHC scores, indicating that the CMHCB demonstration produced an improvement in physical functioning in the intervention group by raising the PHC score by slightly more than 2 points.

4.2 Medicare Health Services Survey Results for KTBH

This section presents the results of the Medicare Health Services Survey data analysis for KTBH. First we present the results of the response propensity modeling, then we present descriptive statistics separately for intervention and control groups, and ANCOVA adjusted intervention effects with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental functioning. Overall, we present results for 19 survey outcomes. The full ANCOVA models are presented in Appendices A-4 to A-6. We wrap up this section with a summary of results for KTBH and conclusions.

4.2.1. Response Propensity Analysis

Response rate for KTBH was 61.7%. Response propensity analysis is presented in Table 12. The response propensity analysis for KTBH indicates that Medicaid status and higher baseline HCC scores led to lower response rates. An unusual finding was that response rates were higher for beneficiaries in their 70s than for younger beneficiaries.

Table 12
KTBH response propensity analysis results

Variable	KTBH Coefficient	 Stat. sign.
Intercept	0.585	*
Medicaid	-0.953	**
Age 71 to 79	0.501	*
Age 80 or more	0.065	
Age under 65	0.248	
Baseline HCC risk score	-0.172	**
Female	-0.124	
Telephone known	0.402	
Intervention group	-0.381	
c statistic = .622		

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program:req006

4.2.2. Descriptive Analyses

Descriptive statistics for the KTBH are presented in Table 13 separately for the intervention and control groups with statistical significance tested for each variable. KTBH program is community based with random assignment for the intervention and the control groups. Overall, there are no statistically significant differences between the two groups for KTBH. KTBH beneficiaries are about 74 years old on average, are about 50-55% female, have 13 years of schooling on average, about 15% are minorities, with over 80% having health insurance coverage in addition to Medicare. About a quarter of KTBH beneficiaries used a proxy to respond to the survey. Three percent of KTBH beneficiaries have Medicaid. The baseline HCC score for both groups is slightly over 2, indicating that KTBH beneficiaries are more than twice as expensive as average Medicare beneficiaries nationally. About three quarters of KTBH members responded by mail. The rest were interviewed via the telephone.

Table 13
Medicare Health Services Survey respondents
Descriptive statistics
RMS Disease Management and its Keys to Better Health Program
(N = 508)

Covariate	N	All beneficiaries	Intervention group	Control group	Stat. sig.
Age (Mean Years)	508	74.2	74.2	74.3	
Female (%)	508	53.0	55.4	50.8	
Hispanic (%)	453	5.9	6.1	5.7	
Black (%)	489	14.2	14.3	14.1	
Years of education	470	13	13	13	
Live alone (%)	491	25.6	27.3	24.1	
Other health insurance coverage (%)	470	82.7	84.5	81.2	
Proxy respondent (%)	508	25.9	24.7	27.0	
Medicaid beneficiary (%)	508	3.0	3.2	2.7	
HCC score at baseline (Mean)	508	2.31	2.21	2.40	
PBPM for base year ($)	507	1,465	1,427	1,498	
Completed survey by mail (%)	508	75.4	76.3	74.6	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq000

4.2.3. Experience and Satisfaction with Care

The primary measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their satisfaction with communication with their health care team and how quickly they get answers to their questions. Lastly, beneficiaries responded to questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 14 displays the satisfaction and experience with care measures for KTBH.

Table 14
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
RMS Disease Management and its Keys to Better Health Program
(N = 508)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.59	3.55	0.10	
Number of helpful discussion topics (0 to 5)	2.11	2.06	0.08	
Discussing treatment choices (1 to 4)	3.13	3.22	-0.19	*
Communicating with providers (0 to 100)	75.5	73.6	2.7	
Getting answers to questions quickly (0 to 100)	64.0	65.3	-0.8	
Multimorbidity Hassles score (0 to 24)	3.63	3.38	0.15	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 3.6 for both the intervention and for the control groups or about midway between “very good” and “good” ratings). It is not uncommon among the elderly to see high satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured. For this overall satisfaction measure, we observe no statistically significant intervention effect for KTBH.

None of the other covariates in the model provided any explanatory power for this outcome. The full details of this analysis are presented in the Appendix Table A-4.

Number of helpful discussion topics. For this item, beneficiaries were asked to count five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was the same between the controls and the intervention groups (2.1). For this measure, we observe no statistically significant intervention effect for KTBH.

None of the other covariates in the model provided any explanatory power for this outcome. The full details of this analysis are presented in the Appendix Table A-4.

Discussing treatment choices. For this item, beneficiaries were asked whether health care team talked about pros and cons of each treatment choice with answers ranging from 1 “definitely no” to 4 “definitely yes”. The mean was 3.1 for the intervention group and 3.2 for the control group. For this measure, we observe a small negative effect for KTBH, indicating that intervention group beneficiaries were less likely to discuss treatment choices with their health care team than beneficiaries in the control group.

In terms of additional beneficiary characteristics, those with higher per beneficiary per month expenditures report significantly higher ratings on discussing treatment options. The full details of this analysis are presented in the Appendix Table A-4.

Satisfaction with communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating always to all items in the composite. KTBH results showed that the scores were somewhat high: 76 for the intervention group and 74 for the control group. For this measure, we observe no statistically significant intervention effect for KTBH.

In terms of additional beneficiary characteristics, KTBH proxy respondents report significantly less satisfaction with provider communication than self-respondents, when all other covariates are held constant. The full details of this analysis are presented in the Appendix Table A-4.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. KTBH showed scores of 64 and 65 respectively for intervention and control groups. For this measure, we observe no statistically significant intervention effect for KTBH.

None of the other covariates in the model provided any explanatory power for this outcome. The full details of this analysis are presented in the Appendix Table A-4.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses, is measured on a scale from 0 to 24. KTBH results revealed that the scores are relatively low and range between 3.6 and 3.4 for intervention and control groups. In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for KTBH.

In terms of other covariates, older KTBH beneficiaries, those with additional insurance coverage reported fewer frustrations in getting their care, while proxy respondents reported greater frustration than self-respondents. The full details of this analysis are presented in the Appendix Table A-4.

Across the 6 measures of experience and satisfaction with care we observe no statistically significant positive intervention effects for KTBH. We found one statistically significant negative effect for the discussing treatment choices outcome, indicating that KTBH was not able improve this aspect of beneficiary experience with care.

4.2.4. Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 15 displays the self-management measures for KTBH.

Table 15
Medicare Health Services Survey: Estimated intervention effects
Self-Management
RMS Disease Management and its Keys to Better Health Program
(N = 508)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	65.1	57.6	9.5	
Percent receiving help making a care plan	60.1	55.7	4.0	
Self-efficacy ratings				
Take all medications (1 to 5)	4.36	4.30	0.03	
Plan meals and snacks (1 to 5)	3.85	3.86	-0.08	
Exercise 2 or 3 times weekly (1 to 5)	3.32	3.14	0.14	
Self-care activities				
Prescribed medications taken (mean # of days)	6.67	6.81	-0.15	
Followed healthy eating plan (mean # of days)	4.92	4.90	-0.03	
30 minutes of continuous physical activity (mean # of days)	2.68	2.84	-0.30	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. Sixty five percent of KTBH beneficiaries in the intervention group reported receiving help setting goals compared to 58 %, although the difference is not statistically significant. Similarly, 60% of KTBH beneficiaries in the intervention group reported receiving help making a care plan compared to 56 %, where the difference is also not statistically significant. The ANCOVA results reveal KTBH was not effective at increasing the proportion of beneficiaries who had received help to set goals for self-care management, nor was it effective at increasing the proportion of beneficiaries reporting that they had help from their health care team in making health care plans.

For other covariates in the models, KTBH beneficiaries living alone were less likely to receive help on both setting goals and making a care plan, but those with additional health coverage were more likely to receive help with their goals; Black KTBH beneficiaries were more likely to receive help in making a care plan compared to beneficiaries of other races. The full details of this analysis are presented in the Appendix Table A-5.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, KTBH beneficiaries typically reported high levels of self-efficacy with mean ratings averaging around 3.5- 4 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed (4.4 for the intervention group versus 4.3 for the control group), and the lowest scores were for getting exercise two or three times per week (3.3 for the intervention group versus 3.1 for the control group). The ANCOVA results reveal that with their program’s intervention, KTBH was not effective at increasing beneficiaries’ self-confidence on the three specific behaviors such as taking medications, planning meals according to dietary guidelines, and engaging in physical exercise.

In terms of other characteristics, Black and proxy KTBH beneficiaries expressed significantly less confidence in taking their medications appropriately. Proxy respondents from KTBH also have less confidence in planning meals and engaging in physical exercise then self-respondents. KTBH beneficiaries who live alone and mail respondents are significantly more likely to feel confident about their meal planning. In terms of confidence with exercise guidelines, females appear to be less confident, while those who are better educated – more confident that they can engage in this behavior. The full details of this analysis are presented in the Appendix Table A-5.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7.

The reported compliance rate for self-care activities for KTBH members ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates among other activities (exercise). For example, the mean number of days that beneficiaries said they take their medications as prescribed ranged from 6.7 to 6.8 out of 7 days, but the mean number of days that beneficiaries said they have 30 minutes of continuous physical activity ranged from 2.7 to 2.8 days.

For self-care activities, we observe no statistically significant intervention effects for KTBH: there were no significant differences in frequencies of any of the three self-care activities between the intervention and the control groups.

In terms of other characteristics predictive of self-care behaviors, proxy KTBH respondents are more likely to be compliant with their prescribed medications while Medicaid enrollees are less likely to be compliant; KTBH members follow a healthy eating plan more often with increased age, and less often if they are respondents by mail; and female and proxy respondents are significantly less likely to engage in physical activity than their counterparts. The full details of this analysis are presented in the Appendix Table A-5.

4.2.5 Physical and Mental Health Functioning

Physical and Mental Function. Table 16 displays the mental and physical functioning outcomes for KTBH. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range form 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

Table 16
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
RMS Disease Management and its Keys to Better Health Program
(N = 508)

Outcome	Intervention mean	Control mean	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	29.6	29.7	-0.1	
MHC score (mental health, mean =50, std=10)	36.9	36.5	0.0	
PHQ-2 score (depression, 0 to 6)	2.00	2.37	-0.45	*
Number of ADLs difficult to do (0 to 6)	2.55	2.59	-0.02	
Number ADLs receiving help (0 to 6)	1.51	1.30	0.21	

NOTES:

ADLs are activities of daily living.

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

The mean PHC scores for the intervention and control group were very similar and ranged from 29.6 to 29.7, while the mean MHC scores were also similar and ranged from 36.9 to 36.5. PHQ-2 scores averaged about 2 for the in intervention group and 2.4 for the control group.

The ANCOVA estimation revealed only one statistically significant intervention effect for physical and mental function outcomes: KTBH intervention group reported significantly lower PHQ-2 scores than the control group, leading to a significant intervention effect in the desired direction of fewer depressive symptoms. Consistently, for the second mental health outcome, the MHC score, the direction of the coefficient was positive, indicating an improvements in mental health functioning (the result is not statistically significant).There was no difference in the physical health functioning in the KTBH intervention group compared to the controls.

In terms of other predictors, for KTBH members, self-reported physical function, as shown by PHC scores, increases significantly with age and years of education, but is lower for females, those responding to the survey by proxy, and for mail respondents. Similarly mental function, as expressed by MHC scores, is significantly higher with increased age and every additional year of education, but is lower for females than males and for proxies compared to self-respondents. PHQ scores are lower for those with more years of education and higher for proxy respondents. The full details of this analysis are presented in the Appendix Table A-6.

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or were unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items. On average, respondents reported limitations on about 2.6 ADLs and received help with an average of 1.5 to 1.3 ADLs.

We observe no statistically significant differences in ADL outcomes for KTBH.

Among KTBH, when other characteristics are held constant, proxy respondents report more ADL limitations than self-respondents. As expected, those with higher baseline HCC score also report significantly higher levels of functional impairment. In terms of needing help with ADLs, females and proxy respondents report needing help on a significantly higher number of ADLs. Those with additional health coverage also report needing help with fewer ADLs. Those living alone and mail survey respondents report needing help on a significantly few ADLs then those who live with others and phone respondents respectively. The full details of this analysis are presented in the Appendix Table A-6.

4.2.6 Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

Table 17 presents the summary of results for KTBH. In evaluating KTBH intervention effect on changes in beneficiary satisfaction and experience with care, self-management behaviors, and self-reported physical and mental health function, survey results indicate that KTBH demonstrated one positive intervention effect that resulted in the decrease of the depression symptoms, and one negative intervention effect on discussing treatment choices within the self-management survey domain. KTBH showed no statistically significant intervention effects on their beneficiaries' overall rating of satisfaction. We do not observe any significant intervention effects for the measures related to communication with health care team or for helpfulness of discussions nor with any other self-efficacy or self-care outcomes. Finally, with the exception of the depression scores, there were no other statistically significant intervention effects for KTBH in any other health status measures. These results are not likely to be sufficient to effect reductions in acute flare ups of the beneficiaries' chronic condition or result in reduction in more costly health care utilization.

4.3 Medicare Health Services Survey Results for Health Buddy Consortium

This section presents the results of the Medicare Health Services Survey data analysis for HBC. First we present the results of the response propensity modeling, we then present descriptive statistics separately for intervention and comparison groups, and ANCOVA adjusted intervention effects, with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental function. Overall, we present results for 19 survey outcomes. The full ANCOVA models are presented in Appendix tables A7 to A-9. We wrap up this section with a summary of results for HBC and conclusions.

Table 17
Medicare Health Services Survey: Estimated intervention effects
Summary of results
RMS Disease Management and its Keys to Better Health Program
(N = 508)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	-
Communicating with providers	
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	
Followed healthy eating plan	
30 minutes of continuous physical activity	
Physical and mental health function	
PHC score	
MHC score	
PHQ-2 score	+
Number of ADLs difficult to do	
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

4.3.1 Response Propensity Analysis

Response rate for HBC was 81.7%. Our analysis of the response propensity for HBC is presented in Table 18. The response propensity analysis for Health Buddy Consortium indicates that beneficiaries on Medicaid and those aged 80 years old or older were significantly less likely to respond to the survey. Health Buddy Consortium was the only CMO where the baseline HCC score did not lead to decreased likelihood of response.

Table 18
Response propensity analysis for HBC

	HBC	
Variable	Coefficient	Stat. sign.
Intercept	1.849	**
Mediciad	-1.309	*
Age 71 to 79	-0.305	
Age 80 or more	-0.663	*
Age under 65	-0.434	
Baseline HCC risk score	0.023	
Female	-0.077	
Telephone known	0.050	
Intervention group	0.100	
c statistic = .585		

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program:req006

4.3.2 Descriptive Statistics

Descriptive statistics for the HBC are presented in Table 19 separately for the intervention and comparison groups with statistical significance tested for each variable. HBC program is institution-based with the comparison group matched to the intervention group. Overall, with the exception of gender, there are no statistically significant differences between the two groups for HBC. Comparison group has a significantly higher proportion of females than intervention group (55% versus the 44%). While not statistically significant, intervention group has a slightly lower proportion of minorities and Medicaid beneficiaries and a slightly higher HCC score and PBPM at baseline. HBC beneficiaries are about 75 years old on average, are high school graduates with 86-88% having health insurance coverage in addition to Medicare. Over a quarter of beneficiaries live alone and about 19% used a proxy to respond to the survey. Less than 1 percent of intervention group members have Medicaid and about 2 percent in the comparison group have Medicaid. The baseline HCC score for both groups approaches 2, indicating that HBC beneficiaries are about twice as expensive as average Medicare beneficiaries nationally. Over 80 percent of HBC members responded by mail. The rest were interviewed via the telephone.

Table 19
Medicare Health Services Survey respondents
Descriptive statistics
Health Buddy Consortium
(N = 673)

Covariate	N	All beneficiaries	Intervention group	Comparison group	Stat. sig.
Age (Mean Years)	673	75.3	75.3	75.4	
Female (%)	673	49.7	44.4	55.3	**
Hispanic (%)	629	1.8	1.2	2.3	
Black (%)	662	0.8	0.3	1.2	
Years of education	647	13	13	13	
Live alone (%)	664	28.7	27.7	29.7	
Other health insurance coverage (%)	649	87.3	88.4	86.2	
Proxy respondent (%)	673	18.9	19.3	18.6	
Medicaid beneficiary (%)	673	1.5	0.6	2.3	
HCC score at baseline (Mean)	673	2.02	2.06	1.98	
PBPM for base year ($)	673	1,020	1,103	934	
Completed survey by mail (%)	672	84.2	82.2	86.3	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq000

4.3.3 Experience and Satisfaction with Care

The primary measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their satisfaction with communication with their health care team and how quickly they get answers to their questions. Finally, beneficiaries responded to questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 20 displays the satisfaction and experience with care measures for HBC.

Table 20
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
Health Buddy Consortium
(N = 673)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.76	3.70	0.08	
Number of helpful discussion topics (0 to 5)	2.02	1.92	0.11	
Discussing treatment choices (1 to 4)	3.13	3.15	-0.01	
Communicating with providers (0 to 100)	75.7	75.4	2.2	
Getting answers to questions quickly (0 to 100)	62.9	59.7	4.3	
Multimorbidity Hassles score (0 to 24)	3.06	3.41	-0.44	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 3.8 for the intervention group and 3.7 for the comparison group, or about midway between “very good” and “good” ratings. Over sixty percent of HBC beneficiaries rated their experience as “excellent” or “very good” and approximately a third selected “good.” It is not uncommon among the elderly to see high satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured. For this overall satisfaction measure, we observe no statistically significant intervention effect for HBC, indicating that CMHCB demonstration effort failed to improve beneficiary satisfaction with care experience.

None of the other covariates in the model provided any explanatory power for this outcome for HBC, indicating that this set of predictors does not result in a good fit for the overall satisfaction measure (R square = 0.022). The full details of this analysis are presented in the Appendix Table A-7.

Number of helpful discussion topics. For this item, beneficiaries were asked to count five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was comparable between the comparison and the intervention groups (2.0- 1.9). For this measure, we observe no statistically significant intervention effect for HBC.

Among other predictors for this outcome, older HBC beneficiaries were less likely to have more helpful discussions than their younger counterparts. Again, the set of predictors available from the survey and Medicare claims does not provide a good fit for this outcome (R square = 0.025). The full details of this analysis are presented in the Appendix Table A-7.

Discussing treatment choices. For this item, beneficiaries were asked whether health care team talked about pros and cons of each treatment choice with answers ranging from 1 “definitely no” to 4 “definitely yes”. The mean, 3.1, was the same for the intervention and comparison groups. For this measure, we observe no statistically significant intervention effect for HBC.

Satisfaction with communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating always to all items in the composite. HBS showed somewhat high average communication scores of 75.7 for the intervention group and 75.4 for the comparison group. For this measure, we observe no statistically significant intervention effect for HBC.

Among other predictors for this outcome, female HBC beneficiaries were more likely to have better communication with providers than males. The full details of this analysis are presented in the Appendix Table A-7.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. HBC showed average scores ranging form 62.9 to 59.7 for intervention and comparison groups respectively. For this measure, we observe no statistically significant intervention effect for HBC.

Among other covariates, female HBC beneficiaries were less likely to either discuss treatment options or communicate well with providers and get answers to their questions quickly than males. The full details of these analyses are presented in the Appendix Table A-7.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses, is measured on a scale from 0 to 24. HBC beneficiaries scored between 3.1 and 3.4 for intervention and comparison groups. In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for HBC.

Among other predictor of the Multimorbidity Hassles Scale, older HBC beneficiaries were more likely to have lower scores than younger HBC beneficiaries. Full details of these analyses are presented in the Appendix Table A-7.

In summary, across the 6 measures of experience and satisfaction with care, we observe no statistically significant positive intervention effects for HBC, suggesting that HBC intervention failed to produce a difference in any of the experience and satisfaction with care domains measured by the Medicare Health Services Survey.

4.3.4. Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 21 displays the self-management measures for HBC.

Table 21
Medicare Health Services Survey: Estimated intervention effects
Self-Management
Health Buddy Consortium
(N = 673)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	55.5	54.9	2.3	
Percent receiving help making a care plan	50.6	54.9	-2.8	
Self-efficacy ratings				
Take all medications (1 to 5)	4.47	4.41	0.09	
Plan meals and snacks (1 to 5)	4.00	3.94	0.10	
Exercise 2 or 3 times weekly (1 to 5)	3.47	3.31	0.20	
Self-care activities				
Prescribed medications taken (mean # of days)	6.79	6.64	0.18	*
Followed healthy eating plan (mean # of days)	5.12	5.05	0.15	
30 minutes of continuous physical activity (mean # of days)	2.76	2.76	-0.03	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. In the intervention group about 56% of HBC beneficiaries report receiving help with setting goals and 51% report receiving help making a care plan. Similarly, in the comparison group 55% report receiving help on each of these respective outcomes.

The ANCOVA results reveal HBC was not effective at increasing the proportion of beneficiaries who had received help to set goals for self-care management. HBC was also not effective at increasing the proportion of beneficiaries reporting that they had help from their health care team in making health care plans.

For HBC, there were a few other covariates that predicted receiving help on these two measures: HBC females were significantly more likely to get help setting goals, and mail survey respondents were more likely to receive help with making a care plan. HBC beneficiaries with additional insurance coverage were less likely to receive help with making a care plan. The full details of this analysis are presented in the Appendix Table A-8.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, HBC beneficiaries typically reported relatively high levels of self-efficacy with mean ratings averaging around 4 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed, and the lowest scores were for getting exercise two or three times per week. On average, HBC beneficiaries in the intervention group rated their confidence in taking prescription medications 4.5, compared to 4.4 in the comparison group. Confidence in planning meals and snacks was rated 4.0 and 3.9, respectively, and confidence in exercising was rated as 3.5 and 3.3 respectively. The confidence levels mirrored somewhat the frequency with which beneficiaries reported performing particular self-care activities, as reported later in this section.

For HBC, we found no significant intervention effects in beneficiary confidence in taking medications, planning healthy meals and snacks, and engaging in physical exercise.

In terms of other predictors for self-efficacy outcomes for HBC, there were a few other covariates that predicted receiving help on these two measures: HBC beneficiaries with additional insurance coverage were significantly more likely to score high on confidence with prescription medications, females were more confident about planning meals and snacks, while proxy respondents have lower ratings than self-respondents on all three self-efficacy measures. Females were also less confident about maintaining an exercise regiment. The full details of this analysis are presented in the Appendix Table A-8.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7. The reported compliance rate for self-care activities ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates among other activities (exercise). For example, the mean number of days that HBC beneficiaries said they take their medications as prescribed ranged from 6.8 to 6.6; the mean number of days that HBC beneficiaries reported following a healthy eating plan was about 5.1, and the mean number of days HBC beneficiaries reported exercising was 2.8 out of 7 days.

For self-care activities, we found one significant positive intervention effect for the frequency of prescribed medications behavior. HBC intervention increased their beneficiaries' compliance with prescription drugs. We observe no statistically significant intervention effects for other self-care behaviors such as diet and exercise for HBC, although all coefficients are positive and thus show the desired direction.

In terms of other significant covariates for self-efficacy outcomes, HBC beneficiaries with additional insurance coverage were significantly more likely to score high on confidence with prescription medications, females were more confident about planning meals and snacks, while proxy respondents have lower ratings than self-respondents on all three self-efficacy measures. Females were also less confident about maintaining an exercise regiment. The full details of these analyses are presented in the Appendix Table A-8.

4.3.5 Physical and Mental Health Functioning

Physical and Mental Function. Table 22 displays the mental and physical functioning outcomes for Health Buddy Consortium. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range form 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

On average, HBC participants reported better mental health then physical health functioning which is consistent with the general Medicare population. The mean PHC score for the intervention group was 27.3, compared to 26.7 for the comparison group. The mean MHC score for the intervention group was 37.3 and the PHQ-2 score of 2.0, compared to 36.4 and 2.2 for the comparison group.

The ANCOVA estimation revealed no statistically significant intervention effects for physical and mental function outcomes.

Table 22
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
Health Buddy Consortium
(N = 673)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	27.3	26.7	0.8	
MHC score (mental health, mean =50, std=10)	37.3	36.4	1.2	
PHQ-2 score (depression, 0 to 6)	2.01	2.19	-0.28	
Number of ADLs difficult to do (0 to 6)	2.36	2.56	-0.17	
Number ADLs receiving help (0 to 6)	0.90	1.07	-0.17	

NOTES:

ADLs are activities of daily living.

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

In addition to intervention effect, there were other characteristics in the ANCOVA model that proved to be significant predictors for physical and mental health outcomes. PHC scores for HBC beneficiaries increase significantly with age and additional years of education and significantly decrease for those with higher HCC scores and for those who completed the survey by mail. For MHC scores the pattern is similar: the scores increase significantly with age and additional years of education and decrease with higher HCC scores and for mail respondents. In addition, for HBC beneficiaries the MHC scores are significantly lower for those who used a proxy to respond to the survey. As higher PHQ scores indicate greater depressive symptoms, the results for PHQ mirror those for MHC: PHQ scores decrease with higher age and more years of education. PHQ scores are lower for females, proxy respondents, and those with additional health coverage. The full details of these analyses are presented in the Appendix Table A-9.

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or were unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items.

On average, HBC respondents reported limitations on about two and a half activities of daily living (ADLs) and received help with an average of one activity of daily living.

We found no statistically significant intervention effects in ADL outcomes for HBC.

Among HBC members, when other characteristics are held constant, females report significantly more ADL limitations than males, and blacks report more than members of other races, and proxy respondents more than self-respondents. As expected, those with higher baseline HCC score also report higher levels of functional impairment. HBC members who have additional health insurance coverage report fewer ADL limitations than those who only have Medicare. In terms of needing help with ADLS, the patterns are similar: females, proxy respondents, and members with higher baseline HCC score report needing help on a significantly higher number of ADLs. Somewhat counter-intuitively, those who live alone report needing help on fewer ADLs. The full details of these analyses are presented in the Appendix Table A-9.

4.3.6 Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

In summarizing HBC intervention effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning, survey results indicate that HBC achieved a positive intervention effect on only one measure within the self-management survey domain. HBC showed no statistically significant intervention effects on their beneficiaries’ overall rating of experience that their health care providers helped them cope with their chronic condition. We do not observe any intervention effect for the measure related to communication with health care team or for helpfulness of discussions related to health topics. Overall, we found one statistically significant positive intervention effect in the self-management domain among nineteen CMHCB demonstration survey outcome measures for HBC: CMHCB intervention resulted in higher frequency of medication compliance for beneficiaries in this program. The summary of survey analysis results for HBC is presented in Table 23.

In addition, there were no statistically significant intervention effects in the five physical and mental health function measures. Without seeing improvements in beneficiary self-management activities, it will be challenging for the HBC intervention group to demonstrate reductions in acute flare ups of chronic illness and corresponding reductions in costly health care utilization.

Table 23
Medicare Health Services Survey: Estimated intervention effects
Summary of results
Health Buddy Consortium
(N = 673)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	
Communicating with providers	
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	+
Followed healthy eating plan	
30 minutes of continuous physical activity	
Physical and mental health function	
PHC score	
MHC score	
PHQ-2 score	
Number of ADLs difficult to do	
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

4.4 Medicare Health Services Survey Results for TST

This section presents the results of the Medicare Health Services Survey data analysis for TST. First we present the results of the response propensity modeling, then descriptive statistics for TST separately for intervention and comparison groups, and then ANCOVA results with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental functioning. Overall, we present results for 19 survey outcomes. The full ANCOVA models are presented in Appendix tables A-10 to A-12. We wrap up this section with a summary of results for TST and conclusions.

4.4.1 Response Propensity Analysis

Response rate for TST was 73.7%. Response propensity analysis findings are presented in Table 24. The response propensity analysis for Texas Tech indicates that 1) beneficiaries on Medicaid responded at a significantly lower rate than those who were enrolled in Medicare only; 2) those with the lower baseline HCC score responded at a significantly lower rate than those with higher scores, and 3) all age groups had a significantly lower response propensity than those aged 65 to 71. Moreover, intervention group members had a significantly lower probability of responding to the Medicare Health Services Survey than the comparison group.

Table 24
Medicare Health Services Survey: Response propensity analysis for TST

	TST	
Variable	Coefficient	Stat. sign.
Intercept	2.262	**
Medicaid	-0.845	*
Age 71 to 79	-0.609	*
Age 80 or more	-0.644	*
Age under 65	-0.434	
Baseline HCC risk score	-0.164	*
Female	-0.164	
Telephone known	-0.041	
Intervention group	-0.525	**
c statistic = .616		

NOTES:

* Indicates significance at the 5 percent level;

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program:req006

4.4.2 Descriptive Analyses

Descriptive statistics for the TST are presented in Table 25 separately for the intervention and comparison groups with the statistical significance tested for each variable. TST program was institution-based with the comparison group matched to the intervention group. Overall, we found that there are several statistically significant differences between the two groups for TST, in particular in the distribution of minorities, educational attainment, levels of insurance coverage in addition to Medicare, levels of proxy response and Medicaid enrollment. For example, 21% of intervention group were Hispanic and almost 8% were black compared to 8% and 2% respectively in the comparison group. Intervention group members also had fewer years of schooling (11,7 years versus 12.6 years) and less additional insurance coverage (59% versus 84%) than those in the comparison group. About 27 % of intervention group responded by proxy compared to 19.6% in the comparison group. There were also significant differences in Medicaid receipt: 4.5% of intervention group were enrolled in Medicaid compared to less than 1 % in the comparison group.

The TST starting populations were initially matched by HCC risk scores and PBPM expenditure levels. Neither of these key covariates was significantly different in the survey sample groups. Both groups were selected from the same 48-county area. Comparison group members were drawn from a competing health system in this geographic area. This resulted in a number of demographic differences between the groups, largely in terms of racial and ethnic minorities which were more prevalent in the intervention group. However, potential biases attributable to these demographic differences are minimized in the statistical analyses because the effects of all of these variables are controlled in the ANCOVA models.

In addition, TST beneficiaries are about 73-74 years old on average and are about 60% female. The baseline HCC score for both groups is around 1.7, indicating that TST beneficiaries are about 70% more expensive than average Medicare beneficiaries nationally. Slightly over three quarters of TST members responded by mail. The rest were interviewed via the telephone.

4.4.3 Experience and Satisfaction with Care

The primary measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their communication with their health care team and how quickly they get answers to their questions. Lastly, beneficiaries responded to a set of questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 26 displays the satisfaction and experience with care measures for TST.

Table 25
Medicare Health Services Survey respondents
Descriptive statistics
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

Covariate	N	All beneficiaries	Intervention group	Comparison group	Stat. sig.
Age (Mean Years)	618	73.5	72.8	74.2	
Female (%)	618	60.0	61.4	58.7	
Hispanic (%)	570	14.3	21.5	8.1	**
Black (%)	606	4.7	7.6	2.2	**
Years of education	592	12	12	13	**
Live alone (%)	608	30.8	30.3	31.3	
Other health insurance coverage (%)	592	72.6	59.2	84.3	**
Proxy respondent (%)	618	23.1	27.1	19.7	*
Medicaid beneficiary (%)	618	2.6	4.8	0.6	**
HCC score at baseline (Mean)	618	1.69	1.66	1.71	
PBPM for base year ($)	617	1,322	1,278	1,361	
Completed survey by mail (%)	618	79.1	77.3	80.7	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq000

Table 26
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.51	3.71	-0.07	
Number of helpful discussion topics (0 to 5)	1.85	1.68	0.14	
Discussing treatment choices (1 to 4)	3.00	3.16	-0.07	
Communicating with providers (0 to 100)	70.9	75.7	-4.0	
Getting answers to questions quickly (0 to 100)	57.0	63.3	-5.4	
Multimorbidity Hassles score (0 to 24)	3.53	3.20	0.02	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 3.5 for the intervention group, or about midway between “very good” and “good” ratings. The average score for the comparison group was about 3.7. Over fifty seven percent of TST beneficiaries rated their experience as “excellent” or “very good” and about 26% selected “good.” It is not uncommon among the elderly to report high satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured.

For this overall satisfaction measure, we observe no statistically significant intervention effect for TST. TST’s intervention was not effective in improving beneficiary overall satisfaction in helping them cope with their chronic illness.

Among other covariates in the ANCOVA model, gender, education, and survey mode of administration were significant predictors of overall satisfaction. Older and better educated TST beneficiaries were more likely to rate this outcome higher. Mail survey respondents gave lower ratings how well the TST program helped them to cope with their chronic condition. The full details of this analysis are presented in the Appendix Table A-10.

Number of helpful discussion topics. For this item, beneficiaries were asked to evaluate five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was comparable between the intervention and the comparisons groups (1.8 and 1.7 respectively). For this measure, we observe no statistically significant intervention effect for TST.

Female TST beneficiaries are more likely to have more helpful discussions than males. The full details of this analysis are presented in the Appendix Table A-10.

Discussing treatment choices. For this item, beneficiaries were asked whether health care team talked about pros and cons of each treatment choice with answers ranging from 1 “definitely no” to 4 “definitely yes”. The mean score for the intervention group was 3.0, compared to 3.2 for the control group. For TST, we observe no statistically significant intervention effect on this satisfaction item.

Gender was a significant predictor for this satisfaction with care outcome: Female TST beneficiaries were more likely to rate this outcome higher than males. The full details of this analysis are presented in the Appendix Table A-10.

Communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating always to all items in the composite. TST showed somewhat high average communication scores with 71 for the intervention group and about 76 for the comparison group. For TST, we observe no statistically significant intervention effect on this satisfaction item, indicating that TST intervention did not affect communication with providers.

Age and additional insurance coverage were significant predictors for the communication with providers outcome: older TST beneficiaries and beneficiaries with other health insurance coverage in addition to Medicare were more likely to rate this outcome higher. The full details of this analysis are presented in the Appendix Table A-10.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. TST showed moderate average scores for intervention and control groups (57 and 63, respectively). For this measure, we observe no statistically significant intervention effect for TST.

Two other covariates in the model were significant predictors for this outcome. Older TST beneficiaries and females are more likely to report that they get the answers to their questions quickly than their counterparts. The full details of this analysis are presented in the Appendix Table A-10.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses, is measured on a scale from 0 to 24. High score indicates more problems. TST showed relatively low Multimorbidity Hassles scores for intervention and control groups (3.5 and 3.2, respectively). In the original development sample, the mean Hassles score for these six items was

5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for TST.

Two other covariates in the model were significant predictors for the Multimorbidity Hassles score. Older TST beneficiaries experienced fewer frustrating problems in getting comprehensive care for their chronic illnesses than their counterparts. Mail survey responders reported more problems. The full details of this analysis are presented in the Appendix Table A-10.

In summary, across the 6 measures of experience and satisfaction with care, we observe no significant intervention effects for TST. TST was unable to influence any aspects of their members' experience and satisfaction with care with CMHCB interventions.

4.4.4 Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 27 displays the self-management measures for TST.

Table 27
Medicare Health Services Survey: Estimated intervention effects
Self-Management
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	45.8	43.7	1.5	
Percent receiving help making a care plan	46.4	38.9	8.2	
Self-efficacy ratings				
Take all medications (1 to 5)	4.12	4.46	-0.23	*
Plan meals and snacks (1 to 5)	3.83	4.12	-0.21	
Exercise 2 or 3 times weekly (1 to 5)	3.36	3.67	-0.25	
Self-care activities				
Prescribed medications taken (mean # of days)	6.53	6.75	-0.14	
Followed healthy eating plan (mean # of days)	4.75	4.83	-0.07	
30 minutes of continuous physical activity (mean # of days)	2.93	3.17	-0.28	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. For TST beneficiaries, in the intervention group 46% received help setting goals and 46% received help making a care plan. In the comparison group, 44% and 39% respectively received assistance on these self-management activities.

The ANCOVA results reveal Texas Tech was not effective at helping beneficiaries set goals for self-care management, nor was it effective at providing help in making health care plans. Both coefficients, though positive in direction, are not statistically significant.

For TST, there were a few other covariates that predicted receiving help on these two measures: TST females, proxy respondents and those with higher baseline HCC score were significantly more likely to get help setting goals, and females and proxy respondents were also more likely to receive help with making a care plan. The full details of this analysis are presented in the Appendix Table A-11.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, TST beneficiaries typically reported relatively high levels of self-efficacy with mean ratings averaging around 4 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed, and the lowest scores were for getting exercise two or three times per week. On average, TST beneficiaries in the intervention group were significantly less sure they could take their medications as often as prescribed (4.1), compared to 4.5 in the comparison group. Confidence in planning meals and snacks was rated 3.8 and 4.1 respectively, and confidence in exercising was rated as 3.4 and 3.7, respectively. Thus, of the three self-efficacy items, the only significant intervention effect was an unfavorable impact on taking medications as prescribed.

For TST, there were a couple of other covariates that predicted self-efficacy ratings: Older beneficiaries were more likely to be confident about taking their medications, proxy respondents and those with higher baseline HCC score were significantly more confident about planning their meals and snacks, and Hispanic TST beneficiaries were more confident about getting needed exercise. On the other hand, females and proxy respondents were less confident about their exercise regimen. The full details of this analysis are presented in the Appendix Table A-11.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7. The reported compliance rate for self-care activities ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates for another activity (exercise). For example, the mean number of days that TST beneficiaries said they take their medications as prescribed ranged from 6.5 to 6.8; the mean number of days that TST beneficiaries reported following a healthy eating plan was about 4.8, and the mean number of days TST beneficiaries reported exercising was 3.0-3.2 days out of 7.

There were no significant group differences in the rates for any of these three self-care activities.

In terms of other significant covariates for self-care outcomes, greater age for TST beneficiaries decreased their compliance with prescription medications but increased their compliance with diet and exercise. The medication and exercise compliance was lower for proxy respondents compared to self-respondents. Diet compliance improved with age and with Hispanic status, but decreased for those who live alone and for mail respondents. Compliance with exercise was also better for Hispanic and Black beneficiaries compared to Whites and for those with higher PBPM expenditures. Self-care exercise behavior was less consistent for females, those with higher baseline HCC score and for mail respondents. The full details of these analyses are presented in the Appendix Table A-11.

4.4.5 Physical and Mental Health Functioning

Physical and Mental Function. Table 28 displays the mental and physical functioning outcomes for Texas Tech. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range form 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

On average, TST respondents had the mean PHC score for the intervention group at 28.3, slightly lower when compared to 29.5 for the comparison group but not significantly so according to the ANCOVA adjustment. The mean MHC score for the intervention group was 35.8 and the PHQ-2 score of 2.6, compared to 38.7 and 2.0 for the comparison group.

The ANCOVA estimation revealed that for Texas Tech there are no statistically significant intervention effects for physical and mental functioning outcomes.

For TST members, self-reported physical function, as shown by PHC scores, increases significantly with age and years of education, but is lower for females, those responding to the survey by proxy, and for mail respondents. Similarly mental function, as expressed by MHC scores, is significantly higher with increased age and every additional year of education, but is lower for females than males and for proxies compared to self-respondents. PHQ scores are lower for those with more years of education and higher for proxy respondents. Detailed analysis is presented in the Appendix Table A-12.

Table 28
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	28.3	29.5	-0.4	
MHC score (mental health, mean =50, std=10)	35.8	38.7	-1.3	
PHQ-2 score (depression, 0 to 6)	2.64	2.03	0.27	
Number of ADLs difficult to do (0 to 6)	2.75	2.32	0.04	
Number ADLs receiving help (0 to 6)	1.30	0.82	0.27	

NOTES:

ADLs are activities of daily living

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: CreqD2

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or were unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items.

On average, respondents in the TST intervention group reported being limited on 2.8 ADLs compared to 2.3 ADLs for the comparison group. TST beneficiaries also reported received help with an average of 1.3 to 0.8 ADLs. ANCOVA results indicate that there was no difference in functional status as a result of the intervention.

For TST members, when other characteristics are held constant, females report significantly more ADL limitations than males and proxy respondents more than self-respondents. As expected, those with higher baseline HCC score also report significantly higher levels of functional impairment. Those with higher baseline HCC scores, higher PBPM expenditures, and mail respondents also report significantly higher levels of ADL impairment. TST members who have additional health insurance coverage report fewer ADL limitations than those who only have Medicare. In terms of needing help with ADLs, the patterns are similar: females, proxy respondents, and members with higher baseline HCC score report needing help on a significantly higher number of ADLs. Those who live alone and those with additional health coverage report needing help with fewer ADLs. Detailed analysis is presented in the Appendix Table A-12.

4.4.6 Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

Among the 19 outcomes covered by the survey, only one statistically significant group difference was found—members of TST's intervention group were less certain that they could take their medications as prescribed. This difference, however, was not reflected in actual weekly medication usage rates which were only slightly lower for the intervention group. It should also be noted that for many outcomes, especially those for beneficiary functioning, the ANCOVA-adjusted effects were smaller than the crude, unadjusted group differences. This suggests that the covariates in the ANCOVA models were mitigating the racial and ethnic disparities between the intervention and comparison groups. The summary of survey results for TST is presented in Table 29.

Table 29
Medicare Health Services Survey: Estimated intervention effects
Summary of results
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	
Communicating with providers	
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	-
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	
Followed healthy eating plan	
30 minutes of continuous physical activity	
Physical and mental health function	
PHC score	
MHC score	
PHQ-2 score	
Number of ADLs difficult to do	
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

4.5 Medicare Health Services Survey Results for MMC

This section presents the results of the Medicare Health Services Survey data analysis for MMC. First we present the results of the response propensity modeling, then descriptive statistics for MMC separately for intervention and comparison groups, and then ANCOVA results with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental functioning. Overall, we present results for 19 survey outcomes. The full ANCOVA models are presented in Appendix tables A-13 to A-15. We wrap up this section with a summary of results for MMC and conclusions.

4.5.1 Response Propensity Analysis

Response rate for MMC was 62.8%. Response propensity analysis findings are presented in Table 30. The response propensity analysis for MMC indicates that beneficiaries on Medicaid responded at a significantly lower rate than those who were enrolled in Medicare only. A low C statistic of 0.561 suggests that there is little relationship between the predictors and the probability of response. Most importantly, there was no difference in probability of responding to the Medicare Health Services Survey between intervention and comparison groups.

Table 30
Medicare Health Services Survey: Response propensity analysis for MMC

	MMC	
Variable	Coefficient	Stat. sign.
Intervention group	-0.114	
Age under 65	0.179	
Age 71 to 79	0.067	
Age 80 or more	-0.086	
Female	0.034	
Medicaid	-0.601	**
Baseline HCC risk score	-0.022	
Telephone known	0.191	
Intercept	0.523	
c statistic = .561		

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: req006

4.5.2 Descriptive Analyses

Descriptive statistics for the MMC are presented in Table 31 separately for the intervention and comparison groups with the statistical significance tested for each variable. MMC's program is institution-based with the comparison group matched to the intervention group. Overall, we found that there are three statistically significant differences between the two groups for MMC, in particular in the distribution of Hispanics, levels of insurance coverage in addition to Medicare, and Medicaid enrollment. For example, among survey respondents, almost 19% of the intervention group were Hispanic compared to 55% in the comparison group. The intervention group was selected from 16 ZIP codes in Bronx and the comparison group was selected from 16 ZIP codes in lower Manhattan and Brooklyn.

Table 31
Medicare Health Services Survey respondents
Descriptive statistics
Montefiore Medical Center (MMC)
(N = 508)

Covariate	N	All beneficiaries	Intervention group	Comparison group	Stat. sig.
Age (Mean Years)	508	77.1	77.6	76.6	
Female (%)	508	65.2	61.9	68.5	
Hispanic (%)	450	37.9	18.9	55.4	**
Black (%)	473	23.0	22.8	23.2	
Years of education	460	12	12	11	
Live alone (%)	481	44.8	42.4	47.0	
Other health insurance coverage (%)	465	66.9	76.3	58.0	**
Proxy respondent (%)	508	29.9	28.2	31.5	
Medicaid beneficiary (%)	508	11.7	6.3	17.2	**
HCC score at baseline (Mean)	508	2.10	2.10	2.10	
PBPM for base year ($)	508	1,299	1,270	1,327	
Completed survey by mail (%)	508	69.1	72.3	66.0	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq000

Respondents in the intervention group also had more additional insurance coverage (76% versus 58%) than those in the comparison group. There were also significant differences in Medicaid receipt: 6% of intervention group were enrolled in Medicaid compared to over 17% in the comparison group.

The MMC starting populations were initially matched by HCC risk scores and PBPM expenditure levels. Neither of these key covariates was significantly different among the survey sample groups: the baseline HCC score for both groups is 2.1, indicating that MMC beneficiaries are about twice as expensive as average Medicare beneficiaries nationally. In addition, MMC beneficiaries are about 77 years old on average and are about 65% female. Slightly over three quarters of MMC survey participants responded by mail. The rest were interviewed via the telephone.

In summary, while we found some statistically significant demographic differences between the intervention and comparison groups, potential biases attributable to differences such as Medicaid/other insurance enrollment and Hispanic status are minimized in the statistical analyses because the effects of all of these variables are controlled in the ANCOVA models.

4.5.3 Experience and Satisfaction with Care

The primary measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their communication with their health care team and how quickly they get answers to their questions. Lastly, beneficiaries responded to a set of questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 32 displays the satisfaction and experience with care measures for MMC.

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 3.5 for the intervention group, or about midway between “very good” and “good” ratings. The average score for the comparison group was about 3.6. Over fifty four percent of MMC beneficiaries rated their experience as “excellent” or “very good” and about 27% selected “good.” It is not uncommon among the elderly to report high satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured.

For this overall satisfaction measure, we observe no statistically significant intervention effect for MMC. Being in the MMC intervention group was not associated with beneficiary improvement in overall satisfaction in helping them cope with their chronic illness.

Among other covariates in the ANCOVA model, gender and Hispanic status were characteristics associated with overall satisfaction. Female MMC beneficiaries were less likely to rate this outcome higher. Hispanic MMC beneficiaries were more likely to give higher ratings on how well the MMC program helped them to cope with their chronic condition. The full details of this analysis are presented in the Appendix Table A-13.

Number of helpful discussion topics. For this item, beneficiaries were asked to evaluate five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was comparable for the intervention and the comparisons groups (2.05 and 2.44 respectively). For this measure, we observe no statistically significant intervention effect for MMC.

Discussing treatment choices. For this item, beneficiaries were asked whether the health care team talked about pros and cons of each treatment choice with answers ranging from 1 “definitely no” to 4 “definitely yes”. The mean score for the intervention group was 3.16, compared to 3.01 for the control group. For MMC, we observe no statistically significant intervention effect on this satisfaction item.

None of the other covariates in the model provided any explanatory power for this outcome for MMC, indicating that this set of predictors does not result in a good fit for discussing treatment choices measure (R square = 0.019). The full details of this analysis are presented in the Appendix Table A-13.

Table 32
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
Montefiore Medical Center (MMC)
(N = 508)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.54	3.58	0.09	
Number of helpful discussion topics (0 to 5)	2.05	2.44	-0.11	
Discussing treatment choices (1 to 4)	3.16	3.01	0.18	
Communicating with providers (0 to 100)	75.8	74.7	3.3	
Getting answers to questions quickly (0 to 100)	65.6	60.7	5.2	
Multimorbidity Hassles score (0 to 24)	2.98	3.57	-0.60	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

Communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating a response of always to all items in the composite. MMC showed somewhat high average communication scores with 75.8 for the intervention group and about 74.7 for the comparison group. For MMC, we observe no statistically significant intervention effect on this satisfaction item, indicating that MMC intervention did not affect communication with providers.

Hispanic status was the only variable to have a statistically significant association with satisfaction with the communication with providers outcome: Hispanic MMC beneficiaries rated this outcome higher. The full details of this analysis are presented in the Appendix Table A-13.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. MMC showed moderate average scores for intervention and comparison groups (65.6 and 60.7, respectively). For this measure, we observe no statistically significant intervention effect for MMC.

None of the other covariates in the model provided any explanatory power for this outcome for MMC, indicating that this set of predictors does not result in a good fit for the getting answers quickly measure (R square = 0.032). The full details of this analysis are presented in the Appendix Table A-13.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses, is measured on a scale from 0 to 24. High scores indicate more problems. MMC showed relatively low Multimorbidity Hassles scores for intervention and control groups (2.98 and 3.57, respectively). In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for MMC.

There was only one covariate in the model that was a significant predictor for the Multimorbidity Hassles score. MMC beneficiaries enrolled in Medicaid reported experiencing more frustrating problems in getting comprehensive care for their chronic illnesses than MMC beneficiaries enrolled in Medicare only. The full details of this analysis are presented in the Appendix Table A-13.

In summary, across the six measures of experience and satisfaction with care, we observe no statistically significant intervention effects for MMC. Compared with the comparison group, MMC's program was not associated with significant effects on members' experience and satisfaction with care.

4.5.4 Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 33 displays the self-management measures for MMC.

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. For MMC beneficiaries, in the intervention group 61% received help setting goals and 55.3% received help making a care plan. In the comparison group, 69.5% and 60.5% respectively received assistance on these self-management activities.

Table 33
Medicare Health Services Survey: Estimated intervention effects
Self-Management
Montefiore Medical Center (MMC)
(N =508)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	61.0	69.5	0.3	
Percent receiving help making a care plan	55.3	60.5	2.8	
Self-efficacy ratings				
Take all medications (1 to 5)	4.37	4.17	0.17	
Plan meals and snacks (1 to 5)	4.03	3.78	0.23	
Exercise 2 or 3 times weekly (1 to 5)	3.47	3.15	0.29	
Self-care activities				
Prescribed medications taken (mean # of days)	6.72	6.61	0.04	
Followed healthy eating plan (mean # of days)	5.32	5.22	0.09	
30 minutes of continuous physical activity (mean # of days)	3.26	2.92	0.56	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

The ANCOVA results reveal these differences are not statistically significant: MMC did not have a higher proportion of beneficiaries who report receiving help setting goals for self-care management, nor was MMC associated with an increase in the number of beneficiaries receiving help in making care plans.

For MMC, there were two other covariates that were associated with receiving help on these two measures: MMC beneficiaries of Hispanic background were significantly more likely to report getting help setting goals and making a care plan. MMC beneficiaries with proxy respondents reported receiving help with making a care plan more often than self-respondents. The full details of this analysis are presented in the Appendix Table A-14.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, MMC beneficiaries typically reported relatively high levels of self-efficacy with mean ratings averaging around 4 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed, and the lowest scores were for getting exercise two or three times per week. On average, on the scale of 1 to 5, MMC beneficiaries in the intervention group rated their confidence in taking medications as often as prescribed as 4.4, compared to 4.2 in the comparison group. Confidence in planning meals and snacks was rated 4.0 and 3.8 respectively, and confidence in exercising was rated as 3.5 and 3.2, respectively. However, none of the three ANCOVA effects were statistically significant.

For MMC, there were several other covariates that were associated with self-efficacy ratings: compared to self-respondents, MMC beneficiaries with proxy respondents reported lower confidence on all three self-efficacy ratings. Older beneficiaries were less confident about taking their medications and planning meals and snacks than younger MMC enrollees, both Hispanic and Black MMC beneficiaries had lower confidence ratings on medications and Blacks were also less confident with planning meals and snacks than Whites. Female MMC beneficiaries reported lower confidence in their ability to maintain a regular exercise regiment than males. The full details of this analysis are presented in the Appendix Table A-14.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7. The reported compliance rate for self-care activities ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates for another activity (exercise). For example, the mean number of days that MMC beneficiaries said they take their medications as prescribed ranged from 6.6 to 6.7; the mean number of days that MMC beneficiaries reported following a healthy eating plan was between 5.2 to 5.3, and the mean number of days MMC beneficiaries reported exercising was 2.9-3.3 days out of 7.

ANCOVA analysis revealed that there were no statistically significant differences in the ratings for any of the three self-care activities between intervention and comparison group.

In terms of other statistically significant covariates for self-care activity outcomes, Medicaid enrollees reported fewer days of compliance with prescription medications than MMC beneficiaries with Medicare only. The covariates in the model associated with compliance with a healthy eating plan provided little explanatory power (R square = 0.024). In terms of following 30 minutes of continuous exercise, female, Black, and proxy MMC beneficiaries, as well as MMC beneficiaries with higher baseline HCC score all reported fewer days of compliance with this activity. The full details of these analyses are presented in the Appendix Table A-14.

4.5.5 Physical and Mental Health Functioning

Physical and Mental Function. Table 34 displays the mental and physical functioning outcomes for MMC. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range from 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

Table 34
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
Montefiore Medical Center (MMC)
(N = 508)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	30.0	28.4	1.8	
MHC score (mental health, mean =50, std=10)	37.3	35.9	1.3	
PHQ-2 score (depression, 0 to 6)	2.26	2.55	-0.07	
Number of ADLs difficult to do (0 to 6)	2.40	3.15	-0.61	**
Number ADLs receiving help (0 to 6)	1.49	2.09	-0.23	

NOTES:

ADLs are activities of daily living.

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

On average, MMC respondents had the mean PHC score for the intervention group of 30, slightly higher when compared to 28.4 for the comparison group but not statistically significantly so according to the ANCOVA adjustment. The mean MHC score for the intervention group was 37.3 and the PHQ-2 score of 2.26, compared to 35.9 and 2.55 for the comparison group, also not statistically significant intervention effects.

For MMC members, self-reported physical function, as shown by PHC scores, was statistically significantly lower for females, those responding to the survey by proxy, and for respondents with higher baseline HCC scores. Similarly mental function, as expressed by MHC scores, was significantly lower for females than males and for proxies compared to self-respondents. Consistently, PHQ scores are higher for females and for proxy respondents. Detailed analysis is presented in the Appendix Table A-15.

***Activities of Daily Living*.** A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities for which the beneficiary reported having difficulty with or was unable to do. The ADL help score was the number of activities for which the beneficiary reported needing help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items.

On average, respondents in the MMC intervention group reported being limited on 2.4 ADLs compared to 3.2 ADLs for the comparison group, a difference that is statistically significant. MMC beneficiaries in the intervention group also reported receiving help with an average of 1.5 ADLs, compared to 2.1 ADLs in the comparison group, the intervention effect that is consistent in direction but not statistically significant. In summary, ANCOVA results indicate that there were fewer reported ADL limitations in the intervention group.

For MMC members, when other characteristics are held constant, females report significantly more ADL limitations than males and proxy respondents more than self-respondents. As expected, those with higher baseline HCC score also report significantly higher levels of functional impairment. In terms of needing help with ADLs, the patterns are similar: older MMC beneficiaries, females, proxy respondents, and members with higher baseline HCC score reported needing help on a significantly higher number of ADLs. Those who live alone and mail respondents reported needing help with fewer ADLs. Detailed analysis is presented in the Appendix Table A-15.

4.5.6 Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

Among the 19 outcomes covered by the survey, only one statistically significant positive group difference was found—members of MMC's intervention group reported fewer limitations in their activities of daily living than those in the comparison group. This difference, however, was not reflected in another measure of physical health-PHC scores. We did not find any statistically significant intervention effects on any measures of beneficiary's satisfaction and experience with care, nor on any of the self-management outcomes for MMC. The CMHCB demonstration activities were not successful in affecting the MMC intervention group beneficiary self-efficacy ratings or confidence in being able to perform self-care activities. The summary of survey results for MMC is presented in Table 35.

Table 35
Medicare Health Services Survey: Estimated intervention effects
Summary of results
Montefiore Medical Center (MMC)
(N = 508)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	
Communicating with providers	
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	
Followed healthy eating plan	
30 minutes of continuous physical activity	
Physical and mental health function	
PHC score	
MHC score	
PHQ-2 score	
Number of ADLs difficult to do	++
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

4.6 Medicare Health Services Survey Results for MGH

This section presents the results of the Medicare Health Services Survey data analysis for MGH. First we present the results of the response propensity modeling, then descriptive statistics for MGH separately for intervention and comparison groups, and then ANCOVA results with survey outcomes organized into three domains: beneficiary experience and satisfaction with care, self-management, and physical and mental functioning. Overall, we present results for 19 survey outcomes. The full ANCOVA models are presented in Appendix tables A-16 to A-18. We wrap up this section with a summary of results for MGH and conclusions.

4.6.1 Response Propensity Analysis

Response rate for MGH was 71%.

Response propensity analysis findings are presented in Table 36. The response propensity analysis for MGH indicates that 1) beneficiaries on Medicaid responded at a significantly lower rate than those who were enrolled in Medicare only; 2) availability of a telephone number from SSA records improved the probability of responding to the survey, and 3) there is no difference in the response propensity between the intervention group and the comparison group.

Table 36
Medicare Health Services Survey: Response propensity analysis for MGH

	MGH	
Variable	Coefficient	Stat. sign.
Intervention group	-0.233	
Age under 65	0.202	
Age 71 to 79	0.021	
Age 80 or more	-0.032	
Female	-0.146	
Medicaid	-0.818	**
Baseline HCC risk score	0.015	
Telephone known	0.723	*
Intercept	0.417	
c statistic = .583		

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program:req006

4.6.2 Descriptive Analyses

Descriptive statistics for the MGH are presented in Table 37 separately for the intervention and comparison groups with the statistical significance tested for each variable. MGH's program is institution-based with the comparison group matched to the intervention group. Overall, we found very few statistically significant differences between the two groups for MGH, in particular in the distribution of minorities and Medicaid enrollment. For example, 4.8% of respondents in the intervention group were black compared to 13.2% in the comparison group. There were also statistically significant differences in Medicaid receipt among survey respondents: 3% of intervention group were enrolled in Medicaid compared to 7 % in the comparison group.

Table 37
Medicare Health Services Survey respondents
Descriptive statistics
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

Covariate	N	All beneficiaries	Intervention group	Comparison group	Stat. sig.
Age (Mean Years)	590	74.6	75.1	74.2	
Female (%)	590	52.2	52.2	52.1	
Hispanic (%)	538	4.1	3.5	4.7	
Black (%)	570	9.1	4.8	13.2	**
Years of education	550	13	13	13	
Live alone (%)	572	37.1	40.0	34.4	
Other health insurance coverage (%)	543	78.2	77.1	79.2	
Proxy respondent (%)	590	16.5	15.5	17.4	
Medicaid beneficiary (%)	590	5.0	3.0	7.0	*
HCC score at baseline (Mean)	590	2.70	2.64	2.76	
PBPM for base year ($)	590	1,719	1,637	1,797	
Completed survey by mail (%)	590	79.1	77.9	80.2	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq000

The MGH starting populations were initially matched by HCC risk scores and there was no statistically significant difference on this key covariate between the intervention and comparison groups. We also did not find any differences in PBPM costs, another important covariate- the PBPM costs in the intervention and the comparison groups are very similar.

In addition, MGH beneficiaries are about 75 years old on average and are split almost equally between male and female. The baseline HCC score for both groups is around 2.6-2.7, indicating that MGH beneficiaries are very expensive, approximating nearly three times what Medicare spends per average beneficiary. About 78-79% of MGH survey respondents were by mail; the rest were interviewed via the telephone.

4.6.3 Experience and Satisfaction with Care

The primary measure of satisfaction was a rating of experience with health care providers to help the beneficiary cope with his or her condition. The survey also included five other measures of satisfaction with care experience. Beneficiaries were asked to rate the helpfulness of specific activities such as discussions about medications, diet, exercise, and coping with stress or sadness and the helpfulness of discussing treatment choices. Beneficiaries were also asked to rate their communication with their health care team and how quickly they get answers to their questions. Lastly, beneficiaries responded to a set of questions that comprised the Multimorbidity Hassles score that we are reporting as the final measure of experience and satisfaction with care. Table 38 displays the satisfaction and experience with care measures for MGH.

Table 38
Medicare Health Services Survey: Estimated intervention effects
Experience and satisfaction with care
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Helping to cope with a chronic condition (1 to 5)	3.97	3.86	0.16	
Number of helpful discussion topics (0 to 5)	2.40	2.45	-0.02	
Discussing treatment choices (1 to 4)	3.29	3.17	0.26	**
Communicating with providers (0 to 100)	80.5	77.8	4.5	*
Getting answers to questions quickly (0 to 100)	70.5	65.4	5.0	
Multimorbidity Hassles score (0 to 24)	2.78	3.22	-0.27	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

Overall experience: helping beneficiary to cope with chronic condition. The average score for the key satisfaction outcome item that assessed how well the health care team helped beneficiaries cope with their illness was 4.0 for the intervention group, or about midway between "very good" and "good" ratings. The average score for the comparison group was about 3.9. Over fifty seven percent of MGH beneficiaries rated their experience as "excellent" or "very good" and about 26% selected "good." It is not uncommon among the elderly to report high satisfaction ratings. For that reason, the mean scale score was used in the analyses so that transitions between all response categories would be captured.

For this overall satisfaction measure, we observe no statistically significant intervention effect for MGH. MGH's intervention was not found to improve beneficiary overall satisfaction in helping them cope with their chronic illness.

Among other covariates in the ANCOVA model, only age was a significant predictor of overall satisfaction. Older MGH beneficiaries were more likely to rate this outcome higher. The full details of this analysis are presented in the Appendix Table A-16.

Number of helpful discussion topics. For this item, beneficiaries were asked to evaluate five types of services (1) one-on-one educational or counseling sessions, (2) discussions about when and how to take medicine, (3) discussions about dealing with stress or feeling sad, (4) discussions about diet, and (5) discussions about exercise. The mean number of services for which beneficiaries had helpful discussions with their health care team was comparable between the intervention and the comparisons groups (2.4 and 2.5 respectively). For this measure, we observe no statistically significant intervention effect for MGH.

Older, female, and mail MGH beneficiaries were less likely to have more helpful discussions with their health care team than younger MGH beneficiaries, males and phone respondents respectively. The full details of this analysis are presented in the Appendix Table A-16.

Discussing treatment choices. For this item, beneficiaries were asked whether health care team talked about pros and cons of each treatment choice with answers ranging from 1 "definitely no" to 4 "definitely yes". The mean score for the intervention group was 3.3, compared to 3.2 for the control group, resulting in a statistically significant ANCOVA adjusted intervention effect. MMC beneficiaries in the intervention group rated this outcome higher than those in the comparison group.

Age and minority status were other significant predictors for this satisfaction with care outcome: Older and Black MGH beneficiaries were more likely to rate the discussion of treatment choices higher than younger and white MGH beneficiaries respectively. The full details of this analysis are presented in the Appendix Table A-16.

Communication with health care team. The score for communication with health care team could range from 0 to 100, with 0 indicating never to all items in the composite and 100 indicating always to all items in the composite. Both MGH intervention and control groups reported high average communication scores with 80.5 for the intervention group and about 77.8

for the comparison group. This difference is statistically significant suggesting that the MGH intervention improved perceived beneficiary communication with providers.

Medicaid status was another significant predictor for the communication with providers outcome: MGH beneficiaries enrolled in Medicaid were more likely to rate communication with providers outcome higher. The full details of this analysis are presented in the Appendix Table A-16.

Getting Answers to Questions Quickly. The score for getting answers to questions quickly could range from 0 to 100, with 0 indicating never to both items in the composite and 100 indicating always to both items in the composite. MGH was associated with high average scores for intervention and control groups (70.5 and 65.4, respectively). For this measure, the difference between the intervention and control groups was not found to be statistically significant.

Two other covariates in the model were significant predictors for this outcome. Older MGH beneficiaries and Medicaid enrollees reported that they get the answers to their questions quicker than their counterparts. The full details of this analysis are presented in the Appendix Table A-16.

Multimorbidity Hassles Scale. Multimorbidity Hassles Scale, designed to measure frustrating problems that patients experience in getting comprehensive care for chronic illnesses, is measured on a scale from 0 to 24. High scores indicate more problems. MGH showed relatively low Multimorbidity Hassles scores for intervention and control groups (2.8 and 3.2, respectively). In the original development sample, the mean Hassles score for these six items was 5.86 (Parchman et al., 2005). For this measure, we observe no statistically significant intervention effect for MGH.

Two other covariates in the model were significant predictors for the Multimorbidity Hassles score. Older MGH beneficiaries experienced fewer frustrating problems in getting comprehensive care for their chronic illnesses than their counterparts. Black survey responders from MGH reported more problems. The full details of this analysis are presented in the Appendix Table A-16.

In summary, across the six measures of experience and satisfaction with care, we observe two statistically significant intervention effects for MGH. CMHCB interventions conducted by MGH were associated with statistically significantly higher ratings on discussing treatment choices and communicating with health providers compared to the comparison group.

4.6.4 Self-Management

A goal of chronic disease management is to improve compliance with self-care activities that may slow the decline in functioning and health status. The survey included three sets of questions related to self-management: receiving help with setting goals and making a care plan, self-efficacy ratings, and self-care activities. Table 39 displays the self-management measures for MGH.

Table 39
Medicare Health Services Survey: Estimated intervention effects
Self-Management
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
Percent receiving help setting goals	57.1	64.4	-5.6	
Percent receiving help making a care plan	57.2	57.8	2.3	
Self-efficacy ratings				
Take all medications (1 to 5)	4.62	4.51	0.05	
Plan meals and snacks (1 to 5)	4.17	4.11	0.01	
Exercise 2 or 3 times weekly (1 to 5)	3.69	3.59	0.11	
Self-care activities				
Prescribed medications taken (mean # of days)	6.65	6.69	-0.10	
Followed healthy eating plan (mean # of days)	4.81	4.91	-0.16	
30 minutes of continuous physical activity (mean # of days)	2.85	2.70	0.05	

NOTES:

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

Setting Goals and Making a Care Plan. The survey included two questions that asked if someone from their health care team helped set goals or a plan to take care of their health problems. For MGH beneficiaries, in the intervention group 57% reported receiving help setting goals and help making a care plan each. In the comparison group, 64% and 58% respectively reported receiving assistance on these self-management activities.

The ANCOVA results reveal that these differences are not statistically significant: MGH did not have a higher proportion of beneficiaries who received help setting goals for self-care management, nor was it associated with a reported increase in providing help in making health care plans.

The other covariates in the model provided little explanatory power for these outcomes for MGH. With the exception of females, fewer of whom reported getting help making a care plan, no other variables were significant in the models. The R-square for the models are 0.601 (setting goals) and 0.618 (making a care plan). The full details of this analysis are presented in the Appendix Table A-17.

Self-Efficacy Ratings. To assess self-efficacy, respondents were asked how sure they were that they could perform each of three specific behaviors: taking medications, planning meals according to dietary guidelines, and engaging in physical exercise. Ratings are made on a five-point scale ranging from 1=very unsure to 5=very sure.

Overall, MGH beneficiaries typically reported relatively high levels of self-efficacy with mean ratings averaging around 4 (somewhat sure of their ability to perform self-care activities) out of a maximum of 5 (very sure). The highest self-efficacy scores were reported for taking medications as prescribed, and the lowest scores were for getting exercise two or three times per week. On average, MGH beneficiaries in both groups were quite sure they could take their medications as often as prescribed - 4.6 rating for the intervention group, compared to 4.5 in the comparison group. Confidence in planning meals and snacks was rated 4.2 and 4.1 respectively, and confidence in exercising was rated as 3.7 and 3.6, respectively. None of the self-efficacy items yielded statistically significant ANCOVA-adjusted intervention effects.

For MGH, there were a couple of other covariates that predicted self-efficacy ratings: proxy respondents rated all three self-efficacy measures lower than self-respondents. Black respondents were less confident about taking their medications, older respondents were more confident about planning their meals and snacks, and older and Black MGH beneficiaries were more confident about getting needed exercise. The full details of this analysis are presented in the Appendix Table A-17.

Self-Care Activities. A goal of chronic disease management is to promote patient compliance with self-care behaviors and activities that may help to maintain or improve health status. The questionnaire included questions about three self-care behaviors that parallel the items in the self-efficacy ratings. Self-care activities are measured in the number of days in the past week when beneficiaries were compliant and range from 0 to 7. The reported compliance rate for self-care activities ranged from quite high for both groups among some activities (taking medications) to more modest compliance rates for another activity (exercise). For example, the mean number of days that MGH beneficiaries said they take their medications as prescribed was 6.7 for both groups; the mean number of days that MGH beneficiaries reported following a healthy eating plan ranged between 4.8 to 4.9, and the mean number of days MGH beneficiaries reported exercising was 2.7-2.9 days out of 7.

There were no significant group differences in the rates for any of these three self-care activities between the intervention and the comparison groups.

In terms of other significant covariates for self-efficacy outcomes, Hispanic status and greater education increased MGH beneficiaries' compliance with prescription medications, but compliance was lower for Blacks. Older and Black respondents were more likely to follow a healthy eating plan more days a week. Compliance with exercise was also higher for Black beneficiaries compared to Whites and lower for those who live alone and for MGH beneficiaries with additional insurance coverage. The full details of these analyses are presented in the Appendix Table A-17.

4.6.5 Physical and Mental Health Functioning

Physical and Mental Function. Table 40 displays the mental and physical functioning outcomes for MGH. Functioning levels were tracked by the responses to the Veterans RAND-12 (VR-12) instrument. These scores are normalized so that the mean composite score is 50 (SD=10) in the general U.S. adult population. We report mean Physical Health Composite (PHC) and Mental Health Composite (MHC) scores. Higher scores indicate higher levels of functioning. Mental health status was also measured by the Patient Health Questionnaire-2 (PHQ-2), which consists of two items, one for anhedonia (How often have you been bothered by little interest or pleasure in doing things) and one tapping depressed mood (How often been bothered by feeling down, depressed, or hopeless). Each item is assessed in terms of weekly frequency (0=not at all, 3=nearly every day). The total PHQ-2 score is the sum of these values, which may range from 0-6 points. Higher scores indicate greater depressive symptoms. Scores of three points or more are commonly used in screening to identify cases that require further clinical evaluation. We report the PHQ-2 mean score.

Table 40
Medicare Health Services Survey: Estimated intervention effects
Physical and Mental Health Function
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

Outcome	Intervention mean	Comparison group	ANCOVA-adjusted intervention effect	Stat. sig.
PHC score (physical health, mean =50, std=10)	32.6	29.9	2.3	**
MHC score (mental health, mean =50, std=10)	39.5	38.3	1.1	
PHQ-2 score (depression, 0 to 6)	1.73	1.87	-0.03	
Number of ADLs difficult to do (0 to 6)	1.91	2.24	-0.28	
Number ADLs receiving help (0 to 6)	0.63	0.90	-0.21	

NOTES:

ADLs are activities of daily living.

* Indicates significance at the 5 percent level.

** Indicates significance at the 1 percent level.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: DreqD2

On average, MGH respondents had the mean PHC score for the intervention group of 32.6, significantly higher when compared to 29.9 for the comparison group, producing a statistically significant ANCOVA intervention effect at the 1 percent level. The mean MHC score for the intervention group was 39.5 and the PHQ-2 score of 1.7, compared to 38.3 and 1.9 for the comparison group. Both mental health function outcome differences were not statistically significant.

For MGH members, self-reported physical function, as shown by PHC scores, was higher for older beneficiaries and with more years of education, but the scores were lower for females, those responding to the survey by proxy, and for MGH beneficiaries with lower baseline HCC scores. Similarly, mental function, as expressed by MHC scores, was higher for older beneficiaries, but was lower for proxies compared to self-respondents and for those with lower baseline HCC scores. Consistent with MHC scores, PHQ scores revealed fewer depressive symptoms associated with greater age and additional years of educations, and more depressive symptoms for proxy respondents. Detailed analysis is presented in the Appendix Table A-18.

Activities of Daily Living. A related measure of beneficiary functioning is the ability to perform basic activities of daily living (ADLs). The questionnaire collected information about six standard activities—bathing, dressing, eating, getting in and out of chairs, walking, and using the toilet. An ADL difficulty score was created by counting the number of activities that the beneficiary had difficulty with or were unable to do. The ADL help score was the number of activities for which the beneficiary needed help. Each score could therefore range from zero to six. We report the mean scores for each of the two ADL items.

On average, respondents in the MGH intervention group reported being limited on 1.9 ADLs compared to 2.2 ADLs for the comparison group. MGH beneficiaries also reported received help with an average of 0.6 to 0.9 ADLs. ANCOVA results indicate that there was no statistically significant difference in functional status (both difficulty and receipt of help measures) between the intervention and the comparison groups.

For MGH members, when other characteristics were held constant, proxies reported significantly more ADL limitations than self-respondents. In terms of needing help with ADLs, females, proxy respondents, and members with higher PBPM for the base year reported needing help on a significantly higher number of ADLs. Those who live alone reported needing help with fewer ADLs. Detailed analysis is presented in the Appendix Table A-18.

4.6.6 Conclusions

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their primary health care provider. The CMHCB demonstration hypothesized that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

Among the 19 outcomes covered by the survey, we found three statistically significant ANCOVA-adjusted intervention effects, two in the experience and satisfaction with care domain and one in the physical and mental health function domain. Survey results indicate that members of MGH's intervention group were more satisfied with the discussion of their treatment choices and rated their communication with heath providers higher than MGH beneficiaries in the comparison group. These achievements, however, were not translated into any improvements in self-efficacy or in self-care activities.

In addition, MGH beneficiaries in the intervention group reported significantly higher PHC scores than those in the comparison group, suggesting that CMHCB intervention affected physical functioning of participating Medicare beneficiaries. No other statistically significant outcomes were found in the physical and mental health function domain. The summary of survey results for MGH is presented in Table 41.

Table 41
Medicare Health Services Survey: Estimated intervention effects
Summary of results
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)

Outcome	Stat. sig.
Experience and satisfaction with care	
Helping to cope with a chronic condition	
Number of helpful discussion topics	
Discussing treatment choices	++
Communicating with providers	+
Getting answers to questions quickly	
Multimorbidity Hassles score	
Self-management	
Percent receiving help setting goals	
Percent receiving help making a care plan	
Self-efficacy ratings	
Take all medications	
Plan meals and snacks	
Exercise 2 or 3 times weekly	
Self-care activities	
Prescribed medications taken	
Followed healthy eating plan	
30 minutes of continuous physical activity	
Physical and mental health function	
PHC score	++
MHC score	
PHQ-2 score	
Number of ADLs difficult to do	
Number ADLs receiving help	

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

CHAPTER 5
SUMMARY AND DISCUSSION

The CMHCB demonstration employs strategies to improve quality of care for high cost Medicare beneficiaries while reducing costs by empowering Medicare beneficiaries to better manage their care. They do so in three ways: (1) by enhancing beneficiary knowledge of their chronic condition through educational and coaching interventions; (2) by improving beneficiary communication with their care providers; and (3) by improving beneficiary self-management skills. Successful interventions should alter beneficiary use of medications, eating habits, and exercise, as well as interacting more effectively with their health care team. The CMHCB demonstration hypothesizes that lifestyle changes and better communication with providers will mitigate acute flare-ups in the chronic conditions and should reduce hospital admissions and readmissions and the use of other costly health services such as nursing homes and visits to specialists. Experiencing better health, beneficiaries should also be more satisfied that their health care providers are effectively helping them to cope with their chronic medical conditions.

As part of the CMHCB demonstration evaluation, we conducted a survey of beneficiaries randomized into the intervention and control groups for two CMOs and for intervention and comparison groups for four CMOs to examine the intervention effect of the CMHCB demonstration on three areas relevant to disease management: beneficiary experience and satisfaction with care; self-management activities; and physical and mental health function. We summarize our overall findings across six CMOs and then conclude with summaries of findings for each of the CMOs.

5.1 Summary of Findings across the CMOs

Do the CMHCB programs lead to higher levels of beneficiary satisfaction with their care experience than is reported by beneficiaries in the control/comparison group?

Overall, it is not uncommon among the elderly to see high satisfaction ratings. A great majority of beneficiaries surveyed rated their experience as “excellent” or “very good” or “good.” Across the six measures of satisfaction with care experience and across the six MCOs, we observe two statistically significant positive intervention effects for MMC and two for MGH. For these CMOs, beneficiaries in the intervention group rated discussions of treatment choices and communication with providers higher than their counterparts in the control/comparison groups.

None of the CMOs had an effect on the overall satisfaction item, the rating of overall experience coping with their chronic condition. Additionally, the CMHCB intervention did not lead to any significant differences in the number of helpful discussion topics, getting answers to questions, or the number of frustrating problems that patients experience in getting comprehensive care for chronic illnesses. Moreover, the analysis revealed one negative intervention effect for KTBH on discussing treatment choices.

Do the CMHCB programs result in greater engagement in health behaviors?

Assisting beneficiaries to set goals and develop a care plan are two of the key objectives in disease management. While the proportion of beneficiaries receiving help on these two outcomes ranged widely from a low of 39% to high of 69% across different CMOs, no intervention effects were found for these two measures.

For self-efficacy, beneficiaries typically reported levels of confidence to take medications as prescribed, plan healthy meals and snacks, and exercise 2 or 3 times weekly with mean ratings averaging from 3.1 to 4.6 (3 = moderately confident of their ability to perform self-care activities) out of a maximum of 5 (extremely confident). Of the all significance tests conducted to examine intervention effects on beneficiary self-efficacy, only one unfavorable effect was found. This was a difference in the confidence level of TST intervention beneficiaries to manage their prescription medications.

We found variation by type of activity in the compliance rates among both the intervention and control groups for self-care activities. For example, baseline rates for taking medications as prescribed were quite high ranging from 6.6 to 6.8 days per week, leaving little room to detect differences; on the other hand, getting 30 minutes of continuous exercise ranged from 2.7 to 3.2 days per week.

Of the 3 measures examined for self-care activities in each CMO, only two were statistically significant, favoring the intervention. The CLM intervention group had a greater number of days during the week when the beneficiary exercised 30 minutes while HBC had more days during the prior week when the beneficiary took their medication as prescribed.

Do the CMHCB programs affect physical or mental health functioning?

Not unexpectedly, survey respondents were found to be relatively frail with PHC scores ranging from 27 to 33 and MHC scores ranging from 36 to 40. These two scores are normalized to a standard population mean of 50. On average, beneficiaries reported having difficulty performing two to three activities of daily living. Among the five physical and mental health outcomes examined across the CMOs, the ANCOVA estimation revealed four statistically significant positive intervention effects. Both CLM and MGH had higher PHC scores in the intervention group compared to the control/comparison group with the difference around 2 points. Members of the KTBH intervention group reported lower PHQ-2 scores, indicating fewer depressive symptoms than the control group. At MMC, intervention group respondents reported significantly fewer limitations in the activities of daily living (ADLs) on average than those in the comparison group.

5.2 Conclusions

Overall, our findings show that with a few exceptions, the CMHCB programs did not achieve consistent results in creating more favorable experiences of health care and greater engagement in health-promoting behaviors among beneficiaries in intervention groups. We also did not find consistent significant differences in beneficiary physical and mental functioning with the exception of two CMOs that showed better physical health and another that showed fewer depressive symptoms. A summary of statistically significant intervention effects for all survey outcomes across CMOs is shown in Table 42.

Table 42
Medicare Health Services Survey: Estimated intervention effects
Summary of results across CMOs

Outcome	CLM	KTBH	HBC	TST	MMC	MGH
Experience and satisfaction with care						
Helping to cope with a chronic condition						
Number of helpful discussion topics						
Discussing treatment choices	+	-				++
Communicating with providers	++					+
Getting answers to questions quickly						
Multimorbidity Hassles score						
Self-management						
Percent receiving help setting goals						
Percent receiving help making a care plan						
Self-efficacy ratings						
Take all medications				-		
Plan meals and snacks						
Exercise 2 or 3 times weekly						
Self-care activities						
Prescribed medications taken			+			
Followed healthy eating plan						
30 minutes of continuous physical activity	+					
Physical and mental health function						
PHC score	+					++
MHC score						
PHQ-2 score		+				
Number of ADLs difficult to do					++	
Number ADLs receiving help						

NOTES:

++/-- Indicates significance at the 1 percent level for favorable or unfavorable intervention effect.

+/- Indicates significance at the 5 percent level for favorable or unfavorable intervention effect.

Statistical significance is determined using Analysis of Covariance.

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Overall, CMHCB demonstration participants reported high levels of satisfaction with their care. Prior research has shown that Medicare fee-for-service beneficiaries are generally satisfied with their health care and our findings are consistent with those observations (Bernard and Urig, 2002; Safran et al., 2006). However, our ANCOVA analysis findings indicate that none of the CMOs achieved a significant positive intervention effect on the general beneficiary satisfaction with their care outcome. The principal satisfaction question asked beneficiaries how well their health care team helped them to cope with their chronic condition.

There were, however, several CMOs that showed meaningful effects on other beneficiary satisfaction measures, self-efficacy, self-care activities, and physical and mental health functioning. Two CMOs had statistically significant effects in the experience and satisfaction with care domain. Care Level Management demonstrated positive intervention effects for two satisfaction outcomes: one related to helpfulness of discussing treatment choices and one on communication with providers. MGH demonstrated positive intervention effects for the same two satisfaction outcomes. KTBH showed a negative intervention effect on helpfulness of discussing treatment choices. HBC, TST, and MMC showed no statistically significant intervention effects on any of the beneficiary care experience outcomes.

Generally, of the five satisfaction measures, those that asked beneficiaries to rate the helpfulness discussing treatment choices and communication with providers were the only ones showing improvement. None of the CMOs produced any significant effects on getting answers to questions quickly, indicating that CMHCB demonstration was not able to improve this aspect of beneficiary relationship with providers. Multimorbidity Hassles scores, used to measure frustrating problems that patients experience in getting comprehensive care , were relatively low for all beneficiaries, and none of the interventions significantly affected these scores.

Another goal of disease management is to increase compliance with appropriate self-care behaviors among the chronically ill. None of the CMOs were more successful in helping beneficiaries to set goals and make plans to address their care needs or in helping beneficiaries become more confident in performing health-related behaviors (self-efficacy). TST beneficiaries in the intervention group reported less confidence in medication management than those in the comparison group.

Two CMOs had higher intervention group frequencies for self-care behavior. Health Buddy Consortium had a higher rate of compliance with prescribed medications. In terms of other self-care activity outcomes, CLM beneficiaries in the intervention group reported more days of exercise than those in the control group.

Lastly, the survey instrument included five important physical and mental health functioning measures. In this domain, we found four positive intervention effects. In two CMOs (Care Level Management and MGH), the intervention group reported better physical health than the control group as measured by the PHC scores. KTBH showed fewer depressive symptoms for the intervention group compared to the control group measured by PHQ-2 scores. In addition, MMC members in the intervention group reported fewer ADL limitations than those in the comparison group. None of the CMOs achieved an intervention effect on the level of help with ADLs.

5.3 Summary of Findings within Individual CMOs

Care Level Management (CLM)

In summarizing CLM's effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning, survey results indicate that CLM achieved at least one positive intervention effect in each of the three survey domains. We found 4 statistically significant positive intervention effects on 19 CMHCB demonstration survey outcome measures for CLM.

For experience and satisfaction with care, there were positive intervention effects for CLM on discussing treatment choices and communicating with providers. We do not observe any intervention effects for the overall measure related to helping beneficiaries cope with their chronic condition, for number of helpful discussion topics, getting answers quickly or any difference in the Multimorbidity Hassles score.

No effects were found for CLM in any of the self-efficacy measures. For self-care activities, we observe one positive intervention effect for CLM for the frequency of maintaining 30 minutes of continuous exercise. No statistically significant intervention effects were found for CLM for self-care activities such as prescription medications and dietary guidelines.

Among 5 physical and mental function measures, we observe one significant improvement in the PHC scores, indicating that the CMHCB demonstration produced an improvement in physical functioning in the intervention group by raising the PHC score by slightly more than 2 points.

RMS Disease Management and its Key to Better Health program (KTBH)

In evaluating KTBH intervention effect on changes in beneficiary satisfaction and experience with care, self-management behaviors, and self-reported physical and mental health function, survey results indicate that KTBH demonstrated one positive intervention effect that resulted in the decrease of the depression symptoms, and one negative intervention effect on discussing treatment choices within the self-management survey domain. KTBH showed no statistically significant intervention effects on their beneficiaries' overall rating of satisfaction. We do not observe any significant intervention effects for the measures related to communication with health care team or for helpfulness of discussions nor with any other self-efficacy or self-care outcomes. Finally, with the exception of the depression scores, there were no other statistically significant intervention effects for KTBH in any other health status measures. These results are not likely to be sufficient to effect reductions in acute flare ups of the beneficiaries' chronic condition or result in reduction in more costly health care utilization.

Health Buddy Consortium (HBC)

In this study we examined HBC intervention effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning. Survey results indicate that HBC achieved a positive intervention effect on only one measure within the self-management survey domain. HBC showed no statistically significant intervention effects on their beneficiaries' overall rating of experience that their health care providers helped them cope with their chronic condition. We do not observe any intervention effect for the measure related to communication with health care team or for helpfulness of discussions related to health topics. Overall, we found 1 statistically significant positive intervention effect in the self-management domain among 19 CMHCB demonstration survey outcome measures for HBC: CMHCB intervention resulted in higher frequency of medication compliance for beneficiaries in this program.

In addition, there were no statistically significant intervention effects in the five physical and mental health function measures. Without seeing improvements in beneficiary self-management activities, it will be challenging for the HBC intervention group to demonstrate reductions in acute flare ups of chronic illness and corresponding reductions in costly health care utilization.

Texas Tech University Health Sciences Center (TTUHSC) and its Texas Senior Trails program (TST)

In summarizing TST intervention effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning, survey results indicate that TST achieved no positive intervention effects. Among the 19 outcomes covered by the survey, only one statistically significant group difference was found—members of TST's intervention group were less certain that they could take their medications as prescribed. This difference, however, was not reflected in actual weekly medication usage rates which were only slightly lower for the intervention group. It should also be noted that for many outcomes, especially those for beneficiary functioning, the ANCOVA-adjusted effects were smaller than the crude, unadjusted group differences. This suggests that the covariates in the ANCOVA models were mitigating the racial and ethnic disparities between the intervention and comparison groups.

Montefiore Medical Center (MMC)

MMC intervention effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning were evaluated in this study. Survey results indicate that MMC achieved a positive intervention effect on only one measure within the physical and mental health function survey domain. MMC showed no statistically significant intervention effects on their beneficiaries' overall rating of experience that their health care providers helped them cope with their chronic condition. None of the other measures in the beneficiary experience and satisfaction with care were significant.

We do not observe any intervention effect for the self-management outcomes as well. Overall, we found 1 statistically significant positive intervention effect among 19 CMHCB demonstration survey outcome measures for MMC: CMHCB intervention resulted in fewer limitations in activities of daily living for beneficiaries in this program.

Without seeing improvements in beneficiary self-management activities, it will be challenging for the MMC intervention group to demonstrate reductions in acute exacerbations of chronic illness and corresponding reductions in costly health care utilization.

Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)

In summarizing MGH's effect on changes in beneficiary experience and satisfaction with care, self-management behaviors, and self-reported physical and mental health functioning, survey results indicate that MGH achieved positive intervention effects in two of the three survey evaluation domains. We found 3 statistically significant positive intervention effects on 19 CMHCB demonstration survey outcome measures for MGH.

For experience and satisfaction with care, there were positive intervention effects for MGH on discussing treatment choices and communicating with providers: beneficiaries in the intervention group reported higher ratings on the two outcomes than those in the comparison group. We do not observe any intervention effects for the overall measure related to helping beneficiaries cope with their chronic condition, for number of helpful discussion topics, getting answers quickly or any difference in the Multimorbidity Hassles scores.

Two positive intervention effects in the beneficiary experience and satisfaction with care domain did not translate into any gains with self-management behaviors. No differences were found in the proportion of beneficiaries receiving help with setting goals or making a care plan. No effects were found for MGH in any of the self-efficacy or self-care activity measures.

Among 5 physical and mental function measures, we observe one significant difference in the PHC scores, indicating that the CMHCB demonstration produced a significant effect on physical functioning in the intervention group by raising the PHC score by slightly more than 2.5 points.

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APPENDIX A

Table A-1
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
Care Level Management
(N = 504)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.194		0.197		0.228	*	6.555	**	4.898		-0.437	
Age (years)	-0.001		-0.018	*	-0.005		-0.166		-0.147		-0.016	
Female	0.049		0.068		0.056		1.313		3.611		-0.380	
Hispanic	-0.263		0.013		-0.115		2.262		1.958		-0.278	
Black	-0.301		0.599		0.312		5.330		4.918		-0.158	
Years of education	0.010		-0.017		0.016		0.475		0.433		-0.119	
Live alone	-0.018		-0.079		-0.052		0.089		0.700		0.712	
Other health insurance coverage	0.075		0.101		0.042		4.345		-1.235		-0.932	
Proxy respondent	0.149		0.307		0.158		5.619		7.042		-0.351	
Medicaid beneficiary	-0.302		0.063		0.017		-2.271		-0.256		0.788	
HCC score at baseline	-0.048		-0.037		0.017		0.030		0.855		0.113	
PBPM for base year ($)	0.054	*	0.001		0.000		0.744		0.418		-0.046	
Completed survey by mail	-0.170		0.164		0.059		4.114		0.716		-0.454	
Intercept	3.733	**	3.469	**	3.040	**	67.147	**	61.362	**	7.532	**
R-Square	0.054		0.030		0.042		0.066	*	0.046		0.030	
N	355		437		355		355		355		431	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq014,Creq019,Creq016

Table A-2
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
Care Level Management
(N = 504)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.249		0.156		0.197		0.150		0.203		0.056		-0.034		0.628	*
Age (years)	-0.006		-0.013		-0.007		-0.008		0.012		0.003		0.015		0.011	
Female	0.319		0.146		0.011		0.185		-0.312	*	0.080		0.357		-0.791	**
Hispanic	-0.431		-0.918	**	0.041		0.087		0.010		0.104		0.251		0.052	
Black	0.607		0.311		-0.621	*	-0.645	*	-0.441		0.178		0.121		0.121	
Years of education	-0.021		-0.033		0.022		0.039		0.023		-0.015		0.013		-0.035	
Live alone	0.028		0.133		-0.082		-0.084		-0.291		0.159		-0.128		-0.513	
Other health insurance coverage	0.109		-0.036		-0.212		-0.367	*	-0.163		0.259		0.070		-0.663	
Proxy respondent	0.406		0.481		-1.055	**	-0.897	**	-0.672	**	-0.013		-0.065		-1.086	**
Medicaid beneficiary	0.358		0.586		-0.112		0.107		-0.317		-0.382		0.001		0.047	
HCC score at baseline	0.117		0.121		-0.130	**	-0.114	*	-0.181	**	-0.089		0.029		-0.296	**
PBPM for base year ($)	-0.064		-0.094	*	0.051	*	0.056	*	0.052		0.044		0.063		0.115	*
Completed survey by mail	0.235		0.408		0.036		0.019		-0.008		-0.186		-0.689	*	-0.590	
Intercept	0.335		1.121		5.140	**	4.514	**	3.221	**	6.610	**	3.961	**	4.645	**
R-Square					0.224	**	0.165	**	0.122	**	0.036		0.043		0.103	**
N	428		426		384		384		384		384		384		384	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq013,Creq015

Table A-3
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
Care Level Management
(N = 504)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	2.131	*	1.660		-0.257		-0.028		0.003	
Age (years)	0.075		0.137	*	-0.022	*	-0.004		0.012	
Female	-4.931	**	-3.931	**	0.284		0.699	**	0.590	**
Hispanic	-1.260		1.108		-0.073		-0.375		-0.498	
Black	-2.973		-4.016		0.491		0.580		0.624	
Years of education	0.186		0.280		-0.078	*	-0.001		-0.021	
Live alone	-0.840		-0.485		0.261		0.101		-0.341	
Other health insurance coverage	-0.709		2.075		-0.411		-0.523	*	-0.543	*
Proxy respondent	-4.403	**	-6.589	**	1.254	**	1.906	**	1.911	**
Medicaid beneficiary	-2.064		-2.002		-0.255		-0.034		-0.055	
HCC score at baseline	-0.900	*	-0.821		0.122		0.364	**	0.387	**
PBPM for base year ($)	0.244		0.498	*	-0.092	*	-0.106	**	-0.075	*
Completed survey by mail	-2.575	*	-0.862		-0.107		0.015		-0.445	
Intercept	29.127	**	27.682	**	4.563	**	1.854	*	0.311	
R-Square	0.192	**	0.162	**	0.159	**	0.308	**	0.379	**
N	406		406		406		415		415	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq017,Creq018

Table A-4
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
RMS Disease Management and its Keys to Better Health Program
(N = 508)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.103		0.081		-0.192	*	2.665		-0.835		0.145	
Age (years)	0.001		-0.011		-0.002		-0.030		0.086		-0.056	**
Female	-0.038		-0.061		0.001		0.831		4.765		-0.177	
Hispanic	-0.356		0.119		-0.269		0.533		-2.128		-0.061	
Black	0.084		0.341		0.098		2.865		-0.288		-0.299	
Years of education	0.030		0.021		0.005		0.128		-0.141		0.048	
Live alone	-0.046		-0.100		0.038		2.063		2.080		0.270	
Other health insurance coverage	0.309		0.440		0.121		4.635		6.356		-1.325	*
Proxy respondent	-0.133		0.083		-0.009		-7.674	**	-5.584		1.304	**
Medicaid beneficiary	0.133		0.737		0.155		4.496		14.492		0.590	
HCC score at baseline	0.034		-0.024		-0.016		0.018		-1.429		0.068	
PBPM for base year ($)	-0.007		0.070		0.062	*	0.603		1.088		0.037	
Completed survey by mail	0.020		-0.126		0.003		0.498		-3.973		0.093	
Intercept	2.873	**	2.353	**	3.255	**	69.994	**	59.353	**	7.334	**
R-Square	0.047		0.028		0.046		0.053		0.038		0.059	*
N	366		437		366		366		366		432	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq014,Creq019,Creq016

Table A-5
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
RMS Disease Management and its Keys to Better Health Program
(N = 508)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.406		0.164		0.027		-0.082		0.136		-0.147		-0.034		-0.302	
Age (years)	-0.009		-0.007		-0.001		-0.005		0.008		0.007		0.031	**	0.004	
Female	-0.064		-0.142		-0.092		0.065		-0.361	*	-0.019		0.306		-0.593	*
Hispanic	-0.428		-0.557		0.056		-0.435		-0.362		0.092		0.427		0.735	
Black	0.407		0.647	*	0.073		0.064		0.134		-0.307	*	0.380		0.677	
Years of education	-0.001		0.011		0.021		0.026		0.061	*	-0.001		0.053		0.044	
Live alone	-0.484	*	-0.494	*	0.170		0.364	*	0.278		-0.095		0.339		0.399	
Other health insurance coverage	0.695	*	0.309		-0.028		-0.067		0.055		0.018		0.152		0.121	
Proxy respondent	0.293		0.280		-1.233	**	-0.835	**	-1.021	**	-0.354	**	0.118		-1.109	**
Medicaid beneficiary	0.596		0.296		0.735	*	0.279		-0.399		-0.158		0.161		0.645	
HCC score at baseline	0.089		0.090		-0.034		-0.011		-0.099		0.059		0.005		-0.101	
PBPM for base year ($)	-0.010		0.004		0.039		0.028		-0.003		-0.025		-0.024		-0.039	
Completed survey by mail	-0.199		0.056		0.259		0.335	*	-0.126		-0.010		-0.655	*	0.073	
Intercept	0.453		0.207		4.256	**	3.810	**	2.466	**	6.395	**	2.083		2.564	
R-Square					0.246	**	0.159	**	0.170	**	0.053		0.054		0.074	**
N	420		422		381		381		381		381		381		381	

NOTES:
* Indicates significance at the 5 percent level
** Indicates significance at the 1 percent level
SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.
Computer program: Creq013,Creq015

Table A-6
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
RMS Disease Management and its Keys to Better Health Program
(N = 508)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	-0.071		0.030		-0.453	*	-0.019		0.210	
Age (years)	0.104	**	0.127	*	-0.013		0.017		0.020	*
Female	-2.861	**	-2.382	*	0.287		0.373		0.495	**
Hispanic	-2.022		-2.288		0.079		0.354		0.307	
Black	0.797		2.482		-0.454		0.064		0.320	
Years of education	0.416	**	0.567	**	-0.103	**	-0.057		-0.019	
Live alone	0.857		0.454		0.039		-0.379		-0.400	*
Other health insurance coverage	-0.761		2.217		-0.327		0.092		-0.071	
Proxy respondent	-3.221	**	-6.248	**	1.043	**	1.729	**	1.903	**
Medicaid beneficiary	-2.205		-0.433		-0.363		-0.027		-0.266	
HCC score at baseline	-0.429		-0.469		0.067		0.180	*	0.134	
PBPM for base year ($)	-0.278		-0.019		-0.035		-0.015		0.019	
Completed survey by mail	-2.592	*	-2.251		0.054		-0.120		-0.595	**
Intercept	22.798	**	23.646	**	4.370	**	1.055		-0.549	
R-Square	0.138	**	0.148	**	0.141	**	0.226	**	0.295	**
N	396		396		396		407		407	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq017,Creq018

Table A-7
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
Health Buddy Consortium
(N = 673)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.077		0.111		-0.013		2.196		4.258		-0.444	
Age (years)	-0.001		-0.025	**	-0.003		-0.049		0.140		-0.048	**
Female	0.159		0.127		0.208	*	4.811	*	5.796	*	-0.300	
Hispanic	0.455		0.549		0.378		13.756		1.298		-0.786	
Black	0.378		0.274		-0.095		11.650		22.343		1.160	
Years of education	0.029		-0.004		0.010		-0.159		-0.125		0.047	
Live alone	-0.176		0.004		-0.104		-3.687		-5.661		0.367	
Other health insurance coverage	0.122		-0.179		-0.012		4.073		3.786		0.081	
Proxy respondent	0.077		0.144		0.157		-0.937		2.483		-0.057	
Medicaid beneficiary	-0.078		-0.511		-0.025		0.987		2.574		-1.047	
HCC score at baseline	0.046		0.029		0.009		0.706		2.508		0.091	
PBPM for base year ($)	-0.047		-0.029		0.028		0.391		0.121		-0.009	
Completed survey by mail	-0.120		-0.191		0.204		1.603		0.800		0.689	
Intercept	3.244	**	4.034	**	2.930	**	70.468	**	38.874	**	5.750	**
R-Square	0.022		0.025		0.031		0.027		0.041		0.028	
N	470		619		470		470		470		608	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq014,Creq019,Creq016

Table A-8
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
Health Buddy Consortium
(N = 673)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.095		-0.113		0.086		0.095		0.201		0.185	*	0.145		-0.034	
Age (years)	-0.015		-0.019		-0.005		0.003		0.005		-0.003		0.042	**	-0.003	
Female	0.429	*	0.315		0.151		0.320	**	-0.271	*	0.041		0.406	*	-0.338	
Hispanic	0.624		0.603		-1.214	**	-0.628		-0.440		0.319		0.393		0.338	
Black	-0.444		-0.352		0.346		-0.588		0.128		0.232		-0.483		0.195	
Years of education	0.040		0.032		0.016		0.011		0.019		0.013		0.056		0.003	
Live alone	-0.373		-0.354		0.010		-0.043		-0.017		-0.167		-0.537	*	-0.099	
Other health insurance coverage	-0.500		-0.723	*	0.489	**	0.256		0.295		0.351	*	-0.718	*	-0.073	
Proxy respondent	0.332		0.418		-0.813	**	-0.875	**	-0.607	**	-0.487	**	-0.433		-1.114	**
Medicaid beneficiary	-1.379		-1.557		-0.172		-0.357		-0.776		-0.623		-1.731	*	-1.293	
HCC score at baseline	0.172		0.131		-0.103	*	-0.046		-0.102		0.073		0.042		-0.144	
PBPM for base year ($)	-0.066		-0.013		0.042		-0.017		0.041		-0.015		0.074		0.119	
Completed survey by mail	0.279		0.612	*	0.057		0.036		-0.010		-0.005		-0.567		-0.410	
Intercept	0.566		0.967		4.376	**	3.420	**	2.879	**	6.392	**	2.128	*	3.954	**
R-Square					0.161	**	0.121	**	0.058	**	0.072	**	0.064	**	0.035	
N	597		596		552		552		552		552		552		552	

NOTES:
* Indicates significance at the 5 percent level
** Indicates significance at the 1 percent level
SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.
Computer program: Creq013,Creq015

Table A-9
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
Health Buddy Consortium
(N = 673)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.800		1.231		-0.282		-0.174		-0.168	
Age (years)	0.117	**	0.135	**	-0.030	**	-0.014		-0.004	
Female	-1.060		0.643		-0.334	*	0.408	**	0.580	**
Hispanic	0.604		1.624		-0.725		-0.153		0.764	
Black	-2.547		-5.463		0.272		2.855	*	0.269	
Years of education	0.505	**	0.690	**	-0.115	**	-0.011		-0.023	
Live alone	0.806		-1.469		0.233		-0.095		-0.342	*
Other health insurance coverage	0.466		2.351		-0.767	**	-0.614	*	-0.347	
Proxy respondent	-1.650		-4.569	**	0.671	**	1.153	**	1.271	**
Medicaid beneficiary	-0.407		1.306		-1.046		-0.147		0.194	
HCC score at baseline	-0.965	**	-0.978	*	0.172		0.209	*	0.215	**
PBPM for base year ($)	0.139		0.230		-0.036		0.020		0.083	
Completed survey by mail	-2.010	*	-3.111	*	0.203		0.174		0.044	
Intercept	15.268	**	20.866	**	6.070	**	3.258	**	0.962	
R-Square	0.091	**	0.103	**	0.106	**	0.108	**	0.194	**
N	583		583		583		573		573	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq017,Creq018

Table A-10
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	-0.066		0.135		-0.065		-3.969		-5.378		0.018	
Age (years)	0.014	*	0.014		0.014	**	0.279	*	0.317	*	-0.053	**
Female	0.014		0.375	*	0.025		1.745		6.316	*	0.016	
Hispanic	0.279		0.449		0.132		6.485		7.815		0.320	
Black	0.137		0.785		0.380		4.786		9.839		-1.263	
Years of education	0.089	**	0.048		0.006		0.733		0.210		-0.028	
Live alone	-0.105		-0.110		-0.079		-2.559		-0.991		0.435	
Other health insurance coverage	0.116		0.144		0.304	*	3.643		5.998		-0.280	
Proxy respondent	-0.077		0.285		0.035		-0.261		1.295		0.023	
Medicaid beneficiary	-0.467		0.778		0.154		-6.979		-2.220		1.295	
HCC score at baseline	-0.017		0.054		0.020		0.076		1.150		0.226	
PBPM for base year ($)	-0.005		0.059		-0.014		-0.949		-1.151		0.097	
Completed survey by mail	-0.314	*	-0.121		-0.119		-4.428		-2.945		0.968	*
Intercept	1.741	**	-0.401		1.863	**	46.498	**	30.191	*	6.200	**
R-Square	0.098	**	0.045	*	0.056	*	0.058	*	0.051		0.050	*
N	431		555		431		431		431		545	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq014,Creq019,Creq016

Table A-11
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.062		0.337		-0.228	*	-0.213		-0.247		-0.137		-0.068		-0.277	
Age (years)	-0.004		-0.002		-0.013	*	0.003		0.012		0.015	*	0.045	**	0.034	**
Female	0.589	**	0.604	**	-0.048		-0.005		-0.364	**	0.014		0.142		-0.496	*
Hispanic	-0.377		-0.181		-0.040		0.228		0.617	**	-0.163		0.879	*	1.357	**
Black	0.387		0.149		-0.137		-0.078		0.054		0.160		1.107		1.411	*
Years of education	0.048		0.049		0.005		0.024		0.030		0.021		0.037		0.011	
Live alone	-0.188		-0.084		0.201		-0.033		0.118		-0.057		-0.540	*	0.300	
Other health insurance coverage	-0.240		-0.052		0.203		0.086		0.226		0.173		0.206		0.237	
Proxy respondent	0.633	**	0.540	*	-0.620	**	-0.867	**	-0.891	**	-0.019		-0.384		-1.408	**
Medicaid beneficiary	0.369		0.395		0.159		-0.141		-0.286		-0.174		-0.910		-0.061	
HCC score at baseline	0.349	**	0.151		-0.103		-0.178	**	-0.120		-0.085		-0.230		-0.432	**
PBPM for base year ($)	-0.025		0.003		-0.066		-0.024		-0.038		-0.033		0.091		0.169	*
Completed survey by mail	-0.122		-0.084		-0.012		-0.128		-0.109		0.123		-0.980	**	-0.787	*
Intercept	-1.127		-1.494		5.571	**	4.181	**	2.862	**	5.318	**	1.960		1.860	
R-Square					0.138	**	0.158	**	0.137	**	0.055	*	0.089	**	0.113	**
N	542		543		493		493		493		493		493		493	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq013,Creq015

Table A-12
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
Texas Tech University Health Sciences Center (TTUHCS) and its Texas Senior Trails Program
(N = 618)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	-0.351		-1.283		0.271		0.044		0.268	
Age (years)	0.092	*	0.115	*	-0.024	*	0.004		0.008	
Female	-1.265		-1.321		0.086		0.365	*	0.633	**
Hispanic	3.675	**	2.303		-0.512		-0.557		-0.244	
Black	1.146		0.898		-0.177		0.605		0.670	
Years of education	0.561	**	0.378		-0.069		-0.050		0.027	
Live alone	-1.032		-2.554	*	0.310		0.244		-0.455	**
Other health insurance coverage	1.708		3.008	*	-0.504	*	-0.753	**	-0.395	*
Proxy respondent	-3.363	**	-6.263	**	1.162	**	1.242	**	1.365	**
Medicaid beneficiary	-2.392		-1.808		0.306		0.399		0.124	
HCC score at baseline	-1.158	**	-1.788	**	0.140		0.328	**	0.273	**
PBPM for base year ($)	0.028		-0.413		0.040		0.120	*	0.055	
Completed survey by mail	-3.856	**	-3.189	*	0.391		0.570	**	0.213	
Intercept	20.413	**	31.594	**	4.089	**	1.636	*	-0.986	
R-Square	0.151	**	0.185	**	0.142	**	0.227	**	0.241	**
N	528		528		528		525		525	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Creq017,Creq018

Table A-13
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
Montefiore Medical Center (MMC)
(N = 508)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.094		-0.114		0.181		3.275		5.167		-0.604	
Age (years)	-0.004		-0.013		0.000		-0.019		0.040		-0.015	
Female	-0.280	*	-0.107		0.122		-1.285		-1.355		0.517	
Hispanic	0.343	*	0.426		0.149		7.651	*	4.025		0.288	
Black	0.006		0.148		-0.001		0.051		-2.296		0.489	
Years of education	-0.004		0.008		0.008		0.487		-0.194		0.045	
Live alone	0.144		0.162		0.092		1.250		4.855		-0.656	
Other health insurance coverage	0.113		0.016		0.072		-1.827		-3.243		0.719	
Proxy respondent	0.010		0.181		0.072		0.175		-3.715		0.598	
Medicaid beneficiary	-0.229		0.442		-0.133		-6.186		-9.395		1.385	*
HCC score at baseline	-0.010		0.021		-0.004		0.554		-0.105		0.093	
PBPM for base year ($)	-0.002		0.098		-0.021		-0.776		-0.053		0.255	
Completed survey by mail	-0.204		-0.321		-0.061		-0.532		4.137		0.256	
Intercept	4.038	**	3.061	**	2.782	**	68.546	**	58.471	**	2.259	
R-Square	0.041		0.058	*	0.019		0.026		0.032		0.060	*
N	351		423		351		351		351		418	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq014,Dreq019,Dreq016

Table A-14
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
Montefiore Medical Center (MMC)
(N = 508)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.014		0.120		0.171		0.225		0.286		0.038		0.085		0.561	
Age (years)	-0.008		-0.022		-0.027	**	-0.016	*	-0.001		-0.006		0.021		-0.010	
Female	-0.149		-0.169		0.048		0.070		-0.404	*	-0.063		-0.226		-1.125	**
Hispanic	1.172	**	0.912	**	-0.468	**	-0.110		0.093		-0.056		0.091		0.065	
Black	-0.043		-0.096		-0.688	**	-0.357	*	-0.237		-0.228		-0.130		-0.707	*
Years of education	0.077		0.041		-0.007		0.017		0.012		-0.014		0.014		-0.049	
Live alone	0.145		0.243		0.070		0.164		0.127		0.127		-0.050		0.029	
Other health insurance coverage	-0.242		-0.182		-0.172		-0.209		-0.112		0.127		-0.112		-0.520	
Proxy respondent	0.184		0.622	*	-0.455	**	-0.584	**	-0.697	**	0.033		-0.112		-1.003	**
Medicaid beneficiary	0.157		0.063		-0.227		-0.206		-0.307		-0.585	**	-0.185		-0.083	
HCC score at baseline	-0.054		0.112		0.022		-0.070		-0.121		0.053		-0.035		-0.377	*
PBPM for base year ($)	0.084		0.046		-0.068		-0.028		-0.010		-0.055		-0.006		0.072	
Completed survey by mail	0.063		0.135		0.068		0.062		-0.138		-0.034		-0.492		0.019	
Intercept	0.075		0.807		6.952	**	5.330	**	4.031	**	7.289	**	4.223	**	6.443	**
R-Square	0.657		0.665		0.153	**	0.097	**	0.109	**	0.051		0.024		0.118	**
N	405		408		370		370		370		370		370		370	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq013,Dreq015

Table A-15
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
Montefiore Medical Center (MMC)
(N = 508)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	1.835		1.294		-0.066		-0.607	**	-0.230	
Age (years)	0.073		0.004		0.003		0.016		0.037	**
Female	-5.045	**	-4.882	**	0.872	**	0.931	**	0.997	**
Hispanic	0.535		1.163		0.019		-0.058		0.463	
Black	0.390		0.593		-0.047		0.381		0.332	
Years of education	0.234		0.392		-0.014		0.008		-0.009	
Live alone	-0.555		-0.901		0.010		-0.263		-0.504	*
Other health insurance coverage	-1.945		0.969		-0.247		-0.156		-0.424	
Proxy respondent	-3.736	**	-3.726	**	0.658	**	0.851	**	0.954	**
Medicaid beneficiary	-2.072		-1.213		0.346		0.634		0.437	
HCC score at baseline	-1.280	**	-0.822		0.074		0.304	**	0.332	**
PBPM for base year ($)	-0.325		-0.084		0.051		0.086		0.023	
Completed survey by mail	-1.582		0.430		-0.394		-0.387		-0.650	**
Intercept	30.268	**	36.466	**	1.723		0.419		-1.827	
R-Square	0.211	**	0.128	**	0.104	**	0.204	**	0.258	**
N	384		384		384		383		383	

NOTES

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq017,Dreq018

Table A-16
Medicare Health Services Survey respondents: Multivariate analysis
Experience and satisfaction with care
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

	Helping to cope with a chronic condition (1 to 5)		Number of helpful discussion topics (0 to 5)		Discussing treatment choices (1 to 4)		Communicating with providers (0 to 100)		Getting answers to questions quickly (0 to 100)		Multimorbidity Hassles score (0 to 24)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	0.164		-0.022		0.255	**	4.548	*	4.957		-0.270	
Age (years)	0.012	*	-0.016	*	0.009	*	0.177		0.260	*	-0.064	**
Female	-0.144		-0.342	*	-0.012		-0.257		-0.185		0.083	
Hispanic	-0.170		-0.447		-0.069		-2.692		-11.176		0.749	
Black	0.036		0.562		0.347	*	-0.673		-5.458		1.298	*
Years of education	0.012		-0.030		-0.016		-0.164		-0.759		0.022	
Live alone	-0.086		0.293		-0.004		-3.236		-0.943		0.037	
Other health insurance coverage	0.132		0.107		0.216		2.347		0.219		0.116	
Proxy respondent	-0.058		0.285		-0.030		-2.508		-0.241		-0.103	
Medicaid beneficiary	-0.170		0.403		0.134		12.338	*	15.389	*	-0.778	
HCC score at baseline	-0.037		0.097		0.040		-0.624		0.284		0.257	
PBPM for base year ($)	0.034		-0.034		0.001		0.372		0.838		-0.154	
Completed survey by mail	-0.100		-0.423	*	0.157		3.270		1.829		-0.153	
Intercept	2.919	**	4.090	**	2.200	**	62.693	**	52.773	**	7.123	**
R-Square	0.043		0.066	**	0.050		0.047		0.047		0.070	**
N	424		517		424		424		424		511	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq014,Dreq019,Dreq016

Table A-17
Medicare Health Services Survey respondents: Multivariate analysis
Self-Management
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

	Percent receiving help				Self-efficacy ratings						Self-care activities					
	Setting goals		Making a care plan		Take all medications (1 to 5)		Plan meals and snacks (1 to 5)		Exercise 2 or 3 times weekly (1 to 5)		Prescribed medications taken (mean # of days)		Followed healthy eating plan (mean # of days)		30 minutes of continuous physical activity (mean # of days)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	-0.237		0.095		0.054		0.012		0.109		-0.102		-0.162		0.047	
Age (years)	0.003		-0.009		-0.002		0.012	*	0.023	**	-0.005		0.048	**	0.013	
Female	-0.379		-0.423	*	-0.161		-0.002		-0.148		-0.070		0.030		-0.273	
Hispanic	0.482		-0.306		-0.175		0.158		0.296		0.547	*	0.735		0.419	
Black	0.729		0.359		-0.534	**	-0.069		0.528	*	-0.734	**	0.799	*	0.992	*
Years of education	0.017		0.020		0.025		-0.005		0.036		0.037	*	0.047		0.057	
Live alone	-0.013		-0.070		0.031		-0.119		-0.250		0.154		-0.034		-0.491	*
Other health insurance coverage	-0.125		0.157		-0.074		-0.150		-0.191		0.101		0.022		-0.994	**
Proxy respondent	0.086		0.211		-0.593	**	-0.519	**	-0.659	**	-0.075		0.194		-0.628	
Medicaid beneficiary	-0.111		0.280		0.337		-0.355		-0.213		-0.217		-0.286		-0.554	
HCC score at baseline	0.064		0.061		-0.005		-0.062		-0.073		0.089		-0.148		-0.069	
PBPM for base year ($)	0.063		0.113		-0.012		0.019		0.045		-0.028		0.088		0.057	
Completed survey by mail	0.281		0.154		0.199		0.261		0.122		0.004		0.330		-0.163	
Intercept	-0.216		0.228		4.497	**	3.455	**	1.800	**	6.396	**	0.553		2.368	*
R-Square	0.601		0.618		0.113	**	0.059	**	0.088	**	0.077	**	0.066	**	0.062	**
N	503		497		471		471		471		471		471		471	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq013,Dreq015

Table A-18
Medicare Health Services Survey respondents: Multivariate analysis
Physical and mental health function
Massachusetts General Hospital and Massachusetts General Physicians Organization (MGH)
(N = 590)

	PHC score (physical health)		MHC score (mental health)		PHQ-2 score (depression, 0 to 6)		Number of ADLs difficult to do (0 to 6)		Number ADLs receiving help (0 to 6)	
	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.	Coefficient	Stat. sig.
Intervention group	2.280	**	1.104		-0.027		-0.279		-0.214	
Age (years)	0.134	**	0.272	**	-0.044	**	-0.007		0.003	
Female	-2.104	*	-1.427		-0.134		0.304		0.403	**
Hispanic	0.758		0.715		-0.511		-0.646		-0.251	
Black	1.881		1.671		-0.016		0.451		0.461	
Years of education	0.323	*	0.311		-0.076	*	-0.011		0.002	
Live alone	0.137		-2.018		0.035		-0.307		-0.406	**
Other health insurance coverage	1.003		2.054		-0.363		-0.339		-0.154	
Proxy respondent	-2.953	**	-5.444	**	0.575	*	1.217	**	1.299	**
Medicaid beneficiary	-1.346		-1.827		0.612		0.109		0.058	
HCC score at baseline	-1.116	**	-1.014	*	0.045		0.098		-0.009	
PBPM for base year ($)	0.145		0.294		0.038		0.051		0.103	**
Completed survey by mail	-1.503		-0.577		-0.364		-0.067		-0.147	
Intercept	20.464	**	17.174	**	6.371	**	2.579	**	0.369	
R-Square	0.110	**	0.144	**	0.139	**	0.109	**	0.197	**
N	481		481		481		486		486	

NOTES:

* Indicates significance at the 5 percent level

** Indicates significance at the 1 percent level

SOURCE: RTI analysis of the Medicare Health Services Survey, 2008.

Computer program: Dreq017,Dreq018

APPENDIX B

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0938-1014. The time required to complete this information collection is estimated to average 15 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: CMS, 7500 Security Boulevard, Attn: PRA Reports Clearance Officer, Mail Stop C4-26-05, Baltimore, Maryland 21244-1850.

SURVEY INSTRUCTIONS

This survey asks about you and your health. Answer each question thinking about yourself. Please take the time to complete this survey. Your answers are very important to us. If you are unable to complete this survey, a family member or friend can fill out the survey about you. If a family member is NOT available, please ask someone who knows you and your care for help.

Please return the survey with your answers in the enclosed postage-paid envelope.

- Answer the questions by putting an “X” in the box next to the appropriate answer category like this:

  Are you male or female?

  ☐ Male
  ☒ Female

- Be sure to read all the answer choices given before marking a box with an ‘X.’

- It is important that you answer EVERY question on this survey. If you are unsure of the answer to a question or that a question applies to you, please answer the question anyway, choosing the BEST possible answer.

About Your Health

These questions ask for your views about your health, about how you feel and how well you are able to do your usual activities.

1. In general, would you say your health is

Excellent	Very good	Good	Fair	Poor
☐	☐	☐	☐	☐

2. The following items are about activities you might do during a typical day. Does *your health now limit you* in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. *Moderate activities*, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	☐	☐	☐
b. Climbing *several* flights of stairs	☐	☐	☐

3. During the <u>past 4 weeks</u>, have you had any of the following problems with your work or other regular daily activities as a *result of your physical health*?

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
a. *Accomplished less* than you would like	☐	☐	☐	☐	☐
b. Were limited in the *kind* of work or other activities	☐	☐	☐	☐	☐

About Your Health

4. During the <u>past 4 weeks</u>, have you had any of the following problems with your work or other regular daily activities *as a result of any emotional problems* (such as feeling depressed or anxious)?

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
a. *Accomplished less* than you would like	☐	☐	☐	☐	☐
b. Didn't do work or other activities as *carefully* as usual	☐	☐	☐	☐	☐

5. During the <u>past 4 weeks</u>, how much did *pain* interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
☐	☐	☐	☐	☐

6. These questions are about how you feel and how things have been with you. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the <u>past 4 weeks</u>

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a. Have you felt *calm and peaceful*?	☐	☐	☐	☐	☐	☐
b. Did you have *a lot of energy*?	☐	☐	☐	☐	☐	☐
c. Have you felt *downhearted and blue*?	☐	☐	☐	☐	☐	☐

About Your Health

7. During the <u>past 4 weeks</u>, how much of the time has your *physical health or emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
☐	☐	☐	☐	☐

8. In the <u>past 2 weeks</u> have you been bothered by little interest or pleasure in doing things?

Not at all	Several days	More than half of the days	Nearly every day
☐	☐	☐	☐

9. In the <u>past 2 weeks</u> have you been bothered by feeling down, depressed, or hopeless?

Not at all	Several days	More than half of the days	Nearly every day
☐	☐	☐	☐

About Your Health

10. Because of a *health or physical problem*, do you have any difficulty doing the following activities? (Please mark one response for each activity.)

	I am not able to do this activity	Yes, I have difficulty	No, I do not have difficulty
a. Bathing	☐	☐	☐
b. Dressing	☐	☐	☐
c. Eating	☐	☐	☐
d. Getting in or out of chairs	☐	☐	☐
e. Walking	☐	☐	☐
f. Using the toilet	☐	☐	☐

11. Do you receive help from another person with any of these activities?

	Yes, I receive help	No, I do not receive help
a. Bathing	☐	☐
b. Dressing	☐	☐
c. Eating	☐	☐
d. Getting in or out of chairs	☐	☐
e. Walking	☐	☐
f. Using the toilet	☐	☐

Your Health Care

A health care team consists of a variety of people who help you take care of your health condition. For some people, this team may include nurses, case managers, or doctors. These individuals make up your health care team. Please think about your health care team when answering the questions below.

12. During the past 6 months, has someone from your health care team helped you set goals to take care of your health problems?

☐ Yes

☐ No

13. During the past 6 months, has someone from your health care team helped you make a plan to take care of your health problems?

☐ Yes

☐ No

These next questions are about services you may have received during the past 6 months. Please consider information you may have received from your health care team, at physicians' offices, during telephone calls from someone from your health care team, or by mail when answering the next questions.

14. How helpful were the one-on-one educational or counseling sessions you may have received to help you care for your health problems?

Very helpful	Somewhat helpful	A little helpful	Not helpful	Did not receive counseling
☐	☐	☐	☐	☐

15. How helpful were discussions you may have had with your health care team about how and when to take your medicine?

Very helpful	Somewhat helpful	A little helpful	Not helpful	Did not discuss medicine
☐	☐	☐	☐	☐

Your Health Care

16. How helpful were discussions you may have had with your health care team about how to deal with stress or feeling sad?

Very helpful	Somewhat helpful	A little helpful	Not helpful	Did not discuss stress/sadness
☐	☐	☐	☐	☐

17. How helpful were discussions you may have had with your health care team about the foods you should be eating?

Very helpful	Somewhat helpful	A little helpful	Not helpful	Did not discuss food
☐	☐	☐	☐	☐

18. How helpful were discussions you may have had with your health care team about the amount of exercise you should get?

Very helpful	Somewhat helpful	A little helpful	Not helpful	Did not discuss exercise
☐	☐	☐	☐	☐

Taking Care of Your Health

The next questions ask about how sure you are that you can do certain things for your health.

19. How sure are you that …

a. You can take all of your medications when you should?

Very unsure	Somewhat unsure	Neither	Somewhat sure	Very sure
☐	☐	☐	☐	☐

b. You can plan your meals and snacks according to dietary guidelines?

Very unsure	Somewhat unsure	Neither	Somewhat sure	Very sure
☐	☐	☐	☐	☐

c. You can exercise two or three times weekly?

Very unsure	Somewhat unsure	Neither	Somewhat sure	Very sure
☐	☐	☐	☐	☐

The questions below ask about self-care activities.

20. On how many of the <u>past 7 days</u> did you take your medication as prescribed?

0	1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐	☐

21. On how many of the <u>past 7 days</u> did you participate in at least 30 minutes of continuous physical activity (including walking)?

0	1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐	☐

Taking Care of Your Health

22. On average, over the <u>past month</u>, how many DAYS PER WEEK have you followed your healthy eating plan?

0	1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐	☐

Your Health Care Experience

A health care team consists of a variety of people who help you take care of your health condition. For some people, this team may include nurses, case managers, or doctors. These individuals make up your health care team. Please think about your health care team when answering the questions below.

23. Please think about all the health care providers you have talked with either by phone or in-person over the <u>past 6 months</u>, including any doctors, nurses, or other providers such as pharmacists who you talked to about your health problems.

Overall, how would you rate your experience with these health care providers in helping you cope with your condition?

Excellent	Very good	Good	Fair	Poor
☐	☐	☐	☐	☐

24. In the <u>past 6 months</u>, how often did your health care team …

a. Explain things in a way that was easy to understand?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

b. Listen carefully to you?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

c. Spend enough time with you?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

25. In the <u>past 12 months</u>, did your health care team talk with you about the pros and cons of each choice for your treatment or health care?

Definitely yes	Somewhat yes	Somewhat no	Definitely no
☐	☐	☐	☐

26. In the <u>past 12 months</u>, how often did your health care team give you easy to understand instructions about what to do to take care of these health problems or concerns?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

27. In the <u>past 12 months</u>, how often did your health care team seem informed and up-to-date about your health?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

28. In the <u>past 12 months</u>, when you called someone on your health care team with a medical question during regular office hours, how often did you get an answer to your question that same day?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

Your Health Care Experience

29. In the <u>past 12 months</u>, when you called someone on your health care team after regular office hours, how often did you get an answer to your question?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

30. In the <u>past 12 months</u>, how often did your health care team show respect for what you had to say?

Never	Almost never	Sometimes	Usually	Almost always	Always
☐	☐	☐	☐	☐	☐

31. How much of a problem are each of these for you?

a. Lack of information about my medical conditions

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

b. Lack of information about my treatment options

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

c. Lack of information about why my medications have been prescribed to me

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

Your Health Care Experience

d. Problems getting my medications refilled on time

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

e. Uncertainty about when or how to take my medications

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

f. Side effects from my medications

Very big problem	Big problem	Moderate problem	Small problem	Not a problem at all
☐	☐	☐	☐	☐

About You

These next questions ask for information about you.

	Yes, Hispanic or Latino	No, not Hispanic or Latino
32. Are you of Hispanic or Latino origin or descent?	☐	☐

33. What is your race? Please mark one or more.

White	Black or African American	Asian	Native Hawaiian or other Pacific Islander	American Indian or Alaska Native
☐	☐	☐	☐	☐

34. What is the highest grade or level of school that you have completed?

8th grade or less	Some high school, but did not graduate	High school graduate or GED	Some college or 2-year degree	4-year college graduate	More than 4-year college degree
☐	☐	☐	☐	☐	☐

35. What is your current living arrangement? Right now, are you living … (check all that apply)

Alone ....☐

With spouse or partner..☐

With others who are related to you ....☐

With others who are not related to you ....☐

About You

36. Some people who have Medicare also have <u>other insurance</u> to help pay for some of the costs of their health care. Do you have any other insurance that pays at least some of the cost of your health care?

☐ Yes

☐ No

37. Do you have insurance that helps to pay for at least some of the cost of your prescription drugs (check all that apply)?

☐ Yes, Medicare Part D

☐ Yes, Other insurance

☐ No

38. Please mark the box below for <u>each type</u> of health insurance that you have (check all that apply).

Medigap .... ☐

Employer, Union, or Retiree Health Coverage....................... ☐

Veteran's Retiree Benefits, also known as VA Benefits .... ☐

Military Retiree Benefits, also known as Tricare .... ☐

Medicaid, also known as state medical assistance................ ☐

Other .... ☐

I don't have health insurance other than Medicare .... ☐

39. Who completed this survey form?

Person to whom this survey was addressed.......................... ☐

Family member or relative of person to whom the survey was addressed.. ☐

Friend of person to whom the survey was addressed .... ☐

Other .... ☐