Research Report

Evaluation of CMS's Federally Qualified Health Center (FQHC) Advanced Primary Care Practice (APCP) Demonstration

Final Report – Appendix I–N

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Preface

RAND has conducted an independent evaluation of the Federally Qualified Health Center Advanced Primary Care Practice (FQHC APCP) Demonstration for Centers for Medicare and Medicaid Services (CMS). The evaluation studied the processes and challenges involved in transforming FQHCs into patient-centered medical homes and assessed the effects of the FQHC APCP Demonstration model on access, quality, and cost of care provided to Medicare and Medicaid beneficiaries served by FQHCs.

This final report, written by RAND, describes the approach RAND took to its mixed-methods evaluation and the final results of these analyses. This is the final of three annual reports that RAND prepared during the course of the evaluation. The contents and format of this report were designed to address three key policy questions relevant to FQHC APCP Demonstration and its evaluation.

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Abbreviations

AAAHC	Accreditation Association for Ambulatory Health Care
ACA	Affordable Care Act
ACSC	ambulatory care sensitive condition
APCP	Advanced Primary Care Practice
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CG-CAHPS	Clinician and Group Consumer Assessment of Healthcare Providers and Systems
CHF	chronic heart failure
CMS	Centers for Medicare and Medicaid Services
COC	continuity of care
CPT	current procedural terminology
CVD	cardiovascular disease
DME	durable medical equipment
E&M	evaluation and management
ED	emergency department
FQHC	federally qualified health center
HbA1C	hemoglobin A1c
HCC	hierarchical condition category
HCCN	Health Center Control Networks
HRSA	Health Resources and Services Administration
JC	Joint Commission
LDL	low-density lipoprotein
MDM	Master Data Management System
NCQA	National Committee for Quality Assurance
OPD	outpatient department

PAC	post–acute care
PCA	primary care association
PCMH	patient-centered medical home
PCP	primary care provider
RHC	rural health clinic
SE	standard error
SNF	skilled nursing facility
TA	technical assistance

Appendix I. Demonstration Effect on Continuity of Care

Improving continuity of care between Medicare patients and their individual providers or care teams is one of the key goals of advanced primary care (Institute of Medicine, 1996; 2003; 2012). Greater continuity of care can improve care management and strengthen patient and provider communication, improving patient-provider trust (Love, 2004; Rodriguez, 2007), and the efficiency of care (Bentler, Morgan, Vimig, et al., 2013; Mainous and Gill, 1998; Morgan, Teal, Hasche, et al., 2008; Saultz and Lochner, 2005). This is believed to be especially relevant for patients with multimorbidity, which characterizes many Medicare FQHC users.

In this appendix we initially report the results of our analyses of the impact of the demonstration on continuity of care (COC). We examined this issue for the overall rolling-entry cohort, and for four subgroups of beneficiaries with specific diagnoses measured during the baseline year: (1) diabetes, (2) cardiovascular disease or chronic heart failure (CVD/CHF), (3) chronic lung disorder, and (4) neurological disorder or stroke (neuro/stroke). We discuss our methods in more detail below and then provide the results of our analyses.

Next, we report the results of our analyses of the impact of medical home recognition on COC.

Methods

We assessed the COC between Medicare beneficiaries and providers before and after the start of the demonstration using the Bice-Boxerman index (Bice and Boxerman, 1977). This index incorporates the number of unique *providers* visited, the number of visits with each provider, and the total number of visits to all providers. The scale ranges from 0 to 1, with 1 indicating perfect COC. We supplemented this analysis with a secondary analysis that examined COC between beneficiaries and *practices* by accounting for the number of unique practices visited, the number of visits associated with each practice, and the total number of visits overall. We used a difference-in-differences regression approach to determine whether beneficiary-provider COC (primary analysis) or beneficiary-practice COC (secondary analysis) differed between the demonstration and comparison groups in each year of the demonstration compared with the year preceding each beneficiary's entry into the demonstration (baseline year).

Methodology Notes

- Clinicians in internal medicine, general practice, family medicine, obstetrics and gynecology, adult health, community health, family practice, primary care, women's health, gerontology, pediatrics, and preventive medicine were classified as primary care providers (PCPs).

- Specialist categories included cardiology, allergy and immunology, dermatology, emergency, endocrinology, ear-nose-throat, optometry, gastroenterology, hematology and oncology, hospice, mental health, neurology, nephrology, orthopedics, surgery, urology, and others.
- The Bice-Boxerman index is uninformative for patients with few visits. Therefore, we excluded patients with fewer than three visits when calculating the index within each provider category (primary care, specialist).
- Models were fit using Generalized Estimating Equation Generalized Linear Model with an identity link and a normal error distribution, clustered at the beneficiary level.
- All models controlled for the same set of covariates included in the primary outcome evaluation models. These included beneficiary characteristics (age, race, gender, Medicaid eligibility, eligibility due to a disability, previous institutionalization, hierarchical condition category [HCC] score), baseline site characteristics (number of Medicare beneficiaries attributed to the site in the year preceding the demonstration, total revenue per site, years of federally qualified health center [FQHC] operation, indicator for participation in Health Resources and Services Administration [HRSA] patient-centered medical home [PCMH] initiative, or other Centers for Medicare and Medicaid Services [CMS] demonstration tracked by Master Data Management System [MDM], PCMH supplemental grant funding recipient in 2011, number of PCPs, and number of specialists), grantee characteristics (number of service delivery sites, indicator for Health Center Control Networks [HCCN] grantee, ambulatory quality accreditation, or Affordable Care Act [ACA] grantee), or area characteristics (rural-urban classification, primary care association [PCA] region, percentage of household poverty).
- Propensity scores were used to further control for baseline differences between the demonstration and control groups; propensity models included all covariates included in the primary outcomes evaluation models, including beneficiary characteristics (age, race, gender, Medicaid eligibility, eligibility due to a disability, previous institutionalization, HCC score), beneficiary outcomes in the baseline year (total cost, number of inpatient admissions, number of emergency room visits, number of readmissions, number of PCP visits, number of specialist visits, number of inpatient Ambulatory Care Sensitive Condition [ACSC] visits, indicators for hemoglobin A1c [HbA1C], nephrology, eye, low-density lipoprotein [LDL], and lipid testing, as well as a diagnosis of diabetes or ischemic vascular disease), baseline site characteristics (National Committee for Quality Assurance [NCQA] Level 3 recognition, number of Medicare beneficiaries attributed to the site in the year preceding the demonstration, total revenue per site, years FQHC in operation, indicator for participation in HRSA PCMH initiative, or other CMS demonstration tracked by MDM, PCMH supplemental grant funding recipient in 2011, number of PCPs, and number of specialists), grantee characteristics (number of service delivery sites, indicator for HCCN grantee, ambulatory quality accreditation, or ACA grantee), or area characteristics (rural-urban classification, PCA region, percent household poverty) plus baseline continuity of care scores.
- The tables that follow present results from Beneficiary-Practice Bice-Boxerman Continuity of Care Index analyses.

Sample

As noted above, we examined continuity for the entire rolling-entry cohort, and for four subgroups of beneficiaries with specific diagnoses measured during the baseline year: (1) diabetes, (2) CVD/CHF, (3) chronic lung disorder, or (4) neuro/stroke. We measured COC between beneficiaries and PCPs only, specialists only, and specific sets of specialists we considered to be most likely to care for patients in each of the four diagnostic groups. Provider categories were defined by National Plan and Provider Enumeration System Provider Taxonomy Codes, and visits included in the analysis were limited to those made by beneficiaries to physicians, nurse practitioners, and physician assistants. Unique providers were identified using National Provider Identifier codes. Unique practices were defined using Tax Identification Numbers or Provider Transaction Access Numbers.

Results of Demonstration Effects on COC

Unadjusted Results

In the primary unadjusted analysis that examined beneficiary-provider COC for primary care, the COC indices were identical for both the demonstration and comparison groups (0.58 in baseline for both groups and 0.59 in Year Three for both groups; Exhibit 11.1).[1] **Continuity was consistently higher for primary care compared with specialty care.** This is consistent with patients' propensity to have a single primary care provider but to have condition-specific specialists. As expected, unadjusted analyses that examined all specialty care together showed COC indices were approximately 0.20 points higher for primary care relative to specialty care for both the demonstration and comparison groups (Exhibit 11.1).

Within beneficiary subgroups that included patients who were homogeneous with respect to diagnoses, COC within selected specialist categories was consistently higher than COC among PCPs. For example, COC was highest between diabetic patients and diabetes (endocrine) specialists (0.93 and 0.94 in baseline and 0.93 and 0.94 in Year Three for demonstration and comparison groups, respectively), and lowest between diabetic patients and eye (ophthalmology) specialists (0.68 and 0.70 in baseline and 0.68 and 0.72 in Year Three for demonstration and comparison groups, respectively (Exhibit 11.1).

We hypothesized that patients might be more loyal to a practice than to an individual provider. We expected that not all clinics would be staffed with capacity to consistently match patients with the *same providers*, even though they might be able to accommodate the patient

[1] The Bice-Boxerman Continuity of Care Index is measured on the 0–1 scale. A value of 1 indicates that all of a beneficiary's visits are to the same provider.

with *a provider* from their clinic. **While COC was substantially higher when measured at the practice level as compared with the provider level, patterns among subgroups and across specialty types were consistent with the beneficiary-provider level measures** (Exhibit O.1).

Exhibit I.1. Unadjusted Bice-Boxerman Index for Primary Care and Specialist Visits, for Baseline and Year Three of the Demonstration

		Full Cohort		Diabetes Subgroup		CVD/CHF Subgroup		Chronic Lung Subgroup		Neurological /Stroke Subgroup	
	Year	Demo	Comp	Demo	Comp	Demo	Comp	Demo	Comp	Demo	Comp
PCP	Baseline	0.58	0.58	0.60	0.60	0.56	0.57	0.57	0.57	0.54	0.55
	Year Three	0.59	0.59	0.61	0.61	0.58	0.59	0.59	0.59	0.57	0.58
Specialist											
Any	Baseline	0.39	0.39								
	Year Three	0.41	0.40								
Diabetes	Baseline			0.93	0.94						
	Year Three			0.93	0.94						
Orthopedics/ podiatry	Baseline			0.74	0.74						
	Year Three			0.74	0.74						
Eye	Baseline			0.68	0.70						
	Year Three			0.68	0.72						
Cardiology/ cardiac or vascular surgery	Baseline			0.76	0.75	0.74	0.73	0.72	0.71	0.73	0.72
	Year Three			0.76	0.76	0.73	0.73	0.73	0.73	0.74	0.74
Pulmonary, lung	Baseline					0.89	0.88	0.90	0.89		
	Year Three					0.89	0.88	0.91	0.90		
Neurology/ neurosurgery	Baseline									0.79	0.80
	Year Three									0.80	0.81

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: Demo=Demonstration group; Comp=Comparison group.

Adjusted Results of Demonstration Effects on COC

For the full beneficiary cohort, in covariate-adjusted regression analyses of the rolling entry cohort that examined differences in COC between beneficiaries and PCPs, **we found statistically significant decreases in continuity in Years Two and Three (≤0.013 points on a scale ranging from 0 to 1) in demonstration sites relative to comparison sites** (Exhibit 11.2, left columns). **We also found statistically significant differences in COC between beneficiaries and specialists in demonstration sites relative to comparison sites in Year Three of the demonstration, although the magnitude of this decrease was smaller (0.004 points).**

In the diabetic beneficiary subgroup (Exhibit I.2, right columns), we separately examined COC for PCPs and for four different types of specialists who typically provide care to patients with diabetes. We examined continuity between diabetic patients and diabetes specialists (typically endocrinologists, who manage diabetes and its complications); orthopedists and/or podiatrists, who often manage lower extremity complications of diabetes; ophthalmologists, who provide preventive and therapeutic vision services for diabetic patients; and cardiologists and cardiac/vascular surgeons who manage the cardiovascular complications of diabetes. Stratifying analyses by specialty type allowed us to analyze a group of beneficiaries expected to be relatively homogeneous with respect to diabetes comorbidities and/or complications.

We observed a statistically significant decrease in COC between beneficiaries and PCPs in Year Two (0.014-point decrease) and in Year Three (0.007-point decrease) among demonstration sites relative to comparison sites. We found a 0.037-point statistically significant decrease in continuity in Year Three (0.014 points) in COC between eye specialists and beneficiaries for demonstration sites relative to comparison sites, but no other statistically significant differences in COC in any other year of the demonstration among eye specialists. We did not find significant COC results in the three other categories of diabetes specialists.

These findings may be explained by beneficiaries attributed to demonstration FQHCs having a stronger emphasis over time from their FQHC on the importance of the receipt of evidence-based services as delivered by both PCPs and when needed by specialists. Beneficiaries attributed to demonstration sites may access needed specialty services more than those attributed to comparison sites. To receive needed services, beneficiaries may have to visit multiple different provider offices in order to access these services. Beneficiaries may visit more than one primary care site within a demonstration FQHC grantee organization or may visit specialty offices in different locations.

Exhibit I.2. Beneficiary-Provider Continuity-of-Care Difference-in-Differences Regression Results; All Beneficiaries and Beneficiaries in the Diabetes Subgroup at Baseline

	Full Cohort		Diabetes Subgroup				
Demonstration Effect	PCP Visits Only Estimate (SE)	Specialist Visits Only Estimate (SE)	PCP Visits Only Estimate (SE)	Diabetes Estimate (SE)	Orthopedics/ Podiatry Estimate (SE)	Eye Estimate (SE)	Cardiology/ Cardiac or Vascular Surgery Estimate (SE)
Year 1	0.001 (0.002)	–0.001 (0.002)	0.001 (0.003)	0.003 (0.010)	–0.015† (0.009)	0.004 (0.019)	0.003 (0.009)
Year 2	–0.010*** (0.002)	0.000 (0.002)	–0.014*** (0.003)	0.014 (0.010)	0.013 (0.009)	0.006 (0.019)	–0.006 (0.009)
Year 3	–0.013*** (0.002)	–0.004* (0.002)	–0.007*° (0.003)	–0.010 (0.009)	0.001 (0.009)	–0.037*° (0.018)	–0.001 (0.008)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Models also controlled for beneficiary, site, and area characteristics.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
° Adjustment for multiple comparisons is associated with loss of statistical significance.

Demonstration impacts on COC were mixed for the three other beneficiary subgroups we examined, and they differed for primary care and specialty care. For the CVD/CHF and beneficiary subgroup (Exhibit 11.3, left columns), we observed a small (<0.015 point) but statistically significant *decrease* in beneficiary-PCP COC for demonstration sites relative to comparison sites in Year Two only. We also found a small increase (0.042 points) in COC between these patients and their pulmonology specialists in Year Three of the demonstration. For patients with chronic lung disease, we see a statistically significant increase (0.028 points) in COC between these patients and pulmonology specialists in Year Three, but no difference for primary care providers or other specialists in any other years of the demonstration (Exhibit 11.3, middle columns). We also see a small but statistically significant decrease (0.015 points) in COC between beneficiaries with neuro/stroke disorders and their primary care physicians in Year Two among demonstration sites, but no statistically significant differences in other years. No other COC trends observed in the demonstration group in any year were statistically different from trends observed in the comparison group. Adjusted analysis results were similar for beneficiary-practice COC in sensitivity analyses (Appendix F; Exhibits O.2 and O.3).

Exhibit I.3. Continuity of Care Difference-in-Differences Regression Results; Beneficiaries with Cardiovascular Disease or Chronic Heart Failure, Chronic Lung Disorder, or Neurological Disorder or Stroke at Baseline

	CVD/CHF Subgroup			Neurological Disorder/Stroke Subgroup			Chronic Lung Subgroup		
Demonstration Effect	PCP Visits Only Estimate (SE)	Cardiology/ Cardiac or Vascular Surgery Estimate (SE)	Pulmonary, Lung Estimate (SE)	PCP Visits Only Estimate (SE)	Neurology/ Neurosurgery Estimate (SE)	Cardiology/ Cardiac or Vascular Surgery Estimate (SE)	PCP Visits Only Estimate (SE)	Cardiology/ Cardiac or Vascular Surgery Estimate (SE)	Pulmonary, Lung Estimate (SE)
Year 1	–0.001 (0.004)	0.007 (0.008)	–0.004 (0.015)	–0.005 (0.005)	0.015 (0.015)	–0.017 (0.014)	–0.006 (0.004)	0.004 (0.013)	–0.015 (0.011)
Year 2	–0.012** (0.004)	–0.012 (0.008)	–0.013 (0.015)	–0.015** (0.005)	–0.008 (0.015)	0.017 (0.015)	–0.008† (0.005)	–0.020 (0.013)	–0.005 (0.012)
Year 3	–0.008† (0.004)	–0.002 (0.008)	0.042** (0.015)	–0.006 (0.005)	–0.009 (0.014)	–0.007 (0.014)	–0.004 (0.004)	0.007 (0.012)	0.028*° (0.012)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Models also controlled for beneficiary, site, and area characteristics (see Appendix G for additional details).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
° Adjustment for multiple comparisons is associated with loss of statistical significance.

Impact of PCMH Recognition on Claims-Based Continuity of Care

As a supplement to the demonstration difference-in-differences effect analyses assessing continuity of care presented in Chapter Eleven, we conducted medical home difference-in-difference impact analyses to test the overall medical home effect that may affect care continuity.

We defined the medical home effect as achievement of NCQA Level 3 status in the last year of the demonstration (versus those FQHCs that did not achieve Level 3). We conducted this analysis separately for the entire sample of beneficiaries attributed to either demonstration or comparison FQHCs by implementing a difference-in-differences analysis comparing beneficiaries attributed to an FQHC that achieved medical home recognition compared with beneficiaries that did not achieve recognition. We repeated this analysis for beneficiaries attributed to FQHCs that achieved Level 3 or alternate recognition (hereafter, "Level 3/alternate recognition").

Exhibit I.4 shows a significant positive demonstration effect for PCP visits in Year One for Level 3 recognition and in Year Three for Level 3/alternate recognition. In contrast, we see a significant negative effect for specialists for both types of recognition.

These results may be explained by an emphasis within medical home recognized FQHCs on the importance of beneficiaries achieving primary care continuity. Since the COC analyses map each beneficiary to the address of specific providers and/or practices, the expected medical home effect of enhanced continuity may be diminished if beneficiaries visit more than one FQHC among their FQHC grantee's organization (with each different FQHC within a grantee organization having its own distinct practice address). Additionally, the emphasis within recognized FQHCs on beneficiary receipt of evidence-based care, which sometimes requires visiting different specialist offices, may be associated with a decrease in continuity across specialty visits, while still maintaining an increase in needed evidence-based services.

Exhibit I.4 shows the beneficiary-provider continuity of care index analyses defining medical home recognition separately as Level 3 and as Level 3/alternate.

Exhibit I.4. Beneficiary-Provider Continuity of Care Index, Difference-in-Differences Regression Results, Level 3 and Level 3/Alternate Medical Home Effect

	Level 3 Recognition				Level 3/Alternate Recognition			
	PCP Visits Only		Specialist Visits Only		PCP Visits Only		Specialist Visits Only	
Demonstration Effect	Estimate (SE)	p-value	Estimate (SE)	p-value	Estimate (SE)	p-value	Estimate (SE)	p-value
Demonstration Effect in Year 1	0.007*** (0.002)	<0.001	–0.002 (0.002)	0.379	0.002 (0.002)	0.239	–0.002 (0.002)	0.315
Demonstration Effect in Year 2	–0.001 (0.002)	0.4953	–0.006*** (0.002)	0.005	0.001 (0.002)	0.783	–0.008*** (0.002)	<0.001
Demonstration Effect in Year 3	–0.001 (0.002)	0.4287	–0.006*** (0.002)	0.005	0.004** (0.002)	0.043	–0.007*** (0.002)	<0.001

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Models also controlled for beneficiary, site, and area characteristics (see Chapter Eleven and Appendix F for additional details). Exhibit I.4 uses two different definitions of the treatment group: The first panel, Medical Home Effect (Level 3 Recognition), compares beneficiaries attributed to FQHCs achieving NCQA Level 3 recognition by the end of the demonstration period with beneficiaries attributed to FQHCs that did not achieve Level 3 recognition by the demonstration's end. The second panel, Level 3/alternate, compares beneficiaries attributed to FQHCs achieving recognition from NCQA Level 3, The Accreditation Association for Ambulatory Health Care (AAAHC), Joint Commission (JC), or from Minnesota or Oregon by the end of the demonstration period with beneficiaries from FQHCs that did not achieve any of these types of recognition.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit I.5 shows the beneficiary-practice continuity of care index analyses defining medical home recognition separately as Level 3 and as Level 3/alternate. We see over time that beneficiaries attributed to recognized sites are associated with worse beneficiary COC compared with unrecognized sites.

Exhibit I.5. Beneficiary-Practice Continuity of Care Index, Difference-in-Differences Regression Results, NCQA Level 3 and Level 3/Alternate Medical Home Effect

	Level 3 Recognition				Level 3/Alternate Recognition			
	PCP Visits Only		Specialist Visits Only		PCP Visits Only		Specialist Visits Only	
Demonstration Effect	Estimate (SE)	p-value	Estimate (SE)	p-value	Estimate (SE)	p-value	Estimate (SE)	p-value
Demonstration Effect in Year 1	–0.011*** (0.002)	<0.0001	–0.002 (0.002)	0.296	–0.003 (0.002)	0.1244	–0.003 (0.002)	0.137
Demonstration Effect in Year 2	–0.006*** (0.002)	<0.0001	–0.003 (0.002)	0.178	–0.002 (0.002)	0.1314	–0.004** (0.002)	0.040
Demonstration Effect in Year 3	–0.010*** (0.002)	<0.0001	–0.004† (0.002)	0.070	–0.005*** (0.002)	0.0011	–0.006*** (0.002)	0.004

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: Models also controlled for beneficiary, site, and area characteristics (see Chapter Twelve for additional details).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Summary and Conclusion

This appendix first described our analyses of the impact of the demonstration on continuity of care. Overall, among the full cohort and within specific beneficiary subgroups defined according to diagnoses for which COC can play a key role in patient outcomes, there was little to no change in COC throughout the demonstration, among either PCPs or specialists. The demonstration did not have a policy-relevant impact on COC when measured at the provider or practice levels, across all of primary care and specialty care and within specific specialist categories for selected diagnostic subgroups. Specific findings include the following:

- In the primary unadjusted analysis that examined beneficiary-provider COC for primary care, the COC indices were identical for demonstration and comparison groups. Continuity was consistently higher for primary care compared with specialty care. While COC was substantially higher when measured at the practice level compared with the provider level, patterns among subgroups and across specialty types were consistent with the beneficiary-provider level measures.
- Within beneficiary subgroups that included patients that were homogeneous with respect to diagnoses, COC within selected specialist categories was consistently higher than COC among PCPs.
- In covariate adjusted regression analyses of the rolling entry cohort that examined differences in COC between beneficiaries and PCPs, we found very small but statistically significant decreases in continuity in Years Two and Three (<0.013 points) in demonstration sites relative to comparison sites.
- In the diabetic beneficiary subgroup, we observed a small but statistically significant decrease in beneficiary-PCP COC among demonstration sites relative to comparison sites in Year Two (0.014 point decrease) and Year Three (0.007 point decrease).
- Demonstration impacts on continuity of care were mixed for the three other beneficiary subgroups we examined and differed for primary care and specialty care.
- While statistically significant changes in COC were detected, the majority of the changes were negative (indicating a decrease in COC among demonstration sites) but very small in magnitude (< 0.02 points on a scale of 0-1). Findings were consistent for COC between patients and PCPs, all specialists, and condition-specific specialists.

Next, we describe the impact of medical home recognition with NCQA Level 3 or Level 3/alternate recognition on COC. We see, over time, that beneficiaries attributed to recognized compared with not recognized sites are associated with worse beneficiary COC.

Efforts to improve patient access to care are often compromised by imperfect electronic health record systems, too few staff, too many structural changes, and inadequate infrastructure for assuring adequate coordination between clinic and specialty and clinic and hospital-based services. Until systems definitively respond to these challenges, we may see hoped for improvements in access to care correlated with decreased continuity. Once access to specialty

care improves for FQHC users, then opportunities for continuity—with beneficiaries being able to follow-up with the same provider or same practice—are likely to follow.

Appendix J. Demonstration Effect on Beneficiary Subgroups

This appendix summarizes the evaluation's approach to subgroups using demonstration difference-in-difference analyses. The goal of any subgroup analysis is to understand whether the treatment or intervention given to the demonstration group affects some subgroups differently than others. Study participants are categorized into subgroups according to certain baseline characteristics. Then, the groups are assessed according to whether outcomes differ according to the baseline factor (Wang, Lagakos, Ware, et al., 2007). Subgroups can be distinguished in many ways, such as demographic characteristics (e.g., age, race/ethnicity) location of residence (e.g., rural, urban), or clinical diagnosis (e.g., mental health condition). For this study, we analyzed whether the effects of the demonstration differed according to certain baseline characteristics. In particular, we wanted to know whether some potentially vulnerable groups had different experiences than other groups in the demonstration versus comparison sites.

FQHCs have been hypothesized to reduce socioeconomic disparities in access to care, both because they are typically located in areas of need and because of their income-based pricing. The Healthy People 2020 goals define disparities as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage" (U.S. Department of Health and Human Services, 2008). Additionally, FQHCs are mission-driven to care for the uninsured and known to have improved access to preventive care for racial/ethnic minorities and low-income individuals (Jones, Shi, Hayashi, et al., 2013; National Association of Community Health Centers, 2014). Chen et al. found that Medicaid enrollees were less likely to visit the ED for a nonemergency reason when an FQHC was located nearby (Chen, Hibbert, Xi, et al., 2015). Wright et al. found that dual-eligible beneficiaries had lower use of the ED when they were users of FQHCs (Wright, Potter, and Trivedi, 2015). These are important findings and suggest that FQHCs may contribute to reducing disparities in care. This seems particularly hopeful given the focus of many FQHCs and medical homes to address the social determinants of health.

As a result of such factors, we hypothesized we might see more favorable outcomes for vulnerable subgroups in the demonstration FQHCs. For example, the first NCQA PCMH standard ("enhance access and continuity") includes a set of elements defined as *culturally appropriate services*. According to the standard, recognized medical home clinics are responsible for assessing the racial and ethnic diversity of the population they serve, assessing the language needs of the population, providing interpretation/bilingual services to meet the needs of the population, and providing printed materials in all appropriate languages for the population. If an FQHC fulfills all these responsibilities, it is possible that patients might experience improved processes and other outcomes as a result.

However, as will be discussed, over the three-year demonstration, we found few persistent significant effects in the subgroups of interest for demonstration versus comparison sites. We briefly describe the methods used in this analysis and then present the results.

Methods

We selected 19 subgroups for analyses, including 16 beneficiary- and three clinic-level subgroups (see Table 12.1, column one). The subgroup statistical analyses use the generalized estimating equations and difference-in-differences study design, just as we have presented throughout this report. However, for the subgroup analyses, we add a three-way interaction between the time period (before and after the intervention), the demonstration group indicator, and the subgroup indicator. This triple difference tells us the relative difference in the given outcome for the subgroup of interest (compared with their comparison group) in the demonstration FQHCs (compared with the comparison FQHCs) in the post-implementation period (compared with before the demonstration was implemented). It is this coefficient we report in the tables.[2]

Results

Exhibit 12.1 summarizes the results of significant subgroup comparisons, stratified by demonstration year. For each subgroup, the table includes significant results moving in a consistent direction (positive or negative) for each subgroup of interest for each year of the demonstration at the $p<0.05$ level. (The full results indicating significance at $p<0.10$ can be found in Appendix G.) The table indicates whether the outcome for that subgroup was greater (increase) or smaller (decrease) than the outcome experienced by the relevant comparison group. In the table, the significant dependent variables are marked with a "U," "P," or "S," to indicate, respectively, whether the variable refers to utilization, process, or spending.

There was no consistent pattern to the results. Overall, 16 of 19 demonstration subgroups had a significant increase in at least one utilization variable relative to the comparison group. At the same time, 12 of 19 demonstration subgroups showed a significant decrease in at least one utilization variable relative to the comparator. Two of 19 subgroups showed an increase in at least one process measure relative to the comparator, while five of 19 showed a decrease in at least one process measure relative to the comparator. Finally, eight of 19 subgroups showed a

[2] One other unique aspect of the subgroup analyses is that these analyses do not include propensity score matching used in the rest of the report. The propensity score matching used elsewhere in the report is designed to make the demonstration FQHC resemble the comparison FQHCs on a variety of characteristics at baseline. Matching on observable characteristics ensures that the groups are as comparable as possible, so that any observed differences on a given outcome can be attributed to the effect of the demonstration. However, the groups were matched at the clinic level, and are not appropriately weighted for the subgroups of interest.

significant increase in one or more areas of spending relative to the comparator, while three of 19 showed a significant decrease in at least one spending variable relative to the comparator.

Exhibit J.1. Subgroups Having Significant Difference on Given Outcome

		Significant Dependent Variables		
Subgroup	**Significant Change**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Demographics				
85+ vs. 65–84 years	Increase	Usual Provider Continuity Index (U)	FQHC visits (U) Usual Provider Continuity Index (U)	PCP visits (U) FQHC visits (U) Usual Provider Continuity Index (U)
	Decrease		Non-FQHC primary care visits (U)	Non-FQHC primary care visits (U)
65–84 vs. < 65 years	Increase	PCP visits (U) FQHC spending (S)	FQHC visits (U) Usual Provider Continuity Index (U) FQHC spending (S)	PCP visits (U) FQHC visits (U) Usual Provider Continuity Index (U) FQHC spending (S)
	Decrease		Non-FQHC primary care visits (U)	Non-FQHC primary care visits (U)
Black vs. white	Increase		PCP visits (U) Usual Provider Continuity Index (U)	ED visits (U) FQHC visits (U) Usual Provider Continuity Index (U)
	Decrease	Total spending (S) Acute spending (S)	Specialist visits (U) Total spending (S) Acute spending (S)	Specialist visits (U) Total spending (S) Acute spending (S)
Disabled vs. not	Increase	Non-FQHC primary care visits (U)	Non-FQHC primary care visits (U)	Non-FQHC primary care visits (U)
	Decrease	FQHC visits (U) Usual Provider Continuity Index (U)	FQHC visits (U) Usual Provider Continuity Index (U)	FQHC visits (U) Usual Provider Continuity Index (U)
Dual-eligible vs. not	Increase	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)
	Decrease	PCP visits (U) FQHC visits (U) Non-FQHC primary care visits (U)	PCP visits (U) Specialist visits (U) Non-FQHC primary care visits (U)	PCP visits (U) Specialist visits (U) Non-FQHC primary care visits (U)
Spanish language preference vs. not	Increase		Usual Provider Continuity Index (U) Hospice spending (S)	Usual Provider Continuity Index (U) Hospice spending (S)
	Decrease	FQHC visits (U)	FQHC visits (U) PCP visits (U)	FQHC visits (U) PCP visits (U)
Clinical conditions				
Diabetes without complications vs. no diabetes	Increase			Usual Provider Continuity Index (U)
	Decrease			Imaging and having any skilled nursing facility (SNF) spending (S)

Subgroup	Significant Change	Significant Dependent Variables		
		Year 1, Post	Year 2, Post	Year 3, Post
Diabetes with vs. without complications	Increase		Usual Provider Continuity Index (U)	ED visits (U) Usual Provider Continuity Index (U)
	Decrease			
75–89th percentile vs. < 75th HCC score	Increase		FQHC visits (U)	FQHC visits (U) Non-FQHC primary care visits (U)
	Decrease			
90th percentile vs. 75–89th HCC score	Increase			Inpatient admissions (U) Home health spending (S)
	Decrease			
Mental health conditions				
Schizophrenia/ other psychotic disorder vs. not	Increase			FQHC visits (U)
	Decrease			
Schizophrenia/ other psychotic/ bipolar, depressive disorder vs. not	Increase	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)
	Decrease		PCP Visits (S)	Non-FQHC PCP visits (U) PCP Visits (S) HbA1C (P) Nephropathy check (P)
Bipolar/ depression vs. none	Increase	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)
	Decrease			HbA1C (P) Nephropathy check (P)
Alcohol disorders vs. none	Increase	PCP spending (S)	Lab spending (S)	Lab spending (S)
	Decrease		Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)
Utilization at baseline				
90th percentile ED Visits vs. <90th	Increase			
	Decrease	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)	
90th percentile FQHC visits vs. < 90th	Increase	Usual Provider Continuity Index (U)	Usual Provider Continuity Index (U)	
	Decrease		FQHC visits (U)	Inpatient admissions (U) FQHC visits (U)
FQHC site characteristics				
Rural vs. urban	Increase	Specialist visits (U) Lipid check (P)	PCP visits (U)	Inpatient admissions (U) PCP visits (U) Specialist visits (U) Total spending (S)
	Decrease	LDL (P) Nephropathy check (P)		
15+ vs. 5–15 sites per grantee	Increase	Specialist visits (U) Nephropathy check (P) Lab spending (S) Usual Provider Continuity Index (U)	Nephropathy check (P) Total spending (S) Lab spending (S)	ED visits (U) Lab spending (S) Nephropathy check (P)

Subgroup	Significant Change	Significant Dependent Variables		
		Year 1, Post	Year 2, Post	Year 3, Post
	Decrease	PCP visits (U) FQHC visits (U) FQHC spending (U)	PCP visits (U) FQHC visits (U) Hemoglobin A1c (HbA1C) tests (P) Usual Provider Continuity Index (U)	PCP visits (U) FQHC visits (U) HbA1C (P) Usual Provider Continuity Index (U)
5–15 vs. <5 sites per grantee	Increase	ED visits (U) ED visits (no admission) (U) Non-FQHC primary care visits (U)	Specialist visits (U) LDL (P) Non-FQHC primary care visits (U) FQHC spending (S)	Specialist visits (U) FQHC visits (U) Non-FQHC primary care visits (U) FQHC spending (S)
	Decrease	PCP visits (U) Usual Provider Continuity Index (U)	PCP visits (U)	Nephropathy check (P)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: U = Utilization, P = Process, S = Spending. Some subgroups do not appear in the table because there were no significant changes in utilization. The Usual Provider Continuity Index is measured for the beneficiary's FQHC visits, for those with three or more visits. The data corresponding with this table are in Appendix O.

More Detailed Subgroup Analysis Focusing on Beneficiaries in Rural vs. Urban FQHCs and Older Beneficiaries

Next, we present two examples of the kind of detailed analyses that we have performed for all listed subgroups.

Rural Beneficiaries

We focus on the subgroup of beneficiaries attributed to rural compared with urban sites, noting that rural populations often have lower utilization of necessary services and worse health outcomes than their urban counterparts (Deshpande, Chewning, Mott, et al., 2014; Murray, Kulkarni, and Ezzati, 2005; Murray, Kulkarni, Michaud, et al., 2006; O'Connor and Wellenius, 2012; Weissman, Duffus, Iyer, et al., 2015). Exhibit 12.2 shows the coefficients on the independent variable of interest: the three-way interaction between the subgroup, the post-period year, and the demonstration variable (the triple difference). **On average, Medicare beneficiaries attributed to rural FQHCs experienced an increase in visits to the FQHCs by the third year of the demonstration** (Exhibit 12.2). For example, by the third year of the demonstration, beneficiaries attributed to rural demonstration clinics had 121 more visits to the FQHCs per 1,000 beneficiaries than before the demonstration compared with urban enrollees (Exhibit 12.2, row seven). Visits to emergency departments and to non-FQHC primary care visits also decreased. **However, visits to non-FQHC specialist providers increased, so the proportion of visits with the attributed FQHC decreased during the study period**, as shown with the Usual Provider Continuity Index coefficient in row ten.

Exhibit J.2. Results, Impact of Demonstration on Individuals in Rural Compared with Urban Clinics

	Year 1, Post	p-value	Year 2, Post	p-value	Year 3, Post	p-value
Visits, per 1,000 enrollees						
Inpatient admissions	–13.73† (8.42)	0.095	–7.60 (7.99)	0.334	11.89 (7.60)	0.126
ED visits	–11.74 (16.14)	0.463	–27.66† (16.40)	0.086	–35.87* (17.6)	0.037
ED visits (w/o admission)	0.13 (13.47)	0.992	–9.53 (13.36)	0.472	–27.91* (14.44)	0.048
ED ACSC visits	–0.05 (3.38)	0.988	1.01 (3.36)	0.766	0.74 (3.72)	0.843
E&M PCP visits	23.67 (26.35)	0.371	89.92** (27.34)	0.001	156.71*** (27.87)	<0.001
E&M specialist visits	11.22 (22.68)	0.622	–17.99 (26.12)	0.489	18.21 (26.89)	0.500
FQHC visits	22.85 (22.62)	0.314	63.36** (21.93)	0.004	121.39*** (20.93)	<0.001
E&M PCP visits (non-FQHC)	–22.07 (18.18)	0.219	–45.72* (23.84)	0.050	–58.62* (27.77)	0.031
E&M specialist visits (non-FQHC)	21.52 (21.77)	0.326	28.86 (24.81)	0.248	77.39** (25.36)	0.003
Usual Provider Continuity Index	–0.91*** (0.00)	<0.001	–1.60*** (0.00)	<0.001	–1.25*** (0.00)	<0.001
Process measures, % change						
HbA1C	–1.19* (0.53)	0.032	–0.57 (0.64)	0.385	–0.99† (0.57)	0.095
LDL	–2.00** (0.70)	0.006	1.28 (0.80)	0.102	1.11 (0.81)	0.163
Eye exam	–1.68* (0.83)	0.041	–1.58* (0.81)	0.049	1.17 (0.81)	0.152
Nephropathy check	–2.00* (0.84)	0.018	–0.44 (0.82)	0.590	0.14 (0.84)	0.864
All four	–0.54* (0.28)	0.044	–0.41† (0.25)	0.089	0.23 (0.23)	0.337
Lipid check	1.88† (1.09)	0.073	1.89† (1.10)	0.077	1.02 (1.15)	0.366
Spending, dollars						
Total spending	24.92 (149.18)	0.867	25.91 (135.14)	0.848	294.29* (134.63)	0.029
Outpatient spending	112.49** (43.64)	0.010	–6.47 (43.50)	0.882	66.57 (42.15)	0.114
Acute spending	22.48 (88.38)	0.799	37.71 (79.13)	0.634	181.06* (77.14)	0.019
Postacute care (PAC) spending	–2.26 (45.48)	0.960	24.12 (40.76)	0.554	40.68 (39.64)	0.305
Outpatient department (OPD) spending	90.74* (40.11)	0.024	–24.23 (39.99)	0.545	33.48 (38.01)	0.378
FQHC spending	–3.85 (2.38)	0.105	–2.86 (2.44)	0.241	1.63 (2.51)	0.516
PC physician spending	0.22 (5.88)	0.971	3.18 (5.74)	0.580	5.58 (5.80)	0.336
Specialist physician spending	0.17 (20.93)	0.993	4.12 (19.93)	0.836	22.61 (19.64)	0.250
Inpatient file spending	–23.63 (100.94)	0.815	19.72 (89.95)	0.826	125.26 (87.81)	0.154
Carrier file spending	–8.32 (28.60)	0.771	3.63 (28.45)	0.898	21.68 (28.93)	0.454
Outpatient file spending	98.41* (41.97)	0.019	–26.44 (41.89)	0.528	33.51 (40.27)	0.405
Durable medical equipment spending	18.90* (9.39)	0.044	15.92† (9.38)	0.090	27.73** (10.38)	0.008
Home health spending	12.72 (12.09)	0.293	14.28 (11.97)	0.233	34.69** (11.36)	0.002
Hospice spending	–18.81 (45.80)	0.681	10.49 (41.27)	0.799	–63.11 (40.90)	0.123
SNF spending	34.99 (32.12)	0.276	16.85 (29.35)	0.566	94.00** (28.78)	0.001
Lab spending			–5.47 (3.43)	0.110	0.44 (3.77)	0.906
Imaging spending	–1.02 (2.90)	0.726	–2.79 (2.69)	0.300	0.20 (2.88)	0.944
Any SNF spending	0.12 (0.14)	0.397	0.08 (0.14)	0.598	0.38** (0.13)	0.010

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Significance levels are unadjusted for multiple hypotheses tests. The procedure for adjusting for multiple comparisons, as well as the adjusted results, can be found in Appendix A2 and Appendix G, respectively. The Usual Provider Continuity Index is calculated for the beneficiary's attributed FQHC. Primary care physician spending includes E&M visits and a service ordered by PCPs. Specialist physician spending includes E&M visits and services ordered by specialists.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Older Beneficiaries

Results for the older beneficiaries showed more concentration of visits within FQHCs over time. Exhibit 12.3 shows the coefficients on the three-way interaction term for the demonstration's effect on the oldest age group compared with the group ages 65–84. For this group, visits to the FQHCs are increasing over time more in the demonstration group than the comparison group, while non-FQHC primary care visits are decreasing. This leads to an increase in concentration of visits within the FQHCs, with a nearly four-percentage-point increase by Year Three. While this suggests increasing continuity within the FQHC, there are not yet spillover effects into decreased spending, as shown in the lower part of Exhibit 12.3.

Exhibit J.3. Results, Impact of Demonstration on Individuals in Age 85+ vs. Age 65–84

	Year 1, Post	p-value	Year 2, Post	p-value	Year 3, Post	p-value
Visits, per 1,000 enrollees						
Inpatient admissions	–9.74 (21.94)	0.653	–23.52 (23.50)	0.303	–19.58 (24.14)	0.407
ED visits	–0.71 (33.54)	0.983	–39.74 (38.08)	0.286	–51.80 (41.57)	0.200
ED visits (w/o admission)	11.28 (22.91)	0.626	–17.77 (26.06)	0.488	–25.87 (28.63)	0.355
ED ACSC visits	–8.77 (8.19)	0.252	–2.95 (8.26)	0.715	1.30 (8.47)	0.879
E&M PCP visits	–124.64† (70.81)	0.074	–44.97 (85.87)	0.599	213.26* (94.15)	0.027
E&M specialist visits	–30.12 (49.47)	0.540	20.53 (56.30)	0.717	–21.31 (64.63)	0.740
FQHC visits	–16.57 (50.93)	0.744	55.04 (55.67)	0.327	187.83*** (54.85)	0.001
E&M PCP visits (non-FQHC)	–250.47*** (72.30)	0.000	–251.77** (96.88)	0.005	–331.49** (125.44)	0.004
E&M specialist visits (non-FQHC)	–44.49 (46.84)	0.337	–44.18 (54.11)	0.409	–67.22 (61.02)	0.263
Usual Provider Continuity Index	2.74*** (0.01)	<0.001	3.57*** (0.01)	<0.001	3.96*** (0.01)	<0.001
Spending, dollars						
Total spending	466.64 (437.34)	0.286	49.73 (446.00)	0.911	–172.24 (483.08)	0.721
Outpatient spending	–15.07 (61.66)	0.807	–49.07 (71.18)	0.491	–75.01 (65.12)	0.249
Acute spending	227.84 (209.74)	0.277	10.11 (185.87)	0.957	–34.57 (187.06)	0.853
PAC spending	145.10 (165.98)	0.382	98.38 (154.69)	0.525	–152.75 (160.01)	0.340
OPD spending	–36.09 (54.11)	0.505	–57.49 (63.86)	0.368	–55.62 (56.23)	0.323
FQHC spending	7.47 (6.16)	0.225	1.82 (7.39)	0.806	4.33 (7.45)	0.561
PC physician spending	–11.31 (11.87)	0.341	–5.64 (18.50)	0.760	–12.37 (16.47)	0.453
Specialist physician spending	12.00 (34.20)	0.726	–48.94 (37.07)	0.187	–37.46 (37.60)	0.319
Inpatient file spending	291.18 (238.43)	0.222	31.30 (206.51)	0.880	–44.61 (210.80)	0.832
Carrier file spending	32.05 (50.56)	0.526	–88.33 (56.17)	0.116	–82.24 (55.71)	0.140
Outpatient file spending	–27.53 (59.09)	0.641	–65.02 (68.76)	0.344	–64.20 (62.11)	0.301
Durable medical equipment spending	14.07 (14.48)	0.331	12.60 (14.11)	0.372	–9.94 (15.78)	0.529
Home health spending	95.94* (43.21)	0.026	27.00 (47.65)	0.571	56.12 (48.64)	0.249
Hospice spending	123.58 (230.04)	0.591	–77.90 (263.09)	0.767	107.72 (296.84)	0.717
SNF spending	92.52 (143.40)	0.519	74.41 (139.22)	0.593	–158.48 (141.87)	0.264
Any SNF spending	0.41 (0.53)	0.453	0.74 (0.54)	0.194	–0.67 (0.65)	0.283
Lab spending	0.33 (5.71)	0.954	–6.44 (5.45)	0.238	–5.18 (5.54)	0.350
Imaging spending	5.89 (5.59)	0.292	–8.42 (5.82)	0.148	–5.61 (5.63)	0.319

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Significance levels are unadjusted for multiple hypotheses tests. The procedure for adjusting for multiple comparisons, as well as the adjusted results can be found in Appendix A2 and Appendix G, respectively. The Usual Provider Continuity Index is calculated for the beneficiary's attributed FQHC. Primary care physician spending includes E&M visits and a service ordered by PCPs. Specialist physician spending includes E&M visits and services ordered by specialists.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Unweighted Results for the Subgroups of Interest

This section of Appendix J supplements the introduction and discussion of the evaluation's subgroup analyses.

It contains the unweighted results for the subgroups of interest. The results, as they are not propensity score-weighted, contain the new entrants through the second year of the

demonstration. The unadjusted columns show the coefficient on the three-way interaction for the subgroup, the post year (Year 1, 2, or 3) and the demonstration group, which is the coefficient of interested in these regressions. Standard errors are in parentheses.

The adjusted columns adjust the significance levels for multiple comparisons. When there are many hypotheses being compared, it is possible to find a significant result just by chance. Adjusting for multiple comparisons guards against making false conclusions (type I error) by holding each hypothesis test to the customary 0.05 level. As explained in Appendix B, the multiple comparisons adjustment sorts p-values from largest to smallest, and compares them against a significance level of 0.01 divided by the *k*th outcome.

Exhibit J.4. Ages 65–84 Compared with Ages Under 65

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	14.12	11.73	15.16†	14.12	11.73	15.16
Inpatient admissions	(8.40)	(8.25)	(8.41)	(8.40)	(8.25)	(8.41)
ED visits	–0.98	6.07	5.38	–0.98	6.07	5.38
	(13.45)	(13.88)	(15.13)	(13.45)	(13.88)	(15.13)
ED visits (no admission)	–0.48	4.11	2.65	–0.48	4.11	2.65
	(10.30)	(10.41)	(11.19)	(10.30)	(10.41)	(11.19)
ED ACSC visits	4.00	–0.99	–1.91	4.00	–0.99	–1.91
	(3.21)	(3.63)	(3.94)	(3.21)	(3.63)	(3.94)
E&M PCP visits	**51.45***	38.79	**76.25****	51.45	38.79	76.25
	(24.51)	(25.79)	**(26.91)**	(24.51)	25.79)	(26.91)
Specialist visits	29.01	–7.44	–11.93	29.01	–7.44	–11.93
	(24.95)	(27.18)	(28.63)	(24.95)	(27.18)	(28.63)
FQHC visits	39.09†	**59.98****	**74.94*****	39.09	59.98	74.94^
	(20.19)	**(19.34)**	**(18.66)**	(20.19)	(19.34)	(18.66)
E&M PCP visits	–27.18	**–78.02****	**–103.71*****	–27.18	–78.02	–103.71
(non-FQHC)	(19.53)	**(25.68)**	**(31.06)**	(19.53)	(25.68)	(31.06)
E&M specialist visits	32.22	–18.10	–12.58	32.22	–18.10	–12.58
(non-FQHC)	(24.13)	(26.68)	(28.06)	(24.13)	(26.68)	(28.06)
Usual provider continuity	0.22	**1.22*****	**1.59*****	0.22	1.22^	1.59^
index	(0.00)	**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	**1.20***	0.48	0.85	1.20	0.48	0.85
HbA1C	**(0.59)**	(0.63)	(0.64)	(0.59)	(0.63)	(0.64)
LDL	**–1.85****	**–1.83****	–0.01	–1.85	–1.83	–0.01
	(0.62)	**(0.66)**	(0.75)	(0.62)	(0.66)	(0.75)
Eye exam	–0.75	0.17	0.45	–0.75	0.17	0.45
	(0.77)	(0.75)	(0.79)	(0.77)	(0.75)	(0.79)
Nephropathy check	–0.08	0.46	–0.58	–0.08	0.46	–0.58
	(0.79)	(0.78)	(0.81)	(0.79)	(0.78)	(0.81)
All four	–0.17	0.22	0.22	–0.17	0.22	0.22
	(0.28)	(0.24)	(0.25)	0.28)	(0.24)	(0.25)
Lipid check	–1.19	–1.24	–0.52	–1.19	–1.24	–0.52
	(0.90)	(0.94)	(1.05)	(0.90)	(0.94)	(1.05)
Spending, dollars	173.84	136.50	191.93	173.84	136.50	191.93
Total Medicare spending	(143.12)	(130.66)	(131.49)	(143.12)	(130.66)	(131.49)
Outpatient spending	30.96	**91.05***	–15.45	30.96	91.05	–15.45
	(43.38)	**(42.56**)	(40.81)	(43.38)	(42.56)	(40.81)
Acute spending	136.89	108.03	60.70	136.89	108.03	60.70
	(87.79)	(78.11)	(75.65)	(87.79)	(78.11)	(75.65)
PAC spending	79.31†	48.96	41.63	79.31	48.96	41.63
	(43.65)	(39.80)	(39.53)	(43.65)	(39.80)	(39.53)
OPD spending	24.93	**77.85***	–22.50	24.93	77.85	–22.50
	(40.14)	**(39.45)**	(36.88)	(40.14)	(39.45)	(36.88)
FQHC spending	**5.93***	**5.99***	**4.67***	5.93	5.99	4.67
	(2.31)	**(2.38)**	**(2.38)**	(2.31)	(2.38)	(2.38)
PC physician spending‡	–2.04	5.41	4.11	–2.04	5.41	4.11
	(6.43)	(5.83)	(6.43)	(6.43)	(5.83)	(6.43)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	12.68 (21.35)	20.72 (20.74)	–4.42 (20.26)	12.68 (21.35)	20.72 (20.74)	–4.42 (20.26)
Inpatient spending	123.25 (101.53)	91.72 (89.66)	77.18 (86.94)	123.25 (101.53)	91.72 (89.66)	77.18 (86.94)
Noninstitutional provider spending	–4.54 (28.73)	34.05 (28.92)	–4.77 (29.64)	–4.54 (28.73)	34.05 (28.92)	–4.77 (29.64)
Outpatient file spending	35.67 (41.75)	**93.45*** **(41.06)**	–15.72 (39.02)	35.67 (41.75)	93.45 (41.06)	–15.72 (39.02)
Durable medical equipment (DME) spending	–7.42 (9.61)	–3.54 (9.02)	–1.89 (9.90)	–7.42 (9.61)	–3.54 (9.02)	–1.89 (9.90)
Home health spending	11.29 (11.27)	**30.57**** **(11.82)**	20.57† (11.25)	11.29 (11.27)	30.57 (11.82)	20.57 (11.25)
Hospice spending	–60.96† (35.56)	–6.62 (34.38)	59.04 (39.74)	–60.96 (35.56)	–6.62 (34.38)	59.04 (39.74)
SNF spending	**71.74*** **(27.92)**	46.23† (27.37)	38.38 (27.51)	71.74 (27.92)	46.23 (27.37)	38.38 (27.51)
Any SNF spending	0.09 (0.19)	–0.17 (0.21)	0.05 (0.21)	0.09 (0.19)	–0.17 (0.21)	0.05 (0.21)
Lab spending	1.83 (3.46)	5.32 (3.35)	0.18 (3.51)	1.83 (3.46)	5.32 (3.35)	0.18 (3.51)
Imaging spending	**51.45*** **(24.51)**	38.79 (25.79)	**76.25**** **(26.91)**	51.45 (24.51)	38.79 (25.79)	76.25 (26.91)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: ED=emergency department; ACSC=ambulatory care sensitive condition; E&M=evaluation and management; PCP=primary care provider; FQHC=federally qualified health center; HbA1C=hemoglobin A1c; LDL=low-density lipoprotein; PAC=post-acute care; OPD=outpatient department; PC=primary care; DME=durable medical equipment; SNF=skilled nursing facility.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.5. Ages 85 and Older Compared with Ages 65–84

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Visits, per 1,000 enrollees	–9.74	–23.52	–19.58	–9.74	–23.52	–19.58
Inpatient admissions	(21.94)	(23.50)	(24.14)	(21.94)	(23.50)	(24.14)
ED visits	–0.71	–39.74	–51.80	–0.71	–39.74	–51.80
	(33.54)	(38.08)	(41.57)	(33.54)	(38.08)	(41.57)
ED visits (no admission)	11.28	–17.77	–25.87	11.28	–17.77	–25.87
	(22.91)	(26.06)	(28.63)	(22.91)	(26.06)	(28.63)
ED ACSC visits	–8.77	–2.95	1.30	–8.77	–2.95	1.30
	(8.19)	(8.26)	(8.47)	(8.19)	(8.26)	(8.47)
E&M PCP visits	–124.64†	–44.97	**213.26***	–124.64	–44.97	213.26
	(70.81)	(85.87)	**(94.15)**	(70.81)	(85.87)	(94.15)
Specialist visits	–30.12	20.53	–21.31	–30.12	20.53	–21.31
	(49.47)	(56.30)	(64.63)	(49.47)	(56.30)	(64.63)
FQHC visits	–16.57	55.04	**187.83*****	–16.57	55.04	187.83
	(50.93)	(55.67)	**(54.85)**	(50.93)	(55.67)	(54.85)
E&M PCP visits	**–250.47*****	**–251.77****	**–331.49****	–250.47	–251.77	–331.49
(non-FQHC)	**(72.30)**	**(96.88)**	**(125.44)**	(72.30)	(96.88)	(125.44)
E&M specialist visits	–44.49	–44.18	–67.22	–44.49	–44.18	–67.22
(non-FQHC)	(46.84)	(54.11)	(61.02)	(46.84)	(54.11)	(61.02)
Usual provider continuity	**2.74*****	**3.57*****	**3.96*****	2.74^	3.57^	3.96^
index	**"(0.01)**	**(0.01)**	**(0.01)**	(0.01)	(0.01)	(0.01)
Process measures, % change[a]	NA	NA	NA	NA	NA	NA
HbA1C						
LDL	NA	NA	NA	NA	NA	NA
Eye exam	NA	NA	NA	NA	NA	NA
Nephropathy check	NA	NA	NA	NA	NA	NA
All four	NA	NA	NA	NA	NA	NA
Lipid check	NA	NA	NA	NA	NA	NA
Spending, dollars	466.64	49.73	–172.24	466.64	49.73	–172.24
Total Medicare spending	(437.34)	(446.00)	(483.08)	(437.34)	(446.00)	(483.08)
Outpatient spending	–15.07	–49.07	–75.01	–15.07	–49.07	–75.01
	(61.66)	(71.18)	(65.12)	(61.66)	(71.18)	(65.12)
Acute spending	227.84	10.11	–34.57	227.84	10.11	–34.57
	(209.74)	(185.87)	(187.06)	(209.74)	(185.87)	(187.06)
PAC spending	145.10	98.38	–152.75	145.10	98.38	–152.75
	(165.98)	(154.69)	(160.01)	(165.98)	(154.69)	(160.01)
OPD spending	–36.09	–57.49	–55.62	–36.09	–57.49	–55.62
	(54.11)	(63.86)	(56.23)	(54.11)	(63.86)	(56.23)
FQHC spending	7.47	1.82	4.33	7.47	1.82	4.33
	(6.16)	(7.39)	(7.45)	(6.16)	(7.39)	(7.45)
PC physician spending‡	–11.31	–5.64	–12.37	–11.31	–5.64	–12.37
	(11.87)	(18.50)	(16.47)	(11.87)	(18.50)	(16.47)
Specialist physician	12.00	–48.94	–37.46	12.00	–48.94	–37.46
spending‡‡	(34.20)	(37.07)	(37.60)	(34.20)	(37.07)	(37.60)
Inpatient spending	291.18	31.30	–44.61	291.18	31.30	–44.61
	(238.43)	(206.51)	(210.80)	(238.43)	(206.51)	(210.80)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Noninstitutional provider spending	32.05 (50.56)	–88.33 (56.17)	–82.24 (55.71)	32.05 (50.56)	–88.33 (56.17)	–82.24 (55.71)
Outpatient file spending	–27.53 (59.09)	–65.02 (68.76)	–64.20 (62.11)	–27.53 (59.09)	–65.02 (68.76)	–64.20 (62.11)
DME spending	14.07 (14.48)	12.60 (14.11)	–9.94 (15.78)	14.07 (14.48)	12.60 (14.11)	–9.94 (15.78)
Home health spending	**95.94*** **(43.21)**	27.00 (47.65)	56.12 (48.64)	95.94 (43.21)	27.00 (47.65)	56.12 (48.64)
Hospice spending	123.58 (230.04)	–77.90 (263.09)	107.72 (296.84)	123.58 (230.04)	–77.90 (263.09)	107.72 (296.84)
SNF spending	92.52 (143.40)	74.41 (139.22)	–158.48 (141.87)	92.52 (143.40)	74.41 (139.22)	–158.48 (141.87)
Any SNF spending	0.41 (0.53)	0.74 (0.54)	–0.67 (0.65)	0.41 (0.53)	0.74 (0.54)	–0.67 (0.65)
Lab spending	0.33 (5.71)	–6.44 (5.45)	–5.18 (5.54)	0.33 (5.71)	–6.44 (5.45)	–5.18 (5.54)
Imaging spending	5.89 (5.59)	–8.42 (5.82)	–5.61 (5.63)	5.89 (5.59)	–8.42 (5.82)	–5.61 (5.63)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[a] We did not develop process measures for the 85 and older age group to align with criteria used in CMS's other PCMH evaluations.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.6. Alcohol Problems Compared with No Alcohol Problems

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	6.57	0.17	–26.41†	6.57	0.17	–26.41
Inpatient admissions	(16.29)	(14.78)	(15.27)	(16.29)	(14.78)	(15.27)
ED visits	79.64*	37.30	3.14	79.64	37.30	3.14
	(39.74)	(43.97)	(40.08)	(39.74)	(43.97)	(40.08)
ED visits (no admission)	50.59	30.25	10.12	50.59	30.25	10.12
	(35.93)	(39.33)	(35.22)	(35.93)	(39.33)	(35.22)
ED ACSC visits	–3.67	–6.73	–12.99†	–3.67	–6.73	–12.99
	(7.86)	(7.10)	(7.80)	(7.86)	(7.10)	(7.80)
E&M PCP visits	1.01	–73.53	–45.72	1.01	–73.53	–45.72
	(66.87)	(65.77)	(65.47)	(66.87)	(65.77)	(65.47)
Specialist visits	–10.60	29.05	25.82	–10.60	29.05	25.82
	(45.26)	(56.20)	(58.28)	(45.26)	(56.20)	(58.28)
FQHC visits	–34.32	–45.15	–40.81	–34.32	–45.15	–40.81
	(52.86)	(49.60)	(45.36)	(52.86)	(49.60)	(45.36)
E&M PCP visits	**99.52***	38.50	**117.33***	99.52	38.50	117.33
(non-FQHC)	**(42.24)**	(48.60)	**(51.77)**	(42.24)	(48.60)	(51.77)
E&M specialist visits	–19.36	18.97	4.78	–19.36	18.97	4.78
(non-FQHC)	(43.80)	(56.06)	(59.02)	(43.80)	(56.06)	(59.02)
Usual provider continuity	–1.02†	**–1.62***	**–2.36*****	–1.02	–1.62	–2.36
index	(0.01)	**(0.01)**	**(0.01)**	(0.01)	(0.01)	(0.01)
Process measures, % change	–0.29	–2.07	–1.54	–0.29	–2.07	–1.54
HbA1C	(1.50)	(1.43)	(1.46)	(1.50)	(1.43)	(1.46)
LDL	3.47†	0.05	2.10	3.47	0.05	2.10
	(1.97)	(1.79)	(1.90)	(1.97)	(1.79)	(1.90)
Eye exam	–1.33	–2.43	1.35	–1.33	–2.43	1.35
	(1.94)	(1.87)	(1.75)	(1.94)	(1.87)	(1.75)
Nephropathy check	–0.08	–3.34†	–0.34	–0.08	–3.34	–0.34
	(2.06)	(1.95)	(1.96)	(2.06)	(1.95)	(1.96)
All four	–0.09	–0.51†	–0.06	–0.09	–0.51	–0.06
	(0.30)	(0.30)	(0.26)	(0.30)	(0.30)	(0.26)
Lipid check	0.88	–1.21	–1.34	0.88	–1.21	–1.34
	(2.46)	(2.26)	(2.37)	(2.46)	(2.26)	(2.37)
Spending, dollars	909.98††	338.13	–19.93	909.98	338.13	–19.93
Total Medicare spending	(483.17)	(414.45)	(404.54)	(483.17)	(414.45)	(404.54)
Outpatient spending	169.31	–8.70	88.82	169.31	–8.70	88.82
	(106.47)	(104.02)	(85.86)	(106.47)	(104.02)	(85.86)
Acute spending	285.41	90.80	–377.24	285.41	90.80	–377.24
	(314.06)	(268.11)	(253.98)	(314.06)	(268.11)	(253.98)
PAC spending	76.25	102.34	134.44	76.25	102.34	134.44
	(151.15)	(109.86)	(112.16)	(151.15)	(109.86)	(112.16)
OPD spending	139.84	–36.46	85.19	139.84	–36.46	85.19
	(94.50)	(92.71)	(70.90)	(94.50)	(92.71)	(70.90)
FQHC spending	–0.88	7.12	9.38	–0.88	7.12	9.38
	(7.85)	(9.77)	(7.93)	(7.85)	(9.77)	(7.93)
PC physician spending‡	**79.42***	7.45	35.84†	79.42	7.45	35.84
	(35.90)	(14.95)	(18.51)	(35.90)	(14.95)	(18.51)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	58.35 (46.39)	–3.22 (40.46)	32.71 (40.56)	58.35 (46.39)	–3.22 (40.46)	32.71 (40.56)
Inpatient spending	551.00 (375.80)	414.43 (320.81)	–206.91 (304.05)	551.00 (375.80)	414.43 (320.81)	–206.91 (304.05)
Non-institutional provider spending	**229.54**** **(88.62)**	89.80 (70.65)	**184.72*** **(74.05)**	229.54 (88.62)	89.80 (70.65)	184.72 (74.05)
Outpatient file spending	192.39†† (101.76)	17.43 (101.25)	108.94 (81.28)	192.39 (101.76)	17.43 (101.25)	108.94 (81.28)
DME spending	–15.25 (28.58)	–16.09 (22.52)	–20.26 (25.47)	–15.25 (28.58)	–16.09 (22.52)	–20.26 (25.47)
Home health spending	4.49 (31.51)	–24.17 (24.52)	–18.09 (23.66)	4.49 (31.51)	–24.17 (24.52)	–18.09 (23.66)
Hospice spending	101.80 (85.77)	–109.04 (77.48)	–84.07 (86.69)	101.80 (85.77)	–109.04 (77.48)	–84.07 (86.69)
SNF spending	41.81 (100.13)	7.30 (71.04)	56.49 (77.79)	41.81 (100.13)	7.30 (71.04)	56.49 (77.79)
Any SNF spending	–0.23 (0.35)	–0.03 (0.31)	0.10 (0.30)	–0.23 (0.35)	–0.03 (0.31)	0.10 (0.30)
Lab spending	15.90 (17.95)	**45.23**** **(16.38)**	**87.59***** **(16.31)**	15.90 (17.95)	45.23 (16.38)	87.59^ (16.31)
Imaging spending	8.21 (7.05)	3.30 (6.28)	10.43† (5.86)	8.21 (7.05)	3.30 (6.28)	10.43 (5.86)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.7. Bipolar Disorder Compared with No Bipolar Disorder

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	**27.52****	5.55	1.72	27.52	5.55	1.72
Inpatient admissions	**(9.07)**	(8.91)	(8.96)	(9.07)	(8.91)	(8.96)
ED visits	**44.73***	–4.08	3.09	44.73	–4.08	3.09
	(20.01)	(20.54)	(20.84)	(20.01)	(20.54)	(20.84)
ED visits (no admission)	22.50	–7.05	–7.20	22.50	–7.05	–7.20
	(17.12)	(17.35)	(17.51)	(17.12)	(17.35)	(17.51)
ED ACSC visits	–1.63	2.52	5.96	–1.63	2.52	5.96
	(4.43)	(4.02)	(3.69)	(4.43)	(4.02)	(3.69)
E&M PCP visits	39.19	–71.60†	**–100.91***	39.19	–71.60	–100.91
	(36.28)	(38.71)	**(40.58)**	(36.28)	(38.71)	(40.58)
Specialist visits	**67.40***	–14.04	–76.28†	67.40	–14.04	–76.28
	(32.58)	(42.03)	(44.43)	(32.58)	(42.03)	(44.43)
FQHC visits	57.70†	–50.26	–32.12	57.70	–50.26	–32.12
	(31.10)	(30.99)	(29.61)	(31.10)	(30.99)	(29.61)
E&M PCP visits	37.32	18.22	–5.22	37.32	18.22	–5.22
(non-FQHC)	(25.32)	(31.41)	(36.45)	(25.32)	(31.41)	(36.45)
E&M specialist visits	39.66	–7.12	–77.83†	39.66	–7.12	–77.83
(non-FQHC)	(31.36)	(40.94)	(43.76)	(31.36)	(40.94)	(43.76)
Usual provider continuity	**1.15*****	0.64†	0.75†	1.15	0.64	0.75
index	**(0.00)**	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Process measures, % change	–0.28	–0.91	**–1.58***	–0.28	–0.91	–1.58
HbA1C	(0.72)	(0.76)	**(0.71)**	(0.72)	(0.76)	(0.71)
LDL	**2.63****	0.04	–0.98	2.63	0.04	–0.98
	(1.04)	(0.94)	(0.94)	(1.04)	(0.94)	(0.94)
Eye exam	–0.06	–0.44	–1.23	–0.06	–0.44	–1.23
	(1.05)	(0.99)	(1.01)	(1.05)	(0.99)	(1.01)
Nephropathy check	1.28	–0.96	**–2.39***	1.28	–0.96	–2.39
	(1.10)	(1.03)	**(1.05)**	(1.10)	(1.03)	(1.05)
All four	0.18	–0.08	–0.35	0.18	–0.08	–0.35
	(0.26)	(0.24)	(0.25)	(0.26)	(0.24)	(0.25)
Lipid check	1.55	1.14	0.34	1.55	1.14	0.34
	(1.42)	(1.38)	(1.46)	(1.42)	(1.38)	(1.46)
Spending, dollars	239.27	–51.79	–85.58	239.27	–51.79	–85.58
Total Medicare spending	(211.88)	(186.31)	(188.69)	(211.88)	(186.31)	(188.69)
Outpatient spending	40.64	–63.38	–4.89	40.64	–63.38	–4.89
	(53.10)	(55.72)	(54.35)	(53.10)	(55.72)	(54.35)

Acute spending	219.10†	–41.72	–17.96	219.10	–41.72	–17.96
	(128.44)	(112.23)	(113.09)	(128.44)	(112.23)	(113.09)
PAC spending	–33.74	–81.55	–6.93	–33.74	–81.55	–6.93
	(69.69)	(57.14)	(57.81)	(69.69)	(57.14)	(57.81)
OPD spending	35.69	–50.46	–10.58	35.69	–50.46	–10.58
	(46.79)	(50.55)	(46.98)	(46.79)	(50.55)	(46.98)
FQHC spending	1.58	–3.32	–2.87	1.58	–3.32	–2.87
	(3.95)	(4.14)	(4.27)	(3.95)	(4.14)	(4.27)
PC physician spending‡	11.57	–12.06	11.10	11.57	–12.06	11.10
	(8.14)	(8.07)	(9.41)	(8.14)	(8.07)	(9.41)
Specialist physician spending‡‡	37.22	–9.43	27.73	37.22	–9.43	27.73
	(24.45)	(23.69)	(25.46)	(24.45)	(23.69)	(25.46)
Inpatient spending	246.93	–38.61	–31.80	246.93	–38.61	–31.80
	(151.39)	(130.04)	(129.86)	(151.39)	(130.04)	(129.86)
Noninstitutional provider spending	67.95†	–14.30	60.83	67.95	–14.30	60.83
	(36.76)	(35.88)	(41.44)	(36.76)	(35.88)	(41.44)
Outpatient file spending	37.66	–74.42	–9.73	37.66	–74.42	–9.73
	(49.82)	(53.47)	(51.81)	(49.82)	(53.47)	(51.81)
DME spending	1.30	7.38	3.22	1.30	7.38	3.22
	(14.80)	(13.66)	(13.66)	(14.80)	(13.66)	(13.66)
Home health spending	**40.48***	–3.38	15.27	40.48	–3.38	15.27
	(17.89)	(16.61)	(15.93)	(17.89)	(16.61)	(15.93)
Hospice spending	–104.95†	0.12	–23.85	–104.95	0.12	–23.85
	(56.53)	(46.41)	(52.76)	(56.53)	(46.41)	(52.76)
SNF spending	–45.83	–66.75†	–21.76	–45.83	–66.75	–21.76
	(44.79)	(40.04)	(38.58)	(44.79)	(40.04)	(38.58)
Any SNF spending	–0.02	–0.16	–0.12	–0.02	–0.16	–0.12
	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)
Lab spending	6.92	6.35	**13.63***	6.92	6.35	13.63
	(6.05)	(6.31)	**(6.15)**	(6.05)	(6.31)	(6.15)
Imaging spending	5.14	0.95	5.91	5.14	0.95	5.91
	(4.01)	(3.70)	(4.30)	(4.01)	(3.70)	(4.30)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.8. Diabetes with Complications Compared with No Diabetes

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	6.67	5.67	–1.51	6.67	5.67	–1.51
Inpatient admissions	(9.35)	(9.16)	(9.70)	(9.35)	(9.16)	(9.70)
ED visits	23.73	–3.73	21.30	23.73	–3.73	21.30
	(16.56)	(17.44)	(18.47)	(16.56)	(17.44)	(18.47)
ED visits (no admission)	10.20	–14.59	9.51	10.20	–14.59	9.51
	(13.34)	(13.98)	(14.41)	(13.34)	(13.98)	(14.41)
ED ACSC visits	–1.62	1.37	–1.33	–1.62	1.37	–1.33
	(4.68)	(4.59)	(5.19)	(4.68)	(4.59)	(5.19)
E&M PCP visits	15.47	–5.46	5.75	15.47	–5.46	5.75
	(34.77)	(36.99)	(39.39)	(34.77)	(36.99)	(39.39)
Specialist visits	–36.56	**–83.9***	–58.40	–36.56	–83.90	–58.40
	(31.60)	**(36.17)**	(37.93)	(31.60)	(36.17)	(37.93)
FQHC visits	14.10	18.47	33.18	14.10	18.47	33.18
	(28.69)	(28.63)	(27.83)	(28.69)	(28.63)	(27.83)
E&M PCP visits	–39.74	**–71.49***	–47.49	–39.74	–71.49	–47.49
(non-FQHC)	(25.83)	**(32.75)**	(38.37)	(25.83)	(32.75)	(38.37)
E&M specialist visits	–13.70	–62.23†	–62.68†	–13.70	–62.23	–62.68
(non-FQHC)	(30.02)	(34.82)	(36.96)	(30.02)	(34.82)	(36.96)
Usual provider continuity	0.44	**1.38*****	**1.44*****	0.44	1.38^	1.44^
index	(0.00)	**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	0.05	–0.15	–0.77	0.05	–0.15	–0.77
HbA1C	(0.85)	(0.88)	(0.80)	(0.85)	(0.88)	(0.80)
LDL	**–2.5***	–0.96	–1.69	–2.50	–0.96	–1.69
	(1.11)	(1.19)	(1.18)	(1.11)	(1.19)	(1.18)
Eye exam	1.24	–1.05	–1.55	1.24	–1.05	–1.55
	(2.02)	(1.86)	(1.91)	(2.02)	(1.86)	(1.91)
Nephropathy check	–0.00	0.73	–0.90	–0.00	0.73	–0.90
	(2.02)	(1.90)	(1.87)	(2.02)	(1.90)	(1.87)
All four	3.15	1.30	1.37	3.15	1.30	1.37
	(2.84)	(2.91)	(2.87)	(2.84)	(2.91)	(2.87)
Lipid check	–1.28	–1.02	–1.74†	–1.28	–1.02	–1.74
	(0.86)	(0.93)	(0.97)	(0.86)	(0.93)	(0.97)
Spending, dollars	326.58	–43.50	246.14	326.58	–43.50	246.14
Total Medicare spending	(239.97)	(227.93)	(229.14)	(239.97)	(227.93)	(229.14)
Outpatient spending	–51.96	–86.95	112.07	–51.96	–86.95	112.07
	(82.63)	(83.04)	(82.70)	(82.63)	(83.04)	(82.70)

Acute spending	61.27 (147.02)	–2.12 (139.81)	29.91 (134.98)	61.27 (147.02)	–2.12 (139.81)	29.91 (134.98)
PAC spending	132.72† (78.25)	–7.08 (73.73)	–6.30 (72.55)	132.72 (78.25)	–7.08 (73.73)	–6.30 (72.55)
OPD spending	–41.20 (77.78)	–57.36 (78.16)	104.23 (75.61)	–41.20 (77.78)	–57.36 (78.16)	104.23 (75.61)
FQHC spending	3.28 (3.32)	–2.25 (3.60)	–0.83 (3.71)	3.28 (3.32)	–2.25 (3.60)	–0.83 (3.71)
PC physician spending‡	16.07 (12.77)	4.22 (10.97)	13.02 (11.81)	16.07 (12.77)	4.22 (10.97)	13.02 (11.81)
Specialist physician spending‡‡	–16.08 (36.56)	–46.82 (36.68)	9.62 (36.07)	–16.08 (36.56)	–46.82 (36.68)	9.62 (36.07)
Inpatient spending	28.59 (169.82)	–50.74 (159.11)	13.55 (153.95)	28.59 (169.82)	–50.74 (159.11)	13.55 (153.95)
Non-institutional provider spending	–7.65 (50.60)	–57.48 (53.73)	31.50 (56.82)	–7.65 (50.60)	–57.48 (53.73)	31.50 (56.82)
Outpatient file spending	–39.46 (80.06)	–69.07 (80.61)	116.21 (80.06)	–39.46 (80.06)	–69.07 (80.61)	116.21 (80.06)
DME spending	–16.14 (15.71)	–10.16 (15.34)	5.99 (15.74)	–16.14 (15.71)	–10.16 (15.34)	5.99 (15.74)
Home health spending	17.35 (20.61)	22.30 (22.22)	39.34† (20.56)	17.35 (20.61)	22.30 (22.22)	39.34 (20.56)
Hospice spending	92.27 (57.03)	**117.01*** **(52.87)**	113.03† (62.12)	92.27 (57.03)	117.01 (52.87)	113.03 (62.12)
SNF spending	**122.78*** **(49.29)**	–8.75 (50.29)	–21.90 (48.21)	122.78 (49.29)	–8.75 (50.29)	–21.90 (48.21)
Any SNF spending	0.28 (0.16)	0.15 (0.18)	–0.04 (0.20)	0.28 (0.16)	0.15 (0.18)	–0.04 (0.20)
Lab spending	–0.93 (4.65)	0.15 (4.74)	1.84 (5.48)	–0.93 (4.65)	0.15 (4.74)	1.84 (5.48)
Imaging spending	–1.99 (5.18)	0.13 (5.29)	–4.36 (4.33)	–1.99 (5.18)	0.13 (5.29)	–4.36 (4.33)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.9. Diabetes Without Complications Compared with No Diabetes

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	–11.65	–15.63†	–13.01	–11.65	–15.63	–13.01
Inpatient admissions	(9.32)	(9.30)	(9.57)	(9.32)	(9.30)	(9.57)
Inpatient ACSC admissions	2.50 (16.22)	–10.23 (18.01)	1.39 (18.03)	2.50 (16.22)	–10.23 (18.01)	1.39 (18.03)
ED visits	3.27 (13.39)	–8.93 (14.98)	3.57 (14.38)	3.27 (13.39)	–8.93 (14.98)	3.57 (14.38)
ED visits (no admission)	–0.96 (3.95)	–1.80 (4.06)	–4.22 (4.46)	–0.96 (3.95)	–1.80 (4.06)	–4.22 (4.46)
ED ACSC visits	31.07 (31.60)	37.72 (33.90)	14.79 (35.69)	31.07 (31.60)	37.72 (33.90)	14.79 (35.69)
E&M PCP visits	25.86 (28.24)	–25.49 (33.16)	–23.44 (35.12)	25.86 (28.24)	–25.49 (33.16)	–23.44 (35.12)
Specialist visits	21.58 (26.81)	19.72 (26.90)	12.15 (26.66)	21.58 (26.81)	19.72 (26.90)	12.15 (26.66)
FQHC visits	–18.14 (22.24)	–27.69 (29.02)	–30.39 (33.92)	–18.14 (22.24)	–27.69 (29.02)	–30.39 (33.92)
E&M PCP visits (non-FQHC)	38.88 (26.82)	–1.65 (31.89)	–10.13 (34.08)	38.88 (26.82)	–1.65 (31.89)	–10.13 (34.08)
E&M specialist visits (non-FQHC)	0.20 (0.00)	0.60† (0.00)	**0.76* (0.00)**	0.20 (0.00)	0.60 (0.00)	0.76 (0.00)
Usual provider continuity index	–0.39 (0.87)	–0.88 (0.83)	–0.59 (0.81)	–0.39 (0.87)	–0.88 (0.83)	–0.59 (0.81)
Process measures, % change	–1.16	–0.23	–0.18	–1.16	–0.23	–0.18
HbA1C	(1.12)	(1.10)	(1.13)	(1.12)	(1.10)	(1.13)
LDL	1.98 (1.60)	0.66 (1.50)	–0.61 (1.57)	1.98 (1.60)	0.66 (1.50)	–0.61 (1.57)
Eye exam	1.05 (1.78)	–0.70 (1.60)	–1.99 (1.61)	1.05 (1.78)	–0.70 (1.60)	–1.99 (1.61)
Nephropathy check	2.75 (1.42)	1.32 (1.57)	1.26 (1.56)	2.75 (1.42)	1.32 (1.57)	1.26 (1.56)
All four	–1.88† (0.96)	–1.58 (1.02)	–0.27 (1.17)	–1.88 (0.96)	–1.58 (1.02)	–0.27 (1.17)
Lipid check	–26.92 (180.76)	–210.31 (169.71)	–272.37 (173.84)	–26.92 (180.76)	–210.31 (169.71)	–272.37 (173.84)
Spending, dollars	67.55	–28.09	36.39	67.55	–28.09	36.39
Total Medicare spending	(49.46)	(47.45)	(53.53)	(49.46)	(47.45)	(53.53)
Outpatient spending	–45.43 (110.35)	–125.27 (98.51)	**–194.98* (99.1)**	–45.43 (110.35)	–125.27 (98.51)	–194.98 (99.10)
Acute spending	–52.66 (54.18)	–19.13 (50.71)	–77.99 (51.76)	–52.66 (54.18)	–19.13 (50.71)	–77.99 (51.76)
PAC spending	66.15 (45.67)	–11.34 (42.60)	49.38 (48.25)	66.15 (45.67)	–11.34 (42.60)	49.38 (48.25)
OPD spending	3.38 (2.97)	0.84 (3.05)	–3.17 (3.17)	3.38 (2.97)	0.84 (3.05)	–3.17 (3.17)
FQHC spending	1.61 (7.22)	–8.36 (7.70)	–9.62 (7.75)	1.61 (7.22)	–8.36 (7.70)	–9.62 (7.75)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
PC physician spending‡	34.98 (26.66)	–24.38 (25.41)	–46.36† (24.98)	34.98 (26.66)	–24.38 (25.41)	–46.36 (24.98)
Specialist physician spending‡‡	–79.00 (126.93)	–185.04 (114.44)	–221.45† (113.63)	–79.00 (126.93)	–185.04 (114.44)	–221.45 (113.63)
Inpatient spending	37.02 (34.73)	–27.68 (34.67)	–41.08 (39.09)	37.02 (34.73)	–27.68 (34.67)	–41.08 (39.09)
Non-institutional provider spending	57.65 (47.76)	–30.84 (45.09)	34.08 (51.11)	57.65 (47.76)	–30.84 (45.09)	34.08 (51.11)
Outpatient file spending	13.53 (10.92)	5.07 (12.02)	9.36 (13.26)	13.53 (10.92)	5.07 (12.02)	9.36 (13.26)
DME spending	–15.51 (15.40)	–18.30 (15.65)	–10.56 (15.16)	–15.51 (15.40)	–18.30 (15.65)	–10.56 (15.16)
Home health spending	47.15 (47.40)	74.41 (48.25)	3.43 (55.34)	47.15 (47.40)	74.41 (48.25)	3.43 (55.34)
Hospice spending	–24.60 (38.32)	11.68 (35.21)	–40.95 (38.48)	–24.60 (38.32)	11.68 (35.21)	–40.95 (38.48)
SNF spending	–0.15 (0.18)	–0.11 (0.19)	**–0.4*** **(0.22)**	–0.15 (0.18)	–0.11 (0.19)	–0.40 (0.22)
Any SNF spending	4.70 (4.19)	1.64 (4.28)	–0.10 (4.46)	4.70 (4.19)	1.64 (4.28)	–0.10 (4.46)
Lab spending	0.22 (4.10)	–6.29† (3.52)	**–7.65*** **(3.73)**	0.22 (4.10)	–6.29 (3.52)	–7.65 (3.73)
Imaging spending	–11.65 (9.32)	–15.63† (9.30)	–13.01 (9.57)	–11.65 (9.32)	–15.63 (9.30)	–13.01 (9.57)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.10. Disabled Compared with Nondisabled

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Visits, per 1,000 enrollees	2.74	–1.79	–13.73†	2.74	–1.79	–13.73
Inpatient admissions	(8.08)	(7.85)	(8.24)	(8.08)	(7.85)	(8.24)
ED visits	18.79	–4.21	–10.10	18.79	–4.21	–10.10
	(18.02)	(17.46)	(17.74)	(18.02)	(17.46)	(17.74)
ED visits (no admission)	14.35	–5.21	–4.88	14.35	–5.21	–4.88
	(15.27)	(14.47)	(14.44)	(15.27)	(14.47)	(14.44)
ED ACSC visits	–2.97	–1.97	–0.93	–2.97	–1.97	–0.93
	(3.80)	(3.74)	(3.77)	(3.80)	(3.74)	(3.77)
E&M PCP visits	–46.24†	–10.27	**–77.82****	–46.24	–10.27	–77.82
	(25.49)	(26.27)	**(27.79)**	(25.49)	(26.27)	(27.79)
Specialist visits	–14.84	23.93	–4.88	–14.84	23.93	–4.88
	(23.36)	(27.87)	(29.43)	(23.36)	(27.87)	(29.43)
FQHC visits	**–50.64***	**–51.29***	**–56.44****	–50.64	–51.29	–56.44
	(20.8)	**(20.15)**	**(19.47)**	(20.80)	(20.15)	(19.47)
E&M PCP visits	**48.36****	**90.84*****	**77.99****	48.36	90.84^	77.99
(non-FQHC)	**(18.05)**	**(21.78)**	**(25.63)**	(18.05)	(21.78)	(25.63)
E&M specialist visits	–17.48	33.73	–10.17	–17.48	33.73	–10.17
(non-FQHC)	(22.63)	(27.26)	(29.17)	(22.63)	(27.26)	(29.17)
Usual provider continuity	**–0.51* (0)**	**–1.52*****	**–1.53*****	–0.51	–1.52^	–1.53^
index		**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	–0.96†	0.71	–0.83	–0.96	0.71	–0.83
HbA1C	(0.53)	(0.68)	(0.59)	(0.53)	(0.68)	(0.59)
LDL	**1.64***	1.11	–0.56	1.64	1.11	–0.56
	(0.81)	(0.79)	(0.76)	(0.81)	(0.79)	(0.76)
Eye exam	0.31	0.47	–0.26	0.31	0.47	–0.26
	(0.76)	(0.73)	(0.76)	(0.76)	(0.73)	(0.76)
Nephropathy check	0.40	–0.39	–0.41	0.40	–0.39	–0.41
	(0.83)	(0.80)	(0.82)	(0.83)	(0.80)	(0.82)
All four	0.17	0.13	–0.09	0.17	0.13	–0.09
	(0.21)	(0.19)	(0.20)	(0.21)	(0.19)	(0.20)
Lipid check	0.77	0.71	0.46	0.77	0.71	0.46
	(1.06)	(1.06)	(1.12)	(1.06)	(1.06)	(1.12)
Spending, dollars	–16.21	54.55	–116.11	–16.21	54.55	–116.11
Total Medicare spending	(141.78)	(128.98)	(128.78)	(141.78)	(128.98)	(128.78)
Outpatient spending	–44.28	–33.01	11.00	–44.28	–33.01	11.00
	(41.38)	(41.14)	(39.55)	(41.38)	(41.14)	(39.55)
Acute spending	–31.70	45.21	–24.28	–31.70	45.21	–24.28
	(85.33)	(75.60)	(73.42)	(85.33)	(75.60)	(73.42)
PAC spending	–21.40	–12.22	–21.31	–21.40	–12.22	–21.31
	(44.41)	(39.42)	(38.64)	(44.41)	(39.42)	(38.64)
OPD spending	–35.77	–27.10	20.19	–35.77	–27.10	20.19
	(38.31)	(38.15)	(35.67)	(38.31)	(38.15)	(35.67)
FQHC spending	**–7.21****	–3.21	–2.30	–7.21	–3.21	–2.30
	(2.26)	(2.35)	(2.36)	(2.26)	(2.35)	(2.36)
PC physician spending‡	8.82	1.42	1.14	8.82	1.42	1.14
	(6.09)	(5.74)	(6.21)	(6.09)	(5.74)	(6.21)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	–11.93 (20.77)	0.31 (19.95)	10.02 (19.44)	–11.93 (20.77)	0.31 (19.95)	10.02 (19.44)
Inpatient spending	–4.62 (98.38)	68.04 (86.74)	–35.88 (84.40)	–4.62 (98.38)	68.04 (86.74)	–35.88 (84.40)
Non-institutional provider spending	12.35 (27.82)	6.68 (27.77)	27.37 (28.17)	12.35 (27.82)	6.68 (27.77)	27.37 (28.17)
Outpatient file spending	–40.33 (39.88)	–30.94 (39.71)	21.81 (37.81)	–40.33 (39.88)	–30.94 (39.71)	21.81 (37.81)
DME spending	–4.10 (9.05)	–1.01 (8.81)	–9.26 (9.82)	–4.10 (9.05)	–1.01 (8.81)	–9.26 (9.82)
Home health spending	–4.28 (11.49)	–14.05 (11.60)	–15.86 (10.86)	–4.28 (11.49)	–14.05 (11.60)	–15.86 (10.86)
Hospice spending	29.14 (40.54)	11.91 (38.25)	–49.14 (41.22)	29.14 (40.54)	11.91 (38.25)	–49.14 (41.22)
SNF spending	–27.10 (30.00)	–30.89 (27.98)	–19.80 (27.21)	–27.10 (30.00)	–30.89 (27.98)	–19.80 (27.21)
Any SNF spending	0.14 (0.14)	0.20 (0.14)	0.05 (0.16)	0.14 (0.14)	0.20 (0.14)	0.05 (0.16)
Lab spending	–0.16 (3.28)	–5.32 (3.27)	–1.09 (3.43)	–0.16 (3.28)	–5.32 (3.27)	–1.09 (3.43)
Imaging spending	1.40 (3.01)	1.12 (2.89)	0.04 (2.83)	1.40 (3.01)	1.12 (2.89)	0.04 (2.83)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.11. ED Visits in the 90th Percentile Compared with Visits Below the 90th Percentile

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	5.72	–38.40	–5.32	5.72	–38.40	–5.32
Inpatient admissions	(25.18)	(26.82)	(28.60)	(25.18)	(26.82)	(28.60)
ED visits	21.32	–77.26	–80.75	21.32	–77.26	–80.75
	(75.64)	(81.82)	(87.65)	(75.64)	(81.82)	(87.65)
ED visits (no admission)	–22.16	–61.65	–83.64	–22.16	–61.65	–83.64
	(67.80)	(72.08)	(75.84)	(67.80)	(72.08)	(75.84)
ED ACSC visits	–28.82†	**–68.16*** **	–34.14†	–28.82	–68.16	–34.14
	(17.63)	**(20.80)**	(20.58)	(17.63)	(20.80)	(20.58)
E&M PCP visits	38.14	–92.88	–132.58	38.14	–92.88	–132.58
	(75.97)	(76.67)	(84.18)	(75.97)	(76.67)	(84.18)
Specialist visits	**143.70***	60.29	–29.67	143.70	60.29	–29.67
	(61.46)	(71.13)	(78.82)	(61.46)	(71.13)	(78.82)
FQHC visits	48.91	–89.82†	–15.90	48.91	–89.82	–15.90
	(59.19)	(55.21)	(54.65)	(59.19)	(55.21)	(54.65)
E&M PCP visits	27.08	36.80	27.73	27.08	36.80	27.73
(non-FQHC)	(54.51)	(60.38)	(75.67)	(54.51)	(60.38)	(75.67)
E&M specialist visits	**128.40***	75.55	–43.26	128.40	75.55	–43.26
(non-FQHC)	**(59.76)**	(69.89)	(78.49)	(59.76)	(69.89)	(78.49)
Usual provider continuity	**–1.11***	**–1.64****	–0.79	–1.11	–1.64	–0.79
index	**(0)**	**(0.01)**	(0.01)	(0.00)	(0.01)	(0.01)
Process measures, % change	–0.88	0.28	0.35	–0.88	0.28	0.35
HbA1C	(1.12)	(1.19)	(1.16)	(1.12)	(1.19)	(1.16)
LDL	–1.66	–0.77	–1.17	–1.66	–0.77	–1.17
	(1.36)	(1.34)	(1.37)	(1.36)	(1.34)	(1.37)
Eye exam	0.06	–1.24	1.09	0.06	–1.24	1.09
	(1.61)	(1.53)	(1.53)	(1.61)	(1.53)	(1.53)
Nephropathy check	–0.44	0.58	2.88†	–0.44	0.58	2.88
	(1.64)	(1.56)	(1.60)	(1.64)	(1.56)	(1.60)
All four	–0.25	–0.01	–0.51	–0.25	–0.01	–0.51
	(0.46)	(0.42)	(0.45)	(0.46)	(0.42)	(0.45)
Lipid check	–1.57	–2.87†	–0.81	–1.57	–2.87	–0.81
	(1.65)	(1.57)	(1.80)	(1.65)	(1.57)	(1.80)
Spending, dollars	490.08	–55.86	387.23	490.08	–55.86	387.23
Total Medicare spending	(523.60)	(464.78)	(494.62)	(523.60)	(464.78)	(494.62)
Outpatient spending	274.55†	–53.70	290.07	274.55	–53.70	290.07
	(151.53)	(152.92)	(178.26)	(151.53)	(152.92)	(178.26)
Acute spending	209.48	45.85	292.47	209.48	45.85	292.47
	(341.18)	(302.74)	(315.40)	(341.18)	(302.74)	(315.40)
PAC spending	–158.93	**–294.8***	33.94	–158.93	–294.80	33.94
	(167.21)	**(143.59)**	(155.17)	(167.21)	(143.59)	(155.17)
OPD spending	218.24	–67.09	218.92	218.24	–67.09	218.92
	(136.68)	(135.31)	(150.97)	(136.68)	(135.31)	(150.97)
FQHC spending	10.15	–10.97	–8.25	10.15	–10.97	–8.25
	(7.61)	(7.25)	(7.93)	(7.61)	(7.25)	(7.93)
PC physician spending‡	32.51	–9.04	18.99	32.51	–9.04	18.99
	(21.40)	(19.69)	(26.65)	(21.40)	(19.69)	(26.65)

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Specialist physician spending‡‡	**129.00*** **(64.08)**	29.23 (56.50)	84.26 (75.65)	129.00 (64.08)	29.23 (56.50)	84.26 (75.65)
Inpatient spending	308.40 (398.16)	108.56 (347.55)	391.15 (361.38)	308.40 (398.16)	108.56 (347.55)	391.15 (361.38)
Non-institutional provider spending	185.78† (101.66)	–6.73 (99.41)	108.69 (134.57)	185.78 (101.66)	–6.73 (99.41)	108.69 (134.57)
Outpatient file spending	284.45† (147.99)	–75.32 (149.16)	285.89† (173.20)	284.45 (147.99)	–75.32 (149.16)	285.89 (173.20)
DME spending	6.45 (29.72)	32.44 (28.54)	22.36 (33.91)	6.45 (29.72)	32.44 (28.54)	22.36 (33.91)
Home health spending	3.71 (42.29)	27.85 (40.18)	53.59 (37.33)	3.71 (42.29)	27.85 (40.18)	53.59 (37.33)
Hospice spending	–98.59 (63.85)	2.65 (59.45)	**–138.89*** **(65.53)**	–98.59 (63.85)	2.65 (59.45)	–138.89 (65.53)
SNF spending	–80.78 (115.13)	–170.71† (101.39)	–51.72 (106.98)	–80.78 (115.13)	–170.71 (101.39)	–51.72 (106.98)
Any SNF spending	–0.41 (0.46)	–0.42 (0.47)	0.25 (0.47)	–0.41 (0.46)	–0.42 (0.47)	0.25 (0.47)
Lab spending	**41.39*** **(12.44)**	**24.95*** **(11.82)**	5.29 (12.94)	41.39 (12.44)	24.95 (11.82)	5.29 (12.94)
Imaging spending	12.65 (8.65)	0.20 (7.94)	5.06 (8.14)	12.65 (8.65)	0.20 (7.94)	5.06 (8.14)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.12: FQHC Visits in the 90th Percentile Compared with Visits Below the 90th Percentile

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	**27.68***	0.77	**–47.75****	27.68	0.77	–47.75
Inpatient admissions	**(12.67)**	(14.22)	**(17.56)**	(12.67)	(14.22)	(17.56)
ED visits	38.50	–4.96	24.48	38.50	–4.96	24.48
	(28.70)	(32.97)	(39.62)	(28.70)	(32.97)	(39.62)
ED visits (no admission)	26.17	–6.66	49.62	26.17	–6.66	49.62
	(24.39)	(27.56)	(31.98)	(24.39)	(27.56)	(31.98)
ED ACSC visits	1.85	2.11	–12.83	1.85	2.11	–12.83
	(6.61)	(7.74)	(9.82)	(6.61)	(7.74)	(9.82)
E&M PCP visits	–36.95	–136.24†	–148.04†	–36.95	–136.24	–148.04
	(63.81)	(72.00)	(80.99)	(63.81)	(72.00)	(80.99)
Specialist visits	19.08	–97.04	–121.52†	19.08	–97.04	–121.52
	(49.90)	(60.72)	(71.95)	(49.90)	(60.72)	(71.95)
FQHC visits	–53.50	**–259.81*****	**–298.57*****	–53.50	–259.81^	–298.57^
	(58.98)	**(68.32)**	**(73.41)**	(58.98)	(68.32)	(73.41)
E&M PCP visits (non-FQHC)	–30.67	–17.02	39.26	–30.67	–17.02	39.26
	(25.58)	(29.58)	(33.72)	(25.58)	(29.58)	(33.72)
E&M specialist visits (non-FQHC)	69.44	–30.58	–57.91	69.44	–30.58	–57.91
	(43.88)	(53.03)	(62.97)	(43.88)	(53.03)	(62.97)
Usual provider continuity index	**1.61*****	**1.17*****	0.60	1.61^	1.17	0.60
	(0.00)	**(0.00)**	(0.00)	(0.00)	(0.00)	(0.00)
Process measures, % change	–0.17	0.95	–0.13	–0.17	0.95	–0.13
HbA1C	(0.57)	(0.70)	(0.63)	(0.57)	(0.70)	(0.63)
LDL	0.22	0.51	0.52	0.22	0.51	0.52
	(0.92)	(0.91)	(1.05)	(0.92)	(0.91)	(1.05)
Eye exam	0.20	–0.22	1.60	0.20	–0.22	1.60
	(1.18)	(1.19)	(1.27)	(1.18)	(1.19)	(1.27)
Nephropathy check	–0.10	–0.27	–0.83	–0.10	–0.27	–0.83
	(1.17)	(1.15)	(1.20)	(1.17)	(1.15)	(1.20)
All four	–0.12	–0.41	–0.07	–0.12	–0.41	–0.07
	(0.48)	(0.50)	(0.54)	(0.48)	(0.50)	(0.54)
Lipid check	1.47	0.65	2.75†	1.47	0.65	2.75
	(1.42)	(1.41)	(1.72)	(1.42)	(1.41)	(1.72)
Spending, dollars	472.55†	59.07	–539.46†	472.55	59.07	–539.46
Total Medicare spending	(283.14)	(287.09)	(304.11)	(283.14)	(287.09)	(304.11)
Outpatient spending	122.41	19.72	26.86	122.41	19.72	26.86
	(83.13)	(99.92)	(101.42)	(83.13)	(99.92)	(101.42)
Acute spending	327.46†	110.82	**–392.35***	327.46	110.82	–392.35
	(182.19)	(180.29)	**(186.28)**	(182.19)	(180.29)	(186.28)
PAC spending	99.47	–37.10	84.83	99.47	–37.10	84.83
	(82.63)	(79.86)	(90.99)	(82.63)	(79.86)	(90.99)
OPD spending	74.09	33.22	87.76	74.09	33.22	87.76
	(74.28)	(92.87)	(92.45)	(74.28)	(92.87)	(92.45)
FQHC spending	–0.02	**–23.05****	**–29.48*****	–0.02	–23.05	–29.48^
	(5.97)	**(7.50)**	**(7.59)**	(5.97)	(7.50)	(7.59)
PC physician spending‡	18.86	–7.08	–10.02	18.86	–7.08	–10.02
	(12.14)	(14.22)	(13.05)	(12.14)	(14.22)	(13.05)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	25.97 (35.60)	–40.93 (40.67)	–67.70 (52.99)	25.97 (35.60)	–40.93 (40.67)	–67.70 (52.99)
Inpatient spending	382.44† (202.20)	134.56 (199.40)	**–444.56*** **(205.74)**	382.44 (202.20)	134.56 (199.40)	–444.56 (205.74)
Non-institutional provider spending	90.72† (50.36)	–102.11† (60.24)	–119.19 (73.88)	90.72 (50.36)	–102.11 (60.24)	–119.19 (73.88)
Outpatient file spending	118.72 (79.35)	35.58 (97.55)	108.44 (98.42)	118.72 (79.35)	35.58 (97.55)	108.44 (98.42)
DME spending	8.46 (21.59)	–10.95 (20.22)	**–56.82*** **(22.18)**	8.46 (21.59)	–10.95 (20.22)	–56.82 (22.18)
Home health spending	**57.98*** **(26.01)**	49.29† (27.05)	–21.45 (27.85)	57.98 (26.01)	49.29 (27.05)	–21.45 (27.85)
Hospice spending	**–116.15*** **(50.98)**	**–108.76*** **(47.77)**	–66.21 (48.28)	–116.15 (50.98)	–108.76 (47.77)	–66.21 (48.28)
SNF spending	50.16 (63.01)	–47.18 (59.80)	128.76† (68.57)	50.16 (63.01)	–47.18 (59.80)	128.76 (68.57)
Any SNF spending	0.05 (0.22)	–0.07 (0.24)	–0.07 (0.28)	0.05 (0.22)	–0.07 (0.24)	–0.07 (0.28)
Lab spending	16.08* (7.35)	3.76 (7.53)	5.00 (8.01)	16.08 (7.35)	3.76 (7.53)	5.00 (8.01)
Imaging spending	3.62 (6.00)	–6.03 (6.17)	–4.03 (6.51)	3.62 (6.00)	–6.03 (6.17)	–4.03 (6.51)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.13. HCC Scores in the 75th–89th Percentiles Compared with HCC Scores Below the 75th Percentile

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	5.69	–17.36	–19.85†	5.69	–17.36	–19.85
Inpatient admissions	(11.08)	(11.24)	(11.20)	(11.08)	(11.24)	(11.20)
ED visits	0.27	–16.79	–2.00	0.27	–16.79	–2.00
	(23.05)	(25.20)	(24.77)	(23.05)	(25.20)	(24.77)
ED visits (no admission)	2.87	–2.37	14.60	2.87	–2.37	14.60
	(19.55)	(21.38)	(20.36)	(19.55)	(21.38)	(20.36)
ED ACSC visits	–3.19	–1.20	–2.28	–3.19	–1.20	–2.28
	(5.99)	(5.98)	(6.19)	(5.99)	(5.98)	(6.19)
E&M PCP visits	1.34	8.72	–25.69	1.34	8.72	–25.69
	(39.49)	(43.24)	(46.25)	(39.49)	(43.24)	(46.25)
Specialist visits	–26.26	26.98	–20.30	–26.26	26.98	–20.30
	(39.22)	(43.34)	(45.35)	(39.22)	(43.34)	(45.35)
FQHC visits	33.27	**67.06***	**69.12***	33.27	67.06	69.12
	(32.08)	**(31.64)**	**(30.68)**	(32.08)	(31.64)	(30.68)
E&M PCP visits	–18.43	–44.25	**–90.21***	–18.43	–44.25	–90.21
(non-FQHC)	(30.12)	(38.69)	**(46.14)**	(30.12)	(38.69)	(46.14)
E&M specialist visits	–45.15	–21.67	–69.77	–45.15	–21.67	–69.77
(non-FQHC)	(38.17)	(42.94)	(45.10)	(38.17)	(42.94)	(45.10)
Usual provider continuity	0.50†	**0.90***	0.64†	0.50	0.90	0.64
index	(0.00)	**(0.00)**	(0.00)	(0.00)	(0.00)	(0.00)
Process measures, % change	0.66	1.01	–0.97	0.66	1.01	–0.97
HbA1C	(0.72)	(0.82)	(0.69)	(0.72)	(0.82)	(0.69)
LDL	0.08	0.10	–1.51†	0.08	0.10	–1.51
	(0.87)	(0.88)	(0.86)	(0.87)	(0.88)	(0.86)
Eye exam	0.03	0.33	0.42	0.03	0.33	0.42
	(0.95)	(0.93)	(0.95)	(0.95)	(0.93)	(0.95)
Nephropathy check	1.89†	1.17	0.42	1.89	1.17	0.42
	(0.99)	(0.95)	(0.97)	(0.99)	(0.95)	(0.97)
All four	**0.83***	**0.78***	0.29	0.83	0.78	0.29
	(0.39)	**(0.36)**	(0.37)	(0.39)	(0.36)	(0.37)
Lipid check	–0.21	0.36	–1.38	–0.21	0.36	–1.38
	(1.16)	(1.19)	(1.22)	(1.16)	(1.19)	(1.22)
Spending, dollars	254.51	99.12	137.29	254.51	99.12	137.29
Total Medicare spending	(235.36)	(221.06)	(218.99)	(235.36)	(221.06)	(218.99)
Outpatient spending	17.67	56.95	27.53	17.67	56.95	27.53
	(67.66)	(78.56)	(68.72)	(67.66)	(78.56)	(68.72)
Acute spending	41.09	72.91	7.06 (124.17)	41.09	72.91	7.06
	(135.60)	(124.78)		(135.60)	(124.78)	(124.17)
PAC spending	86.70	–61.40	–19.82	86.70	–61.40	–19.82
	(75.21)	(63.40)	(66.94)	(75.21)	(63.40)	(66.94)
OPD spending	–35.70	28.23	24.66	–35.70	28.23	24.66
	(62.90)	(73.81)	(62.87)	(62.90)	(73.81)	(62.87)
FQHC spending	4.97	**7.84***	3.99	4.97	7.84	3.99
	(3.56)	**(3.79)**	(4.01)	(3.56)	(3.79)	(4.01)
PC physician spending‡	–2.78	–0.22	–2.97	–2.78	–0.22	–2.97
	(8.23)	(9.32)	(11.02)	(8.23)	(9.32)	(11.02)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	5.88 (29.62)	56.96 (35.09)	30.84 (30.05)	5.88 (29.62)	56.96 (35.09)	30.84 (30.05)
Inpatient spending	35.97 (158.98)	2.25 (141.99)	38.28 (142.78)	35.97 (158.98)	2.25 (141.99)	38.28 (142.78)
Non-institutional provider spending	–3.31 (39.91)	49.25 (47.97)	34.73 (45.31)	–3.31 (39.91)	49.25 (47.97)	34.73 (45.31)
Outpatient file spending	–20.74 (65.63)	33.10 (76.70)	28.20 (66.50)	–20.74 (65.63)	33.10 (76.70)	28.20 (66.50)
DME spending	19.90 (13.96)	19.61 (14.62)	2.21 (14.75)	19.90 (13.96)	19.61 (14.62)	2.21 (14.75)
Home health spending	14.31 (19.15)	37.06† (20.42)	**50.04**** **(19.03)**	14.31 (19.15)	37.06 (20.42)	50.04 (19.03)
Hospice spending	5.08 (71.59)	–7.51 (70.09)	59.83 (74.45)	5.08 (71.59)	–7.51 (70.09)	59.83 (74.45)
SNF spending	74.81 (50.85)	–10.18 (48.49)	–53.47 (49.44)	74.81 (50.85)	–10.18 (48.49)	–53.47 (49.44)
Any SNF spending	–0.03 (0.27)	–0.51† (0.31)	–0.43 (0.31)	–0.03 (0.27)	–0.51 (0.31)	–0.43 (0.31)
Lab spending	–3.70 (5.82)	8.28 (6.15)	**12.08*** **(6.14)**	–3.70 (5.82)	8.28 (6.15)	12.08 (6.14)
Imaging spending	1.48 (4.61)	11.20† (5.79)	5.42 (4.76)	1.48 (4.61)	11.20 (5.79)	5.42 (4.76)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.14. HCC Visits Below the 90th Percentile Compared with Visits in the 75th–89th Percentiles

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	14.81	7.29	**56.80***	14.81	7.29	56.80
Inpatient admissions	(30.56)	(27.20)	**(24.93)**	(30.56)	(27.20)	(24.93)
ED visits	16.28	–20.26	25.75	16.28	–20.26	25.75
	(56.38)	(59.94)	(60.29)	(56.38)	(59.94)	(60.29)
ED visits (no admission)	–10.23	–8.84	–16.21	–10.23	–8.84	–16.21
	(44.69)	(47.28)	(48.32)	(44.69)	(47.28)	(48.32)
ED ACSC visits	3.97	–17.36	4.80	3.97	–17.36	4.80
	(16.02)	(17.33)	(15.61)	(16.02)	(17.33)	(15.61)
E&M PCP visits	–85.99	–127.61	–9.70	–85.99	–127.61	–9.70
	(83.82)	(91.96)	(94.87)	(83.82)	(91.96)	(94.87)
Specialist visits	–0.38	–119.58	23.97	–0.38	–119.58	23.97
	(81.48)	(87.90)	(86.85)	(81.48)	(87.90)	(86.85)
FQHC visits	–102.04[†]	–72.11	–47.91	–102.04	–72.11	–47.91
	(61.13)	(61.65)	(58.68)	(61.13)	(61.65)	(58.68)
E&M PCP visits	–43.56	–71.15	–16.71	–43.56	–71.15	–16.71
(non-FQHC)	(71.94)	(84.31)	(93.93)	(71.94)	(84.31)	(93.93)
E&M specialist visits	21.38	–123.95	23.63	21.38	–123.95	23.63
(non-FQHC)	(78.58)	(85.53)	(83.92)	(78.58)	(85.53)	(83.92)
Usual provider continuity	–0.37	–0.50	–0.12	–0.37	–0.50	–0.12
index	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)
Process measures, % change	–0.59	–1.45	–0.54	–0.59	–1.45	–0.54
HbA1C	(0.98)	(1.04)	(1.11)	(0.98)	(1.04)	(1.11)
LDL	2.13	0.37	1.88	2.13	0.37	1.88
	(1.44)	(1.39)	(1.49)	(1.44)	(1.39)	(1.49)
Eye exam	–0.13	–0.55	–0.20	–0.13	–0.55	–0.20
	(1.36)	(1.35)	(1.40)	(1.36)	(1.35)	(1.40)
Nephropathy check	–0.79	0.03	–0.97	–0.79	0.03	–0.97
	(1.29)	(1.32)	(1.34)	(1.29)	(1.32)	(1.34)
All four	–0.40	–0.21	–0.33	–0.40	–0.21	–0.33
	(0.72)	(0.64)	(0.66)	(0.72)	(0.64)	(0.66)
Lipid check	0.34	–0.97	0.59	0.34	–0.97	0.59
	(1.61)	(1.57)	(1.72)	(1.61)	(1.57)	(1.72)
Spending, dollars	277.40	–308.43	828.51	277.40	–308.43	828.51
Total Medicare spending	(563.60)	(533.64)	(555.33)	(563.60)	(533.64)	(555.33)
Outpatient spending	–242.78	**–348.25***	173.46	–242.78	–348.25	173.46
	(167.56)	**(174.06)**	(180.68)	(167.56)	(174.06)	(180.68)
Acute spending	413.61	–93.76	278.91	413.61	–93.76	278.91
	(349.80)	(329.55)	(332.51)	(349.80)	(329.55)	(332.51)
PAC spending	–92.78	33.52	151.85	–92.78	33.52	151.85
	(188.31)	(172.25)	(175.45)	(188.31)	(172.25)	(175.45)
OPD spending	–126.24	–255.18	212.99	–126.24	–255.18	212.99
	(154.13)	(160.50)	(163.04)	(154.13)	(160.50)	(163.04)
FQHC spending	–6.90	–3.96	–5.05	–6.90	–3.96	–5.05
	(6.76)	(8.32)	(7.62)	(6.76)	(8.32)	(7.62)
PC physician spending[‡]	27.03	–3.43	31.43	27.03	–3.43	31.43
	(28.51)	(24.40)	(28.50)	(28.51)	(24.40)	(28.50)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	82.49 (82.46)	–101.21 (79.81)	163.76† (88.46)	82.49 (82.46)	–101.21 (79.81)	163.76 (88.46)
Inpatient spending	474.34 (404.63)	48.84 (377.64)	392.23 (379.32)	474.34 (404.63)	48.84 (377.64)	392.23 (379.32)
Non-institutional provider spending	68.17 (112.26)	–200.81† (117.71)	166.76 (129.38)	68.17 (112.26)	–200.81 (117.71)	166.76 (129.38)
Outpatient file spending	–156.66 (159.55)	–273.43 (166.52)	238.39 (172.83)	–156.66 (159.55)	–273.43 (166.52)	238.39 (172.83)
DME spending	–78.43† (41.87)	–62.08 (42.41)	–51.86 (46.07)	–78.43 (41.87)	–62.08 (42.41)	–51.86 (46.07)
Home health spending	75.71† (44.77)	62.14 (47.23)	**94.28*** **(44.89)**	75.71 (44.77)	62.14 (47.23)	94.28 (44.89)
Hospice spending	–130.86 (151.86)	–45.31 (137.45)	–54.26 (167.12)	–130.86 (151.86)	–45.31 (137.45)	–54.26 (167.12)
SNF spending	–85.81 (118.74)	–114.98 (113.55)	57.81 (118.52)	–85.81 (118.74)	–114.98 (113.55)	57.81 (118.52)
Any SNF spending	–0.02 (0.57)	0.38 (0.49)	0.52 (0.49)	–0.02 (0.57)	0.38 (0.49)	0.52 (0.49)
Lab spending	11.75 (10.62)	–10.98 (10.66)	9.52 (12.64)	11.75 (10.62)	–10.98 (10.66)	9.52 (12.64)
Imaging spending	0.98 (10.03)	–22.81* (9.95)	10.03 (10.98)	0.98 (10.03)	–22.81 (9.95)	10.03 (10.98)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.15. Dual Compared with Nondual

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Visits, per 1,000 enrollees	9.12	4.96	–3.25	9.12	4.96	–3.25
Inpatient admissions	(7.29)	(7.12)	(7.45)	(7.29)	(7.12)	(7.45)
ED visits	6.23	–6.27	13.71	6.23	–6.27	13.71
	(16.17)	(16.30)	(16.21)	(16.17)	(16.30)	(16.21)
ED visits (no admission)	–12.55	–18.48	2.74	–12.55	–18.48	2.74
	(13.97)	(13.84)	(13.36)	(13.97)	(13.84)	(13.36)
ED ACSC visits	–1.98	–0.40	3.72	–1.98	–0.40	3.72
	(3.52)	(3.46)	(3.39)	(3.52)	(3.46)	(3.39)
E&M PCP visits	**–82.83****	**–61.44***	**–83.40****	–82.83	–61.44	–83.40
	(25.91)	**(26.83)**	**(28.05)**	(25.91)	(26.83)	(28.05)
Specialist visits	–26.34	**–55.65***	**–75.87****	–26.34	–55.65	–75.87
	(22.98)	**(27.46)**	**(28.79)**	(22.98)	(27.46)	(28.79)
FQHC visits	–40.48†	–22.45	–3.17	–40.48	–22.45	–3.17
	(21.35)	(20.60)	(19.76)	(21.35)	(20.60)	(19.76)
E&M PCP visits	**–46.99***	**–57.16***	**–82.14****	–46.99	–57.16	–82.14
(non-FQHC)	**(19.39)**	**(24.12)**	**(28.26)**	(19.39)	(24.12)	(28.26)
E&M specialist visits	–23.90	–31.72	–85.27**	–23.90	–31.72	–85.27
(non-FQHC)	(21.98)	(26.52)	(28.42)	(21.98)	(26.52)	(28.42)
Usual provider continuity	**0.63****	**0.82****	**0.81****	0.63	0.82	0.81
index	**(0.00)**	**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	0.06	0.97	0.68	0.06	0.97	0.68
HbA1C	(0.52)	(0.62)	(0.60)	(0.52)	(0.62)	(0.60)
LDL	–0.30	–0.47	–0.39	–0.30	–0.47	–0.39
	(0.65)	(0.65)	(0.68)	(0.65)	(0.65)	(0.68)
Eye exam	0.67	0.19	0.33	0.67	0.19	0.33
	(0.75)	(0.73)	(0.75)	(0.75)	(0.73)	(0.75)
Nephropathy check	0.33	–0.69	–0.17	0.33	–0.69	–0.17
	(0.79)	(0.75)	(0.78)	(0.79)	(0.75)	(0.78)
All four	0.05	–0.11	0.08	0.05	–0.11	0.08
	(0.24)	(0.22)	(0.22)	(0.24)	(0.22)	(0.22)
Lipid check	0.41	–1.22	–1.05	0.41	–1.22	–1.05
	(0.95)	(0.92)	(1.00)	(0.95)	(0.92)	(1.00)
Spending, dollars	–83.44	–3.73	11.75	–83.44	–3.73	11.75
Total Medicare spending	(141.84)	(129.13)	(129.06)	(141.84)	(129.13)	(129.06)
Outpatient spending	–75.53†	–26.91	–11.91	–75.53	–26.91	–11.91
	(41.53)	(41.37)	(40.11)	(41.53)	(41.37)	(40.11)
Acute spending	–62.70	21.79	–29.82	–62.70	21.79	–29.82
	(85.68)	(76.44)	(74.37)	(85.68)	(76.44)	(74.37)
PAC spending	–31.93	–19.46	12.81	–31.93	–19.46	12.81
	(44.17)	(39.22)	(38.47)	(44.17)	(39.22)	(38.47)
OPD spending	**–80.51***	–20.91	–15.72	–80.51	–20.91	–15.72
	(38.41)	(38.28)	(36.04)	(38.41)	(38.28)	(36.04)
FQHC spending	–3.83†	–2.44	–1.16	–3.83	–2.44	–1.16
	(2.28)	(2.41)	(2.41)	(2.28)	(2.41)	(2.41)
PC physician spending‡	5.94	–1.07	–6.24	5.94	–1.07	–6.24
	(6.15)	(5.74)	(6.29)	(6.15)	(5.74)	(6.29)

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Specialist physician spending[‡‡]	–18.66 (20.56)	–2.94 (19.64)	–4.68 (19.42)	–18.66 (20.56)	–2.94 (19.64)	–4.68 (19.42)
Inpatient spending	–37.70 (98.99)	9.88 (87.96)	–26.76 (85.67)	–37.70 (98.99)	9.88 (87.96)	–26.76 (85.67)
Non-institutional provider spending	–9.33 (27.73)	–13.58 (27.69)	–9.39 (28.64)	–9.33 (27.73)	–13.58 (27.69)	–9.39 (28.64)
Outpatient file spending	**–88.48* (39.99)**	–26.55 (39.88)	–11.65 (38.27)	–88.48 (39.99)	–26.55 (39.88)	–11.65 (38.27)
DME spending	5.43 (9.25)	4.27 (9.11)	2.90 (10.30)	5.43 (9.25)	4.27 (9.11)	2.90 (10.30)
Home health spending	–21.50[†] (11.38)	–6.15 (11.47)	10.18 (10.79)	–21.50 (11.38)	–6.15 (11.47)	10.18 (10.79)
Hospice spending	56.56 (39.76)	–7.82 (36.83)	33.99 (39.62)	56.56 (39.76)	–7.82 (36.83)	33.99 (39.62)
SNF spending	–27.97 (29.57)	16.41 (27.32)	17.20 (26.76)	–27.97 (29.57)	16.41 (27.32)	17.20 (26.76)
Any SNF spending	–0.06 (0.14)	–0.20 (0.16)	0.01 (0.15)	–0.06 (0.14)	–0.20 (0.16)	0.01 (0.15)
Lab spending	2.41 (3.34)	–2.35 (3.40)	–2.22 (3.58)	2.41 (3.34)	–2.35 (3.40)	–2.22 (3.58)
Imaging spending	–2.65 (2.98)	–3.81 (2.83)	**–5.53* (2.81)**	–2.65 (2.98)	–3.81 (2.83)	–5.53 (2.81)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
[‡] This includes E&M visits and services ordered by PCPs.
[‡‡] This includes E&M visits and services ordered by specialists.

Exhibit J.16. Fifteen or More Grantee Sites Compared with Five to 14

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	0.29	7.83	–9.08	0.29	7.83	–9.08
Inpatient admissions	(11.53)	(10.61)	(11.43)	(11.53)	(10.61)	(11.43)
ED visits	3.64	–2.47	26.11	3.64	–2.47	26.11
	(19.20)	(19.89)	(20.54)	(19.20)	(19.89)	(20.54)
ED visits (no admission)	–12.77	–26.20	8.31	–12.77	–26.20	8.31
	(15.64)	(16.43)	(16.37)	(15.64)	(16.43)	(16.37)
ED ACSC visits	4.81	4.11	9.00†	4.81	4.11	9.00†
	(3.92)	(4.19)	(4.23)	(3.92)	(4.19)	(4.23)
E&M PCP visits	**–98.73****	**–155.68*****	**–147.73*****	**–98.73****	**–155.68*****	**–147.73*****
	(34.16)	**(36.52)**	**(37.22)**	**(34.16)**	**(36.52)**	**(37.22)**
Specialist visits	54.48†	–15.37	34.10	54.48†	–15.37	34.10
	(31.65)	(38.24)	(39.01)	(31.65)	(38.24)	(39.01)
FQHC visits	–167.91***	**–265.24*****	**–205.27*****	**–167.91*****	**–265.24*****	**–205.27*****
	(30.13)	**(30.38)**	**(28.69)**	**(30.13)**	**(30.38)**	**(28.69)**
E&M PCP visits	14.84	36.32	15.12	14.84	36.32	15.12
(non-FQHC)	(22.41)	(28.53)	(33.90)	(22.41)	(28.53)	(33.90)
E&M specialist visits	87.62**	5.66	15.58	87.62**	5.66	15.58
(non-FQHC)	(29.65)	(36.68)	(38.13)	(29.65)	(36.68)	(38.13)
Usual provider continuity	**1.95*****	**–2.75*****	**–3.15*****	**1.95*****	**–2.75*****	**–3.15*****
index	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
Process measures, % change	0.39	**2.47****	–0.07	0.39	**2.47****	–0.07
HbA1C	(0.77)	**(0.94)**	(0.75)	(0.77)	**(0.94)**	(0.75)
LDL	0.88	0.14	0.57	0.88	0.14	0.57
	(0.96)	(0.90)	(0.96)	(0.96)	(0.90)	(0.96)
Eye exam	1.11	0.57	0.96	1.11	0.57	0.96
	(0.97)	(0.95)	(0.97)	(0.97)	(0.95)	(0.97)
Nephropathy check	**2.24***	**2.77****	**2.93****	**2.24***	**2.77****	**2.93****
	(1.10)	**(1.05)**	**(1.09)**	**(1.10)**	**(1.05)**	**(1.09)**
All four	**0.76****	0.43†	**0.79****	**0.76****	0.43†	0.79**
	(0.25)	(0.24)	**(0.22)**	**(0.25)**	(0.24)	(0.22)
Lipid check	–0.76	–0.71	0.04	–0.76	–0.71	0.04
	(1.34)	(1.36)	(1.52)	(1.34)	(1.36)	(1.52)
Spending, dollars	–108.48	**410.16***	316.36†	–108.48	**410.16***	316.36†
Total Medicare spending	(203.29)	**(183.53)**	(178.94)	(203.29)	**(183.53)**	(178.94)
Outpatient spending	**–178.94****	24.44	31.94	**–178.94****	24.44	31.94
	(66.34)	(57.01)	(56.69)	**(66.34)**	(57.01)	(56.69)
Acute spending	–57.90	**345.09****	126.51	–57.90	**345.09****	126.51
	(124.07)	**(106.59)**	(104.22)	(124.07)	**(106.59)**	(104.22)
PAC spending	–98.72	41.91	13.53	–98.72	41.91	13.53
	(64.60)	(53.68)	(54.58)	(64.60)	(53.68)	(54.58)
OPD spending	–157.23*	51.41	22.76	–157.23*	51.41	22.76
	(62.94)	(52.88)	(51.67)	(62.94)	(52.88)	(51.67)
FQHC spending	**–16.06*****	**–22.32*****	**–16.50*****	**–16.06*****	**–22.32*****	**–16.50*****
	(3.37)	**(3.48)**	**(3.58)**	**(3.37)**	**(3.48)**	**(3.58)**
PC physician spending‡	–5.99	**19.40***	**21.84***	**–5.99**	**19.40***	**21.84***
	(11.32)	**(9.10)**	**(9.81)**	**(11.32)**	**(9.10)**	**(9.81)**

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	–0.22 (32.00)	32.05 (27.58)	30.92 (29.06)	–0.22 (32.00)	32.05 (27.58)	30.92 (29.06)
Inpatient spending	–77.92 (143.64)	**358.71**** **(123.63)**	182.76 (119.85)	–77.92 (143.64)	**358.71**** **(123.63)**	182.76 (119.85)
Non-institutional provider spending	34.85 (45.93)	93.36* (38.89)	**121.91**** **(43.15)**	34.85 (45.93)	93.36* (38.89)	121.91** (43.15)
Outpatient file spending	**–168.43**** **(64.86)**	29.09 (55.04)	17.54 (54.70)	**–168.43**** **(64.86)**	29.09 (55.04)	17.54 (54.70)
DME spending	–25.51 (15.61)	–9.15 (12.38)	7.93 (11.94)	–25.51 (15.61)	–9.15 (12.38)	7.93 (11.94)
Home health spending	20.16 (15.62)	0.52 (15.44)	0.35 (14.95)	20.16 (15.62)	0.52 (15.44)	0.35 (14.95)
Hospice spending	–90.03 (55.79)	–132.47* (56.52)	2.67 (49.06)	–90.03 (55.79)	**–132.47*** **(56.52)**	2.67 (49.06)
SNF spending	–53.87 (43.82)	76.55* (37.13)	18.57 (40.09)	–53.87 (43.82)	**76.55*** **(37.13)**	18.57 (40.09)
Any SNF spending	0.02 (0.18)	0.14 (0.19)	0.17 (0.19)	0.02 (0.18)	0.14 (0.19)	0.17 (0.19)
Lab spending	**23.26***** **(4.63)**	**29.29***** **(4.66)**	**43.65***** **(4.87)**	**23.26***** **(4.63)**	**29.29***** **(4.66)**	**43.65***** **(4.87)**
Imaging spending	2.87 (4.56)	4.61 (3.77)	1.91 (4.27)	2.87 (4.56)	4.61 (3.77)	1.91 (4.27)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.17. Five to 14 Grantee Sites Compared with Fewer Than Five

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	11.01	–12.28	–15.43†	11.01	–12.28	–15.43
Inpatient admissions	(9.07)	(9.46)	(9.66)	(9.07)	(9.46)	(9.66)
ED visits	**45.29***	5.51	8.74	45.29	5.51	8.74
	(18.23)	(19.11)	(18.79)	(18.23)	(19.11)	(18.79)
ED visits (no admission)	**35.35***	18.10	23.06	35.35	18.10	23.06
	(14.95)	(15.11)	(14.41)	(14.95)	(15.11)	(14.41)
ED ACSC visits	–0.75	–4.70	0.86	–0.75	–4.70	0.86
	(4.21)	(4.42)	(4.18)	(4.21)	(4.42)	(4.18)
E&M PCP visits	**–108.15*****	**–97.65****	–9.54	–108.15	–97.65	–9.54
	(29.59)	**(30.64)**	(31.81)	(29.59)	(30.64)	(31.81)
Specialist visits	36.38	**106.39*****	85.40**	36.38	106.39	85.40
	(26.69)	**(29.36)**	(31.08)	(26.69)	(29.36)	(31.08)
FQHC visits	**–113.56*****	–42.64†	**77.10*****	–113.56^	–42.64	77.10
	(24.56)	(23.26)	**(21.40)**	(24.56)	(23.26)	(21.40)
E&M PCP visits	**41.21***	**51.81***	**58.00***	41.21	51.81	58.00
(non-FQHC)	**(19.35)**	**(23.74)**	**(28.07)**	(19.35)	(23.74)	(28.07)
E&M specialist visits	**61.60***	99.94***	**93.35****	61.60	99.94	93.35
(non-FQHC)	**(25.12)**	(28.60)	**(30.35)**	(25.12)	(28.60)	(30.35)
Usual provider continuity	**–1.37*****	–0.22	–0.13	–1.37^	–0.22	–0.13
index	**(0.00)**	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Process measures, % change	**–1.39***	**–2.28*****	**–2.43*****	–1.39	–2.28	–2.43^
HbA1C	**(0.59)**	**(0.60)**	**(0.56)**	(0.59)	(0.60)	(0.56)
LDL	–0.77	0.32	–1.16	–0.77	0.32	–1.16
	(0.83)	(0.88)	(0.84)	(0.83)	(0.88)	(0.84)
Eye exam	–0.48	0.59	–0.06	–0.48	0.59	–0.06
	(0.90)	(0.86)	(0.89)	(0.90)	(0.86)	(0.89)
Nephropathy check	–0.69	**–3.21*****	**–3.46*****	–0.69	–3.21	–3.46
	(0.96)	**(0.89)**	**(0.90)**	(0.96)	(0.89)	(0.90)
All four	0.01	–0.41	–0.81**	0.01	–0.41	–0.81
	(0.26)	(0.26)	(0.29)	(0.26)	(0.26)	(0.29)
Lipid check	–1.42	–0.53	**–2.77***	–1.42	–0.53	–2.77
	(1.09)	(1.16)	**(1.14)**	(1.09)	(1.16)	(1.14)
Spending, dollars	**404.33***	274.61†	267.77†	404.33	274.61	267.77
Total Medicare spending	**(168.73)**	(151.90)	(157.29)	(168.73)	(151.90)	(157.29)
Outpatient spending	–24.30	42.88	44.24	–24.30	42.88	44.24
	(50.65)	(50.02)	(49.10)	(50.65)	(50.02)	(49.10)
Acute spending	172.33†	59.02	–21.45	172.33	59.02	–21.45
	(99.08)	(87.40)	(88.49)	(99.08)	(87.40)	(88.49)
PAC spending	**217.68*****	**138.13****	**153.67****	217.68^	138.13	153.67
	(53.55)	**(46.51)**	**(46.86)**	(53.55)	(46.51)	(46.86)
OPD spending	–14.07	34.70	8.96	–14.07	34.70	8.96
	(47.00)	(46.24)	(43.81)	(47.00)	(46.24)	(43.81)
FQHC spending	–0.23	6.92*	**22.04*****	–0.23	6.92	22.04^
	(2.69)	(2.80)	**(2.80)**	(2.69)	(2.80)	(2.80)
PC physician spending‡	12.15†	–0.32	–5.82	12.15	–0.32	–5.82
	(6.34)	(6.49)	(6.95)	(6.34)	(6.49)	(6.95)

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Specialist physician spending‡‡	22.95 (24.25)	22.37 (23.21)	42.30† (22.04)	22.95 (24.25)	22.37 (23.21)	42.30 (22.04)
Inpatient spending	191.26† (115.15)	11.82 (101.05)	–43.44 (102.08)	191.26 (115.15)	11.82 (101.05)	–43.44 (102.08)
Non-institutional provider spending	28.64 (32.17)	3.16 (33.04)	3.47 (33.31)	28.64 (32.17)	3.16 (33.04)	3.47 (33.31)
Outpatient file spending	–11.10 (49.00)	41.39 (48.37)	45.70 (46.48)	–11.10 (49.00)	41.39 (48.37)	45.70 (46.48)
DME spending	–7.99 (10.40)	5.15 (10.31)	0.72 (13.86)	–7.99 (10.40)	5.15 (10.31)	0.72 (13.86)
Home health spending	5.94 (13.67)	18.78 (13.34)	37.42** (12.66)	5.94 (13.67)	18.78 (13.34)	37.42 (12.66)
Hospice spending	29.58 (50.04)	81.19† (44.21)	24.14 (52.77)	29.58 (50.04)	81.19 (44.21)	24.14 (52.77)
SNF spending	**191.08***** **(37.26)**	**154.77***** **(32.99)**	**157.62***** **(32.33)**	191.08^ (37.26)	154.77^ (32.99)	157.62^ (32.33)
Any SNF spending	**0.74***** **(0.11)**	**0.74***** **(0.11)**	**0.77***** **(0.12)**	0.74^ (0.11)	0.74^ (0.11)	0.77^ (0.12)
Lab spending	**–11.12**** **(4.13)**	**–16.20***** **(4.03)**	**–18.16***** **(4.27)**	–11.12 (4.13)	–16.20^ (4.03)	–18.16^ (4.27)
Imaging spending	4.96 (3.36)	0.67 (3.17)	4.66 (3.02)	4.96 (3.36)	0.67 (3.17)	4.66 (3.02)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.18. Black/African American Compared with Non-Hispanic White

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Visits, per 1,000 enrollees	**–23.42***	–13.82	–15.22	–23.42	–13.82	–15.22
Inpatient admissions	**(11.22)**	(10.62)	(10.93)	(11.22)	(10.62)	(10.93)
ED visits	12.15	23.12	**39.16***	12.15	23.12	39.16
	(18.77)	(19.06)	**(19.42)**	(18.77)	(19.06)	(19.42)
ED visits (no admission)	8.87	13.71	24.17	8.87	13.71	24.17
	(15.31)	(15.52)	(15.53)	(15.31)	(15.52)	(15.53)
ED ACSC visits	3.96	1.53	0.32	3.96	1.53	0.32
	(4.80)	(4.91)	(5.36)	(4.80)	(4.91)	(5.36)
E&M PCP visits	25.93	**63.95***	**65.37***	25.93	63.95	65.37
	(29.88)	**(30.70)**	**(32.22)**	(29.88)	(30.70)	(32.22)
Specialist visits	–36.81	**–98.72****	**–116.22*****	–36.81	–98.72	–116.22
	(28.59)	**(33.94)**	**(36.11)**	(28.59)	(33.94)	(36.11)
FQHC visits	30.81	**70.53****	**105.67*****	30.81	70.53	105.67^
	(24.35)	**(23.43)**	**(22.28)**	(24.35)	(23.43)	(22.28)
E&M PCP visits	–26.34	**–59.78***	**–90.60****	–26.34	–59.78	–90.60
(non-FQHC)	(21.95)	**(28.02)**	**(33.58)**	(21.95)	(28.02)	(33.58)
E&M specialist visits	–33.89	–41.61	**–67.02***	–33.89	–41.61	–67.02
(non-FQHC)	(27.26)	(32.21)	**(34.58)**	(27.26)	(32.21)	(34.58)
Usual provider continuity	0.59†	**0.86***	**1.28****	0.59	0.86	1.28
index	(0.00)	**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	**–1.55***	0.22	–0.47	–1.55	0.22	–0.47
HbA1C	**(0.62)**	(0.78)	(0.72)	(0.62)	(0.78)	(0.72)
LDL	0.31	–0.03	1.40	0.31	–0.03	1.40
	(0.92)	(0.89)	(0.96)	(0.92)	(0.89)	(0.96)
Eye exam	–1.12	1.67†	–0.08	–1.12	1.67	–0.08
	(0.93)	(0.89)	(0.94)	(0.93)	(0.89)	(0.94)
Nephropathy check	–0.57	–0.98	–0.48	–0.57	–0.98	–0.48
	(0.96)	(0.93)	(0.96)	(0.96)	(0.93)	(0.96)
All four	–0.71*	0.04	–0.15	–0.71	0.04	–0.15
	(0.36)	(0.30)	(0.31)	(0.36)	(0.30)	(0.31)
Lipid check	–0.19	–0.27	0.54	–0.19	–0.27	0.54
	(1.34)	(1.33)	(1.46)	(1.34)	(1.33)	(1.46)
Spending, dollars	**–459.13***	**–536.03****	**–404.73***	–459.13	–536.03	–404.73
Total Medicare spending	**(197.31)**	**(182.39)**	**(182.04)**	(197.31)	(182.39)	(182.04)
Outpatient spending	–72.62	–66.24	15.10	–72.62	–66.24	15.10
	(62.39)	(64.51)	(61.31)	(62.39)	(64.51)	(61.31)
Acute spending	**–312.64****	**–246.91***	–197.74†	–312.64	–246.91	–197.74
	(120.09)	**(110.57)**	(107.93)	(120.09)	(110.57)	(107.93)
PAC spending	20.01	–92.03†	**–111.5***	20.01	–92.03	–111.50
	(66.28)	(55.73)	**(56.65)**	(66.28)	(55.73)	(56.65)
OPD spending	–63.99	–67.96	–1.66	–63.99	–67.96	–1.66
	(58.73)	(60.66)	(56.39)	(58.73)	(60.66)	(56.39)
FQHC spending	2.63	**–6.54***	–0.71	2.63	–6.54	–0.71
	(2.86)	**(2.84)**	(2.92)	(2.86)	(2.84)	(2.92)
PC physician spending‡	1.50	–5.61	3.01	1.50	–5.61	3.01
	(11.93)	(9.26)	(9.12)	(11.93)	(9.26)	(9.12)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	–6.67 (29.41)	–10.49 (27.69)	–2.80 (26.89)	–6.67 (29.41)	–10.49 (27.69)	–2.80 (26.89)
Inpatient spending	**–316.13*** **(141.1)**	**–298.31*** **(127.95)**	–237.28† (124.61)	–316.13 (141.10)	–298.31 (127.95)	–237.28 (124.61)
Non-institutional provider spending	–12.45 (41.14)	–40.27 (41.37)	5.47 (42.47)	–12.45 (41.14)	–40.27 (41.37)	5.47 (42.47)
Outpatient file spending	–56.67 (60.61)	–74.42 (62.64)	–2.46 (59.10)	–56.67 (60.61)	–74.42 (62.64)	–2.46 (59.10)
DME spending	–10.16 (13.25)	14.24 (13.30)	26.73† (14.22)	–10.16 (13.25)	14.24 (13.30)	26.73 (14.22)
Home health spending	–26.29 (16.67)	–25.98 (17.10)	**–34.3*** **(15.85)**	–26.29 (16.67)	–25.98 (17.10)	–34.30 (15.85)
Hospice spending	–38.71 (50.99)	–44.28 (48.42)	45.59 (53.01)	–38.71 (50.99)	–44.28 (48.42)	45.59 (53.01)
SNF spending	–29.54 (40.69)	–44.63 (37.05)	**–75.77*** **(38.58)**	–29.54 (40.69)	–44.63 (37.05)	–75.77 (38.58)
Any SNF spending	–0.27 (0.21)	**–0.58**** **(0.24)**	**–0.66**** **(0.25)**	–0.27 (0.21)	–0.58 (0.24)	–0.66 (0.25)
Lab spending	4.75 (4.59)	–1.29 (4.63)	5.65 (4.95)	4.75 (4.59)	–1.29 (4.63)	5.65 (4.95)
Imaging spending	2.51 (4.12)	–4.83 (3.72)	–3.26 (3.49)	2.51 (4.12)	–4.83 (3.72)	–3.26 (3.49)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.19. Rural Compared with Urban

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Visits, per 1,000 enrollees	–13.73†	–7.60	11.89	–13.73	–7.60	11.89
Inpatient admissions	(8.42)	(7.99)	(7.60)	(8.42)	(7.99)	(7.60)
ED visits	–11.74	–27.66†	**–35.87***	–11.74	–27.66	–35.87
	(16.14)	(16.40)	**(17.6)**	(16.14)	(16.40)	(17.60)
ED visits (no admission)	0.13	–9.53	**–27.91***	0.13	–9.53	–27.91
	(13.47)	(13.36)	**(14.44)**	(13.47)	(13.36)	(14.44)
ED ACSC visits	–0.05	1.01	0.74	–0.05	1.01	0.74
	(3.38)	(3.36)	(3.72)	(3.38)	(3.36)	(3.72)
E&M PCP visits	23.67	**89.92****	**156.71*****	23.67	89.92	156.71^
	(26.35)	**(27.34)**	**(27.87)**	(26.35)	(27.34)	(27.87)
Specialist visits	11.22	–17.99	18.21	11.22	–17.99	18.21
	(22.68)	(26.12)	(26.89)	(22.68)	(26.12)	(26.89)
FQHC visits	22.85	**63.36****	**121.39*****	22.85	63.36	121.39^
	(22.62)	**(21.93)**	**(20.93)**	(22.62)	(21.93)	(20.93)
E&M PCP visits	–22.07	**–45.72***	**–58.62***	–22.07	–45.72	–58.62
(non-FQHC)	(18.18)	**(23.84)**	**(27.77)**	(18.18)	(23.84)	(27.77)
E&M specialist visits	21.52	28.86	**77.39****	21.52	28.86	77.39
(non-FQHC)	(21.77)	(24.81)	**(25.36)**	(21.77)	(24.81)	(25.36)
Usual provider continuity	**–0.91*****	**–1.60*****	**–1.25*****	–0.91	–1.60^	–1.25^
index	**(0.00)**	**(0.00)**	**(0.00)**	(0.00)	(0.00)	(0.00)
Process measures, % change	**–1.19***	–0.57	–0.99†	–1.19	–0.57	–0.99
HbA1C	**(0.53)**	(0.64)	(0.57)	(0.53)	(0.64)	(0.57)
LDL	**–2.00****	1.28	1.11	–2.00	1.28	1.11
	(0.70)	(0.80)	(0.81)	(0.70)	(0.80)	(0.81)
Eye exam	**–1.68***	**–1.58***	1.17	–1.68	–1.58	1.17
	(0.83)	**(0.81)**	(0.81)	(0.83)	(0.81)	(0.81)
Nephropathy check	**–2***	–0.44	0.14	–2.00	–0.44	0.14
	(0.84)	(0.82)	(0.84)	(0.84)	(0.82)	(0.84)
All four	**–0.54***	–0.41†	0.23	–0.54	–0.41	0.23
	(0.28)	(0.25)	(0.23)	(0.28)	(0.25)	(0.23)
Lipid check	1.88†	1.89†	1.02	1.88	1.89	1.02
	(1.09)	(1.10)	(1.15)	(1.09)	(1.10)	(1.15)
Spending, dollars	24.92	25.91	**294.29***	24.92	25.91	294.29
Total Medicare spending	(149.18)	(135.14)	**(134.63)**	(149.18)	(135.14)	(134.63)
Outpatient spending	**112.49****	–6.47	66.57	112.49	–6.47	66.57
	(43.64)	(43.50)	(42.15)	(43.64)	(43.50)	(42.15)
Acute spending	22.48	37.71	**181.06***	22.48	37.71	181.06
	(88.38)	(79.13)	**(77.14)**	(88.38)	(79.13)	(77.14)
PAC spending	–2.26	24.12	40.68	–2.26	24.12	40.68
	(45.48)	(40.76)	(39.64)	(45.48)	(40.76)	(39.64)
OPD spending	**90.74***	–24.23	33.48	90.74	–24.23	33.48
	(40.11)	(39.99)	(38.01)	(40.11)	(39.99)	(38.01)
FQHC spending	–3.85	–2.86	1.63	–3.85	–2.86	1.63
	(2.38)	(2.44)	(2.51)	(2.38)	(2.44)	(2.51)
PC physician spending‡	0.22	3.18	5.58	0.22	3.18	5.58
	(5.88)	(5.74)	(5.80)	(5.88)	(5.74)	(5.80)

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Specialist physician spending‡‡	0.17 (20.93)	4.12 (19.93)	22.61 19.64)	0.17 (20.93)	4.12 (19.93)	22.61 (19.64)
Inpatient spending	–23.63 (100.94)	19.72 (89.95)	125.26 (87.81)	–23.63 (100.94)	19.72 (89.95)	125.26 (87.81)
Non-institutional provider spending	–8.32 (28.60)	3.63 (28.45)	21.68 (28.93)	–8.32 (28.60)	3.63 (28.45)	21.68 (28.93)
Outpatient file spending	**98.41*** **(41.97)**	–26.44 (41.89)	33.51 (40.27)	98.41 (41.97)	–26.44 (41.89)	33.51 (40.27)
DME spending	**18.90*** **(9.39)**	15.92† (9.38)	**27.73**** **(10.38)**	18.90 (9.39)	15.92 (9.38)	27.73 (10.38)
Home health spending	12.72 (12.09)	14.28 (11.97)	**34.69**** **(11.36)**	12.72 (12.09)	14.28 (11.97)	34.69 (11.36)
Hospice spending	–18.81 (45.80)	10.49 (41.27)	–63.11 (40.90)	–18.81 (45.80)	10.49 (41.27)	–63.11 (40.90)
SNF spending	34.99 (32.12)	16.85 (29.35)	**94.00**** **(28.78)**	34.99 (32.12)	16.85 (29.35)	94.00 (28.78)
Any SNF spending	0.12 (0.14)	0.08 (0.14)	**0.38**** **(0.13)**	0.12 (0.14)	0.08 (0.14)	0.38 (0.13)
Lab spending	**–8.52*** **(3.37)**	–5.47 (3.43)	0.44 (3.77)	–8.52 (3.37)	–5.47 (3.43)	0.44 (3.77)
Imaging spending	–1.02 (2.90)	–2.79 (2.69)	0.20 (2.88)	–1.02 (2.90)	–2.79 (2.69)	0.20 (2.88)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.20. Schizophrenia and Other Disorders Compared with Those with No Disorders

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	–20.26	–10.13	–26.08†	–20.26	–10.13	–26.08
Inpatient admissions	(15.77)	(14.17)	(14.54)	(15.77)	(14.17)	(14.54)
ED visits	13.43	–2.04	4.31	13.43	–2.04	4.31
	(31.90)	(33.73)	(36.24)	(31.90)	(33.73)	(36.24)
ED visits (no admission)	11.49	–2.14	4.61	11.49	–2.14	4.61
	(27.52)	(28.98)	(31.13)	(27.52)	(28.98)	(31.13)
ED ACSC visits	–4.86	–8.21	–3.05	–4.86	–8.21	–3.05
	(6.31)	(6.20)	(6.06)	(6.31)	(6.20)	(6.06)
E&M PCP visits	–12.59	–35.27	–37.20	–12.59	–35.27	–37.20
	(51.58)	(54.13)	(56.76)	(51.58)	(54.13)	(56.76)
Specialist visits	–36.04	80.41	20.07	–36.04	80.41	20.07
	(43.86)	(68.91)	(74.99)	(43.86)	(68.91)	(74.99)
FQHC visits	36.44	65.94	**101.61***	36.44	65.94	101.61
	(44.22)	(42.82)	**(39.61)**	(44.22)	(42.82)	(39.61)
E&M PCP visits	–61.68†	–77.21†	**–115.98***	–61.68	–77.21	–115.98
(non-FQHC)	(38.49)	(47.87)	**(56.15)**	(38.49)	(47.87)	(56.15)
E&M specialist visits	–16.84	–46.04	**–153.66***	–16.84	–46.04	–153.66
(non-FQHC)	(40.48)	(72.50)	**(80.33)**	(40.48)	(72.50)	(80.33)
Usual provider continuity	**2.22*****	**2.32*****	**3.30*****	2.22^	2.32	3.30^
index	**(0.01)**	**(0.01)**	**(0.01)**	(0.01)	(0.01)	(0.01)
Process measures, % change	–0.29	–0.42	–1.43	–0.29	–0.42	–1.43
HbA1C	(1.05)	(1.19)	(1.10)	(1.05)	(1.19)	(1.10)
LDL	3.11*	1.31	–2.09	3.11	1.31	–2.09
	(1.49)	(1.44)	(1.31)	(1.49)	(1.44)	(1.31)
Eye exam	–0.22	1.79	0.31	–0.22	1.79	0.31
	(1.56)	(1.45)	(1.52)	(1.56)	(1.45)	(1.52)
Nephropathy check	0.66	–1.98	–1.63	0.66	–1.98	–1.63
	(1.68)	(1.61)	(1.65)	(1.68)	(1.61)	(1.65)
All four	0.24	–0.17	**–0.72***	0.24	–0.17	–0.72
	(0.39)	(0.36)	**(0.4)**	(0.39)	(0.36)	(0.40)
Lipid check	2.00	–0.72	1.33	2.00	–0.72	1.33
	(2.56)	(2.49)	(2.72)	(2.56)	(2.49)	(2.72)
Spending, dollars	–105.04	188.44	–3.58	–105.04	188.44	–3.58
Total Medicare spending	(343.93)	(329.77)	(325.34)	(343.93)	(329.77)	(325.34)
Outpatient spending	–44.17	–19.19	–32.50	–44.17	–19.19	–32.50
	(60.75)	(70.28)	(70.32)	(60.75)	(70.28)	(70.32)
Acute spending	–322.65†	–62.69	–186.42	–322.65	–62.69	–186.42
	(181.37)	(176.77)	(169.41)	(181.37)	(176.77)	(169.41)
PAC spending	–113.01	–23.92	–117.30	–113.01	–23.92	–117.30
	(108.85)	(97.14)	(96.55)	(108.85)	(97.14)	(96.55)
OPD spending	–53.69	–17.43	–42.40	–53.69	–17.43	–42.40
	(54.18)	(64.73)	(62.14)	(54.18)	(64.73)	(62.14)
FQHC spending	–7.03	–3.07	–1.41	–7.03	–3.07	–1.41
	(5.87)	(5.78)	(6.06)	(5.87)	(5.78)	(6.06)
PC physician spending‡	17.93	10.49	–9.09	17.93	10.49	–9.09
	(26.69)	(12.63)	(15.60)	(26.69)	(12.63)	(15.60)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending[##]	–16.04 (32.12)	5.12 (33.18)	–40.36 (31.43)	–16.04 (32.12)	5.12 (33.18)	–40.36 (31.43)
Inpatient spending	–32.55 (259.38)	193.70 (248.42)	1.49 (237.75)	–32.55 (259.38)	193.70 (248.42)	1.49 (237.75)
Non-institutional provider spending	–7.43 (55.86)	–11.83 (51.63)	–61.94 (55.43)	–7.43 (55.86)	–11.83 (51.63)	–61.94 (55.43)
Outpatient file spending	–52.75 (58.75)	–13.53 (69.37)	–44.28 (68.60)	–52.75 (58.75)	–13.53 (69.37)	–44.28 (68.60)
DME spending	3.49 (14.10)	–12.33 (12.97)	8.21 (13.79)	3.49 (14.10)	–12.33 (12.97)	8.21 (13.79)
Home health spending	28.44 (23.13)	4.93 (24.17)	9.42 (21.98)	28.44 (23.13)	4.93 (24.17)	9.42 (21.98)
Hospice spending	27.95 (105.25)	22.55 (74.46)	131.32 (85.13)	27.95 (105.25)	22.55 (74.46)	131.32 (85.13)
SNF spending	–85.14 (82.44)	–42.46 (69.37)	–118.70 (72.29)	–85.14 (82.44)	–42.46 (69.37)	–118.70 (72.29)
Any SNF spending	**–0.76*** **(0.39)**	–0.48 (0.35)	**–0.98**** **(0.39)**	–0.76 (0.39)	–0.48 (0.35)	–0.98 (0.39)
Lab spending	1.51 (9.37)	–11.51 (8.19)	–4.14 (9.19)	1.51 (9.37)	–11.51 (8.19)	–4.14 (9.19)
Imaging spending	**–9.76*** **(4.55)**	–6.62 (4.30)	**–9.86*** **(4.24)**	–9.76 (4.55)	–6.62 (4.30)	–9.86 (4.24)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
[‡] This includes E&M visits and services ordered by PCPs.
[##] This includes E&M visits and services ordered by specialists.

Exhibit J.21. Impact of Demonstration on Individuals with Schizophrenia and Other Disorders Compared with Those with No Disorders (2)

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	10.36	–5.46	–14.35†	10.36	–5.46	–14.35†
Inpatient admissions	(8.63)	(8.34)	(8.49)	(8.63)	(8.34)	(8.49)
ED visits	32.82	–14.16	–7.04	32.82†	–14.16	–7.04
	(18.66)	(19.26)	(19.67)	(18.66)	(19.26)	(19.67)
ED visits (no admission)	17.90	–12.59	–10.56	17.90	–12.59	–10.56
	(16.18)	(16.52)	(16.78)	(16.18)	(16.52)	(16.78)
ED ACSC visits	–3.19	–1.27	2.93	–3.19	–1.27	2.93
	(3.91)	(3.64)	(3.36)	(3.91)	(3.64)	(3.36)
E&M PCP visits	25.23	**–65.76***	**–88.8***	25.23	**–65.76***	**–88.8***
	(31.49)	**(33.55)**	**(35.15)**	(31.49)	**(33.55)**	**(35.15)**
Specialist visits	37.83	62.29	–4.71	37.83	62.29	–4.71
	(28.11)	(37.66)	(40.09)	(28.11)	(37.66)	(40.09)
FQHC visits	56.13	–16.29	9.42	**56.13***	–16.29	9.42
	(26.81)	(26.57)	(25.13)	**(26.81)**	(26.57)	(25.13)
E&M PCP visits	5.46	–16.64	–51.24	5.46	–16.64	–51.24
(non-FQHC)	(23.12)	(28.82)	(33.56)	(23.12)	(28.82)	(33.56)
E&M specialist visits	21.82	43.96	–42.95	21.82	43.96	–42.95
(non-FQHC)	(26.62)	(36.83)	(39.85)	(26.62)	(36.83)	(39.85)
Usual provider continuity	1.57^	**1.12*****	**1.55*****	**1.57*****	**1.12*****	**1.55*****
index	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
Process measures, % change	–0.31	–0.86	**–1.73****	–0.31	–0.86	**–1.73****
HbA1C	(0.63)	(0.68)	**(0.62)**	(0.63)	(0.68)	**(0.62)**
LDL	3.13	0.48	–1.50†	**3.13*****	0.48	–1.50†
	(0.92)	(0.83)	(0.80)	**(0.92)**	(0.83)	(0.80)
Eye exam	–0.12	0.25	–0.86	–0.12	0.25	–0.86
	(0.91)	(0.87)	(0.89)	(0.91)	(0.87)	(0.89)
Nephropathy check	1.25	–1.45	**–2.49****	1.25	–1.45	**–2.49****
	(0.97)	(0.92)	**(0.94)**	(0.97)	(0.92)	**(0.94)**
All four	0.23	–0.12	**–0.5***	0.23	–0.12	–0.5*
	(0.22)	(0.21)	**(0.22)**	(0.22)	(0.21)	(0.22)
Lipid check	1.80	0.79	0.63	1.80	0.79	0.63
	(1.30)	(1.26)	(1.34)	(1.30)	(1.26)	(1.34)
Spending, dollars	110.00	–28.84	–122.56	110.00	–28.84	–122.56
Total Medicare spending	(187.42)	(169.04)	(169.80)	(187.42)	(169.04)	(169.80)
Outpatient spending	13.56	–59.42	–18.11	13.56	–59.42	–18.11
	(45.14)	(47.64)	(46.56)	(45.14)	(47.64)	(46.56)
Acute spending	52.97	–66.28	–89.07	52.97	–66.28	–89.07
	(110.22)	(98.77)	(97.98)	(110.22)	(98.77)	(97.98)
PAC spending	–66.02	–75.47	–48.90	–66.02	–75.47	–48.90
	(60.73)	(51.25)	(51.42)	(60.73)	(51.25)	(51.42)
OPD spending	8.33	–46.86	–23.62	8.33	–46.86	–23.62
	(40.17)	(43.46)	(40.64)	(40.17)	(43.46)	(40.64)
FQHC spending	–1.17	–3.72	–2.88	–1.17	–3.72	–2.88
	(3.38)	(3.50)	(3.60)	(3.38)	(3.50)	(3.60)
PC physician spending‡	13.94	–7.05	4.77	13.94	–7.05	4.77
	(9.58)	(7.13)	(8.34)	(9.58)	(7.13)	(8.34)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	21.42 (21.46)	–7.89 (21.00)	5.72 (21.76)	21.42 (21.46)	–7.89 (21.00)	5.72 (21.76)
Inpatient spending	148.40 (135.36)	–4.64 (120.20)	–64.36 (118.28)	148.40 (135.36)	–4.64 (120.20)	–64.36 (118.28)
Non-institutional provider spending	45.29 (32.57)	–20.84 (31.58)	21.04 (35.34)	45.29 (32.57)	–20.84 (31.58)	21.04 (35.34)
Outpatient file spending	8.31 (42.70)	–66.40 (45.95)	–25.84 (44.55)	8.31 (42.70)	–66.40 (45.95)	–25.84 (44.55)
DME spending	2.05 (11.93)	1.72 (11.10)	5.28 (11.36)	2.05 (11.93)	1.72 (11.10)	5.28 (11.36)
Home health spending	39.76 (15.05)	–1.99 (14.40)	13.72 (13.63)	**39.76**** **(15.05)**	–1.99 (14.40)	13.72 (13.63)
Hospice spending	–71.27 (52.23)	7.73 (41.93)	24.35 (47.36)	–71.27 (52.23)	7.73 (41.93)	24.35 (47.36)
SNF spending	–65.48 (40.89)	–69.40† (36.07)	–59.56† (35.56)	–65.48 (40.89)	–69.40† (36.07)	–59.56† (35.56)
Any SNF spending	–0.35 (0.20)	**–0.4*** **(0.2)**	**–0.55**** **(0.21)**	–0.35† (0.20)	**–0.4*** **(0.2)**	**–0.55**** **(0.21)**
Lab spending	5.78 (5.20)	1.11 (5.22)	9.17† (5.26)	5.78 (5.20)	1.11 (5.22)	9.17† (5.26)
Imaging spending	0.75 (3.38)	–1.35 (3.14)	1.42 (3.49)	0.75 (3.38)	–1.35 (3.14)	1.42 3.49)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Exhibit J.22. Spanish Speaking Compared with Non–Spanish Speaking

	Unadjusted			Adjusted		
Outcome Measure	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**	**Year 1, Post**	**Year 2, Post**	**Year 3, Post**
Visits, per 1,000 enrollees	12.30 (	26.24†	6.45	12.30	26.24†	6.45
Inpatient admissions	14.41)	(12.87)	(14.27)	(14.41)	(12.87)	(14.27)
ED visits	31.44	39.61†	51.15†	31.44	39.61†	51.15†
	(21.86)	(23.13)	(25.97)	(21.86)	(23.13)	(25.97)
ED visits (no admission)	12.66	5.33	32.62	12.66	5.33	32.62
	(16.32)	(17.99)	(20.08)	(16.32)	(17.99)	(20.08)
ED ACSC visits	–7.16	–6.29	–3.05	–7.16	–6.29	–3.05
	(6.25)	(6.90)	(7.11)	(6.25)	(6.90)	(7.11)
E&M PCP visits	4.92	**–174.01*** **	**–236.88*** **	4.92	**–174.01*** **	**–236.88*** **
	(38.13)	**(45.42)**	**(50.87)**	(38.13)	**(45.42)**	**(50.87)**
Specialist visits	11.03	**–101.21***	44.67	11.03	**–101.21***	44.67
	(35.17)	**(48.24)**	(50.91)	(35.17)	**(48.24)**	(50.91)
FQHC visits	–63.25*	**–170.28*** **	**–155.62*** **	**–63.25***	**–170.28*** **	**–155.62*** **
	(30.81)	**(34.66)**	**(35.95)**	**(30.81)**	**(34.66)**	**(35.95)**
E&M PCP visits	14.83	–82.02†	–103.60†	14.83	–82.02†	–103.60†
(non-FQHC)	(29.85)	(47.28)	(58.17)	(29.85)	(47.28)	(58.17)
E&M specialist visits	16.22	**–109.94***	–69.21	16.22	–109.94*	–69.21
(non-FQHC)	(34.44)	**(48.62)**	(53.70)	(34.44)	(48.62)	(53.70)
Usual provider continuity	0.01	**1.96*** **	**1.39** **	0.01	**1.96*** **	**1.39** **
index	(0.00)	**(0.00)**	(0.00)	(0.00)	**(0.00)**	**(0.00)**
Process measures, % change	**2.85*** **	0.27	0.19	**2.85*** **	0.27	0.19
HbA1C	**(0.94)**	(0.89)	(0.92)	**(0.94)**	(0.89)	(0.92)
LDL	–0.39	–0.45	–1.37	–0.39	–0.45	–1.37
	(0.90)	(0.97)	(1.05)	(0.90)	(0.97)	(1.05)
Eye exam	–0.27	–0.91	–1.56	–0.27	–0.91	–1.56
	(0.99)	(1.08)	(1.18)	(0.99)	(1.08)	(1.18)
Nephropathy check	–1.18	–0.29	2.31†	–1.18	–0.29	2.31†
	(1.05)	(1.13)	(1.27)	(1.05)	(1.13)	(1.27)
All four	0.12	–0.09	–0.08	0.12	–0.09	–0.08
	(0.39)	(0.43)	(0.47)	(0.39)	(0.43)	(0.47)
Lipid check	**–2.77***	–1.94	**–4.64** **	**–2.77***	–1.94	**–4.64** **
	(1.27)	(1.48)	**(1.57)**	**(1.27)**	(1.48)	**(1.57)**
Spending, dollars	–232.44	194.51	**591.60***	–232.44	194.51	591.60*
Total Medicare spending	(241.44)	(240.74)	**(250.29)**	(241.44)	(240.74)	(250.29)
Outpatient spending	–113.11	–22.21	56.59	–113.11	–22.21	56.59
	(89.34)	(79.92)	(86.39)	(89.34)	(79.92)	(86.39)
Acute spending	–117.70	122.80	–0.01	–117.70	122.80	–0.01
	(144.55)	(141.96)	(138.19)	(144.55)	(141.96)	(138.19)
PAC spending	–91.66	–78.53	–67.30	–91.66	–78.53	–67.30
	(69.52)	(67.35)	(65.29)	(69.52)	(67.35)	(65.29)
OPD spending	–123.30	18.29	33.31	–123.30	18.29	33.31
	(84.40)	(73.79)	(77.92)	(84.40)	(73.79)	(77.92)
FQHC spending	0.77	–0.92	8.48†	0.77	–0.92	8.48†
	(3.85)	(4.24)	(4.65)	(3.85)	(4.24)	(4.65)
PC physician spending‡	–1.82	9.91	–8.88	–1.82	9.91	–8.88
	(10.15)	(10.71)	(11.06)	(10.15)	(10.71)	(11.06)

Outcome Measure	Unadjusted			Adjusted		
	Year 1, Post	Year 2, Post	Year 3, Post	Year 1, Post	Year 2, Post	Year 3, Post
Specialist physician spending‡‡	–24.67 (40.30)	–22.18 (38.48)	12.25 (38.64)	–24.67 (40.30)	–22.18 (38.48)	12.25 (38.64)
Inpatient spending	–274.42† (162.58)	68.19 (162.14)	–15.79 (158.40)	–274.42† (162.58)	68.19 (162.14)	–15.79 (158.40)
Non-institutional provider spending	–64.55 (53.22)	–58.10 (51.52)	–22.04 (52.08)	–64.55 (53.22)	–58.10 (51.52)	–22.04 (52.08)
Outpatient file spending	–114.76 (86.55)	14.01 (76.47)	73.03 (83.04)	–114.76 (86.55)	14.01 (76.47)	73.03 (83.04)
DME spending	–3.07 (18.18)	–25.56 (18.43)	–10.31 (19.35)	–3.07 (18.18)	–25.56 (18.43)	–10.31 (19.35)
Home health spending	1.11 (20.13)	14.89 (22.57)	**71.89**** **(22.50)**	1.11 (20.13)	14.89 (22.57)	**71.89**** **(22.50)**
Hospice spending	111.77 (106.02)	**180.03*** **(78.69)**	**387.23***** **(95.52)**	111.77 (106.02)	**180.03*** **(78.69)**	**387.23***** **(95.52)**
SNF spending	18.65 (45.68)	–77.58† (45.59)	–38.24 (46.55)	18.65 (45.68)	–77.58† (45.59)	–38.24 (46.55)
Any SNF spending	0.26 (0.18)	0.31 (0.21)	0.30 (0.23)	0.26 (0.18)	0.31 (0.21)	0.30 (0.23)
Lab spending	–4.79 (5.29)	–8.87 (5.49)	–11.10† (6.06)	–4.79 (5.29)	–8.87 (5.49)	–11.10† (6.06)
Imaging spending	–0.44 (5.97)	1.69 (5.50)	–0.55 (5.34)	–0.44 (5.97)	1.69 (5.50)	–0.55 (5.34)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001; ^ p<0.10/kth outcome for the multiple comparisons adjustment.
‡ This includes E&M visits and services ordered by PCPs.
‡‡ This includes E&M visits and services ordered by specialists.

Summary and Conclusion

This subgroup analysis adds to existing literature by reporting whether beneficiaries attributed to FQHCs sustain different outcomes according to subgroup affiliation. Overall, we found no consistent pattern to the results. Across the three-year demonstration, we found few persistent significant effects in the subgroups of interest for demonstration versus comparison sites.

- While we do find some differences over time in utilization, process, and costs for potentially vulnerable subgroups attributed to demonstration compared with comparison FQHCs, the lack of persistence across time and related dependent variables highlights a lack of major subgroup impact. For example, on average, Medicare beneficiaries attributed to rural FQHCs experienced an increase in visits to the FQHCs by the third year of the demonstration. However, visits to non-FQHC primary care providers also increased, so the proportion of visits with the attributed FQHC decreased during the study period.

- As found with the other claims data results, the demonstration FQHCs may not be different enough from the comparison FQHCs to elicit substantially different effects in terms of utilization, quality of care process measures, or beneficiary spending.

One possible conclusion to draw from these results is that, since FQHCs are mission-driven to provide some components of a medical home and ancillary support services, both demonstration and comparison beneficiaries may have been receiving similar benefits; as a result, there might be no observed difference between the groups.

Appendix K. Medical Home Mediation Effects on Processes and Outcomes: Level 3–Equivalent Medical Home Mediation and Patient Experience Measure Mediation

This appendix includes the results of all mediation analyses with claims-based outcomes. Level 3–equivalent recognition is defined as PCMH recognition from NCQA Level 3, JC, AAAHC, or states. In the report, we also evaluate the effect of medical home recognition in two subsets. We first evaluated the effect of NCQA Level 3 recognition compared to no recognition (excluding sites that achieved another PCMH recognition). Next, in order to reduce potential confounding by the demonstration, we replicated the analyses comparing NCQA Level 3 PCMH recognition to no recognition among comparison sites only.

Exhibits K.1–K.3 present the results of mediation analyses where Level 3/alternate recognition is hypothesized to mediate the effect of the demonstration on claims-based outcomes. This is an extension of the results presented in Chapter Fifteen. We also hypothesized that beneficiary-reported process measures (based on the late beneficiary survey responses) would mediate the effect of the demonstration on claims-based measures of health care costs and utilization. The results of these analyses are presented in Exhibits K.4–K.23.

Exhibit K.1. Three Effects of the Demonstration on Beneficiary Utilization (Level 3/Alternate Recognition Mediator)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
FQHC visits	1	–5.24	(–24.02, 7.32)	249.63***	(126.61, 381.05)	244.40***	(119.00, 377.84)
	2	11.64†	(–2.27, 31.26)	231.50***	(108.52, 365.71)	243.14***	(117.03, 377.16)
	3	70.03*	(11.71, 133.68)	167.45*	(29.61, 310.71)	237.48***	(115.28, 365.58)
Non-FQHC PCP visits	1	–0.17	(–4.85 4.25)	–69.65*	(–127.69 –8.36)	–69.82*	–(128.10, –8.92)
	2	–4.74	(–13.20, 1.31)	–65.35*	(–125.52 –4.42)	–70.09*	(–128.53, –9.28)
	3	–50.29***	(–81.36, –21.83)	–14.84	(–83.52, 51.52)	–65.13*	(–126.46, –8.10)
PCP visits	1	–1.62	(–11.14, 4.05)	99.09*	(8.53, 187.31)	97.47*	(8.57, 187.82)
	2	1.77	(–8.49, 12.07)	92.00*	(2.23, 182.30)	93.77*	(7.76, 184.08)
	3	–8.46	(–48.30, 31.67)	104.72*	(5.50, 198.88)	96.26*	(5.11, 183.86)
Total ED visits	1	0.69	(–1.54, 3.84)	–6.51	(–37.19, 22.43)	–5.82	(–37.44, 22.52)
	2	–0.91	(–4.83, 2.24)	–4.56	(–35.79, 24.86)	–5.47	(–36.76, 23.29)
	3	–3.50	(–18.29, 9.59)	–1.63	(–35.30, 30.93)	–5.13	(–35.03, 23.42)
Outpatient-only ED visits	1	0.70	(–1.38, 3.61)	–8.70	(–38.27, 22.34)	–8.00	(–36.99, 22.49)
	2	–0.76	(–4.39, 2.20)	–6.80	(–35.95, 23.91)	–7.56	(–37.35, 23.33)
	3	–2.24	(–16.44, 11.12)	–5.59	(–36.65, 25.47)	–7.84	(–34.60, 22.28)
Inpatient admissions	1	–0.01	(–0.50, 0.53)	1.68	(–4.98, 8.54)	1.67	(–5.06, 8.61)
	2	–0.43	(–1.32, 0.25)	2.07	(–4.57, 9.00)	1.64	(–5.01, 8.41)
	3	–2.40	(–5.49, 0.91)	4.19	(–3.40, 11.78)	1.79	(–4.78, 8.64)
ACSC admissions	1	–0.02	(–0.18, 0.13)	–0.91	(–3.05, 1.42)	–0.92	(–3.08, 1.34)
	2	–0.13	(–0.38, 0.08)	–0.91	(–3.28, 1.45)	–1.03	(–3.39, 1.30)
	3	–0.14	(–1.21, 0.90)	–0.87	(–3.36, 1.67)	–1.01	(–3.17, 1.25)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: Visits per 1,000 beneficiaries. This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during

which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended).
FQHC=federally qualified health center; PCP=primary care provider; ED=emergency department; ACSC=ambulatory care sensitive conditions.
† p<0.10, * p<0.05; ** p<0.01; *** p<0.001.

Exhibit K.2. Three Effects of the Demonstration on Process Measures (Level 3/Alternate Recognition Mediator)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
All four tests recommended for diabetes patients	1	–0.02	(–0.10, 0.04)	0.88†	(–0.09, 1.91)	0.86†	(–0.09, 1.88)
	2	0.03	(–0.14, 0.22)	0.84†	(–0.12, 1.79)	0.87†	(–0.09, 1.78)
	3	1.09***	(0.53, 1.68)	–0.26	(–1.30, 0.81)	0.83†	(–0.08, 1.80)
HbA1C test (diabetes patients)	1	0.00	(–0.04, 0.04)	1.04*	(0.07, 1.99)	1.04*	(0.06, 2.00)
	2	0.02	(–0.16, 0.19)	0.98*	(0.02, 1.92)	1.00*	(0.07, 1.91)
	3	0.53†	(–0.04, 1.10)	0.49	(–0.67, 1.64)	1.02*	(0.01, 1.96)
LDL test (diabetes patients)	1	–0.01	(–0.09, 0.05)	0.69	(–0.44, 1.89)	0.68	(–0.45, 1.86)
	2	0.05	(–0.17, 0.26)	0.65	(–0.60, 1.80)	0.71	(–0.51, 1.86)
	3	0.56	(–0.16, 1.29)	0.12	(–1.26, 1.45)	0.68	(–0.51, 1.84)
Nephropathy test (diabetes patients)	1	–0.02	(–0.13, 0.06)	2.31**	(0.87, 3.73)	2.29**	(0.84, 3.71)
	2	–0.05	(–0.31, 0.22)	2.35**	(0.89, 3.70)	2.30**	(0.83, 3.60)
	3	1.38**	(0.55, 2.21)	0.92	(–0.81, 2.49)	2.30**	(0.81, 3.62)
Eye exam (diabetes patients)	1	–0.01	(–0.08, 0.03)	0.18	(–0.81, 1.20)	0.17	(–0.82, 1.18)
	2	0.04	(–0.14, 0.22)	0.10	(–0.86, 1.15)	0.15	(–0.73, 1.18)
	3	0.50†	(–0.05, 1.06)	–0.33	(–1.52, 0.73)	0.17	(–0.85, 1.14)
Lipid test for patients with ischemic vascular disease	1	–0.02	(–0.13, 0.06)	0.05	(–1.29, 1.37)	0.03	(–1.30, 1.36)
	2	0.03	(–0.21, 0.27)	0.00	(–1.44, 1.39)	0.02	(–1.33. 1.42)
	3	0.00	(–0.79 0.78)	–0.03	(–1.54, 1.51)	–0.03	(–1.36, 1.29)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: All effects described in percentage points. This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in

Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). HbA1C=hemoglobin A1c; LDL=low-density lipoprotein.
† p<0.10, * p<0.05; ** p<0.01; *** p<0.001.

Exhibit K.3. Three Effects of the Demonstration on Beneficiary Spending (Level 3/Alternate Recognition Mediator)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
Total Medicare spending	1	2.35	(–8.49, 19.04)	80.29	(–101.09, 271.46)	82.64	(–97.31, 269.83)
	2	–17.46*	(–41.76, –0.24)	91.23	(–104.76, 283.37)	73.77	(–119.88, 263.09)
	3	–118.95**	(–205.24, –37.56)	201.57†	(–2.12, 405.85)	82.61	(–96.61, 272.67)
Inpatient spending	1	0.09	(–8.20, 8.37)	14.25	(–92.38, 131.18)	14.34	(–93.99, 133.99)
	2	–12.42*	(–29.26, –0.08)	29.39	(–82.37, 141.52)	16.97	(–95.61, 130.94)
	3	–66.74**	(–121.75, –15.95)	90.23	(–32.53, 221.56)	23.49	(–91.69, 145.21)
Skilled nursing facility spending	1	–0.09	(–2.56, 2.55)	–12.10	(–47.89, 24.23)	–12.19	(–48.71, 23.98)
	2	0.45	(–3.25, 4.33)	–12.29	(–47.99, 24.22)	–11.84	(–48.16, 24.80)
	3	5.15	(–10.89, 22.98)	–17.71	(–57.72, 20.18)	–12.56	(–47.58, 21.61)
Home health spending	1	0.83	(–1.05, 3.94)	–14.97	(–39.97, 11.11)	–14.14	(–39.56, 11.80)
	2	–1.24	(–4.41, 1.10)	–14.01	(–38.43, 9.93)	–15.25	(–40.24, 8.90)
	3	–18.48**	(–30.28, –5.91)	5.08	(–22.88, 32.55)	–13.40	(–38.59, 12.41)
Outpatient facility spending	1	–0.87	(–5.58, 2.33)	46.61†	(–5.14, 96.25)	45.74†	(–6.25, 95.77)
	2	–4.18	(–11.09, 0.73)	50.49†	(–0.45, 105.30)	46.31†	(–5.76, 100.75)
	3	–18.91	(–44.13, 5.29)	67.07*	(12.65, 128.62)	48.16†	(–0.74, 101.40)
Hospice spending	1	1.12	(–1.90, 5.80)	21.33	(–29.9, 68.7)	22.46	(–29.20, 69.40)
	2	0.26	(–5.27, 5.58)	21.57	(–28.90, 71.00)	21.83	(–29.88, 71.36)
	3	–10.15	(–33.13, 1.84)	32.42	(–25.28, 80.81)	22.27	(–26.47, 69.43)
DME spending	1	–0.24	(–1.19, 0.40)	1.55	(–8.59, 11.78)	1.32	(–8.75, 11.20)
	2	–0.29	(–1.39, 0.67)	1.47	(–8.22, 11.66)	1.18	(–8.36, 11.51)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
	3	1.66	(–2.76, 6.05)	–0.24	(–10.82, 10.60)	1.42	(–8.64, 11.56)
Outpatient spending	1	–1.13	(–6.23, 2.15)	49.40	(–4.76, 101.81)	48.27†	(–5.78, 101.49)
	2	–4.53	(–12.03, 0.94)	49.92†	(–3.63, 104.28)	45.39†	(–8.21, 100.67)
	3	–15.11	(–38.86, 8.90)	62.74†	(2.83, 119.53)	47.63†	(–8.16, 102.36)
Laboratory spending	1	0.57	(–0.81, 2.05)	–1.58	(–10.36, 7.27)	–1.01	(–9.82, 8.03)
	2	–0.79	(–2.05, 0.10)	0.59	(–8.26, 10.64)	–0.20	(–8.98, 9.68)
	3	–1.47	(–5.94, 2.98)	0.95	(–9.41, 11.10)	–0.51	(–9.38, 9.01)
Imaging spending	1	0.12	(–0.25, 0.66)	–1.76	(–8.19, 4.45)	–1.65	(–8.08, 4.52)
	2	0.06	(–0.54, 0.82)	–1.67	(–7.35, 4.27)	–1.61	(–7.17, 4.44)
	3	–1.49	(–4.06, 1.12)	–0.12	(–6.72, 6.54)	–1.61	(–7.33, 4.35)

SOURCE: RAND analysis of CMS's Program IntegrityTAP file claims (November 1, 2010, to October 31, 2014).
NOTES: All effects expressed in dollars. This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended).
DME= durable medical equipment.
† <0.10, * p<0.05; ** p<0.01; *** p<0.001.

Exhibit K.4. Effects of the Demonstration on Beneficiary Utilization and Spending (CG–CAHPS: Getting Timely Appointments, Care, and Information Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(–0.01, 0.00)	0.13	(–0.07, 0.33)	0.13	(–0.07, 0.33)
Total ED visits	0.00	(0.00, 0.01)	0.01	(–0.07, 0.09)	0.01	(–0.07, 0.1)
Outpatient-only ED visits	–0.09	(–0.25, 0.07)	0.00	(0.00, 0.00)	0.08	(–0.02, 0.19)
Admissions	0.00	(0.00, 0.00)	0.03	(0.00, 0.06)	0.03†	(0.00, 0.06)
Non-FQHC PCP visits	0.00	(0.00, 0.00)	–0.10	(–0.22, 0.02)	–0.10	(–0.22, 0.02)
Spending, dollars						
Total cost	7.06	(–14.41, 39.12)	826.68†	(–122.18, 1,794.77)	833.74†	(–118.55, 1,796.40)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
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Exhibit K.5. Effects of the Demonstration on Beneficiary Utilization and Spending (PCMH CAHPS: Access to Care Mediator)

	Average Causal Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	–0.01	(–0.04, 0.01)	0.17	(–0.17, 0.48)	0.16	(–0.18, 0.47)
Total ED visits	0.01	(–0.01, 0.02)	0.11	(–0.06, 0.28)	0.12	(–0.06, 0.29)
Outpatient-only ED visits	0.00	(–0.01, 0.02)	0.10	(–0.04, 0.24)	0.10	(–0.04, 0.24)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.04, 0.09)	0.03	(–0.04, 0.09)
Non-FQHC PCP visits	0.00	(0.00, 0.01)	–0.23*	(–0.43, –0.03)	–0.22*	(–0.43, –0.03)
Spending, dollars						
Total cost	29.00	(–49.96, 138.22)	1261.22	(–665.18, 3,124.52)	1290.22	(–597.03, 3,141.43)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.6. Effects of the Demonstration on Beneficiary Utilization and Spending (PCMH CAHPS: Information About Care and Appointments Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.02***	(0.00, 0.03)	0.12	(–0.11, 0.33)	0.13	(–0.1, 0.34)
Total ED visits	0.00	(0.00, 0.01)	0.01	(–0.08, 0.1)	0.01	(–0.07, 0.1)
Outpatient-only ED visits	0.00	(0.00, 0.00)	–0.01	(–0.08, 0.06)	–0.01	(–0.08, 0.06)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.01, 0.06)	0.03	(0.00, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.00)	–0.09	(–0.21, 0.03)	–0.09	(–0.21, 0.02)
Spending, dollars						
Total cost	13.53	(–18.04, 55.48)	830.04	(–179.61, 1,792.27)	843.57†	(–163.52, 1,807.92)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.7. Effects of the Demonstration on Beneficiary Utilization and Spending (Explicit Process Score)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.01*	(0.00, 0.02)	0.17†	(–0.03, 0.36)	0.18†	(–0.02, 0.37)
Total ED visits	0.00	(–0.00, 0.01)	0.04	(–0.04, 0.12)	0.05	(–0.04, 0.12)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.03	(–0.04, 0.11)	0.03	(–0.04, 0.11)
Inpatient admissions	0.00	(0.00, 0.00)	0.02	(–0.02, 0.05)	0.02	(–0.02, 0.05)
Non-FQHC PCP visits	0.01*	(0.00, 0.02)	–0.14*	(–0.26, –0.01)	–0.13*	(–0.25, 0.00)
Spending, dollars						
Total cost	35.01†	(–0.39, 89.81)	893.39†	(–101.11, 1,846.38)	928.40†	(–56.08, 1,884.43)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.8. Effects of the Demonstration on Beneficiary Utilization and Spending (CAHPS PCMH: Providers Pay Attention to Your Mental or Emotional Health Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.02***	(0.01, 0.04)	0.10	(–0.11, 0.30)	0.12	(–0.09, 0.32)
Total ED visits	0.00	(0.00, 0.01)	0.02	(–0.06, 0.1)	0.02	(–0.06, 0.1)
Outpatient-only ED visits	0.00	(0.00, 0.01)	0.00	(0.00, 0.01)	0.01	(–0.06, 0.08)
Inpatient admissions	0.00	(0.00, 0.00)	0.02	(–0.01, 0.06)	0.02	(–0.01, 0.06)
Non-FQHC PCP visits	0.00	(0.00, 0.01)	–0.09	(–0.21, 0.03)	–0.08	(–0.21, 0.04)
Spending, dollars						
Total cost	54.82*	(1.70, 128.03)	734.18	(–325.94, 1,798.04)	789.00	(–262.68, 1,866.77)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
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Exhibit K.9. Effects of the Demonstration on Beneficiary Utilization and Spending (Rating of Attributed Provider Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.01†	(0.00, 0.03)	0.07	(–0.13, 0.28)	0.08	(–0.12, 0.29)
Total ED visits	0.00*	(–0.01, 0.00)	0.03	(–0.06, 0.12)	0.02	(–0.07, 0.12)
Outpatient-only ED visits	0.00†	(–0.01, 0.00)	0.01	(–0.06, 0.08)	0.01	(–0.07, 0.08)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.01, 0.06)	0.03	(–0.01, 0.06)
Non-FQHC PCP visits	–0.01†	(–0.02, 0.00)	–0.04	(–0.16, 0.09)	–0.05	(–0.16, 0.08)
Spending, dollars						
Total cost	–27.24†	(–78.17, 3.45)	901.17†	(–88.81, 1,942.86)	873.94†	(–101.91, 1,908.63)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.10. Effects of the Demonstration on Beneficiary Utilization and Spending (Rating of Specialist Seen Most Often in Last 12 Months Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.04	(–0.02, 0.13)	0.06	(–0.51, 0.65)	0.10	(–0.47, 0.68)
Total ED visits	–0.01	(–0.06, 0.03)	–0.05	(–0.41, 0.28)	–0.07	(–0.42, 0.25)
Outpatient-only ED visits	–0.01	(–0.04, 0.02)	–0.06	(–0.34, 0.22)	–0.06	(–0.34, 0.21)
Inpatient admissions	–0.01	(–0.03, 0.00)	0.07	(–0.06, 0.20)	0.06	(–0.07, 0.19)
Non-FQHC PCP visits	–0.05*	(–0.11, –0.01)	0.05	(–0.30, 0.40)	0.00	(–0.35, 0.37)
Spending, dollars						
Total cost	–216.13	(–661.17, 115.28)	2083.69	(–520.48, 4,781.76)	1867.56	(–684.81, 4,637.95)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.11. Effects of the Demonstration on Beneficiary Utilization and Spending (CG CAHPS: Helpful, Courteous, and Respectful Office Staff Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(0.00, 0.01)	0.12	(–0.09, 0.32)	0.13	(–0.09, 0.32)
Total ED visits	0.00	(–0.01, 0.00)	0.01	(–0.07, 0.09)	0.01	(–0.08, 0.09)
Outpatient-only ED visits	0.00	(0.00, 0.00)	–0.01	(–0.07, 0.07)	–0.01	(–0.08, 0.07)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.01, 0.06)	0.03	(–0.01, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.00)	–0.09	(–0.21, 0.03)	–0.09	(–0.21, 0.03)
Spending, dollars						
Total cost	–12.95	(–48.39, 14.80)	875.30†	(–56.05, 1,871.75)	862.35†	(–75.49, 1,850.68)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
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Exhibit K.12. Effects of the Demonstration on Beneficiary Utilization and Spending (CAHPS PCMH: Providers Discuss Medication Decisions Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(–0.01, 0.02)	0.01	(–0.32, 0.36)	0.01	(–0.32, 0.36)
Total ED visits	0.00	(0.00, 0.00)	0.06	(–0.08, 0.20)	0.06	(–0.08, 0.20)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.05	(–0.06, 0.16)	0.05	(–0.06, 0.16)
Inpatient admissions	0.01	(–0.05, 0.08)	0.02	(–0.05, 0.08)	0.01	(–0.05, 0.08)
Non-FQHC PCP visits	0.00	(0.00, 0.01)	–0.03	(–0.20, 0.16)	–0.03	(–0.20, 0.16)
Spending, dollars						
Total cost	–7.75	(–76.68, 48.12)	622.69	(–1,394.49, 2,746.03)	614.95	(–1,372.78, 2,748.40)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.13. Effects of the Demonstration on Beneficiary Utilization and Spending (CAHPS Health Literacy: Disease Self-Management Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(–0.01, 0.01)	0.22	(–0.05, 0.51)	0.22	(–0.05, 0.50)
Total ED visits	0.00	(0.00, 0.00)	0.12*	(0.01, 0.25)	0.12*	(0.01, 0.25)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.08	(–0.02, 0.19)	0.08	(–0.02, 0.19)
Inpatient admissions	0.00	(0.00, 0.00)	0.05*	(0.00, 0.10)	0.05*	(0.00, 0.10)
Non-FQHC PCP visits	0.00	(0.00, 0.00)	–0.09	(–0.25, 0.07)	–0.09	(–0.25, 0.07)
Spending, dollars						
Total cost	0.20	(–31.20, 29.07)	1404.33†	(–95.98, 2,865.47)	1404.54†	(–98.52, 2,887.90)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.14. Effects of the Demonstration on Beneficiary Utilization and Spending (CAHPS PCMH: Providers Support You in Taking Care of Your Own Health Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.01**	(0.00, 0.03)	0.11	(–0.10, 0.30)	0.12	(–0.08, 0.31)
Total ED visits	0.00	(0.00, 0.01)	0.02	(–0.06, 0.11)	0.02	(–0.06, 0.11)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.01	(–0.07, 0.08)	0.01	(–0.07, 0.08)
Inpatient admissions	0.00*	(0.00, 0.00)	0.02	(–0.01, 0.06)	0.03	(–0.01, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.00)	–0.08	(–0.19, 0.05)	–0.08	(–0.19, 0.05)
Spending, dollars						
Total cost	45.57*	(3.42, 97.03)	705.25	(–305.06, 1,697.93)	750.82	(–259.25, 1,739.26)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.15. Effects of the Demonstration on Beneficiary Utilization and Spending (CG–CAHPS: How Well Providers Communicate with Patient's Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(0.00, 0.01)	0.13	(–0.09, 0.32)	0.13	(–0.08, 0.32)
Total ED visits	0.00	(–0.01, 0.00)	0.02	(–0.07, 0.10)	0.01	(–0.07, 0.10)
Outpatient-only ED visits	0.00	(0.00, 0.00)	–0.01	(–0.07, 0.07)	–0.01	(–0.08, 0.06)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.01, 0.06)	0.03	(–0.01, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.00)	–0.08	(–0.20, 0.04)	–0.08	(–0.20, 0.04)
Spending, dollars						
Total cost	–6.03	(–33.63, 11.14)	898.77†	(–97.15, 1,849.87)	892.74†	(–112.80, 1,844.64)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.16. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination of Care Around Hospitalization: Saw a Doctor, Nurse, or Other Person in Attributed Provider's Office Within the Two Weeks After Your Most Recent Hospital Stay, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.09	(–0.06, 0.34)	0.22	(–0.91, 1.34)	0.31	(–0.82, 1.45)
Total ED visits	0.00	(–0.11, 0.11)	0.10	(–0.54, 0.81)	0.10	(–0.55, 0.81)
Outpatient-only ED visits	–0.01	(–0.11, 0.08)	0.12	(–0.40, 0.69)	0.11	(–0.40, 0.68)
Inpattient admissions	0.00	(–0.05, 0.06)	0.04	(–0.3, 0.38)	0.04	(–0.29, 0.37)
Non-FQHC PCP visits	–0.07	(–0.26, 0.07)	–0.68	(–1.61, 0.19)	–0.75	(–1.69, 0.13)
Spending, dollars						
Total cost	137.21	(–693.40, 1,072.82)	–1409.68	(–6,680.51, 4,629.61)	–1272.47	(–6,464.41, 4,656.86)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.17. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination of Care Around Hospitalization: Saw a Doctor, Nurse, or Other Person in Attributed Provider's Office Within the Two Weeks After Your Most Recent Hospital Stay, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.09	(–0.06, 0.34)	0.22	(–0.91, 1.34)	0.31	(–0.82, 1.45)
Total ED visits	0.00	(–0.11, 0.11)	0.11	(–0.54, 0.81)	0.11	(–0.55, 0.81)
Outpatient-only ED visits	–0.01	(–0.11, 0.08)	0.12	(–0.4, 0.69)	0.11	(–0.40, 0.68)
Inpatient admissions	0.00	(–0.05, 0.06)	0.04	(–0.3, 0.38)	0.04	(–0.29, 0.37)
Non-FQHC PCP visits	–0.07	(–0.26, 0.07)	–0.68	(–1.61, 0.19)	–0.75	(–1.69, 0.13)
Spending, dollars						
Total cost	48.06	(–591.96, 719.76)	4,464.94	(–1,897.33, 10,637.28)	4,513.00	(–1,973.39, 10,478.96)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.18. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination of Care Around Hospitalization, Received Visit or Call from Attributed Provider After Hospitalization, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	–0.01	(–0.16, 0.15)	0.08	(–0.64, 0.80)	0.08	(–0.68, 0.80)
Total ED visits	0.00	(–0.02, 0.02)	0.02	(–0.43, 0.46)	0.02	(–0.43, 0.45)
Outpatient-only ED visits	0.00	(–0.02, 0.02)	0.01	(–0.40, 0.37)	0.01	(–0.40, 0.38)
Inpatient admissions	0.00	(–0.01, 0.01)	0.03	(–0.14, 0.20)	0.03	(–0.14, 0.21)
Non-FQHC PCP visits	0.00	(–0.09, 0.11)	–0.18	(–0.75, 0.39)	–0.18	(–0.75, 0.39)
Spending, dollars						
Total cost	–9.56	(–727.35, 722.72)	–890.35	(–6,436.38, 4,742.92)	–899.91	(–6,390.16, 4,765.80)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.19. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination of Care Around Hospitalization, Received Visit or Call from Attributed Provider After Hospitalization, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	–0.03	(–0.22, 0.14)	0.12	(–0.61, 0.90)	0.02	(–0.13, 0.16)
Total ED visits	0.00	(–0.02, 0.02)	0.04	(–0.36, 0.49)	0.04	(–0.36, 0.49)
Outpatient-only ED visits	0.00	(–0.02, 0.03)	0.03	(–0.34, 0.41)	0.03	(–0.35, 0.41)
Inpatient admissions	0.00	(–0.01, 0.01)	0.04	(–0.14, 0.22)	0.04	(–0.14, 0.22)
Non-FQHC PCP visits	0.02	(–0.07, 0.12)	–0.10	(–0.68, 0.52)	–0.08	(–0.68, 0.54)
Spending, dollars						
Total cost	61.47	(–367.98, 637.22)	4,965.02	(–1,093.09, 11,001.64)	5,026.49	(–1,032.90, 11,046.22)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey. Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted 'cohort-level' analyses, including those with a valid response at either baseline or follow-up.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.20. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination So Attributed Provider Knows About Specialist, Attributed Provider Usually/Always Seemed Informed and Up-to-Date About the Care You Got from Specialists, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(–0.02, 0.03)	0.11	(–0.20, 0.43)	0.11	(–0.20, 0.43)
Total ED visits	0.00	(–0.01, 0.01)	0.02	(–0.13, 0.16)	0.02	(–0.13, 0.17)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.04	(–0.09, 0.15)	0.04	(–0.09, 0.15)
Inpatient admissions	0.00	(0.00, 0.00)	0.00	(–0.06, 0.06)	0.00	(–0.06, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.01)	–0.10	(–0.31, 0.12)	–0.10	(–0.31, 0.12)
Spending, dollars						
Total cost	–6.47	(–100.47, 77.89)	1,290.99	(–579.92, 3,044.10)	1,284.52	(–595.90, 3,069.03)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
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Exhibit K.21. Effects of the Demonstration on Beneficiary Utilization and Spending (CAHPS PCMH: Attention to Care from Other Providers Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(0.00, 0.01)	0.10	(–0.11, 0.30)	0.10	(–0.11, 0.30)
Total ED visits	0.00	(0.00, 0.00)	0.04	(–0.05, 0.13)	0.04	(–0.05, 0.13)
Outpatient-only ED visits	0.00	(0.00, 0.00)	0.02	(–0.06, 0.10)	0.02	(–0.06, 0.10)
Inpatient admissions	0.00	(0.00, 0.00)	0.03	(–0.01, 0.06)	0.03	(–0.01, 0.06)
Non-FQHC PCP visits	0.00	(–0.01, 0.00)	–0.09	(–0.22, 0.04)	–0.09	(–0.22, 0.04)
Spending, dollars						
Total cost	–2.35	(–30.03, 25.73)	844.20	(–231.11, 1,955.02)	841.86	(–243.05, 1,959.64)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.22. Effects of the Demonstration on Beneficiary Utilization and Spending (Coordination So Specialist Knows Important Medical History, Specialist Provider You Saw Usually or Always Seemed to Know the Important Information about Your Medical History, Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	–0.03	(–0.11, 0.02)	0.09	(–0.50, 0.68)	0.06	(–0.52, 0.64)
Total ED visits	0.01	(–0.02, 0.05)	–0.06	(–0.38, 0.27)	–0.05	(–0.38, 0.29)
Outpatient-only ED visits	0.01	(–0.02, 0.05)	–0.05	(–0.34, 0.22)	–0.04	(–0.31, 0.23)
Inpatient admissions	0.00	(–0.02, 0.01)	0.05	(–0.08, 0.18)	0.05	(–0.08, 0.17)
Non-FQHC PCP visits	0.00	(–0.03, 0.04)	0.10	(–0.23, 0.43)	0.10	(–0.24, 0.43)
Spending, dollars						
Total cost	–201.39	(–646.07, 71.61)	1,930.14	(–949.32, 4,731.26)	1,728.75	(–1231.55, 4,516.44)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Exhibit K.23. Effects of the Demonstration on Beneficiary Utilization and Spending (Self-Reported Overall Mental or Emotional Health Mediator)

	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Claims Outcome Measure	**Estimate**	**95% CI**	**Estimate**	**95% CI**	**Estimate**	**95% CI**
Utilization						
FQHC visits	0.00	(0.00, 0.01)	0.24**	(0.07, 0.43)	0.24**	(0.07, 0.43)
Total ED visits	0.00	(0.00, 0.01)	0.04	(–0.04, 0.11)	0.04	(–0.03, 0.11)
Outpatient-only ED visits	0.00	(0.00, 0.01)	0.03	(–0.03, 0.09)	0.03	(–0.03, 0.09)
Inpatient admissions	0.00	(0.00, 0.00)	0.01	(–0.02, 0.04)	0.01	(–0.02, 0.04)
Non-FQHC PCP visits	0.00	(0.00, 0.01)	–0.13†	(–0.26, 0.00)	–0.13†	(–0.25, 0.00)
Spending, dollars						
Total cost	9.62	(–5.98, 34.12)	853.15*	(68.23, 1,619.11)	862.77*	(77.04, 1,623.97)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014) .
NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Results are the same when mediator is entered as a dichotomous variable. Mediator is from self-reported beneficiary responses to the follow-up (late) beneficiary survey. Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.
† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Appendix L. Medical Home Mediation Effects on Patient Experience: Level 3–Equivalent Medical Home Mediation

This appendix presents detailed results for our second mediation analysis. We hypothesized that the demonstration would change beneficiary-reported outcomes (process and health outcomes) directly and also through a pathway mediated through medical home recognition of the attributed FQHC. The framework for these analyses is presented in Exhibit L.1. The mediation analyses were developed using two measures of medical home recognition: NCQA Level 3 (Figure 15.1) and any PCMH recognition (Exhibit L.2). The Level 3/alternate recognition includes NCQA Level 3, JC, AAAHC, and state-based PCMH recognition programs. Please see Chapter Six for details on the measures of medical home recognition used in this evaluation. In the report, we also evaluate the effect of medical home recognition in two subsets. We first evaluated the effect of NCQA Level 3 recognition compared to no recognition (excluding sites that achieved another PCMH recognition). Next, in order to reduce potential confounding by the demonstration, we replicated the analyses comparing NCQA Level 3 PCMH recognition to no recognition among comparison sites only.

Exhibit L.1. Three Effects of the Demonstration on Beneficiary Reported Processes and Outcomes (NCQA Level 3 Mediator)

		Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
Outcome Measure	Recognition Achievement Year	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
Access to Care with Information-Sharing About Accessing Appointments							
Getting timely appointments, care and information	1	0.00	(–0.06, 0.07)	–0.96†	(–2.01, 0.03)	–0.96†	(–2.01, 0.05)
	2	0.15*	(0.01, 0.34)	–1.07†	(–2.18, 0.00)	–0.92†	(–2.03, 0.09)
	3	1.06**	(0.41, 1.76)	–1.96***	(–3.14, –0.85)	–0.90†	(–1.82, 0.04)
Evidence Based Care: Immunizations							
Had a flu shot during most recent 12 months (%)	1	–0.06	(–0.38, 0.13)	–1.98	(–5.03, 1.06)	–2.04	(–5.13, 1.02)
	2	0.09	(–0.31, 0.54)	–2.01	(–5.13, 1.20)	–1.92	(–5.00, 1.38)
	3	0.23	(–2.07, 2.32)	–2.07	(–5.85, 1.62)	–1.84	(–5.03, 1.19)
Had a pneumonia shot (%)	1	0.16	(–0.12, 0.61)	1.85	(–1.34, 4.97)	2.01	(–1.16, 0.19)
	2	0.11	(–0.36, 0.58)	1.83	(–1.22, 4.90)	1.93	(–1.19, 5.04)
	3	0.19	(–2.19, 2.44)	1.76	(–2.26, 5.54)	1.95	(–1.32, 5.17)
Had a shot to prevent shingles? (%)	1	0.07	(–0.09, 0.31)	0.77	(–1.80, 3.26)	0.83	(–1.73, 3.30)
	2	–0.19	(–0.59, 0.10)	1.06	(–1.53, 3.82)	0.87	(–1.78, 3.60)
	3	–0.80	(–2.51, 0.85)	1.58	(–1.35, 4.45)	0.78	(–1.65, 3.20)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
Evidence-Based Care: Colorectal Cancer Screening							
Had blood stool within most recent two years OR colonoscopy within 10 years (%)	1	–0.02	(–0.51, 0.39)	–2.71	(–7.50, 2.21)	–2.74	(–7.49, 2.23)
	2	0.03	(–0.63, 0.74)	–2.77	(–7.41, 2.06)	–2.74	(–7.31, 2.13)
	3	–0.95	(–4.41, 2.53)	–1.77	(–7.66, 3.71)	–2.72	(–7.30,1.94)
Evidence-Based Care: Providers Pay Attention to Your Mental or Emotional Health							
Providers pay attention to your mental or emotional health	1	0.02	(–0.06, 0.16)	2.52***	(0.97, 4.19)	2.54***	(0.98, 4.21)
	2	0.30**	(0.07, 0.62)	2.30***	(0.66, 3.88)	2.60***	(0.97, 4.15)
	3	0.61	(–0.48, 1.68)	1.95***	(0.06, 3.79)	2.56***	(0.95, 4.26)
Beneficiary Ratings of Providers							
Rating of primary care provider	1	0.01	(–0.04, 0.08)	0.46	(–0.45, 1.42)	0.47	(–0.43, 1.47)
	2	0.06	(–0.08, 0.21)	0.38	(–0.53, 1.31)	0.43	(–0.48, 1.39)
	3	0.37	(–0.21, 0.99)	0.08	(–0.99, 1.16)	0.45	(–0.42, 1.35)
Rating of specialist	1	0.01	(–0.23, 0.33)	4.14**	(1.44, 6.98)	4.15**	(1.47, 7.00)
	2	0.09	(–0.18, 0.49)	4.16**	(1.26, 7.24)	4.25**	(1.32, 7.30)
	3	0.51	(–1.32, 2.48)	3.78*	(0.36, 7.30)	4.29**	(1.48, 7.29)
Rating of how helpful, courteous and respectful were office staff	1	–0.10	(0.85, –0.08)	–0.08	(–0.96, 0.90)	–0.10	(–1.01, 0.89)
	2	–0.06	(0.34, –0.02)	–0.02	(–0.91, 0.89)	–0.08	(–0.95, 0.81)
	3	0.24	(0.46, –0.27)	–0.27	(–1.41, 0.86)	–0.02	(–0.99, 0.95)
Health Literacy: Disease Self-Management							
Health Literacy: disease self management	1	–0.03	(–0.15, 0.05)	–0.69	(–2.00, 0.62)	–0.72	(–2.01, 0.59)
	2	–0.03	(–0.22, 0.15)	–0.68	(–1.93, 0.64)	–0.70	(–1.91, 0.65)
	3	0.08	(–0.86, 0.96)	–0.75	(–2.29, 0.84)	–0.67	(–2.00, 0.67)
Providers Support Beneficiary Self-Care							
Providers discuss medication decisions	1	–0.04	(–0.25, 0.10)	0.86	(–0.96, 2.76)	0.83	(–1.05, 2.73)
	2	0.03	(–0.24, 0.33)	0.84	(–0.86, 2.63)	0.88	(–0.88, 2.63)
	3	0.54	(–0.76, 1.83)	0.38	(–1.90, 2.65)	0.92	(–0.98, 2.72)
Providers support patient in taking care of their own health	1	–0.03*	(0.05, 1.69)	1.69*	(0.02, 3.33)	1.66†	(–0.01, 3.31)
	2	0.24*	(0.05, 1.55)	1.55†	(–0.19, 3.12)	1.79*	(0.06,3.30)
	3	0.93	(0.12, 0.82)	0.82	(–1.14, 2.68)	1.76*	(0.17,3.32)
Providers give patients follow-up on test results	1	0.06	(0.41, –0.44)	–0.44	(–2.26, 1.34)	–0.38	(–2.20, 1.39)
	2	0.33*	(0.02, –0.73)	–0.73	(–2.58, 1.08)	–0.40	(–2.16, 1.46)
	3	1.56*	(0.02, –1.96)	–1.96†	(–4.13, 0.21)	–0.40	(–2.25, 1.51)
Providers discuss cost of seeing a specialist	1	0.09	(–0.17, 0.49)	0.65	(–2.92, 4.30)	0.74	(–2.85, 4.43)
	2	0.51*	(0.01, 1.22)	0.20	(–3.18, 3.68)	0.71	(–2.73, 4.16)
	3	0.91	(–1.36, 3.32)	–0.19	(–4.34, 3.65)	0.72	(–2.76, 4.25)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
Coordination of Care Around Hospitalization							
Doctor, nurse, or other person from attributed FQHC visited patient during most recent hospital stay [§, §§] (%)	1	0.03	(–1.65, 2.03)	–0.71	(–13.14, 12.20)	–0.68	(–13.02, 12.29)
	2	–0.09	(–2.80, 2.50)	–0.53	(–12.87, 11.68)	–0.62	(–12.47, 11.22)
	3	–3.84	(–12.39, 4.12)	3.46	(–12.30, 17.31)	–0.38	(–12.45, 11.51)
Within the two weeks after the most recent hospital stay, patient saw a doctor, nurse, or other person in office [§, §§] (%)	1	0.03	(–1.77, 1.91)	14.82*	(2.55, 26.53)	14.85*	(2.38, 26.72)
	2	1.08	(–1.44, 4.17)	13.19†	(–0.66, 26.97)	14.26*	(0.97, 27.26)
	3	1.60	(–6.6, 10.04)	13.52†	(–0.91, 30.17)	15.12*	(2.57, 28.5)
After hospitalization, received visit OR call from this provider [§, §§] (%)	1	0.01	(–1.63, 1.66)	11.71†	(0.00, 23.42)	11.73*	(0.16, 23.68)
	2	1.14	(–1.06, 4.25)	10.51†	(–1.22, 22.69)	11.65†	(–0.01, 24.19)
	3	3.48	(–4.51, 11.97)	8.19	(–6.23, 22.11)	11.68†	(–0.2, 23.39)
Coordination of Care Between Providers							
Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH Attention to Care from Other Provider Scale	1	0.02	(–0.06, 0.16)	2.52***	(0.97, 4.19)	2.54***	(0.98, 4.21)
	2	0.30**	(0.07, 0.62)	2.30***	(0.66, 3.88)	2.60***	(0.97, 4.15)
	3	0.61	(–0.48, 1.68)	1.95*	(0.06, 3.79)	2.56***	(0.95, 4.26)
In the last 12 months, specialists the patient saw seemed to know the important information about the patient's medical history (%)	1	–0.04	(–0.50, 0.28)	4.20†	(–0.61, 8.77)	4.16†	(–0.70, 8.63)
	2	–0.01	(–0.57, 0.47)	4.39†	(–0.10, 9.24)	4.38†	(–0.10, 9.21)
	3	–1.61	(–4.61, 1.30)	6.13*	(0.35, 11.84)	4.52†	(–0.38, 9.51)
In the last 12 months, how often did the provider seem informed and up-to-date about the care you got from specialists?	1	–0.03	(–0.27, 0.17)	0.75	(–2.10, 3.44)	0.72	(–2.17, 3.57)
	2	–0.09	(–0.50, 0.27)	0.79	(–2.08, 3.56)	0.70	(–2.12, 3.45)
	3	1.83	(–0.07, 3.83)	–0.99	(–4.23, 2.42)	0.83	(–2.05, 3.61)

Outcome Measure	Recognition Achievement Year	Mediated Demonstration Effect Estimate	Mediated Demonstration Effect 95% CI	Direct Demonstration Effect Estimate	Direct Demonstration Effect 95% CI	Total Demonstration Effect Estimate	Total Demonstration Effect 95% CI
Access to Home Services for Those Reporting They Need Home Services							
Access to home services	1	–0.01	(–0.22, 0.19)	2.49	(–0.56, 5.35)	2.47	(–0.59, 5.32)
	2	–0.06	(–0.43, 0.31)	2.57	(–0.28, 5.68)	2.51	(–0.34, 5.64)
	3	0.00	(–2.17, 2.07)	2.40	(–1.19, 5.84)	2.40	(–0.54, 5.21)
CAHPS Cultural Competence							
Cultural competence	1	0.00	(–0.05, 0.05)	0.37	(–0.46, 1.28)	0.36	(–0.44, 1.13)
	2	–0.04	(–0.16, 0.07)	0.39	(–0.39, 1.18)	0.36	(–0.44, 1.13)
	3	–0.14	(–0.69, 0.42)	0.48	(–0.48, 1.50)	0.34	(–0.48, 1.16)

SOURCE: RAND Survey Research Group; August 10, 2014 (original sample); RAND Survey Research Group; April 17, 2015 (supplemental sample).

NOTE: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Estimates and p-values are from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and nonresponse) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure is from the follow-up/late beneficiary survey.

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

§ This item compared beneficiaries hospitalized either during the early or the late demonstration time period. §§ Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted “cohort-level” analyses, including those with a valid response at either baseline or follow-up.

Exhibit L.2. Three Effects of the Demonstration on Beneficiary-Reported Processes and Outcomes (Level 3/Alternate PCMH Recognition Mediator)

Survey Items	Recognition Achievement Year	Mediated Demonstration Effect		Direct Demonstration Effect		Total Demonstration Effect	
		Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
Evidence Based Care: Immunizations							
Had a flu shot during most recent 12 months	1	0.00	(–0.22, 0.18)	–1.95	(–5.10, 1.13)	–1.96	(–5.15, 1.18)
	2	0.44†	(–0.06, 1.05)	–2.32	(–5.60, 0.78)	–1.88	(–5.08, 1.24)
	3	0.64	(–1.11, 2.51)	–2.52	(–5.91, 1.28)	–1.90	(–5.14, 1.26)
Had a pneumonia shot	1	–0.02	(–0.35, 0.31)	2.19	(–1.21, 5.51)	2.16	(–1.32, 5.36)
	2	0.37	(–0.10, 0.99)	1.59	(–1.74, 4.61)	1.96	(–1.38, 4.98)
	3	1.16	(–0.48, 2.90)	0.84	(–2.52, 4.37)	2.01	(–1.06, 5.11)
Had a shot to prevent shingles?	1	0.00	(–0.16, 0.12)	0.87	(–1.32, 3.44)	0.86	(–1.34, 3.46)
	2	0.01	(–0.42, 0.44)	0.77	(–1.74, 3.43)	0.78	(–1.69, 3.35)
	3	–0.50	(–1.93, 0.86)	1.36	(–1.44, 4.29)	0.86	(–1.60, 3.33)
Evidence Based Care: Colorectal Cancer Screening							
Had blood stool within most recent two years OR colonoscopy within 10 years	1	0.01	(–0.30, 0.34)	–2.75	(–7.71, 2.23)	–2.74	(–7.63, 2.35)
	2	0.08	(–0.51, 0.79)	–2.69	(–7.21, 2.18)	–2.61	(–7.16, 2.33)
	3	0.27	(–2.43, 2.79)	–3.08	(–8.49, 2.35)	–2.81	(–7.63, 1.85)
Beneficiary Ratings of Providers							
Rating of attributed provider	1	0	(–0.04, 0.04)	0.44	(–0.49, 1.37)	0.44	(–0.48, 1.36)
	2	0.02	(–0.14, 0.18)	0.44	(–0.50, 1.42)	0.46	(–0.50, 1.43)
	3	–0.1	(–0.68, 0.40)	0.52	(–0.55, 1.59)	0.41	(–0.51, 1.32)
Rating of specialist seen most often in last 12 months	1	–0.04	(–0.35, 0.21)	4.33**	(1.49, 7.34)	4.29**	(1.51, 7.24)
	2	0.17	(–0.13, 0.62)	3.99**	(1.16, 6.92)	4.16**	(1.30, 7.11)
	3	1.00	(–0.56, 2.67)	3.24†	(–0.06, 6.66)	4.24**	(1.35, 7.28)
Rating of how	1	0.01	(–0.05, 0.09)	–0.07	(–1.03, 0.90)	–0.06	(–1.03, 0.91)

helpful, courteous and respectful were office staff	2	–0.11	(–0.29, 0.05)	0.03	(–0.93, 1.00)	–0.08	(–1.05, 0.87)
	3	–0.48†	(–1.04, 0.06)	0.38	(–0.73, 1.49)	–0.10	(–1.02, 0.84)
Providers Support Beneficiary Self-Care							
Providers discuss medication decisions	1	0.05	(–0.08, 0.28)	0.83	(–0.78, 2.55)	0.88	(–0.74, 2.66)
	2	0.16	(–0.12, 0.49)	0.76	(–1.20,2.62)	0.91	(–1.01, 2.74)
	3	0.23	(–0.75, 1.18)	0.66	(–1.63, 2.77)	0.89	(–1.05, 2.69)
Providers support patient in taking care of their own health	1	0.01	(–0.07, 0.12)	1.65*	(0.04, 3.23)	1.66*	(0.06, 3.23)
	2	0.25†	(–0.02, 0.57)	1.44†	(–0.19, 3.06)	1.69*	(0.08, 3.25)
	3	0.37	(–0.53, 1.35)	1.31	(–0.51,3.10)	1.68*	(0.09,3.17)
Providers give patients follow-up on test results	1	–0.02	(–0.15, 0.07)	–0.39	(–2.17, 1.34)	–0.41	(–2.20, 1.31)
	2	0.21	(–0.11, 0.55)	–0.66	(–2.63, 1.19)	–0.45	(–2.35, 1.35)
	3	0.58	(–0.44, 1.61)	–1.03	(–2.99, 1.03)	–0.45	(–2.32, 1.26)
Providers discuss cost of seeing a specialist	1	0.94	(–1.17, 3.00)	0.76	(–2.82, 4.37)	0.69	(–2.96, 4.29)
	2	0.55*	(0.07,1.26)	0.23	(–3.13, 3.78)	0.78	(–2.59, 4.35)
	3	0.94	(–1.17, 3.00)	–0.27	(–4.12, 3.65)	0.67	(–2.73, 4.14)
Coordination of Care Around Hospitalization							
Doctor, nurse, or other person from attributed FQHC visited patient during most recent hospital stay [§, §§]	1	–0.06	(–1.95, 1.66)	–0.74	(–14.85, 11.29)	–0.80	(–14.88, 11.63)
	2	–0.66	(–3.38, 1.76)	–0.11	(–12.45, 11.95)	–0.77	(–12.73, 10.91)
	3	–4.61	(–11.25, 1.43)	3.91	(–10.81, 19.36)	–0.70	(–13.55, 12.09)
Within the two weeks after the most recent hospital stay, patient saw a doctor, nurse, or other person in office [§, §§]	1	–0.07	(–2.18, 1.71)	14.94*	(2.38, 26.70)	14.86*	(2.18, 26.7)
	2	0.49	(–1.83, 3.07)	14.13*	(1.44, 26.7)	14.62*	(1.88, 27.66)
	3	–0.39	(–7.46, 6.13)	15.38*	(1.51, 29.28)	14.99*	(3.07, 26.82)
After hospitalization,	1	11.90†	(0.22, 24.23)	0.01	(–1.59, 1.73)	11.92†	(–0.07, 24.3)
	2	0.41	(–1.96, 3.02)	11.29	(–0.71, 23.22)	11.70†	(–0.1, 23.82)

received visit OR call from this provider[§ §§]	3	0.88	(–5.19, 7.63)	10.71	(–3.25, 24.31)	11.59[†]	(–0.89, 23.15)
Attention to Care from Other Providers							
CAHPS PCMH Attention to Care from Other Provider Scale	1	0.03	(–0.08, 0.19)	1.18	(–0.35, 2.66)	1.21	(–0.31, 2.71)
	2	–0.13	(–0.41, 0.11)	1.33[†]	(–0.45, 1.22)	1.20	(–0.30, 2.76)
	3	–0.32	(–1.16, 0.53)	1.61[†]	(–0.10, 3.39)	1.29[†]	(–0.21, 2.87)
In the last 12 months, specialists the patient saw seemed to know the important information about the patient's medical history	1	0.06	(–0.34, 0.63)	4.28[†]	(–0.49, 9.36)	4.34[†]	(–0.38, 9.42)
	2	–0.03	(–0.70, 0.57)	4.32[†]	(–0.20, 8.97)	4.29[†]	(–0.21, 8.76)
	3	–1.27	(–4.08, 1.33)	5.56*	(0.10, 11.17)	4.29[†]	(–0.56, 8.93)
In the last 12 months, how often did the provider seem informed and up-to-date about the care you got from specialists?	1	0.01	(–0.12, 0.16)	0.70	(–2.07, 3.41)	0.71	(–2.07, 3.37)
	2	–0.10	(–0.56, 0.32)	0.79	(–2.00, 3.59)	0.69	(–2.09, 3.50)
	3	1.07	(–0.40, 2.62)	–0.36	(–3.33, 2.63)	0.72	(–1.96, 3.45)
Access to Home Services for those Reporting they Need Home Services							
Access to home services	1	0.07	(–0.13, 0.38)	2.28	(–0.75, 5.38)	2.35	(–0.62, 5.44)
	2	–0.17	(–0.72, 0.27)	2.63[†]	(–0.40, 5.44)	2.46	(–0.56, 5.23)
	3	–0.89	(–2.61, 0.82)	3.31*	(0.12, 6.63)	2.41	(–0.59, 5.32)
CAHPS Cultural Competence							
Cultural competence	1	0.00	(–0.04, 0.04)	0.38	(–0.49, 1.22)	0.38	(–0.48, 1.22)
	2	–0.03	(–0.17, 0.09)	0.37	(–0.45, 1.22)	0.34	(–0.46, 1.17)
	3	–0.09	(–0.53, 0.35)	0.48	(–0.44, 1.40)	0.38	(–0.45, 1.2
Health status							
Short Form (SF)–12, Physical Component Score	1	–0.06	(–0.17, 0.04)	0.21*	(0.00, 0.43)	0.15	(–0.04, 0.35)
	2	–0.06	(–0.18, 0.05)	0.21[†]	(0.00, 0.42)	0.15	(–0.05, 0.34)
	3	–0.06	(–0.18, 0.05)	0.21[†]	(0.00, 0.42)	0.15	(–0.05, 0.34)

SF–12, Mental Component Score	1	0.16*	(0.02, 0.31)	–0.26†	(–0.54, 0.01)	–0.09	(–0.35, 0.15)
	2	0.16*	(0.02, 0.32)	–0.26†	(–0.56, 0.01)	–0.10	(–0.35, 0.15)
	3	0.16*	(0.03, 0.31)	–0.25†	(–0.54, 0.02)	–0.09	(–0.33, 0.17)
Health literacy: disease self-management	1	0.04	(–0.07, 0.17)	–0.76	(–2.10, 0.58)	–0.72	(–2.09, 0.63)
	2	–0.17†	(–0.40, 0.04)	–0.56	(–1.86, 0.67)	–0.72	(–2.03, 0.53)
	3	–0.34	(–1.17, 0.35)	–0.36	(–1.86, 1.04)	–0.70	(–1.98, 0.59)
Providers pay attention to your mental or emotional health	1	0.00	(–0.09, 0.07)	2.50**	(0.90, 4.13)	2.50**	(0.90, 4.13)
	2	0.22†	(–0.03, 0.53)	2.31*	(0.59, 3.93)	2.31**	(0.59, 3.93)
	3	0.26	(–0.67, 1.18)	2.27**	(0.49, 4.00)	2.53**	(0.98, 4.13)
Getting timely appointments, care and information	1	0.00	(–0.04, 0.06)	–0.94*	(–1.91, –0.01)	–0.93†	(–1.91, 0.00)
	2	0.00	(–0.17, 0.16)	–0.98*	(–1.97, –0.03)	–0.99*	(–1.97, –0.07)
	3	0.22	(–0.30, 0.76)	–1.18*	(–2.30, –0.07)	–0.96†	(–1.95, 0.01)

SOURCE: RAND Survey Research Group; August 10, 2014 (original sample); RAND Survey Research Group; April 17, 2015 (supplemental sample).

NOTES: This exhibit shows the mediated demonstration effect (first panel of results), the direct (other) demonstration effect (second panel), and the total demonstration effect (i.e., the sum of the mediated demonstration effect and the direct (other) demonstration effect, shown in the third panel) on each beneficiary outcome measure. Outcomes were measured during demonstration year three only. The mediator examined in this exhibit is NCQA Level 3 recognition. Similar exhibits using NCQA Level 3/alternate recognition as the mediator are shown in Appendix J. For each beneficiary outcome measure, we display one row of estimates for each of the three demonstration years during which an FQHC could have achieved recognition (labeled the Recognition Achievement Year). A reader can look down each of these three rows to examine how estimates vary depending upon the timing of the attainment of recognition (in Year 1, soon after the demonstration started, during Year 2, or during Year 3 as the demonstration ended). Estimates and p-values from multivariable linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the demonstration and comparison groups; beneficiary survey measure from the follow-up/late beneficiary survey. For the Short Form (SF) SF–12 Physical Component Score (PCS) and Mental Component Score (MCS), missing data were imputed via multiple imputation (n = 5). All SF–12 analyses account for imputation.

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

§This item compared beneficiaries hospitalized either during the early or the late demonstration time period.

§§ Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted 'cohort-level' analyses, including those with a valid response at either baseline or follow-up.

Appendix M. Medical Home Effects on Processes and Outcomes: Year-by-Year Results Stratified by Attribution Cohort and Sensitivity Analyses

This appendix contains additional results from our difference-in-differences analyses examining the impact of PCMH recognition on claims-based measures of health care utilization, processes of care, and spending. These results supplement those presented in Chapter Seventeen. The results included in this appendix are stratified by year of entry into the demonstration. In addition, they reflect results that both include and exclude high-utilization outliers, defined as beneficiaries who had more than 12 inpatient admissions, more than 25 ED visits, more than 50 FQHC visits, or more than 50 visits to primary care providers in any one year during the baseline year or during any of the three years of the demonstration.

The results are as follows:

1. Impact of NCQA Level-3 PCMH recognition on claims-based measures of health care utilization (Exhibit M.1), process measures (Exhibit M.2), and spending measures (Exhibit M.3). These analyses include outliers.
2. Impact of NCQA Level-3 *or other types of PCMH recognition* on claims-based measures of health care utilization (Exhibit M.4), process measures (Exhibit M.5), and spending measures (Exhibit M.6). Other types of PCMH recognition were defined as PCMH recognition from The Joint Commission, Accreditation Association for Ambulatory Health Care, or from the state of Minnesota or Oregon. These analyses also include outliers.

The next six tables (Exhibit M.1–M.12) repeat the analyses listed above after dropping the subset of high-utilization outliers—a group representing less than 0.33 percent of the cohort entering at baseline or any year of the demonstration period.

In the report, we also evaluate the effect of medical home recognition in two subsets. We first evaluated the effect of NCQA Level 3 recognition compared to no recognition (excluding sites that achieved another PCMH recognition). Next, in order to reduce potential confounding by the demonstration, we replicated the analyses comparing NCQA Level 3 PCMH recognition to no recognition among comparison sites only.

Exhibit M.1. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Measures of Health Care Utilization, by Attribution Cohort (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition)

		Overall Utilization Utilization per 1,000 Beneficiaries (SE)		
Outcome Measure[††]	**Cohort**	**Year 1**	**Year 2**	**Year 3**
FQHC visits[§]	Baseline attribution	83.33*** (13.67)	129.9*** (15.20)	162.21*** (15.51)
	Year 1 attribution		170.49*** (21.57)	199.08*** (20.98)
	Year 2 attribution			84.37*** (23.6)
	Rolling entry	83.33*** (13.67)	157.08*** (13.40)	154.26*** (11.97)
Non FQHC–PCP visits	Baseline attribution	–8.48 (12.40)	–29.17 (18.05)	–38.28[†] (21.93)
	Year 1 attribution		–49.19* (23.43)	–48.84[†] (28.67)
	Year 2 attribution			–50.94[†] (26.98)
	Rolling entry	–8.48 (12.40)	–30.62*[°] (14.00)	–39.62**[°] (14.31)
PCP visits[§]	Baseline attribution	54.08** (16.57)	74.18*** (20.35)	51.62* (22.57)
	Year 1 attribution		112.46*** (28.55)	54.36[†] (32.09)
	Year 2 attribution			8.67 (33.17)
	Rolling entry	54.08** (16.57)	93.15*** (17.21)	43.26*[°] (16.90)
Specialist visits	Baseline attribution	1.18 (14.58)	–44.07* (19.80)	–10.30 (21.48)
	Year 1 attribution		–20.28 (28.07)	–20.98 (31.58)
	Year 2 attribution			–2.43 (29.90)
	Rolling entry	1.18 (14.58)	–35.97*[°] (16.27)	–9.98 (15.49)
Total ED visits	Baseline attribution	16.66[†] (10.02)	28.55* (11.45)	38.63** (12.31)
	Year 1 attribution		11.08 (17.23)	23.20 (18.17)
	Year 2 attribution			18.55 (18.20)
	Rolling entry	16.66[†] (10.02)	22.55*[°] (9.50)	29.45*** (8.91)
Outpatient-only ED visits	Baseline attribution	12.99 (8.88)	19.04[†] (10.09)	27.82* (10.99)
	Year 1 attribution		20.14 15.25)	35.02* (15.92)
	Year 2 attribution			14.10 (16.06)
	Rolling entry	12.99 (8.88)	18.52*[°] (8.33)	23.77** (7.70)
ACSC ED visits	Baseline attribution	–0.36 (2.25)	–2.09 (2.76)	1.44 (2.55)
	Year 1 attribution		–1.21 (3.92)	1.24 (3.73)
	Year 2 attribution			2.20 (3.27)
	Rolling entry	–0.36 (2.25)	–2.09 (2.39)	1.48 (1.82)
Inpatient admissions	Baseline attribution	–0.13 (3.78)	4.35 (4.01)	2.53 (4.35)
	Year 1 attribution		4.30 (6.39)	–7.84 (6.57)
	Year 2 attribution			–12.36 (6.89)
	Rolling entry	–0.13 (3.78)	4.12 (3.43)	–2.91 (3.23)

Outcome Measure[††]	Cohort	Overall Utilization Utilization per 1,000 Beneficiaries (SE) Year 1	Year 2	Year 3
Inpatient ACSC admissions	Baseline attribution	0.33 (1.27)	1.02 (1.38)	0.94 (1.48)
	Year 1 attribution		–2.67 (2.61)	–2.49 (2.45)
	Year 2 attribution			0.02 (2.02)
	Rolling entry	0.33 (1.27)	–0.20 (1.35)	0.05 (1.10)
Inpatient readmissions[§§]	Baseline attribution	0.10 (0.51)	–0.16 (0.58)	–0.12 (0.63)
	Year 1 attribution		–1.84 (1.13)	–1.47 (1.01)
	Year 2 attribution			–1.30 (1.10)
	Rolling entry	0.10 (0.51)	–0.68 (0.53)	–0.65 (0.48)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
SE=standard error; FQHC=federally qualified health center; ED=emergency department; ACSC= ambulatory care sensitive condition.
[§] Two-part models were not used due to poor convergence.
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.2. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Process Measures, by Attribution Cohort (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition)

Outcome Measure	Cohort	Likelihood of Utilization Percentage Points (SE)		
		Year 1	Year 2	Year 3
All four recommended tests for patients with diabetes	Baseline attribution	1.89*** (0.38)	2.10*** (0.41)	2.60*** (0.43)
	Year 1 attribution		0.39 (0.70)	0.47 (0.76)
	Year 2 attribution			0.62 (0.81)
	Rolling entry	1.89*** (0.38)	1.58*** (0.36)	1.69*** (0.34)
HbA1C test (diabetes patients)	Baseline attribution	1.67 (0.43)	0.71 (0.48)	0.96 (0.50)
	Year 1 attribution		0.50 (0.82)	0.64 (0.86)
	Year 2 attribution			0.16 (0.88)
	Rolling entry	1.67*** (0.43)	0.68 (0.41)	0.70† (0.38)
LDL test (diabetes patients)	Baseline attribution	0.48 (0.49)	0.48 (0.54)	1.57* (0.62)
	Year 1 attribution		–0.62 (0.89)	0.30 (0.98)
	Year 2 attribution			0.48 (1.02)
	Rolling entry	0.48 (0.49)	0.16 (0.46)	1.00* (0.46)
Eye exam (diabetes patients)	Baseline attribution	11.84*** (0.50)	1.45** (0.54)	1.75** (0.59)
	Year 1 attribution		0.58 (0.90)	0.37 (0.99)
	Year 2 attribution			0.82 (1.00)
	Rolling entry	1.84*** (0.50)	1.17* (0.47)	1.23** (0.46)
Nephropathy test (diabetes patients)	Baseline attribution	2.62*** (0.55)	3.72*** (0.59)	3.97*** (0.64)
	Year 1 attribution		2.56** (0.98)	1.22 (1.07)
	Year 2 attribution			0.92 (1.08)
	Rolling entry	2.62*** (0.55)	3.36*** (0.51)	2.62*** (0.49)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–0.47 (0.69)	–0.48 (0.77)	–1.33 (0.83)
	Year 1 attribution		–1.10 (1.23)	–0.62 (1.41)
	Year 2 attribution			1.92 (1.64)
	Rolling entry	–0.47 (0.69)	–0.64 (0.65)	–0.41 (0.66)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
HbA1C=hemoglobin A1c; LDL=low-density lipoprotein.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.3. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Spending Measures, by Attribution Cohort (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition)

		Overall Spending Dollars (SE)		
Outcome Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–247.74* (103.32)	–68.93 (106.08)	–50.77 (118.21)
	Year 1 attribution		–320.79 (165.29)	–406.12 (183.04)
	Year 2 attribution			–123.82 (183.33)
	Rolling entry	–247.74* (103.32)	–144.03 (89.15)	–155.86† (86.14)
Inpatient	Baseline attribution	–184.85* (75.33)	18.81 (67.55)	–6.30 (71.33)
	Year 1 attribution		–214.48† (109.90)	–217.82† (120.47)
	Year 2 attribution			–33.12 (122.68)
	Rolling entry	–184.85* (75.33)	–52.02 (57.83)	–62.66 (55.17)
Skilled nursing facility	Baseline attribution	–50.75† (27.41)	–32.03 (27.77)	19.79 (41.91)
	Year 1 attribution		2.40 (33.86)	–7.54 (30.07)
	Year 2 attribution			–60.83 (47.71)
	Rolling entry	–50.75† (27.41)	–22.22 (22.10)	–54.55 (45.19)
Home health	Baseline attribution	11.25 (8.62)	16.69† (9.52)	18.36* (9.22)
	Year 1 attribution		20.10 (12.64)	–0.99 (13.79)
	Year 2 attribution			–3.42 (13.59)
	Rolling entry	11.25 (8.62)	17.62* (7.75)	9.32 (6.86)
Outpatient facility	Baseline attribution	–8.12 32.05)	6.46 (29.45)	22.82 (33.61)
	Year 1 attribution		–63.57 (54.25)	–61.24 (46.86)
	Year 2 attribution			–91.21 (56.33)
	Rolling entry	–8.12 (32.05)	–14.83 (26.22)	–21.65 (24.62)
Hospice spending	Baseline attribution	–32.46 (34.96)	13.37 (38.20)	–23.66 (48.36)
	Year 1 attribution		–49.93 (61.30)	–65.51 (75.16)
	Year 2 attribution			294.78 (136.82)
	Rolling entry	–32.46 (34.96)	–7.76 (32.86)	22.82* (33.61)
Part B expenditures§§	Baseline attribution	–45.85* (21.11)	–39.36* (19.58)	–13.85 (20.77)
	Year 1 attribution		–66.64 (38.31)	–6.65 (35.33)
	Year 2 attribution			21.61 (35.99)
	Rolling entry	–45.85* (21.11)	–48.19** (17.98)	–5.92 (16.14)
Physicians (primary care)	Baseline attribution	–2.23 (4.57)	–1.15 (4.35)	–4.62 (5.46)
	Year 1 attribution		–2.86 (6.34)	–1.01 (7.37)
	Year 2 attribution			–0.71 (7.99)
	Rolling entry	–2.23 (4.57)	–1.77 (3.60)	–3.16 (3.91)
Physicians (specialist)	Baseline attribution	–39.22* (15.26)	–35.35* (14.82)	–19.44 (14.66)

Outcome Measure	Cohort	Overall Spending Dollars (SE)		
		Year 1	Year 2	Year 3
	Year 1 attribution		–42.38† (23.23)	–29.89 (24.85)
	Year 2 attribution			–16.86 (24.81)
	Rolling entry	–39.22* (15.26)	–37.70** (12.54)	–21.65† (11.37)
Durable medical equipment	Baseline attribution	–2.11 (8.44)	–4.24 (9.12)	–9.08 (11.57)
	Year 1 attribution		–6.19 (10.21)	–16.09 (11.39)
	Year 2 attribution			8.30 (12.83)
	Rolling entry	–2.11 (8.44)	–4.95 (7.14)	–6.75 (7.61)
Total outpatient§§§	Baseline attribution	–1.24 (32.95)	4.48 (31.20)	15.61 (36.07)
	Year 1 attribution		–61.88 (55.55)	–67.81 (48.87)
	Year 2 attribution			–89.01 (58.13)
	Rolling entry	–1.24 (32.95)	–15.74 (27.43)	–26.94† (26.03)
Laboratory	Baseline attribution	–2.42 (2.81)	–4.88† (2.82)	0.57 (3.00)
	Year 1 attribution		–6.45 (4.47)	–1.45 (5.18)
	Year 2 attribution			3.84 (4.96)
	Rolling entry	–2.42 (2.81)	–5.28* (2.40)	0.93 (2.33)
Imaging	Baseline attribution	–2.24 (2.21)	–5.58** (2.04)	–2.58 (2.12)
	Year 1 attribution		–1.39 (3.36)	–5.37 (3.88)
	Year 2 attribution			–3.33 (3.37)
	Rolling entry	–2.24 (2.21)	–4.27* (1.75)	–3.27*° (1.66)
Acute care hospital §	Baseline attribution	–164.72* (66.62)	–10.56 (59.38)	–51.28 (64.70)
	Year 1 attribution		–206.53* (99.03)	–204.15† (106.13)
	Year 2 attribution			–13.35 (109.81)
	Rolling entry	–164.72* (66.62)	–70.36 (51.40)	–84.07† (49.66)
Post-acute care spending§	Baseline attribution	–137.44** (40.86)	–75.99† (38.99)	–29.59 (39.48)
	Year 1 attribution		–27.54 (51.42)	–117.46† (68.88)
	Year 2 attribution			–78.47 (66.45)
	Rolling entry	–137.44** (40.86)	–63.50* (31.66)	–61.36* (31.18)
Outpatient hospital§	Baseline attribution	–14.92 (30.31)	1.18 (26.22)	21.41 (28.40)
	Year 1 attribution		–30.71 (50.04)	–27.59 (40.44)
	Year 2 attribution			–75.17 (52.04)
	Rolling entry	–14.92 (30.31)	–8.15 (23.82)	–10.77 (21.64)
FQHC/RHC§	Baseline attribution	0.36 (2.93)	–4.95 (4.11)	–5.76 (4.91)
	Year 1 attribution		–4.76 (5.18)	–5.23 (5.97)
	Year 2 attribution			–5.41 (5.75)
	Rolling entry	0.36 (2.93)	–4.89 (3.17)	–4.50 (3.19)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
§ These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report.

These results are provided for reference only.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
[§§§] This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.4. Impact of Level 3/Alternate Recognition on Claims-Based Measures of Health Care Utilization, by Attribution Cohort (Sites with Level 3/Alternate PCMH Recognition vs. Sites Without Level 3/Alternate PCMH Recognition)

Outcome Measure[††]	Cohort	Overall Utilization Utilization per 1,000 Beneficiaries (SE)		
		Year 1	Year 2	Year 3
FQHC visits[§]	Baseline attribution	78.10*** (13.22)	118.97*** (14.94)	168.52*** (14.85)
	Year 1 attribution		131.59*** (21.18)	148.60*** (20.57)
	Year 2 attribution			76.72** (23.33)
	Rolling entry	78.10*** (13.22)	133.50*** (13.13)	142.17*** (11.66)
Non-FQHC PCP visit	Baseline attribution	–26.55* (12.51)	–48.63** (17.74	–51.70* (21.03)
	Year 1 attribution		–58.28 (23.16)	–58.41* (28.39)
	Year 2 attribution			–10.89 (25.36)
	Rolling entry	–26.55* (12.52)	–55.37*** (13.83)	–48.61*** (13.82)
PCP visits[§]	Baseline attribution	–18.28 (16.65)	–13.81 (20.95)	–13.58 (22.40)
	Year 1 attribution		12.59 (28.00)	–39.98 (31.97)
	Year 2 attribution			–3.87 (32.46)
	Rolling entry	–18.28 (16.65)	–1.65 (17.28)	–14.11 (16.68)
Specialist visits	Baseline attribution	9.87 (14.25)	–82.02*** (19.56)	–30.70 (21.07)
	Year 1 attribution		–26.63 (27.73)	–10.72 (31.10)
	Year 2 attribution			11.83 (29.44)
	Rolling entry	9.87 (14.25)	–65.27** (16.06)	–16.96 (15.20)
Total ED visits	Baseline attribution	3.67 (9.67)	13.71 (10.93)	15.29 (11.93)
	Year 1 attribution		–31.53[†] (17.67)	–9.72 (18.63)
	Year 2 attribution			–0.69 (18.62)
	Rolling entry	3.67 (9.67)	0.34 (9.26)	5.75 (8.80)
Outpatient-only ED visits	Baseline attribution	1.59 (8.54)	10.47 (9.53)	11.59 (10.54)
	Year 1 attribution		–17.82 (15.73)	4.37 (16.38)
	Year 2 attribution			–2.26 (16.45)
	Rolling entry	1.59 (8.54)	–0.04 (8.16)	4.43 (7.63)
ACSC ED visits	Baseline attribution	–0.18 (2.02)	–3.32 (2.50)	–1.65 (2.48)
	Year 1 attribution		–2.37 (3.79)	3.79 (3.45)
	Year 2 attribution			2.04 (3.33)
	Rolling entry	–0.18 (2.02)	–3.24 (2.17)	0.34 (1.76)
Inpatient admissions	Baseline attribution	–4.99 (3.71)	–4.25 (4.01)	–5.15 (4.34)
	Year 1 attribution		–5.36 (6.26)	–14.15 (6.63)
	Year 2 attribution			–11.56 (6.91)

Outcome Measure[††]	Cohort	Overall Utilization Utilization per 1,000 Beneficiaries (SE) Year 1	Year 2	Year 3
	Rolling entry	–4.99 (3.71)	–4.82 (3.40)	–8.56** (3.23)
Inpatient ACSC admissions	Baseline attribution	0.45 (1.21)	0.07 (1.38)	0.06 (1.46)
	Year 1 attribution		–3.24 (2.53)	–2.47 (2.36)
	Year 2 attribution			0.72 (1.97)
	Rolling entry	0.45 (1.21)	–0.95 (1.29)	–0.28 (1.08)
Inpatient readmissions[§§]	Baseline attribution	–0.38 (0.51)	–0.23 (0.56)	–0.17 (0.61)
	Year 1 attribution		–0.59 (1.00)	–1.49 (1.00)
	Year 2 attribution			–0.87 (1.07)
	Rolling entry	–0.38 (0.51)	–0.36 (0.50)	–0.60 (0.47)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[§] Two-part models were not used due to poor convergence
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.5. Impact of Level 3/Alternate Recognition on Claims-Based Process Measures, by Attribution Cohort (Sites with Level 3/Alternate PCMH Recognition vs. Sites Without Level 3/Alternate PCMH Recognition)

		Likelihood of Utilization Percentage Points (SE)		
Outcome Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
All four recommended tests for patients with diabetes	Baseline attribution	0.61 (0.39)	1.14** (0.41)	1.75*** (0.43)
	Year 1 attribution		0.09 (0.68)	0.71 (0.71)
	Year 2 attribution			1.40† (0.77)
	Rolling entry	0.61 (0.39)	0.80* (0.36)	1.42*** (0.34)
HbA1C test (diabetes patients)	Baseline attribution	0.54 (0.39)	–0.29 (0.44)	0.14 (0.47)
	Year 1 attribution		–0.49 (0.76)	–1.37 (0.77)
	Year 2 attribution			0.17 (0.93)
	Rolling entry	0.54 (0.39)	–0.34 (0.38)	–0.25 (0.37)
LDL test (diabetes patients)	Baseline attribution	–0.33 (0.47)	–0.03 (0.52)	2.04*** (0.62)
	Year 1 attribution		–1.44† (0.85)	0.03 (0.95)
	Year 2 attribution			1.80 (1.11)
	Rolling entry	–0.33 (0.47)	–0.45 (0.44)	1.47** (0.47)
Eye exam (diabetes patients)	Baseline attribution	0.95† (0.49)	0.63 (0.53)	1.22* (0.58)
	Year 1 attribution		1.19 (0.85)	0.66 (0.94)
	Year 2 attribution			0.49 (0.99)
	Rolling entry	0.95† (0.49)	0.81† (0.45)	0.93* (0.45)
Nephropathy test (diabetes patients)	Baseline attribution	1.38** (0.53)	2.25*** (0.57)	3.55*** (0.64)
	Year 1 attribution		1.42 (0.95)	0.58 (1.05)
	Year 2 attribution			1.60 (1.07)
	Rolling entry	1.38** (0.53)	1.99*** (0.49)	2.42*** (0.49)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–0.50 (0.67)	–0.39 (0.757)	–0.62 (0.85)
	Year 1 attribution		–0.75 (1.23)	–0.13 (1.38)
	Year 2 attribution			0.26 (1.58)
	Rolling entry	–0.50 (0.67)	–0.50 (0.64)	–0.29 (0.65)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.6. Impact of Level 3/Alternate Recognition on Claims-Based Spending Measures, by Attribution Cohort (Sites with Level 3/Alternate PCMH Recognition vs. Sites Without Level 3/Alternate PCMH Recognition)

		Overall Spending Dollars (SE)		
Outcome Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–272.09** (99.38)	–138.03 (104.55)	–120.57 (115.07)
	Year 1 attribution		–272.53 (163.25)	–590.11 (184.69)
	Year 2 attribution			–114.84 (183.94)
	Rolling entry	–272.09** (99.38)	–181.90* (87.84)	–230.93** (85.54)
Inpatient	Baseline attribution	–171.36* (70.36)	–62.70 (70.20)	–121.86† (73.57)
	Year 1 attribution		–235.57 (109.25)	–324.86**(119.63)
	Year 2 attribution			–72.42 (123.50)
	Rolling entry	–171.36* (70.36)	–116.75*° (59.22)	–162.02** (56.12)
Skilled nursing facility	Baseline attribution	–46.95†(25.57)	–44.48 (27.40)	–14.56 (29.92)
	Year 1 attribution		1.02 (32.91)	–37.15 (44.11)
	Year 2 attribution			–42.99 (45.37)
	Rolling entry	–46.95† (25.57)	–31.52 (21.72)	–27.89 (22.38)
Home health	Baseline attribution	12.18 (8.52)	20.81* (9.32)	17.35† (9.22)
	Year 1 attribution		28.03* (12.03)	1.39 (13.65)
	Year 2 attribution			–1.33 (15.27)
	Rolling entry	12.18 (8.52)	23.04** (7.53)	9.56 (7.00)
Outpatient facility	Baseline attribution	–7.22 (29.50)	0.14(27.50)	–20.16 (31.96)
	Year 1 attribution		–55.50(47.67)	–132.90* (55.23)
	Year 2 attribution			–84.67 (64.47)
	Rolling entry	–7.22 (29.50)	–16.46(23.96)	–57.94* (25.85)
Hospice	Baseline attribution	–36.06 (35.08)	10.27(36.40)	35.15 (42.69)
	Year 1 attribution		–31.99(72.63)	–167.68† (97.26)
	Year 2 attribution			282.29* (119.42)
	Rolling entry	–36.06 (35.08)	–1.11(32.83)	27.97 (39.54)
Part B expenditures§§	Baseline attribution	–34.82 (18.35)	–46.58* (18.79)	–41.80* (20.35)
	Year 1 attribution		–8.65 (42.81)	–4.53 (35.73)
	Year 2 attribution			21.94 (35.45)
	Rolling entry	–34.82 (18.35)	–36.64* (18.39)	–21.19 (15.96)
Physicians (primary care)	Baseline attribution	0.63 (3.89)	0.63 (4.08)	–2.19(4.86)
	Year 1 attribution		2.87 (6.93)	1.48(7.50)
	Year 2 attribution			4.09(7.88)
	Rolling entry	0.63 (3.89)	1.16 (3.54)	–0.27 (3.63)

Outcome Measure	Cohort	Overall Spending Dollars (SE)		
		Year 1	Year 2	Year 3
Physicians (specialist)	Baseline attribution	–26.82† (13.75)	–35.05* (14.09)	–40.98** (14.52)
	Year 1 attribution		0.55 (21.75)	–25.84 (24.34)
	Year 2 attribution			–20.75 (24.47)
	Rolling entry	–26.82† (13.75)	–24.91* (11.85)	–33.40** (11.20)
Durable medical equipment	Baseline attribution	7.79 (6.08)	4.52 (7.36)	2.91 (8.81)
	Year 1 attribution		–0.02 (10.26)	–2.60 (10.29)
	Year 2 attribution			4.75 (14.17)
	Rolling entry	7.79 (6.08)	4.52 (7.36)	2.55 (6.38)
Total outpatient§§§	Baseline attribution	–1.40 (30.33)	6.94 (28.82)	–14.47 (33.71)
	Year 1 attribution		–52.12 (50.14)	–128.02* (56.63)
	Year 2 attribution			–86.69 (66.59)
	Rolling entry	–1.40 (30.33)	6.94 (28.82)	–54.08* (26.89)
Laboratory	Baseline attribution	–1.89 (2.98)	–5.98*(3.01)	–0.23(3.18)
	Year 1 attribution		–4.36 (5.05)	4.56 (5.57)
	Year 2 attribution			9.70 (5.96)
	Rolling entry	–1.89 (2.98)	–5.51* (2.60)	2.90* (2.53)
Imaging	Baseline attribution	–2.43 (2.13)	–5.77**(2.04)	–3.70† (2.18)
	Year 1 attribution		0.70 (3.23)	–4.76 (3.95)
	Year 2 attribution			–4.04 (4.35)
	Rolling entry	–2.43 (2.13)	–3.78* (1.73)	–3.93* (1.79)
Acute care hospital §	Baseline attribution	–141.54* (60.34)	–97.18 (60.60)	–167.88* (66.3)
	Year 1 attribution		–174.20† (97.23)	–253.35* (105.42)
	Year 2 attribution			–37.07 (110.71)
	Rolling entry	–141.54* (60.34)	–122.82* (51.72)	–166.39*** (50.35)
Post-acute care§	Baseline attribution	–120.47** (39.53)	–66.35† (39.54)	–17.21 (38.75)
	Year 1 attribution		–21.72 (47.31)	–91.26 (61.72)
	Year 2 attribution			–118.94† (69.57)
	Rolling entry	–120.47** (39.53)	–55.61† (31.36)	–57.16† (30.32)
Outpatient hospital §	Baseline attribution	0.69 (27.96)	11.64 (24.72)	1.72 (27.54)
	Year 1 attribution		4.71 (43.00)	–54.47 (48.57)
	Year 2 attribution			–84.30 (61.14)
	Rolling entry	0.69 (27.96)	9.62 (21.69)	–28.98 (23.17)
FQHC/RHC §	Baseline attribution	–8.54***(2.41)	–14.67*** (3.38)	–16.86*** (4.11)
	Year 1 attribution		–16.33*** (4.57)	–22.55*** (5.44)
	Year 2 attribution			–3.63 (5.65)
	Rolling entry	–8.54*** (2.41)	–14.55*** (2.68)	–13.08*** (2.87)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC= rural health center.
§ These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.

[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
[§§§] This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.7. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Measures of Health Care Utilization, by Attribution Cohort (Sites with NCQA Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition; Excludes Utilization Outliers)

		Overall Utilization Utilization per 1,000 Beneficiaries (SE)		
Outcome Measure††	**Cohort**	**Year 1**	**Year 2**	**Year 3**
FQHC visits §	Baseline attribution	80.80*** (13.55)	130.18*** (14.96)	162.42*** (15.32)
	Year 1 attribution		162.18*** (21.27)	193.66*** (20.74)
	Year 2 attribution			80.25*** (23.36)
	Rolling entry	80.80*** (13.55)	153.61*** (13.19)	151.55*** (11.84)
Non-FQHC PCP visits	Baseline attribution	–10.13 (12.11)	–33.87† (17.67)	–44.32* (21.24)
	Year 1 attribution		–54.04* (23.05)	–47.19† (28.10)
	Year 2 attribution			–57.50* (26.40)
	Rolling entry	–10.13 (12.11)	–34.95* (13.69)	–43.25** (13.83)
PCP visits §	Baseline attribution	51.31** (16.30)	73.26*** (19.79)	51.05* (21.87)
	Year 1 attribution		99.65*** (28.10)	51.14 (31.50)
	Year 2 attribution			1.82 (32.83)
	Rolling entry	51.31** (16.30)	87.07*** (16.82)	39.58* (16.54)
Specialist visits	Baseline attribution	1.08 (14.61)	–42.38* (19.8)	–8.61 (21.47)
	Year 1 attribution		–23.41 (28.19)	–22.06 (31.71)
	Year 2 attribution			–0.21 (29.90)
	Rolling entry	1.08 (14.61)	–35.67* (16.30)	–8.74 (15.51)
Total ED visits	Baseline attribution	13.65† (7.72)	18.33* (8.56)	23.19* (9.36)
	Year 1 attribution		19.23 (13.44)	29.86* (14.41)
	Year 2 attribution			10.87 (15.42)
	Rolling entry	13.65† (7.72)	17.91* (7.18)	21.31** (6.93)
Outpatient-only ED visits	Baseline attribution	11.94† (6.97)	11.60 (7.64)	13.90† (8.44)
	Year 1 attribution		20.82† (12.02)	36.01** (12.78)
	Year 2 attribution			10.43 (13.80)
	Rolling entry	11.94† (6.97)	14.39* (6.43)	17.02** (6.19)
ACSC ED visits	Baseline attribution	0.55 (1.82)	–1.08 (2.11)	0.37 (2.21)
	Year 1 attribution		2.33 (2.81)	3.28 (3.20)
	Year 2 attribution			3.85 (2.94)
	Rolling entry	0.55 (1.82)	0.01 (1.70)	1.88 (1.56)
Inpatient admissions	Baseline attribution	–1.66 (3.68)	2.37 (3.85)	1.86 (4.12)
	Year 1 attribution		7.96 (5.45)	–7.08 (6.21)
	Year 2 attribution			–10.22 (6.44)
	Rolling entry	–1.66 (3.68)	3.96 (3.16)	–2.80 (3.06)
Inpatient ACSC	Baseline attribution	–0.06 (1.25)	0.31 (1.34)	0.47 (1.44)

admissions				
	Year 1 attribution		–0.27 (1.95)	–2.04 (2.26)
	Year 2 attribution			0.58 (1.84)
	Rolling entry	–0.06 (1.25)	0.21 (1.11)	–0.06 (1.05)
Inpatient readmissions [§§]	Baseline attribution	–0.06 (0.49)	–0.43 (0.55)	0.02 (0.57)
	Year 1 attribution		–0.41 (0.84)	–1.23 (0.98)
	Year 2 attribution			–0.95 (1.04)
	Rolling entry	–0.06 (0.49)	–0.43 (0.46)	–0.47 (0.45)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[§] Two-part models were not used due to poor convergence.
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.8. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Process Measures, by Attribution Cohort (Sites with NCQA Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition; Excludes Utilization Outliers)

		Likelihood of Utilization Percentage Points (SE)		
Outcome Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
All four recommended tests for patients with diabetes	Baseline attribution	1.88*** (0.39)	2.10*** (0.41)	2.59*** (0.43)
	Year 1 attribution		0.39 (0.07)	0.54 (0.76)
	Year 2 attribution			0.59 (0.81)
	Rolling entry	1.88*** (0.39)	1.58*** (0.36)	1.69*** (0.35)
HbA1C test (diabetes patients)	Baseline attribution	1.64 (0.43)	0.66 (0.48)	0.95 (0.50)
	Year 1 attribution		0.45 (0.82)	0.66 (0.87)
	Year 2 attribution			0.18 (0.88)
	Rolling entry	1.64*** (0.43)	0.63 (0.41)	0.71† (0.38)
LDL test (diabetes patients)	Baseline attribution	0.48 (0.49)	0.42 (0.54)	1.55* (0.62)
	Year 1 attribution		–0.71 (0.89)	0.31 (0.98)
	Year 2 attribution			0.39 (1.02)
	Rolling entry	0.48 (0.49)	0.09 (0.46)	0.97* (0.46)
Eye exam (diabetes patients)	Baseline attribution	1.81*** (0.50)	1.46** (0.54)	1.72** (0.59)
	Year 1 attribution		0.63 (0.90)	0.43 (0.99)
	Year 2 attribution			0.81 (1.01)
	Rolling entry	1.81*** (0.50)	1.19* (0.47)	1.22** (0.46)
Nephropathy test (diabetes patients)	Baseline attribution	2.63*** (0.55)	3.72*** (0.59)	3.95*** (0.64)
	Year 1 attribution		2.51* (0.99)	1.18 (1.08)
	Year 2 attribution			0.92 (1.08)
	Rolling entry	2.63*** (0.55)	3.35*** (0.51)	2.62*** (0.49)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–0.38 (0.69)	–0.49 (0.77)	–1.33 (0.84)
	Year 1 attribution		–1.16 (1.23)	–0.70 (1.42)
	Year 2 attribution			1.89 (1.64)
	Rolling entry	–0.38 (0.69)	–0.67 (0.65)	–0.43 (0.66)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.9. Impact of NCQA Level-3 PCMH Recognition on Claims-Based Spending Measures, by Attribution Cohort (Sites with NCQA Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition; Excludes Utilization Outliers)

		Overall Spending Dollars (SE)		
Outcome Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–276.52 (102.65)	–117.30 (105.16)	–82.46 (116.84)
	Year 1 attribution		–283.45 (163.71)	–369.87 (181.03)
	Year 2 attribution			–121.71 (182.13)
	Rolling entry	–276.52**° (102.65)	–166.74† (88.33)	–163.97† (85.22)
Inpatient	Baseline attribution	–211.08** (75.08)	–12.49 (67.08)	–24.46 (70.29)
	Year 1 attribution		–182.52† (108.59)	–183.49 (118.54)
	Year 2 attribution			–22.83 (121.12)
	Rolling entry	–211.08** (75.08)	–64.10 (57.34)	–62.89 (54.38)
Skilled nursing facility	Baseline attribution	–53.71† (27.49)	–30.14 (27.61)	–4.37 (29.85)
	Year 1 attribution		7.34 (33.40)	–57.52 (47.28)
	Year 2 attribution			–55.53 (45.03)
	Rolling entry	–53.71† (27.49)	–19.22 (21.93)	–28.48 (22.71)
Home health	Baseline attribution	10.36 (8.65)	15.47 (9.55)	18.81* (9.21)
	Year 1 attribution		19.77 (12.68)	–0.23 (13.82)
	Year 2 attribution			–1.85 (13.57)
	Rolling entry	10.36 (8.65)	16.65* (7.77)	10.18 (6.86)
Outpatient facility	Baseline attribution	–7.21 (32.06)	–2.16 (29.23)	18.98 (33.48)
	Year 1 attribution		–66.97 (54.22)	–54.55 (46.47)
	Year 2 attribution			–97.28† (56.30)
	Rolling entry	–7.21 (32.06)	–21.92 (26.09)	–23.41 (24.53)
Hospice spending	Baseline attribution	–33.89 (35.24)	11.76 (38.66)	–26.99 (48.63)
	Year 1 attribution		–52.13 (62.53)	–69.50 (76.88)
	Year 2 attribution			290.65* (134.08)
	Rolling entry	–33.89 (35.24)	–9.24 (33.33)	17.76 (42.16)
Part B expenditures §§	Baseline attribution	–49.22* (20.93)	–51.51** (19.17)	–24.12 (20.32)
	Year 1 attribution		–63.20† (38.03)	–1.17 (34.87)
	Year 2 attribution			15.24 (35.84)
	Rolling entry	–49.22* (20.93)	–55.75** (17.70)	–11.81 (15.88)
Physicians (primary care)	Baseline attribution	–2.58 (4.55)	–2.47 (4.31)	–5.05 (5.41)
	Year 1 attribution		–1.37 (6.27)	0.25 (7.26)
	Year 2 attribution			–2.10 (7.96)
	Rolling entry	–2.58 (4.55)	–2.27 (3.57)	–3.38 (3.87)
Physicians	Baseline attribution	–41.48** (15.19)	–39.54** (14.74)	–21.79 (14.57)

Outcome Measure	Cohort	Overall Spending Dollars (SE)		
		Year 1	Year 2	Year 3
(specialist)	Year 1 attribution		–41.18† (23.27)	–23.57 (24.66)
	Year 2 attribution			–17.50 (24.83)
	Rolling entry	–41.48** (15.19)	–40.30** (12.50)	–21.67† (11.31)
Durable medical equipment	Baseline attribution	–2.13 (8.43)	–4.51 (9.14)	–9.79 (11.59)
	Year 1 attribution		–7.33 (10.24)	–15.81 (11.42)
	Year 2 attribution			6.69 (12.79)
	Rolling entry	–2.13 (8.43)	–5.47 (7.15)	–7.35 (7.63)
Total outpatient spending §§§	Baseline attribution	–0.20 (32.95)	–4.33 (31.00)	11.04 (35.96)
	Year 1 attribution		–66.46 (55.53)	–61.16 (48.47)
	Year 2 attribution			–96.53† (58.09)
	Rolling entry	–0.20 (32.95)	–23.31 (27.31)	–29.36 (25.94)
Laboratory	Baseline attribution	–2.66 (2.70)	–5.68* (2.71)	–0.37 (2.88)
	Year 1 attribution		–6.97 (4.48)	–0.82 (5.17)
	Year 2 attribution			4.13 (4.92)
	Rolling entry	–2.66 (2.70)	–6.01* (2.33)	0.61 (2.27)
Imaging	Baseline attribution	–2.28 (2.21)	–6.09** (2.03)	–2.95 (2.11)
	Year 1 attribution		–1.57 (3.35)	–5.04 (3.87)
	Year 2 attribution			–3.61 (3.36)
	Rolling entry	–2.28 (2.21)	–4.68** (1.75)	–3.47* (1.65)
Acute care hospital	Baseline attribution	–178.20** (66.36)	–29.49 (58.96)	–62.44 (63.57)
	Year 1 attribution		–182.19† (97.79)	–173.87† (104.17)
	Year 2 attribution			–16.63 (108.45)
	Rolling entry	–178.20*** (66.36)	–76.14 (50.96)	–83.64† (48.84)
Post-acute care spending §	Baseline attribution	–145.07*** (41.16)	–78.45* (38.98)	–27.82 (39.34)
	Year 1 attribution		–20.29 (50.92)	–116.46† (68.04)
	Year 2 attribution			–80.73 (66.50)
	Rolling entry	–145.07*** (41.16)	–62.37* (31.55)	–60.59† (31.03)
Outpatient hospital §	Baseline attribution	–14.02 (30.41)	–3.69 (26.13)	23.32 (28.48)
	Year 1 attribution		–32.74 (50.25)	–23.95 (40.52)
	Year 2 attribution			–74.99 (52.16)
	Rolling entry	–14.02 (30.41)	–12.16 (23.81)	–8.72 (21.69)
FQHC/RHC §	Baseline attribution	0.24 (2.91)	–4.46 (4.05)	–4.87 (4.86)
	Year 1 attribution		–5.38 (5.17)	–5.30 (5.94)
	Year 2 attribution			–5.88 (5.73)
	Rolling entry	0.24 (2.91)	–4.72 (3.14)	–4.16 (3.17)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
§ These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
§§ This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory,

imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
§§§ This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.10. Impact of Level 3/Alternate Recognition on Claims-Based Measures of Health Care Utilization, by Attribution Cohort (Sites with NCQA Level 3/Alternate PCMH Recognition vs. Sites without Level 3/Alternate PCMH Recognition; Excludes Utilization Outliers)

		Overall Utilization Utilization per 1,000 Beneficiaries (SE)		
Measure††	**Cohort**	**Year 1**	**Year 2**	**Year 3**
FQHC visits §	Baseline attribution	80.20*** (13.09)	124.12*** (14.72)	171.38*** (14.65)
	Year 1 attribution		128.43 (21.02)	146.05*** (20.42)
	Year 2 attribution			71.96** (23.10)
	Rolling entry	80.20*** (13.09)	135.39*** (12.98)	141.12*** (11.54)
Non-FQHC PCP visits	Baseline attribution	–25.40*(12.10)	–52.80**(17.57)	–57.19**(20.64)
	Year 1 attribution		–65.89**(22.99)	–57.13*(28.09)
	Year 2 attribution			–17.93(25.32)
	Rolling entry	–25.40* (12.10)	–60.21*** (13.69)	–52.40***(13.56)
PCP visits §	Baseline attribution	–13.70 (16.09)	–6.25 (19.87)	–9.49(21.57)
	Year 1 attribution		2.97 (27.73)	–38.39 (31.51)
	Year 2 attribution			–13.01 (32.14)
	Rolling entry	–13.70 (16.09)	–1.11 (16.71)	–15.43 (16.33)
Specialist visits	Baseline attribution	9.71 (14.27)	–80.51*** (19.57)	–29.87 (21.07)
	Year 1 attribution		–23.55 (27.77)	–7.48 (31.17)
	Year 2 attribution			14.45 (29.46)
	Rolling entry	9.71(14.27)	–63.26*** (16.08)	–15.24 (15.22)
Total ED visits	Baseline attribution	2.35(7.61)	4.25(8.38)	3.81 (9.33)
	Year 1 attribution		–20.40(13.59)	–2.79 (14.68)
	Year 2 attribution			–3.60 (15.56)
	Rolling entry	2.35 (7.61)	–3.39 (7.10)	0.44 (6.96)
Outpatient-only ED visits	Baseline attribution	1.72 (6.85)	3.72 (7.41)	0.63 (8.35)
	Year 1 attribution		–14.31 (12.23)	5.48 (13.15)
	Year 2 attribution			–3.59 (14.15)
	Rolling entry	1.72 (6.85)	–2.97 (6.36)	–0.51 (6.24)
ACSC ED visits	Baseline attribution	–0.38 (1.78)	–4.34* (2.14)	–3.44 (2.31)
	Year 1 attribution		0.41 (2.78)	4.96† (2.89)
	Year 2 attribution			2.80 (2.99)
	Rolling entry	–0.38 (1.78)	–2.90† (1.71)	–0.06 (1.57)
Total admissions	Baseline attribution	–5.63 (3.58)	–5.84 (3.85)	–5.75 (4.12)
	Year 1 attribution		–1.53 (5.44)	–12.56 (6.21)
	Year 2 attribution			–5.83 (6.26)
	Rolling entry	–5.63 (3.58)	–4.67 (3.16)	–7.45* (3.04)

Inpatient ACSC admissions	Baseline attribution	–0.26 (1.22)	–1.34 (1.38)	–0.67 (1.44)
	Year 1 attribution		–1.75 (1.98)	–1.84 (2.14)
	Year 2 attribution			1.21 (1.77)
	Rolling entry	–0.26 (1.22)	–1.38 (1.14)	–0.45 (1.02)
Inpatient readmissions [§§]	Baseline attribution	–0.61 (0.48)	–0.72 (0.53)	–0.28 (0.57)
	Year 1 attribution		0.26 (0.76)	–1.19 (0.93)
	Year 2 attribution			0.06 (0.96)
	Rolling entry	–0.61 (0.48)	–0.45 (0.44)	–0.43 (0.43)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[§] Two-part models were not used due to poor convergence
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.11. Impact of Level 3/Alternate Recognition on Claims-Based Process Measures, by Attribution Cohort (Sites with NCQA Level 3/Alternate PCMH Recognition vs. Sites Without Level 3/Alternate PCMH Recognition; Excludes Utilization Outliers)

Measure	Cohort	Likelihood of Utilization Percentage Points (SE)		
		Year 1	Year 2	Year 3
All four recommended tests for patients with diabetes	Baseline attribution	0.57 (0.39)	1.11** (0.42)	1.70*** (0.44)
	Year 1 attribution		0.11 (0.68)	0.73 (0.71)
	Year 2 attribution			1.39† (0.77)
	Rolling entry	0.57 (0.39)	0.79* (0.36)	1.39*** (0.34)
HbA1C test (diabetes patients)	Baseline attribution	0.53 (0.39)	–0.33 (0.44)	0.1 (0.47)
	Year 1 attribution		–0.53 (0.76)	–1.37 (0.77)
	Year 2 attribution			0.11 (0.93)
	Rolling entry	0.53 (0.39)	–0.38 (0.38)	–0.28 (0.37)
LDL test (diabetes patients)	Baseline attribution	–0.33 (0.47)	–0.07 (0.52)	2.01** (0.62)
	Year 1 attribution		–1.51† (0.84)	0.03 (0.96)
	Year 2 attribution			1.78 (1.11)
	Rolling entry	–0.33 (0.47)	–0.49 (0.44)	1.45** (0.47)
Eye exam (diabetes patients)	Baseline attribution	0.89† (0.49)	0.62 (0.53)	1.11† (0.59)
	Year 1 attribution		1.20 (0.86)	0.69 (0.94)
	Year 2 attribution			0.47 (1.00)
	Rolling entry	0.89† (0.49)	0.80† (0.46)	0.88† (0.45)
Nephropathy test (diabetes patients)	Baseline attribution	1.35* (0.53)	2.25*** (0.57)	3.49*** (0.64)
	Year 1 attribution		1.40 (0.95)	0.53 (1.05)
	Year 2 attribution			1.71 (1.08)
	Rolling entry	1.35* (0.53)	1.98*** (0.49)	2.41*** (0.49)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–0.44 (0.68)	–0.47 (0.76)	–0.64 (0.85)
	Year 1 attribution		–0.74 (1.23)	–0.14 (1.39)
	Year 2 attribution			0.00 (1.58)
	Rolling entry	–0.44 (0.68)	–0.54 (0.64)	–0.34 (0.65)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.12. Impact of Level 3/Alternate Recognition on Claims-Based Spending Measures, by Attribution Cohort (Sites with NCQA Level 3/Alternate PCMH Recognition vs. Sites Without Level-3/Alternate PCMH Recognition; Excludes Utilization Outliers)

		Overall Spending Dollars (SE)		
Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–272.05 (98.29)	–176.56 (103.66)	–143.78 (113.64)
	Year 1 attribution		–226.12 (161.83)	–555.63 (183.11)
	Year 2 attribution			–57.72 (181.07)
	Rolling entry	–272.05** (98.29)	–195.14* (87.08)	–222.91** (84.52)
Inpatient	Baseline attribution	–178.39* (69.68)	–88.40 (69.70)	–131.68† (72.60)
	Year 1 attribution		–199.51† (107.71)	–286.39* (117.77)
	Year 2 attribution			–14.08 (120.15)
	Rolling entry	–178.39* (69.68)	–123.58* (58.68)	–147.08** (55.20)
Skilled nursing facility	Baseline attribution	–44.33† (25.36)	–42.10 (27.20)	–12.97 (29.70)
	Year 1 attribution		3.91(32.60)	–35.83 (43.89)
	Year 2 attribution			–44.48 (45.36)
	Rolling entry	–44.33† (25.36)	–28.96 (21.56)	–27.04 (22.26)
Home health	Baseline attribution	11.73 (8.54)	19.58* (9.36)	17.48† (9.23)
	Year 1 attribution		28.66* (12.03)	2.09 (13.68)
	Year 2 attribution			0.97 (15.20)
	Rolling entry	11.73 (8.54)	22.36** (7.56)	10.30 (7.00)
Outpatient facility	Baseline attribution	–5.72 (29.50)	–6.44 (27.34)	–22.87 (31.81)
	Year 1 attribution		–56.16 (47.65)	–126.66* (55.05)
	Year 2 attribution			–92.43 (64.47)
	Rolling entry	–5.72 (29.50)	–21.32 (23.86)	–59.57* (25.77)
Hospice	Baseline attribution	–36.57 (35.25)	9.03 (36.77)	33.51 (42.86)
	Year 1 attribution		–33.96 (74.59)	–173.41† (99.84)
	Year 2 attribution			284.28* (120.53)
	Rolling entry	–36.57 (35.25)	–2.05 (33.28)	26.73 (39.86)
Part B expenditures §§	Baseline attribution	–35.42† (18.17)	–56.22** (18.50)	–48.42* (20.01)
	Year 1 attribution		–4.94 (42.72)	–0.74 (35.34)
	Year 2 attribution			22.32 (35.20)
	Rolling entry	–35.42† (18.17)	–42.43*° (18.22)	–24.03 (15.75)
Physicians (primary care)	Baseline attribution	1.02 (3.81)	–0.79 (4.05)	–2.59 (4.80)
	Year 1 attribution		3.43 (6.89)	2.07 (7.40)
	Year 2 attribution			4.88 (7.79)
	Rolling entry	1.02 (3.81)	0.30 (3.52)	–0.20 (3.59)

Physicians (specialist)	Baseline attribution	–27.63* (13.72)	–38.70** (14.06)	–42.58** (14.47)
	Year 1 attribution		2.73 (21.78)	–19.61 (24.12)
	Year 2 attribution			–18.49 (24.47)
	Rolling entry	–27.63* (13.72)	–26.85* (11.84)	–32.44** (11.16)
Durable medical equipment	Baseline attribution	7.68 (5.94)	4.19 (7.34)	1.81 (8.78)
	Year 1 attribution		–1.18 (10.28)	–2.43 (10.29)
	Year 2 attribution			2.92 (14.11)
	Rolling entry	7.68 (5.94)	2.49 (6.08)	1.63 (6.36)
Total outpatient §§§	Baseline attribution	–0.02 (30.30)	–0.13 (28.67)	–18.54 (33.56)
	Year 1 attribution		–54.22 (50.14)	–122.05* (56.42)
	Year 2 attribution			–96.29 (66.56)
	Rolling entry	–0.02 (30.30)	–16.34 (25.05)	–56.84* (26.81)
Laboratory	Baseline attribution	–2.68 (2.89)	–7.23* (2.93)	–1.07 (3.10)
	Year 1 attribution		–4.87 (5.05)	4.66 (5.58)
	Year 2 attribution			10.33† (5.86)
	Rolling entry	–2.68 (2.89)	–6.54* (2.56)	2.56 (2.49)
Imaging	Baseline attribution	–2.55 (2.13)	–6.14** (2.04)	–3.94† (2.17)
	Year 1 attribution		0.81 (3.23)	–4.51 (3.95)
	Year 2 attribution			–4.14 (4.35)
	Rolling entry	–2.55 (2.13)	–4.02* (1.73)	–4.03* (1.78)
Acute-care hospital §	Baseline attribution	–141.15* (59.59)	–114.25† (60.12)	–176.93** (65.31)
	Year 1 attribution		–148.34 (95.85)	–220.08* (103.53)
	Year 2 attribution			5.40(107.64)
	Rolling entry	–141.15* (59.59)	–126.83* (51.22)	–155.12** (49.45)
Post-acute care §	Baseline attribution	–122.09** (39.60)	–69.38† (39.57)	–17.01 (38.54)
	Year 1 attribution		–16.55 (46.89)	–90.15(61.1)
	Year 2 attribution			–118.17† (69.79)
	Rolling entry	–122.09** (39.60)	–55.71† (31.29)	–56.44† (30.17)
Outpatient hospital §	Baseline attribution	1.25(28.04)	7.17(24.68)	2.54(27.61)
	Year 1 attribution		3.54(43.15)	–49.16(48.70)
	Year 2 attribution			–85.76 (61.33)
	Rolling entry	1.25(28.04)	6.12(21.69)	–27.52 (23.24)
FQHC/RHC §	Baseline attribution	–8.28*** (2.39)	–13.88*** (3.32)	–15.98*** (4.05)
	Year 1 attribution		–16.42*** (4.56)	–22.18*** (5.41)
	Year 2 attribution			–4.40(5.63)
	Rolling entry	–8.28*** (2.39)	–13.99*** (2.64)	–12.70*** (2.85)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
§ These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
§§ This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory,

imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
§§§ This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.13. Parallel Trends Assessment, Medical Home Effect (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition)

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	–20.12***	5.55	–46.49***	6.69	–67.02***	6.97	–46.47***	7.08
Non-FQHC PCP visits	1.42	1.98	1.48	2.04	6.08	2.03	12.61	2.23
PCP visits	–6.09	5.55	–17.26**	6.38	–35.99***	6.57	–5.13	6.65
Specialist visits	–6.91	4.92	–13.67*	5.55	–4.18	5.49	–4.84	5.94
Total ED visits	1.18	3.10	–0.70	3.56	–1.77	3.84	–2.64	3.99
Outpatient-only ED visits	1.27	2.84	–0.95	3.23	–0.86	3.49	–1.36	3.56
Inpatient admissions	–3.32	2.15	–3.65[†]	2.17	–2.65	2.40	–3.24	3.03
Spending								
Total Medicare expenditures	–24.39	24.04	–17.01	25.33	–31.31	25.25	–19.22	28.25
Inpatient	–1.78	16.03	6.52	17.37	15.04	16.73	–7.83	19.67
Part B expenditures [§§]	3.85	4.48	7.24	4.82	–4.44	4.80	0.25	5.40

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data (i.e., claims with dates of service between November 1, 2009 and October 31, 2011) for beneficiaries attributed to demonstration or comparison sites during the baseline period only. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between sites achieving NCQA Level 3 PCMH recognition and sites without Level 3 recognition were assessed in quarters 5, 6, 7, and 8 of the baseline period relative to the difference in quarters 1–4. Monotonically increasing or decreasing demonstration effect estimates between quarters 5 and 8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.14. Parallel Trends Assessment, Medical Home Effect (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition) Among Demonstration Sites Only

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	2.61	8.12	–28.38**	9.50	–9.45	9.45	22.31*	9.62
Non-FQHC PCP visits	2.27	2.86	4.55[†]	2.76	2.11	2.91	4.13	3.63
PCP visits	12.35	8.17	–5.43	9.14	13.57	9.00	41.68***	9.31
Specialist visits	–2.79	7.14	1.68	7.70	7.43	7.80	7.68	8.49
Total ED visits	–3.66	5.38	0.88	5.41	–7.51	6.07	–13.58*	6.65
Outpatient-only ED visits	–3.09	4.64	0.97	4.63	–6.12	5.26	–8.53	5.62
Inpatient admissions	–0.68	2.03	–0.29	2.10	–1.33	2.20	–4.49[†]	2.45
Spending								
Total Medicare expenditures	48.89	34.23	62.10[†]	37.33	10.56	37.42	–61.15	43.59
Inpatient	38.47	25.02	34.55	27.61	15.05	27.67	–68.76[†]	35.71
Part B expenditures [§§]	3.29	7.07	4.48	7.70	2.41	7.36	–10.03	8.51

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data (i.e., claims with dates of service between November 1, 2009 and October 31, 2011) for beneficiaries attributed to demonstration sites during the baseline period only. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration sites achieving NCQA Level 3 PCMH recognition and demonstration sites without Level 3 recognition were assessed in quarters 5, 6, 7, and 8 of the baseline period relative to the difference in quarters 1–4. Monotonically increasing or decreasing demonstration effect estimates between quarters 5 and 8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001

Exhibit M.15. Parallel Trends Assessment, Medical Home Effect (Sites with Level-3 PCMH Recognition vs. Sites Without Level-3 PCMH Recognition) Among Comparison Sites Only

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	–88.08***	9.23***	–158.45***	11.45	–200.81***	12.04	–149.96***	12.05
Non-FQHC PCP visits	–7.88*	3.38	–7.57*	3.43	–6.29[†]	3.40	–4.02	3.98
PCP visits	–75.26***	9.33	–126.59***	11.01	–172.60***	11.45	–134.24***	11.68
Specialist visits	–22.46**	7.05	–40.23***	8.02	–36.32***	8.08	–26.09**	8.57
Total ED visits	–15.20**	5.37	–12.98*	5.68	–20.08**	6.43	–16.94**	6.46
Outpatient-only ED visits	–16.30***	4.77	–13.93**	5.00	–16.98**	5.66	–15.12**	5.58
Inpatient admissions	–0.39	2.02	1.98	2.05	–5.61*	2.31	–3.84	2.46
Spending								
Total Medicare expenditures	2.06	37.85	18.84	39.47	–84.91*	39.48	–81.18[†]	42.71
Inpatient	8.44	24.72	40.33	25.97	–28.48	27.52	–17.47	30.11
Part B expenditures [§§]	0.71	6.60	–3.18	6.67	–11.06	7.18	–10.81	8.30

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data (i.e., claims with dates of service between November 1, 2009 and October 31, 2011) for beneficiaries attributed to comparison sites during the baseline period only. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between comparison sites achieving NCQA Level 3 PCMH recognition and comparison sites without Level 3 recognition were assessed in quarters 5, 6, 7, and 8 of the baseline period relative to the difference in quarters 1–4. Monotonically increasing or decreasing demonstration effect estimates between quarters 5 and 8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.16. Parallel Trends Assessment, Medical Home Effect (Sites with Level 3/Alternate PCMH Recognition vs. Sites Without Level 3/Alternate PCMH Recognition)

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	–24.27***	5.39	–22.03***	6.21	–52.39***	6.53	–42.39***	6.75
Non-FQHC PCP visits	0.60	2.07	1.61	2.12	6.33**	2.08	12.20***	2.33
PCP visits	–13.11*	5.46	–0.94	6.09	–27.64***	6.26	–7.42	6.48
Specialist visits	–8.24[†]	4.77	–15.70**	5.50	–9.27[†]	5.59	–9.11	5.99
Total ED visits	0.09	2.96	–1.04	3.21	1.28	3.44	–2.54	3.62
Outpatient-only ED visits	–0.18	2.70	–0.42	2.85	1.21	3.09	–1.43	3.21
Inpatient admissions	–1.96	1.82	–3.98*	1.80	–1.61	1.81	–3.97*	2.00
Spending								
Total Medicare expenditures	–34.79	23.22	–43.44[†]	23.99	–26.43	24.18	–27.17	26.49
Inpatient	–10.05	15.75	–6.95	17.21	7.67	16.58	–25.07	19.24
Part B expenditures [§§]	0.62	4.32	2.65	4.56	–5.87	4.55	–4.71	5.20

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010)
NOTES: This analysis used eight quarters of baseline data (i.e., claims with dates of service between November 1, 2009 and October 31, 2011) for beneficiaries attributed to demonstration and comparison sites during the baseline period only. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between sites achieving Level 3/alternate PCMH recognition and sites without Level 3/alternate recognition were assessed in quarters 5, 6, 7, and 8 of the baseline period relative to the difference in quarters 1–4. Monotonically increasing or decreasing demonstration effect estimates between quarters 5 and 8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.17. Parallel Trends Assessment for Comparison Sites that Achieved NCQA Level 3 Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	–71.00***	7.76	–89.71**	8.88	–78.66**	8.91	–51.77**	9.24
Non-FQHC PCP visits	–15.07***	3.34	–13.66***	3.36	–15.73***	3.37	–15.50***	4.04
PCP visits	–84.60***	8.13	–106.04***	9.03	–95.97***	8.91	–74.78***	9.41
Specialist visits	13.02*	6.42	7.97	7.13	11.01	7.25	9.41	7.88
Total ED visits	-5.42	4.40	–4.72	4.71	–5.78	5.01	-6.02	5.26
Outpatient-only ED visits	-8.28*	3.84	–6.31	4.05	–4.57	4.33	–6.44	4.53
Inpatient admissions	0.14	1.79	1.62	1.86	–3.30[†]	1.95	–1.27	2.06
Spending								
Total Medicare expenditures	–12.75	36.14	1.67	38.26	–41.87	36.88	–18.29	40.52
Inpatient	6.18	24.19	26.38	26.29	–26.22	26.27	4.23	29.14
Part B expenditures [§§]	3.35	6.89	0.11	6.93	5.25	7.30	1.03	8.30

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).

NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.

[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission..

[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.

[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.18. Parallel Trends Assessment for Comparison Sites That Achieved NCQA Level 2 Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	9.49	8.59	–56.45***	10.26	–25.59*	9.99	–6.24	10.45
Non-FQHC PCP visits	0.39	3.47	–2.55	3.54	–4.69	3.57	–8.03[†]	4.32
PCP visits	13.71	8.93	–49.57***	10.36	–16.97[†]	9.98	–4.39	10.57
Specialist visits	13.00[†]	7.37	9.59	8.13	–8.45	8.34	–4.48	9.06
Total ED visits	–1.17	5.06	–4.72	5.43	–6.01	5.73	–8.66	6.04
Outpatient-only ED visits	–1.97	4.35	–0.63	4.54	–2.11	4.85	–5.10	5.08
Inpatient admissions	0.06	2.11	–3.03	2.27	–2.86	2.26	–0.25	2.33
Spending								
Total Medicare expenditures	19.48	40.87	–43.40	42.27	–26.49	42.65	5.42	45.15
Inpatient	–2.20	27.81	–18.73	30.64	–35.99	29.83	–36.24	33.48
Part B expenditures [§§]	11.82	7.47	–1.30	7.96	5.20	8.64	11.70	9.62

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.19. Parallel Trends Assessment for Comparison Sites that Achieved NCQA Level 1 Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization [§]								
FQHC visits	–84.29***	15.31	–91.50***	17.36	–37.92*	17.09	–35.98[†]	18.39
Non-FQHC PCP visits	3.54	5.73	5.23	5.60	–3.59	5.85	–12.62	7.19
PCP visits	–46.08**	15.71	–41.65*	17.13	–5.45	16.79	–7.61[†]	18.10
Specialist visits	–17.84	13.71	-6.31	14.64	9.55	14.62	–11.53	16.70
Total ED visits	–4.59	9.41	16.12[†]	9.32	–3.13	10.52	–3.13	10.52
Outpatient-only ED visits	2.34	7.92	16.76*	7.67	13.19	8.60	1.04	8.83
Inpatient admissions	–11.14**	4.20	–4.94	4.43	–7.64[†]	4.27	–7.32[†]	4.45
Spending								
Total Medicare expenditures	–139.75*	70.86	–65.09	74.21	3.73	75.86	–171.41*	71.66
Inpatient	–102.80[†]	56.78	–66.52	61.16	–54.48	61.84	–133.81*	62.09
Part B expenditures [§§]	–22.01[†]	11.42	6.73	13.61	16.11	14.51	0.54	15.58

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.20. Parallel Trends Assessment for Comparison Sites That Achieved Program A Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization[§]								
FQHC visits	–20.48	27.15	–48.01	32.41	–39.13	32.49	–55.05	35.69
Non-FQHC PCP visits	–16.19	10.99	4.09	18.39	–33.52**	11.22	–62.56***	14.26
PCP visits	–63.05*	28.08	–53.83[†]	–53.83	–56.94[†]	31.12	–83.31*	33.94
Specialist visits	–22.63	21.04	–15.40	23.90	–31.74	24.20	–86.28**	27.15
Total ED visits	–5.07	11.86	5.05	12.60	20.80[†]	12.52	0.54	14.35
Outpatient-only ED visits	–4.25	10.36	12.46	10.51	23.16*	10.74	9.62	11.98
Inpatient admissions[§§]	0.81	5.58	–6.44	6.60	–4.64	6.38	–4.12	7.01
Spending								
Total Medicare expenditures	–170.62	106.21	–197.13	112.67	–151.62	120.39	–102.94	126.25
Inpatient	–85.82	88.44	–138.74	98.17	–126.96	99.70	–22.58	98.40
Part B expenditures[§§]	–49.51**	16.13	–35.77[†]	18.81	–25.79	18.69	–49.25*	20.22

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.21. Parallel Trends Assessment for Comparison Sites That Achieved Program B Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization[§]								
FQHC visits	63.89***	17.01	–22.07	19.48	51.09**	18.93	54.46**	19.79
Non-FQHC PCP visits	–29.45**	9.01	–46.69***	9.43	–21.34**	8.03	–45.59***	10.94
PCP visits	38.43*	18.33	–71.15***	20.57	14.31	19.97	–18.91	21.55
Specialist visits	–20.95	17.34	5.36	19.76	6.49	19.71	36.94[†]	21.06
Total ED visits	20.63*	8.37	13.14	9.57	15.60	9.72	10.58	9.82
Outpatient-only ED visits	7.80	7.18	0.17	8.02	2.82	8.43	1.49	8.18
Inpatient admissions[§§]	2.52	4.39	–0.40	4.80	2.20	4.54	–4.03	5.20
Spending								
Total Medicare expenditures	4.22	81.50	–39.10	87.18	64.68	90.46	–29.43	93.78
Inpatient	1.36	53.88	–37.33	60.37	7.91	59.59	–50.87	69.23
Part B expenditures[§§]	55.20*	24.43	54.03*	24.13	73.87**	24.51	50.30*	24.92

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.22. Parallel Trends Assessment for Comparison Sites That Achieved Program C Recognition and Comparison Sites That Did Not Achieve Any Recognition

	Quarter Five		Quarter Six		Quarter Seven		Quarter Eight	
Measure	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Utilization[§]								
FQHC visits	38.53***	8.07	69.89***	9.38	102.83***	9.05	84.89***	9.78
Non-FQHC PCP visits	–4.35	3.71	–1.55	3.70	0.97	3.55	0.81	4.55
PCP visits	23.53**	8.68	31.91**	9.86	74.96***	9.41	42.90***	10.37
Specialist visits	26.69***	7.37	53.44***	8.03	55.17***	8.03	52.55***	8.92
Total ED visits	5.31	4.97	–2.62	5.33	9.14[†]	5.44	1.68	5.80
Outpatient-only ED visits	0.57	4.38	–3.28	4.59	3.53	4.73	–1.83	5.03
Inpatient admissions[§§]	6.12**	1.92	1.55	2.13	8.16***	1.97	6.25**	2.18
Spending								
Total Medicare expenditures	56.00	43.28	10.37	43.82	95.90*	43.73	125.10*	48.98
Inpatient	53.67*	26.11	20.38	28.98	43.54[†]	25.63	72.95*	29.87
Part B expenditures[§§]	3.21	7.71	5.13	8.24	23.63**	8.97	13.79	10.68

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (2009–2010).
NOTES: This analysis used eight quarters of baseline data for the baseline attribution cohort only representing claims for services provided to beneficiaries between November 1 2009 and October 31, 2011. Parallel trends were assessed using a difference-in-differences analysis in which differences in quarterly outcomes between demonstration and comparison sites were assessed for quarters 5–8 relative to the baseline difference in each outcome. Monotonically increasing or decreasing demonstration effect estimates over Quarters 5–8 (regardless of statistical significance) indicate violation of the parallel trends assumption.
[§] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.23. Cumulative Medical Home Effect Analysis (Demonstration and Comparison Sites with NCQA Level 3 PCMH Recognition vs. Demonstration and Comparison Sites with No Recognition)

Outcome Measure	Cumulative Medical Home Effect		
	Year 1	Year 2	Year 3
Utilization, rates per 1,000 beneficiaries[§]			
FQHC visits	98.77*** (11.68)	125.46*** (9.75)	128.52*** (8.66)
Non-FQHC PCP visits	–10.61 (11.58)	–33.22** (11.07)	–44.84*** (10.70)
PCP visits	60.42*** (14.20)	66.31*** (12.12)	48.86*** (11.06)
Specialist visits	–17.18 (13.37)	–28.21* (12.10)	–39.87*** (11.41)
Total ED visits	3.06 (8.24)	7.11 (6.91)	6.23 (6.32)
Outpatient-only ED visits	7.49 (7.28)	9.67 (6.12)	9.83[†] (5.46)
Inpatient admissions	–6.98* (3.48)	–4.07 (2.66)	–7.79*** (2.37)
Inpatient ACSC admissions	–0.70 (1.18)	–1.17 (0.98)	–1.08 (0.87)
Inpatient readmissions, percentage points	0.44 (0.44)	0.25 (0.36)	–0.12 (0.33)
Process measures, percentage points			
All four recommended tests for patients with diabetes	1.72*** (0.35)	1.66*** (0.28)	1.60*** (0.25)
HbA1C test	1.63*** (0.40)	1.14*** (0.33)	1.16*** (0.30)
LDL–C test	0.21 (0.45)	–0.03 (0.36)	0.40 (0.33)
Eye exam	2.02*** (0.45)	1.89*** (0.36)	1.61*** (0.33)
Nephropathy test	2.04*** (0.51)	2.53*** (0.40)	2.49*** (0.36)
Lipid test for patients with ischemic vascular disease	–0.22 (0.61)	–0.41 (0.50)	–0.34 (0.46)
Spending, dollars			
Total Medicare expenditures	–232.90** (90.03)	–218.41** (70.90)	–262.09*** (63.80)
Inpatient	–156.33* (63.65)	–160.24*** (47.77)	–192.04*** (42.11)
Skilled nursing facility	–52.80* (22.93)	–44.90* (17.81)	–17.31 (15.49)
Home health	7.93 (7.60)	7.77 (6.17)	–3.19 (5.50)
Outpatient facility	11.21 (24.45)	-9.17 (18.94)	–8.80 (16.62)
Hospice	2.54 (29.30)	15.8 (23.49)	27.80 (23.17)
Part B expenditures	–42.14* (17.16)	–48.20*** (13.68)	–61.24*** (12.23)
Physicians (primary care)	–4.22 (4.28)	–6.25* (3.36)	–8.09** (2.96)
Physicians (specialist)	–35.14** (12.87)	–41.55*** (10.07)	–56.72*** (8.88)
Durable medical equipment	0.00 (6.06)	0.96 (5.10)	–6.22 (4.84)
Total outpatient[§§§]	12.24 (25.61)	–4.11 (20.01)	–12.86 (17.65)
Laboratory	4.91* (2.06)	1.96 (1.73)	–0.72 (1.61)
Imaging	–2.13 (1.87)	–4.86*** (1.38)	–7.05*** (1.20)
Other measures of spending not presented elsewhere[§§]			
Acute care hospital	–118.79* (55.59)	–123.33** (41.85)	–151.45*** (37.22)
Post-acute care	–107.55** (34.34)	–89.76*** (26.21)	–62.42** (22.73)
Outpatient hospital	–22.75 (23.80)	–36.68* (17.87)	–40.13** (15.28)
FQHC/RHC	13.29*** (2.60)	8.98*** (2.41)	12.43*** (2.30)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
[§] PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
[§§§] This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.24. Cumulative Medical Home Effect Analysis (Comparison Sites with NCQA Level 3 PCMH Recognition vs. Comparison Sites with No Recognition)

	Cumulative Medical Home Effect		
Outcome Measure	**Year 1**	**Year 2**	**Year 3**
Utilization, rates per 1,000 beneficiaries[§]			
FQHC visits	72.38*** (18.83)	102.27*** (15.50)	123.44*** (13.59)
Non-FQHC PCP visits	20.48 (18.46)	4.18 (17.54)	–44.39* (17.43)
PCP visits	57.54* (22.84)	76.77*** (19.31)	73.66*** (17.42)
Specialist visits	–29.88 (21.64)	–39.43* (19.45)	–68.69 (18.43)
All ED visits	–13.33 (12.69)	2.38 (10.67)	7.89 (9.59)
Outpatient-only ED visits	–11.37 (11.18)	–3.80 (9.31)	1.31 (8.32)
Inpatient admissions	–4.18 (5.38)	–4.57 (4.24)	–7.56* (3.79)
Inpatient ACSC admissions	–1.17 (1.85)	–1.03 (1.48)	–0.78 (1.33)
Inpatient readmissions, percentage points	0.00 (0.70)	–0.19 (0.59)	–0.39 (0.54)
Process measures, percentage points			
All four recommended tests for patients with diabetes	0.77 (0.59)	1.23** (0.46)	1.13** (0.42)
HbA1C test	–0.45 (0.58)	–0.47 (0.50)	–0.40 (0.45)
LDL–C test	–1.53* (0.69)	–0.65 (0.58)	–0.22 (0.53)
Eye exam	1.51* (0.73)	1.91** (0.59)	2.01*** (0.53)
Nephropathy test	0.01 (0.81)	1.03 (0.65)	1.05[†] (0.57)
Lipid test for patients with ischemic vascular disease	–1.78[†] (0.98)	–1.02 (0.82)	–0.61 (0.75)
Spending, dollars			
Total Medicare expenditures	–277.54* (138.68)	–322.65** (111.69)	–408.32*** 101.61)
Inpatient	–159.38 (97.15)	–203.90** (74.66)	–242.70*** (66.77)
Skilled nursing facility	6.64 (29.01)	–30.63 (25.02)	–18.59 (22.78)
Home health	–1.15 (11.73)	6.99 (9.12)	–1.12 (8.20)
Outpatient facility	38.04 (43.45)	–10.01 (30.53)	–15.95 (26.54)
Hospice	–50.99 (47.17)	–24.95 (44.65)	–14.70 (44.31)
Part B expenditures	–74.00** (28.16)	–89.80*** (22.42)	–105.99*** (19.47)
Physicians (primary care)	–8.13 (5.64)	–12.67** (4.80)	–18.95*** (4.49)
Physicians (specialist)	–53.23* (22.20)	–62.58*** (17.37)	–69.93*** (14.73)
Durable medical equipment	–10.99 (10.37)	–8.34 (9.10)	–23.59* (10.26)
Total outpatient[§§§]	25.09 (45.17)	–18.69 (32.34)	–38.48 (28.88)

Outcome Measure	Cumulative Medical Home Effect		
	Year 1	Year 2	Year 3
Laboratory	0.43 (3.37)	–8.96** (2.79)	–15.80*** (2.56)
Imaging	–3.07 (3.47)	–7.98*** (2.30)	–9.78*** (1.92)
Other measures of spending not presented elsewhere[§§]			
Acute care hospital	–118.91 (88.22)	–185.10** (66.57)	–208.70*** (59.25)
Post-acute care	–54.40 (44.86)	–48.07 (35.93)	–59.88[†] (34.96)
Outpatient hospital	12.68 (41.39)	–36.74 (28.27)	–50.09* (24.10)
FQHC/RHC	7.08[†] (3.99)	5.81 (3.77)	11.03** (3.64)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
[§] PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.
[§§] These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
[§§§] This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.25. Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Utilization Measures, by Cohort (Includes Both Demonstration and Comparison Sites)

		Year 1	Year 2	Year 3
Measure††	**Cohort**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**
FQHC visits§	Baseline attribution	98.77*** (11.68)	200.18*** (12.71)	258.75*** (12.68)
	Year 1 attribution		140.61*** (18.89)	190.09*** (18.26)
	Year 2 attribution			84.24*** (20.84)
	Rolling entry	98.77*** (11.68)	186.53*** (11.41)	200.89*** (10.20)
Non-FQHC PCP visits	Baseline attribution	–10.61 (11.58)	–66.69*** (17.43)	–84.34*** (21.24)
	Year 1 attribution		–61.47** (22.32)	–59.73* (26.83)
	Year 2 attribution			–57.86* (24.93)
	Rolling entry	–10.61 (11.58)	–61.85*** (13.20)	–62.02*** (13.35)
PCP visits§	Baseline attribution	60.42*** (14.20)	108.32*** (17.30)	126.51*** (18.92)
	Year 1 attribution		54.48* (25.42)	40.03 (28.62)
	Year 2 attribution			–34.04 (29.51)
	Rolling entry	60.42*** (14.20)	90.00*** (14.86)	62.94*** (14.61)
Specialist visits	Baseline attribution	–17.18 (13.37)	–63.10*** (17.74)	–82.26*** (19.62)
	Year 1 attribution		1.74 (25.27)	–22.90 (28.91)
	Year 2 attribution			–47.28† (28.25)
	Rolling entry	60.42*** (14.20)	108.32*** (17.30)	126.51*** (18.92)
Total ED visits	Baseline attribution	3.06 (8.24)	–2.66 (9.52)	–4.57 (10.47)
	Year 1 attribution		9.72 (14.76)	1.51 (16.53)
	Year 2 attribution			15.72 (17.14)
	Rolling entry	3.06 (8.24)	0.74 (7.95)	0.38 (7.77)
Outpatient-only ED visits	Baseline attribution	7.49 (7.28)	1.31 (8.43)	5.09 (9.24)
	Year 1 attribution		14.19 (13.49)	15.65 (14.47)
	Year 2 attribution			7.91 (14.79)
	Rolling entry	7.49 (7.28)	6.31 (7.11)	8.10 (6.73)
ACSC ED visits	Baseline attribution	–1.86 (1.85)	–4.23† (2.32)	–2.98 (2.48)
	Year 1 attribution		–1.19 (3.19)	–1.68 (3.67)
	Year 2 attribution			4.40 (3.35)
	Rolling entry	–1.86 (1.85)	–3.38† (1.89)	–1.16 (1.79)
Inpatient admissions	Baseline attribution	–6.98* (3.48)	-5.31 (3.76)	–7.59† (4.10)
	Year 1 attribution		0.19 (5.40)	–13.30* (6.10)
	Year 2 attribution			–15.88* (6.59)
	Rolling entry	–6.98* (3.48)	–3.69 (3.10)	–10.35*** (3.04)
Inpatient ACSC admissions	Baseline attribution	–0.70 (1.18)	–0.86 (1.42)	–1.28 (1.55)
	Year 1 attribution		–2.74 (2.09)	–3.07 (2.33)

Measure[††]	Cohort	Year 1	Year 2	Year 3
		Estimate (SE)	Estimate (SE)	Estimate (SE)
	Year 2 attribution			1.75 (1.83)
	Rolling entry	–0.7 (1.18)	–1.41 (1.18)	–1.05 (1.10)
Inpatient readmissions[§§]	Baseline attribution	0.44 (0.44)	0.30 (0.51)	0.20 (0.56)
	Year 1 attribution		–0.12 (0.81)	–1.58[†] (0.92)
	Year 2 attribution			–1.58 (1.03)
	Rolling entry	0.44 (0.44)	0.19 (0.43)	–0.53 (0.43)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[§] Two-part models were not used due to poor convergence.
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes. Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.26. Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Process Measures, by Cohort (Includes Both Demonstration and Comparison Sites)

		Year 1	Year 2	Year 3
Measure	**Cohort**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**
All four recommended tests for patients with diabetes	Baseline attribution	1.72** (0.35)	1.38*** (0.38)	1.39*** (0.42)
	Year 1 attribution		1.56** (0.58)	2.15*** (0.62)
	Year 2 attribution			1.02 (0.72)
	Rolling entry	1.72*** (0.35)	1.43*** (0.32)	1.45*** (0.32)
HbA1C test (diabetes patients)	Baseline attribution	1.63*** (0.40)	0.97* (0.45)	1.19* (0.47)
	Year 1 attribution		0.44 (0.76)	–0.14 (0.74)
	Year 2 attribution			1.04 (0.92)
	Rolling entry	1.63*** (0.40)	0.86* (0.39)	0.82* (0.36)
LDL test (diabetes patients)	Baseline attribution	0.21 (0.45)	–0.15 (0.48)	0.48 (0.53)
	Year 1 attribution		–0.48 (0.82)	0.35 (0.88)
	Year 2 attribution			1.42 (1.04)
	Rolling entry	0.21 (0.45)	–0.25 (0.42)	0.52 (0.41)
Eye exam (diabetes patients)	Baseline attribution	2.02*** (0.45)	1.25* (0.49)	1.28* (0.54)
	Year 1 attribution		2.09** (0.80)	2.27** (0.87)
	Year 2 attribution			–0.18 (0.94)
	Rolling entry	2.02*** (0.45)	1.50*** (0.42)	1.13** (0.42)
Nephropathy test (diabetes patients)	Baseline attribution	2.04*** (0.51)	1.81*** (0.53)	1.85** (0.58)
	Year 1 attribution		4.18*** (0.89)	2.90** (0.97)
	Year 2 attribution			2.24* (1.02)
	Rolling entry	2.04*** (0.51)	2.47*** (0.46)	2.04*** (0.45)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–0.22 (0.61)	–0.30 (0.68)	–0.25 (0.76)
	Year 1 attribution		–0.73 (1.11)	0.41 (1.28)
	Year 2 attribution			–0.43 (1.39)
	Rolling entry	–0.22 (0.61)	–0.42 (0.58)	–0.12 (0.59)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.27. Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Spending Measures, by Cohort (Includes Both Demonstration and Comparison Sites)

		Overall Spending Dollars (SE)		
Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–232.90** (90.03)	–234.92* (98.98)	–179.21 (113.99)
	Year 1 attribution		–191.30 (153.83)	–452.97* (178.98)
	Year 2 attribution			–276.08 (178.17)
	Rolling entry	–232.90** (90.03)	–216.33** (83.09)	–272.85*** (82.89)
Inpatient	Baseline attribution	–156.33* (63.65)	–129.49* (64.67)	–143.87* (69.35)
	Year 1 attribution		–212.58* (104.38)	–352.32** (117.6)
	Year 2 attribution			–230.71† (127.07)
	Rolling entry	–156.33* (63.65)	–150.04** (55.11)	–201.91*** (54.31)
Skilled nursing facility	Baseline attribution	–52.80* (22.93)	–89.22** (28)	–87.78** (31.96)
	Year 1 attribution		9.25 (32.13)	–27.02 (39.87)
	Year 2 attribution			85.70* (33.80)
	Rolling entry	–52.80* (22.93)	–54.62* (21.77)	–19.37 (20.96)
Home health	Baseline attribution	7.92 (7.60)	1.89 (8.98)	0.79 (9.04)
	Year 1 attribution		7.14 (11.93)	–10.71 (12.89)
	Year 2 attribution			–15.13 (13.95)
	Rolling entry	7.92 (7.60)	3.75 (7.32)	–4.40 (6.72)
Outpatient facility	Baseline attribution	11.21 (24.45)	–21.71 (27.82)	18.35 (31.70)
	Year 1 attribution		–23.75 (47.79)	–61.71 (50.57)
	Year 2 attribution			–95.02† (52.26)
	Rolling entry	11.21 (24.45)	–23.89 (24.06)	–25.72 (23.73)
Hospice spending	Baseline attribution	2.54 (29.30)	49.25 (30.44)	69.30† (36.23)
	Year 1 attribution		–12.92 (52.23)	–50.41 (62.64)
	Year 2 attribution			52.91 (92.02)
	Rolling entry	2.54 (29.30)	33.19 (26.61)	38.47 (30.59)
Part B expenditures§§	Baseline attribution	–42.14* (17.16)	–84.10*** (18.65)	–73.27*** (20.48)
	Year 1 attribution		–1.93 (32.13)	–32.86 (36.02)
	Year 2 attribution			–62.59 (39.50)
	Rolling entry	–42.14* (17.16)	–60.85*** (16.21)	–62.07*** (16.41)
Physicians (primary care)	Baseline attribution	–4.22 (4.28)	–11.53** (4.44)	–13.39** (4.94)
	Year 1 attribution		–0.68 (7.33)	–3.56 (9.00)
	Year 2 attribution			–12.49 (8.32)
	Rolling entry	–4.22 (4.28)	–8.23* (3.81)	–10.83** (3.89)

Measure	Cohort	Overall Spending Dollars (SE)		
		Year 1	Year 2	Year 3
Physicians (specialist)	Baseline attribution	–35.14** (12.87)	–59.92*** (14.24)	–61.06*** (14.01)
	Year 1 attribution		–16.52 (20.63)	–50.29* (24.22)
	Year 2 attribution			–73.46** (26.71)
	Rolling entry	–35.14** (12.87)	–47.17*** (11.77)	–60.14*** (11.16)
Durable medical equipment	Baseline attribution	0.00 (6.06)	–1.70 (6.88)	–11.41 (7.05)
	Year 1 attribution		3.20 (10.51)	–6.71 (12.98)
	Year 2 attribution			1.34 (12.92)
	Rolling entry	0.00 (6.06)	–0.29 (5.8)	–7.12 (5.76)
Total outpatient§§§	Baseline attribution	12.24 (25.61)	–17.89 (29.21)	13.62 (33.21)
	Year 1 attribution		–12.2 (49.66)	–57.21 (52.95)
	Year 2 attribution			–100.32† (54.39)
	Rolling entry	12.24 (25.61)	–17.87 (25.16)	–29.83 (24.76)
Laboratory spending	Baseline attribution	4.91* (2.06)	–0.5 (2.22)	–1.18 (2.46)
	Year 1 attribution		0.37 (4.17)	8.39† (5.00)
	Year 2 attribution			–5.93 (4.57)
	Rolling entry	4.91* (2.06)	–0.23 (1.99)	0.28 (2.04)
Imaging	Baseline attribution	–2.12 (1.87)	–8.44*** (1.83)	–7.24*** (1.88)
	Year 1 attribution		–1.58 (3.04)	–5.69† (3.34)
	Year 2 attribution			–10.30** (3.48)
	Rolling entry	–2.12 (1.87)	–6.38*** (1.57)	–7.27*** (1.50)
Acute-care hospital§	Baseline attribution	–118.78* (55.59)	–125.36* (56.53)	–123.87* (62.05)
	Year 1 attribution		–136.58 (92.71)	–270.51** (102.36)
	Year 2 attribution			–220.55† (114.48)
	Rolling entry	–118.78* (55.59)	–127.04** (48.50)	–172.56*** (48.46)
Post-acute care§	Baseline attribution	–107.55** (34.34)	–95.43* (37.59)	–81.14* (39.78)
	Year 1 attribution		–28.58 (48.52)	–110.67† (64.28)
	Year 2 attribution			61.97 (53.02)
	Rolling entry	–107.55** (34.34)	–74.26* (30.34)	–46.91 (28.98)
Outpatient hospital§	Baseline attribution	–22.75 (23.80)	–64.46* (26.34)	–41.07 (28.90)
	Year 1 attribution		–26.23 (45.09)	–55.77 (46.32)
	Year 2 attribution			–117.63* (49.89)
	Rolling entry	–22.75 (23.80)	–53.55* (22.95)	–61.30** (22.20)
FQHC/RHC§	Baseline attribution	13.29*** (2.60)	15.84*** (3.65)	21.67*** (4.24)
	Year 1 attribution		–0.07 (4.63)	3.11 (5.23)
	Year 2 attribution			5.66 (5.03)
	Rolling entry	13.29*** (2.60)	10.43*** (2.79)	14.47*** (2.75)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).

NOTE: RHC=rural health center
[§] These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
[§§]This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
[§§§] This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.28. Among Comparison Sites, Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Utilization Measures, by Cohort

Measure[††]	Cohort	Year 1 Estimate (SE)	Year 2 Estimate (SE)	Year 3 Estimate (SE)
FQHC visits[§]	Baseline attribution	72.38*** (18.83)	167.14*** (20.42)	221.97*** (20.45)
	Year 1 attribution		122.98*** (29.54)	181.26*** (27.91)
	Year 2 attribution			173.95*** (31.66)
	Rolling entry	72.38*** (18.83)	160.06*** (18.11)	207.83*** (15.84)
Non-FQHC PCP visits	Baseline attribution	20.48 (18.46)	0.24 (27.15)	–6.19 (32.33)
	Year 1 attribution		–46.39 (36.03)	–29.71 (43.17)
	Year 2 attribution			–204.08*** (44.76)
	Rolling entry	20.48 (18.46)	–7.53 (20.82)	–46.82* (21.54)
PCP visits§	Baseline attribution	57.54* (22.84)	111.18*** (27.93)	157.40*** (30.09)
	Year 1 attribution		96.01* (40.17)	119.65** (43.57)
	Year 2 attribution			36.57 (45.35)
	Rolling entry	57.54* (22.84)	109.01*** (23.74)	122.73*** (22.71)
Specialist visits	Baseline attribution	–29.88 (21.64)	–75.82** (27.93)	–90.49** (31.23)
	Year 1 attribution		36.35 (40.94)	-22.75 (46.73)
	Year 2 attribution			–111.68* (45.86)
	Rolling entry	–29.88 (21.64)	–42.95[†] (23.22)	–76.69*** (22.99)
Total ED visits	Baseline attribution	–13.33 (12.69)	4.92 (14.79)	–10.91 (15.87)
	Year 1 attribution		0.89 (23.25)	–12.77 (26.92)
	Year 2 attribution			37.82 (27.56)
	Rolling entry	–13.33 (12.69)	3.89 (12.41)	–2.85 (12.07)
Outpatient-only ED visits	Baseline attribution	–11.37 (11.18)	–0.6 (12.96)	–12.22 (13.95)
	Year 1 attribution		3.28 (20.49)	–8.81 (23.42)
	Year 2 attribution			27.26 (24.36)
	Rolling entry	–11.37 (11.18)	1.37 (10.86)	–0.24 (10.55)
ACSC ED visits	Baseline attribution	0.86 (2.67)	0.78 (3.24)	–1.69 (3.50)
	Year 1 attribution		–4.16 (5.81)	–6.11 (6.99)
	Year 2 attribution			1.68 (4.56)
	Rolling entry	0.86 (2.67)	–0.56 (2.85)	–2.02 (2.71)
Inpatient admissions	Baseline attribution	–4.18 (5.38)	–4.67 (5.87)	–5.04 (6.44)
	Year 1 attribution		–6.38 (9.20)	–16.61 (10.53)
	Year 2 attribution			–16.57 (10.44)
	Rolling entry	–4.18 (5.38)	–5.11 (4.96)	–9.55[†] (4.90)
Inpatient ACSC	Baseline attribution	–1.17 (1.85)	–0.43 (2.11)	–0.91 (2.42)

Measure[††]	Cohort	Year 1 Estimate (SE)	Year 2 Estimate (SE)	Year 3 Estimate (SE)
admissions	Year 1 attribution		–2.61 (3.06)	–0.71 (3.61)
	Year 2 attribution			0.44 (2.84)
	Rolling entry	–1.17 (1.85)	–1.03 (1.74)	–0.67 (1.75)
Inpatient readmissions[§§]	Baseline attribution	0.00 (0.70)	0.27 (0.79)	–0.18 (0.87)
	Year 1 attribution		–1.09 (1.40)	–1.90 (1.66)
	Year 2 attribution			–1.82 (1.54)
	Rolling entry	0.00 (0.70)	–0.07 (0.69)	–0.84 (0.70)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
[§] Two-part models were not used due to poor convergence.
[§§] Inpatient readmissions are measured as hospital-wide all-cause unplanned readmissions and are modeled as a binary indicator (i.e., whether a beneficiary was hospitalized within 30 days of discharge from the hospital) rather than as a count of readmissions per beneficiary. The difference-in-differences estimates are in units of percentage points.
[†] p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
[††] FQHC visits include any visit to FQHCs regardless of provider specialty. PCP visits included visits to primary care physicians, nurse practitioners, and physician assistants who practice at FQHCs, rural health clinics, or primary care clinics. Specialist visits included visits to specialists who practice at FQHCs, rural health clinics, or primary care clinics. Visits to specialists at primary care clinics are identified by E&M visit codes.Total ED visits included both outpatient-only ED visits that did not lead to a hospitalization and ED visits that were followed by hospital admission.

Exhibit M.29. Among Comparison Sites, Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Process Measures, by Cohort

		Year 1	Year 2	Year 3
Measure	**Cohort**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**
All four recommended tests for patients with diabetes	Baseline attribution	0.77 (0.59)	1.14† (0.63)	0.98 (0.68)
	Year 1 attribution		2.26* (0.95)	1.61 (1.02)
	Year 2 attribution			1.10 (1.16)
	Rolling entry	0.77 (0.59)	1.49** (0.53)	1.18* (0.51)
HbA1C test (diabetes patients)	Baseline attribution	–0.45 (0.58)	–1.56* (0.63)	–1.64* (0.65)
	Year 1 attribution		1.00 (1.28)	–0.22 (1.28)
	Year 2 attribution			0.12 (1.39)
	Rolling entry	–0.45 (0.58)	–0.84 (0.57)	–1.07* (0.53)
LDL test (diabetes patients)	Baseline attribution	–1.53* (0.69)	–1.30† (0.76)	–0.3 (0.84)
	Year 1 attribution		2.51† (1.44)	1.43 (1.46)
	Year 2 attribution			0.30 (1.57)
	Rolling entry	–1.53* (0.69)	–0.27 (0.67)	0.04 (0.65)
Eye exam (diabetes patients)	Baseline attribution	1.51 (0.73)	2.25** (0.79)	1.91* (0.85)
	Year 1 attribution		2.54† (1.31)	2.33† (1.39)
	Year 2 attribution			2.69† (1.48)
	Rolling entry	1.51* (0.73)	2.34*** (0.68)	2.18*** (0.66)
Nephropathy test (diabetes patients)	Baseline attribution	0.01 (0.81)	0.70 (0.86)	0.65 (0.93)
	Year 1 attribution		3.39* (1.41)	2.85† (1.55)
	Year 2 attribution			0.74 (1.57)
	Rolling entry	0.01 (0.81)	1.42† (0.74)	1.00 (0.71)
Lipid test for patients with ischemic vascular disease	Baseline attribution	–1.78† (0.98)	–0.49 (1.12)	0.57 (1.26)
	Year 1 attribution		0.57 (1.84)	–0.33 (2.05)
	Year 2 attribution			–0.10 (2.30)
	Rolling entry	–1.78† (0.98)	–0.15 (0.95)	0.22 (0.95)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Exhibit M.30. Among Comparison Sites, Effect of NCQA Level 3 PCMH Recognition vs. No Recognition on Spending Measures, by Cohort

		Overall Spending Dollars (SE)		
Measure	**Cohort**	**Year 1**	**Year 2**	**Year 3**
Total Medicare expenditures	Baseline attribution	–232.90** (90.03)	–234.92* (98.98)	–179.21 (113.99)
	Year 1 attribution		–191.3 (153.83)	–452.97* (178.98)
	Year 2 attribution			–276.08 (178.17)
	Rolling entry	–232.90** (90.03)	–216.33** (83.09)	–272.85*** (82.89)
Inpatient	Baseline attribution	–156.33* (63.65)	–129.49* (64.67)	–143.87* (69.35)
	Year 1 attribution		–212.58* (104.38)	–352.32** (117.60)
	Year 2 attribution			–230.71† (127.07)
	Rolling entry	–156.33* (63.65)	–150.04** (55.11)	–201.91*** (54.31)
Skilled nursing facility	Baseline attribution	–52.80* (22.93)	–89.22** (28.00)	–87.78** (31.96)
	Year 1 attribution		9.25 (32.13)	–27.02 (39.87)
	Year 2 attribution			85.70* (33.8)
	Rolling entry	–52.80* (22.93)	–54.62* (21.77)	–19.37 (20.96)
Home health	Baseline attribution	7.92 (7.60)	1.89 (8.98)	0.79 (9.04)
	Year 1 attribution		7.14 (11.93)	–10.71 (12.89)
	Year 2 attribution			–15.13 (13.95)
	Rolling entry	7.92 (7.60)	3.75 (7.32)	–4.40 (6.72)
Outpatient facility	Baseline attribution	11.21 (24.45)	–21.71 (27.82)	18.35 (31.70)
	Year 1 attribution		–23.75 (47.79)	–61.71 (50.57)
	Year 2 attribution			–95.02† (52.26)
	Rolling entry	11.21 (24.45)	–23.89 (24.06)	–25.72 (23.73)
Hospice	Baseline attribution	2.54 (29.30)	49.25 (30.44)	69.30† (36.23)
	Year 1 attribution		–12.92 (52.23)	–50.41 (62.64)
	Year 2 attribution			52.91 (92.02)
	Rolling entry	2.54 (29.30)	33.19 (26.61)	38.47 (30.59)
Part B expenditures§§	Baseline attribution	–42.14* (17.16)	–84.10*** (18.65)	–73.27*** (20.48)
	Year 1 attribution		–1.93 (32.13)	–32.86 (36.02)
	Year 2 attribution			–62.59 (39.50)
	Rolling entry	–42.14* (17.16)	–60.85*** (16.21)	–62.07*** (16.41)
Physicians (primary care)	Baseline attribution	–4.22 (4.28)	–11.53** (4.44)	–13.39** (4.94)
	Year 1 attribution		–0.68 (7.33)	–3.56 (9.00)
	Year 2 attribution			–12.49 (8.32)
	Rolling entry	–4.22 (4.28)	–8.23* (3.81)	–10.83** (3.89)
Physicians (specialist)	Baseline attribution	–35.14** (12.87)	–59.92*** (14.24)	–61.06*** (14.01)
	Year 1 attribution		–16.52 (20.63)	–50.29* (24.22)
	Year 2 attribution			–73.46** (26.71)
	Rolling entry	–35.14** (12.87)	–47.17*** (11.77)	–60.14*** (11.16)

Measure	Cohort	Overall Spending Dollars (SE)		
		Year 1	Year 2	Year 3
Durable medical equipment	Baseline attribution	0.00 (6.06)	–1.70 (6.88)	–11.41 (7.05)
	Year 1 attribution		3.20 (10.51)	–6.71 (12.98)
	Year 2 attribution			1.34 (12.92)
	Rolling entry	0.00 (6.06)	–0.29 (5.80)	–7.12 (5.76)
Total outpatient§§§	Baseline attribution	12.24 (25.61)	–17.89 (29.21)	13.62 (33.21)
	Year 1 attribution		–12.2 (49.66)	–57.21 (52.95)
	Year 2 attribution			–100.32† (54.39)
	Rolling entry	12.24 (25.61)	–17.87 (25.16)	–29.83 (24.76)
Laboratory	Baseline attribution	4.91* (2.06)	–0.5 (2.22)	–1.18 (2.46)
	Year 1 attribution		0.37 (4.17)	8.39† (5.00)
	Year 2 attribution			–5.93 (4.57)
	Rolling entry	4.91* (2.06)	–0.23 (1.99)	0.28 (2.04)
Imaging	Baseline attribution	–2.12 (1.87)	–8.44*** (1.83)	–7.24*** (1.88)
	Year 1 attribution		–1.58 (3.04)	–5.69† (3.34)
	Year 2 attribution			–10.30** (3.48)
	Rolling entry	–2.12 (1.87)	–6.38*** (1.57)	–7.27*** (1.50)
Acute-care hospital§	Baseline attribution	–118.78* (55.59)	–125.36* (56.53)	–123.87* (62.05)
	Year 1 attribution		–136.58 (92.71)	–270.51** (102.36)
	Year 2 attribution			–220.55† (114.48)
	Rolling entry	–118.78* (55.59)	–127.04** (48.50)	–172.56*** (48.46)
Post-acute care§	Baseline attribution	–107.55** (34.34)	–95.43* (37.59)	–81.14* (39.78)
	Year 1 attribution		–28.58 (48.52)	–110.67† (64.28)
	Year 2 attribution			61.97 (53.02)
	Rolling entry	–107.55** (34.34)	-74.26* (30.34)	-46.91 (28.98)
Outpatient hospital§	Baseline attribution	–22.75 (23.80)	–64.46* (26.34)	-41.07 (28.90)
	Year 1 attribution		–26.23 (45.09)	-55.77 (46.32)
	Year 2 attribution			–117.63* (49.89)
	Rolling entry	–22.75 (23.80)	–53.55* (22.95)	–61.30** (22.20)
FQHC/RHC§	Baseline attribution	13.29*** (2.60)	15.84*** (3.65)	21.67*** (4.24)
	Year 1 attribution		–0.07 (4.63)	3.11 (5.23)
	Year 2 attribution			5.66 (5.03)
	Rolling entry	13.29*** (2.60)	10.43*** (2.79)	14.47*** (2.75)

SOURCE: RAND analysis of CMS's Program Integrity TAP file claims (November 1, 2010, to October 31, 2014).
NOTE: RHC=rural health center.
§ These measures were used in the evaluation's quarterly reports but are not presented in the Final Evaluation Report. These results are provided for reference only.
§§ This category corresponds to all claims in the Physician/Supplier Part B ("carrier") file including spending on laboratory, imaging, and physician services provided in ED settings, which are excluded from the primary care physician and specialist physician spending subcategories that are reported in the subsequent two rows.
§§§ This category corresponds to outpatient facility claims and all provider claims for services rendered in outpatient places of service.
† p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

Appendix N. Medical Home Effect on Patient Experience

This appendix includes the results of beneficiary survey difference-in-difference analyses evaluating the medical home effect. We use NCQA Level 3 PCMH recognition to define medical home recognition. In this appendix, we present the complete set of beneficiary survey results for Medical Home Effect Analysis 1. As described in Chapter Thirteen, this analysis included beneficiaries attributed to demonstration or comparison FQHCs. We examined changes over time, for beneficiaries attributed to NCQA Level 3–recognized sites compared with beneficiaries attributed to not NCQA Level 3–recognized sites. We also analyzed Level 3–equivalent recognition which is defined as PCMH recognition from NCQA Level 3, JC, AAAHC, or states.

In the final report (Chapter Thirteen), we also evaluate the effect of medical home recognition in two additional analyses. We first evaluated the effect of NCQA Level 3 recognition compared to no recognition, excluding sites that achieved another PCMH recognition (Medical Home Effect Analysis 2). Next, in order to reduce potential confounding by the demonstration, we replicated the analyses comparing NCQA Level 3 PCMH recognition to no recognition among comparison sites only (Medical Home Effect Analysis 3).

We describe the methods associated with the development, fielding, and analysis of the beneficiary survey in Appendix D. In summary, as with the analyses presented in Chapters 10 and 13, we use logistic regression for binary items and linear regression for all scale scores. Each analysis incorporated sampling weights, non-response weights, propensity score weights to balance demonstration and comparison groups, site-level clustering, and Huber-White adjusted standard errors. Logistic regression estimates are reported on their natural scales using an estimator developed by Puhani.

The remainder of this appendix, including Exhibits N.1 though N.28, presents the complete results of Medical Home Effect Analysis 1 first defining recognition as NCQA Level 3 (shown in exhibits as Level 3 Difference-in-Differences Estimates), and then as Level 3–equivalent (shown in exhibits as Level 3–Equivalent Difference-in-Differences Estimates).

Exhibit N.1. Loyalty

Survey Item	Total N Unweighted	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites
This provider has been the one:					
Caring for me for > five years	7,614	0.015	-0.004	0.019	0.026
Most helpful in guiding me about whether to have tests or treatments, or change my health habits	7,710	-0.021	-0.009	-0.008	0.038
In charge of following up on my health and medical conditions if I need help	7,705	-0.007	-0.007	-0.006	0.002
Most likely to help with most-important medical problems	7,664	-0.011	-0.010	0.002	0.026
Fulfilling my main provider roles[c]	7,973	-0.005	0.008	-0.007	0.056

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.
[c] Main provider roles include: the provider I usually see; the provider who has been most helpful; the provider most likely to help me with important medical problems; and the provider who is in charge of following up on medical conditions.

Exhibit N.2. Loyalty/Continuity Defined as Usual Provider Type

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3- Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
This provider is the one I usually see if I need a check-up, want advice about a health problem, or get sick or hurt?	7,325	0.010	0.013	0.008	0.029
Usually see another doctor or nurse in this office if I need a check-up, want advice about a health problem, or get sick or hurt	284	-0.115	**-0.115†**	**-0.111†**	-0.198
Have a personal doctor or nurse at your attributed clinic	1,833	0.004	-0.033	-0.030	-0.113
Do you have a personal doctor or a personal nurse somewhere else if not at this clinic?	921	-0.016	-0.007	-0.012	-0.037
In the last 12 months, at your personal provider's office, how often did you see your personal doctor or nurse (not another provider from the office)?					
Usually or always	1,008	0.036	0.025	0.055	0.046
Always	1,008	0.067	0.073	0.066	0.042

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.3. CG-CAHPS. Getting Timely Appointments, Care, and Information

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
In the last 12 months, did you phone this provider's office with a medical question after regular office hours?	6,363	-0.007	0.003	0.002	-0.034
Usually or always in the last 12 months, when you phoned this provider's office *during* regular office hours, get an answer to your medical question that same day	1,843	**0.080***	0.054	**0.083†**	**0.165***
Get an appointment as soon as you needed for check-up or *routine* care	4,092	0.000	-0.014	-0.021	-0.027
When you phoned this provider's office *after* regular office hours, get an answer to your medical question as soon as you needed	174	0.105	-0.006	-0.047	-0.003
When you phoned this provider's office for care you needed right away, get an appointment as soon as you needed	2,154	0.029	0.024	0.035	**0.115***
Saw this provider within 15 minutes of your appointment time	6,460	0.001	-0.008	-0.017	-0.059
Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS): Getting timely appointments, care and information scale[c]	6,749	0.500	0.134	-0.643	**-2.941†**

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling, design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition
status and time.
[c] This CG-CAHPS: *Getting timely appointments, care and information* scale includes (1) In the last 12 months, when you phoned this provider's office after regular office hours, how often did you get an answer to your medical question as soon as you needed? (2) In the last 12 months, when you made an appointment for a check-up or routine care with this provider, how often did you get an appointment as soon as you needed? (3) In the last 12 months, when you phoned this provider's office to get an appointment for care you needed right away, how often did you get an appointment as soon as you needed? (4) Wait time includes time spent in the waiting room and exam room. In the last 12 months, how often did you see this provider within 15 minutes of your appointment time? (5) In the last 12 months, when you phoned this provider's office during regular office hours, how often did you get an answer to your medical question that same day?

Exhibit N.4. PCMH CAHPS: Access to Care

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Usually had to wait four or more days for an appointment when you needed care right away?	2,107	-0.006	-0.010	0.004	0.009
Usually have to wait more than seven days for an appointment when you needed care right away	2,107	-0.005	-0.025	0.000	-0.007
Usually or always able to get the care you needed from this provider's office during evenings, weekends, or holidays	800	0.047	0.032	0.032	0.082
Never able to get the care you needed from this provider's office during evenings, weekends, or holidays	800	-0.025	-0.043	-0.058	-0.095
PCMH CAHPS: Access to care scale[c]	2,699	-2.369	-0.352	-2.224	-5.741

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.
[c] This *PCMH CAHPS: Access to care scale* includes (1) In the last 12 months, how many days did you usually have to wait for an appointment when you needed care right away?, (2) In the last 12 months, how often were you able to get the care you needed from this provider's office during evenings, weekends, or holidays?

Exhibit N.5. Access to Care with Information-Sharing Scale Components

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Did this provider's office give you information about what to do if you needed care during evenings, weekends, or holidays?	6,509	-0.005	0.004	0.018	0.003
In the last 12 months, did you get any reminders from this provider's office between visits?	6,434	-0.017	-0.006	-0.006	-0.032
PCMH CAHPS: Information about care and appointments scale[c]	6,817	-1.432	-0.294	0.139	-1.606

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *PCMH CAHPS: Information about care and appointments scale* includes (1) Did this provider's office give you information about what to do if you needed care during evenings, weekends, or holidays? (2) Some offices remind patients between visits about tests, treatment or appointments. In the last 12 months, did you get any reminders from this provider's office between visits?

Exhibit N.6. Access to Specialist

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
In the last 12 months, did you make any appointments to see a specialist?[c]	1,873	N/A	N/A	N/A	N/A-
Within the last 12 months, among those who tried to make an appointment to see a specialist:					
It was *usually or always* easy to geat an appointment	742	-0.032	-0.012	-0.046	-0.17
It was *always* easy to get an appointment	742	-0.066	-0.036	-0.136†	-0.006

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.
[c] This question was not asked in this way during the early baseline survey; the values presented include only data from the late beneficiary survey. The *n* presented in this cell represents the unweighted number of beneficiaries who responded to this question at follow-up.

Exhibit N.7. Evidence-Based Care Summary

Survey Item	Total N Unweighted (Baseline [a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Explicit Process Score [b]	7,432	1.311	**2.852***	2.189	1.726

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] p-values from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time. [b] Explicit Process Score (NEW measure of % of care measures received out of total eligible procedures), adjusted for number of measures that apply to each person.

Exhibit N.8. Evidence-Based Immunizations

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Immunizations received:					
Influenza vaccine this season	2,327	0.020	0.042	0.041	0.068
Pneumonia vaccine ever	2,234	0.016	**0.062***	**0.052†**	0.078
Shingles vaccine ever	2,273	0.001	-0.003	-0.022	-0.003
All three: influenza, pneumonia, shingles	2,360	0.017	0.000	-0.006	0.001
All three among aged 65-85 years	1,162	0.041	-0.003	-0.012	0.037
Pneumonia vaccine ever aged 65-85 years	1,067	0.000	0.022	0.013	0.006

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.9. Evidence-Based Aspirin Use and/or Discussion

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Use aspirin daily or every other day?	2,279	-0.038	-0.019	-0.026	-0.039
Doctor or health provider ever discussed with you the risks and benefits of aspirin to prevent heart attack or stroke	2,279	-0.003	-0.043	-0.024	-0.019
Use aspirin *or* discussed risks	2,291	0.006	-0.027	-0.001	-0.007
Use aspirin or discussed risks among those with heart disease, stroke or diabetes	1,672	-0.030	-0.044	-0.021	-0.053
Use aspirin *and* discussed risks	2,270	-0.053	-0.040	-0.060†	-0.053
Use aspirin and discussed risks among those with heart disease or stroke or diabetes	1,650	-0.010	-0.044	-0.031	0.009

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.10. Evidence-Based Colorectal Cancer (CRC) Screening

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Had blood stool within one year or colonoscopy within 10 years	1,201	0.017	0.015	0.048	0.153
Had blood stool within two years or colonoscopy within 10 years	1,201	-0.004	0.008	0.035	0.113
Had blood stool within one year, colonoscopy within 10 years, or sigmoidoscopy within 5 years	1,204	0.020	0.024	0.049	0.151

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.11. Evidence-Based Smoking Cessation

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Provider *ever* advised you to quit smoking	374	0.025	0.059	0.025	0.099
Provider *usually or always* advised you to quit smoking	374	0.109	0.038	-0.006	-0.237
Provider *always* advised you to quit smoking	374	0.065	0.084	0.019	0.049
Provider *ever* recommended or discussed medication to assist you with quitting smoking	371	0.000	-0.045	-0.079	-0.001
Provider *usually or always* recommended or discussed medication to assist you with quitting smoking	371	0.143	**0.159†**	0.040	0.065
Provider *always* recommended or discussed medication to assist you with quitting smoking	371	0.095	0.069	0.029	0.077
Provider *ever* discussed or provided methods and strategies other than medication to assist you with quitting smoking	371	0.085	0.024	-0.008	-0.099
Provider *usually or always* discussed or provided methods and strategies other than medication to assist you with quitting smoking	371	0.003	-0.037	-0.062	-0.198
Provider *always* discussed or provided methods and strategies other than medication to assist you with quitting smoking	371	0.083	0.057	0.049	0.165
Received *3 of 3* smoking cessation interventions	375	0.103	0.040	0.044	-0.163

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.12. Evidence-Based Weight Loss, Exercise, and Eating Right

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Within the last 12 months, the provider's office discussed with me:					
Weight loss	1,643	-0.003	0.022	0.021	-0.065
Exercising regularly	1,663	0.042	0.062	0.008	0.104
Eating right	1,654	0.005	-0.040	-0.018	-0.039
Discussed *3 of 3* weight loss interventions	1,724	-0.026	-0.032	-0.007	-0.015

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.13. Evidence-Based Mental Health: CAHPS PCMH: Providers Pay Attention to Your Mental or Emotional Health

Survey Item	Total N Unweighted (Baseline)a	Level 3 Difference-in- Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Within the last 12 months, the provider's office:					
Asked me if there was a period of time when I felt sad, empty, or depressed	6,486	0.012	0.029	0.011	-0.001
Talked about things in my life that worry me or cause me stress	6,460	0.005	0.011	0.018	0.032
Talked about a personal or family substance abuse, mental health, or emotional concern?	6,449	0.021	0.014	0.039	0.008
Within the last 12 months, among patients with moderate or severe mental health concerns, the provider's office:					
Asked if there was a period of time when patient felt sad, empty, or depressed?	919	-0.031	-0.019	-0.002	-0.055
Talked about things in life that worry patient or cause stress	918	-0.055	-0.070	0.000	-0.013
Talked about a personal or family substance abuse, mental health, or emotional concern?	913	0.076	0.038	**0.115***	0.052
Number of mental health items discussed:					
For full cohort—*3 of 3* mental health items discussed	6,564	0.005	0.000	0.005	-0.014
Among those with moderate or severe mental health problems[d]:					
3 of 3	926	0.002	-0.013	0.069	0.014
2 of 3	926	0.007	0.014	-0.002	0.053
1 of 3	926	-0.052	-0.040	-0.073	-0.146
0 out of 3	926	0.050	0.039	0.014	0.093
CAHPS PCMH: Providers pay attention to your mental or emotional health scale[c:]					
For full cohort	6,564	0.865	1.171	1.522	0.761

CAHPS PCMH: Providers pay attention to your mental or emotional health scale[c]:					
Among those with moderate or severe mental health problems[d]	1,588	2.684	2.121	5.107	5.759

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
[†] p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition
status and time.
[c] This *CAHPS PCMH: Providers pay attention to your mental or emotional health scale* includes (1) In the last 12 months, did anyone in this provider's office ask you if there was a period of time when you felt sad, empty, or depressed?
(2) In the last 12 months, did you and anyone in this provider's office talk about things in your life that worry you or cause you stress? (3) In the last 12 months, did you and anyone in this provider's office talk about a personal problem, family problem, alcohol use, drug use, or a mental or emotional illness?
[d] The Four-Item Patient Health Questionnaire total score ranges from 0 to 12, with categories of psychological distress being categorized as: none (0-2), mild (3-5), moderate (6-8), severe (9-12) (Kroenke, 2009).

Exhibit N.14. Beneficiary Ratings of Providers

Survey Item	Total N Unweighted (Baseline) [a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Quality ratings of primary care providers:					
Rated specialist >=7 on 10 point scale	6,396	-0.005	-0.001	0.008	-0.015
Rates specialist 10 on a 10 point scale	6,396	-0.028	-0.035	**-0.054***	-0.046
Rated specialist (0-10)	6,408	-0.739	-0.756	-1.193	-1.598
Quality ratings of specialty providers:					
Rated specialist >=7 on 10 point scale	742	-0.051	-0.044	-0.032	-0.115
Rates specialist 10 on a 10 point scale	742	-0.111	-0.114	**-0.176***	**-0.257***
Rated specialist (0-10)	753	-1.875	-0.782	0.296	-3.457

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.15. Beneficiary Ratings of Clerks and Receptionists

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Clerks and receptionists at this provider's office:					
Usually or always treated you with courtesy and respect	6,598	-0.002	-0.011	-0.002	0.012
Always treated you with courtesy and respect	6,598	-0.029	**-0.039***	**-0.037†**	-0.043
Were *usually or always* as helpful as you thought they should be	6,561	0.022	0.001	0.020	0.040
Were *always* as helpful as you thought they should be	6,561	0.016	-0.006	0.013	-0.006
CG CAHPS: Helpful, courteous, and respectful office staff scale[c]	6,692	0.482	-0.519	0.426	0.530

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *CG CAHPS: Helpful, courteous and respectful office staff scale* includes (1) In the last 12 months, how often were clerks and receptionists at this provider's office as helpful as you thought they should be? (2) In the last 12 months, how often did clerks and receptionists at this provider's office treat you with courtesy and respect?

Exhibit N.16. Effective Participation in Decisionmaking About Medications: CAHPS PCMH: Providers Discuss Medication Decisions

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
When you talked about starting or stopping a prescription medicine, this provider asked you what you thought was best for you	2,364	-0.030	-0.015	-0.027	0.011
Provider talked about starting or stopping a prescription medicine	6,222	-0.015	0.003	-0.003	-0.001
Provider *usually or always* talked about the reasons you might want to take a medicine	2,382	**0.046****	**0.032†**	**0.045***	0.038
Provider *always* talked about the reasons you might want to take a medicine	2,382	-0.058	-0.035	-0.049	0.036
Provider *usually or always* talked about the reasons you might not want to take a medicine?	2,362	**0.074***	0.042	**0.074†**	0.046
Provider *always* talked about the reasons you might not want to take a medicine	2,362	0.023	-0.001	0.044	0.112
Discussed 3 of 3 medication decisions	2,362	0.034	0.044	0.043	0.071
CAHPS PCMH: Providers discuss medication decisions scale[c]	2,456	1.056	0.630	1.819	4.544

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *CAHPS PCMH: Providers discuss medication decisions scale* includes (1) When you talked about starting or stopping a prescription medicine, how much did this provider talk about the reasons you might want to take a medicine? (2) When you talked about starting or stopping a prescription medicine, how much did this provider talk about the reasons you might not want to take a medicine? (3) When you talked about starting or stopping a prescription medicine, did this provider ask you what you thought was best for you?

Exhibit N.17. CAHPS Health Literacy

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Provider gave instructions about what to do to take care of illness or health condition	3,665	-0.026	-0.010	-0.009	0.022
Provider *usually or always* explained what to do if this illness or health condition got worse or came back	3,726	0.005	-0.015	-0.007	0.064
Provider *always* explained what to do if this illness or health condition got worse or came back	3,726	0.046	0.036	0.009	0.070
Provider *usually or always* asked how I was going to follow these instructions	3,338	0.031	-0.003	0.003	0.014
Provider *always* asked how I was going to follow these instructions	3,338	-0.039	-0.034	-0.022	-0.006
Instructions were *usually or always* easy to understand	3,374	0.007	-0.014	0.004	0.018
Instructions were *always* easy to understand	3,374	-0.009	-0.031	-0.031	-0.062
Provider *usually or always* asked you whether I would have any problems doing what I need to do to take care of this illness or health condition	3,308	0.040	-0.014	0.021	0.032
Provider always asked whether I would have any problems doing what I need to do to take care of this illness or health condition	3,308	0.015	-0.016	0.017	0.016
CAHPS health literacy: disease self-management scale[c]	3,820	0.020	-0.997	-0.418	2.516

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *CAHPS health literacy: disease self-management scale* includes (1) In the last 12 months, how often did this provider explain what to do if this illness or health condition got worse or came back? (2) In the last 12 months, how often did this provider ask you to describe how you were going to follow these instructions? (3) In the last 12 months, how often were these instructions easy to understand? (4) Sometimes providers give instructions that are hard to follow. In the last 12 months, how often did this provider ask you whether you would have any problems doing what you need to do to take care of this illness or health condition?

Exhibit N.18. CAHPS PCMH: Providers Support You in Taking Care of Your Own Health

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Did anyone in this provider's office talk with you about specific goals for your health?	6,400	0.017	0.009	0.024	**0.122***
Did anyone in this provider's office ask you if there are things that make it hard for you to take care of your health?	6,367	**0.042†**	0.035	**0.056***	0.022
CAHPS PCMH: Providers support you in taking care of your own health scale[c]	6,515	2.327	1.852	3.050	5.047

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).
[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.
[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.
[c] This *CAHPS PCMH: Providers support you in taking care of your own health scale* includes (1) In the last 12 months, did anyone in this provider's office talk with you about specific goals for your health? (2) In the last 12 months, did anyone in this provider's office ask you if there are things that make it hard for you to take care of your health?

Exhibit N.19. CG-CAHPS: How Well Providers Communicate with Patients

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Provider talked with you about any health questions or concerns	6,409	0.006	0.007	0.002	-0.002
Provider *usually or always* showed respect for what you had to say?	6,621	**-0.037****	**-0.028***	-0.022	0.000
Provider *always* showed respect for what you had to say	6,621	-0.013	-0.019	-0.003	-0.028
Provider *usually or always* spent enough time with you	6,411	0.007	0.005	0.012	0.033
Provider *always* spent enough time with you	6,411	0.002	-0.024	0.006	0.009
Provider *usually or always* listened carefully to you	6,591	-0.011	0.003	0.003	0.006
Provider *always* listened carefully to you	6,591	0.000	-0.014	0.002	-0.031
Provider *usually or always* gave you easy to understand information about these health questions or concerns	4,273	-0.010	-0.020	-0.004	**0.051†**
Provider *always* gave you easy to understand information about these health questions or concerns	4,273	-0.018	-0.031	-0.012	-0.043
Provider *usually or always* seemed to know the important information about your medical history	6,580	-0.012	-0.005	0.000	-0.004
Provider *always* seemed to know the important information about your medical history	6,580	0.003	-0.014	0.000	-0.004
Provider *usually or always* explained things in a way that was easy to understand	6,559	**-0.026†**	**-0.028***	**-0.033***	-0.008
Provider *always* explained things in a way that was easy to understand	6,559	-0.007	-0.016	-0.014	-0.006
CG-CAHPS: How well providers communicate with patients scale[c]	6,828	-0.882	-1.181	-0.544	-0.569

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *CG-CAHPS: How well providers communicate with patients scale* includes (1) In the last 12 months, how often did

this provider give you easy to understand information about these health questions or concerns? (2) In the last 12 months, how often did this provider show respect for what you had to say? (3) In the last 12 months, how often did this provider explain things in a way that was easy to understand? (4) In the last 12 months, how often did this provider seem to know the important information about your medical history? (5) In the last 12 months, how often did this provider listen carefully to you? (6) In the last 12 months, how often did this provider spend enough time with you?

Exhibit N.20. Awareness of Cost of Care: Cost of Seeing a Specialist

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Did you and this provider talk about the cost of seeing a specialist?	1,012	-0.042	0.003	-0.004	-0.040
Were you ever worried or concerned about the cost of seeing a specialist?	1,011	0.032	**0.077†**	**0.101†**	0.027
CAHPS: Cost of seeing a specialist scale[c]	1,032	-0.744	3.496	3.603	-1.145

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *CAHPS: Cost of seeing a specialist scale* includes (1) In the last 12 months, did you and this provider talk about the cost of seeing a specialist? (2) In the last 12 months, were you ever worried or concerned about the cost of seeing a specialist?

Exhibit N.21. Provider Follow-up on Test Results

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
When this provider ordered a blood test, x-ray, or other test for you, someone from this provider's office *usually or always* follow up to give you those results	4,796	0.005	0.001	0.022	**0.069***
When this provider ordered a blood test, x-ray, or other test for you, someone from this provider's office *always* follow up to give you those results	4,796	**0.047†**	**0.042†**	0.038	0.082
CG-CAHPS: Follow-up on test results scale [c]	4,796	1.570	1.652	2.087	**7.535***

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups
with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This scale includes In the last 12 months, when this provider ordered a blood test, x-ray, or other test for you, how often did someone from this provider's office follow up to give you those results.

Exhibit N.22. Coordination of Care Around Hospitalization

Survey Item	Total N Unweighted (Baseline) [a]	Level 3 Difference- in-Differences Estimate [b]	Level 3-Equivalent Difference- in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Compariso	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison
Did you see a doctor, nurse, or other person from this provider's office during your most recent hospital stay?					
[Person level][c]	248	-0.046	-0.074	-0.018	-0.103
[Cohort level][c]	615	0.006	-0.049	0.055	-0.074
After your most recent hospital stay, did this provider seem to know the important information about this hospital stay?					
[Person level][c]	242	-0.148	-0.128	-0.043	-0.033
[Cohort level][c]	612	-0.008	-0.085	-0.024	0.080
Within the two weeks after your most recent hospital stay, did you see a doctor, nurse, or other person in this provider's office?					
[Person level][c]	249	-0.075	0.062	-0.139	-0.215
[Cohort level][c]	619	0.107	0.027	0.039	-0.003
Within the two weeks after your most recent hospital stay, did you have a telephone call with a doctor, nurse, or other person in this provider's office?					
[Person level][c]	248	-0.110	-0.077	-0.145	-0.187
[Cohort level][c]	613	-0.068	-0.039	-0.049	**-0.224†**
Person level analysis[c]					
After hospitalization, received visit OR call from this provider	247	0.027	0.110	-0.010	-0.098
After hospitalization, received visit AND call from this provider	113	**-0.200***	-0.134	**-0.188†**	-0.159
After hospitalization, received call ONLY from this provider	243	0.070	0.090	0.030	-0.150
After hospitalization, received visit OR call from this provider	243	**0.186***	0.097	0.173	**0.159*****
Cohort level analysis[c]					
After hospitalization, received visit OR call from this provider	615	**0.153***	0.071	0.110	0.047
After hospitalization, received visit AND call from this provider	410	0.134	0.045	0.078	-0.004
After hospitalization, received call ONLY from this provider	607	0.107	0.031	0.077	0.082
After hospitalization, received visit OR call from this provider	607	**0.084†**	0.034	0.094	0.015

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted 'cohort-level' analyses, including those with a valid response at either baseline or follow-up.

Exhibit N.23. Coordination So Attributed Provider Knows About Specialist: CAHPS PCMH: Attention to Care from Other Providers

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference- in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Provider named in Question 1 *usually or always* seemed informed and up-to-date about the care you got from specialists	2,848	-0.019	-0.024	-0.029	-0.015
Provider named in Question 1 *always* seemed informed and up-to-date about the care you got from specialists	2,848	-0.046	-0.006	-0.036	-0.073
Did you and anyone in this provider's office talk at each visit about all the prescription medicines you were taking?	5,646	0.002	0.005	0.009	-0.014
PCMH CAHPS Attention to care from other providers scale[c]	5,913	-0.628	-0.552	-0.112	-3.402

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] This *PCMH CAHPS Attention to care from other providers scale* includes (1) In the last 12 months, how often did the provider named in Question 1 seem informed and up-to-date about the care you got from specialists? (2) In the last 12 months, did you and anyone in this provider's office talk at each visit about all the prescription medicines you were taking?

Exhibit N.24. Coordination So Specialist Provider Knows Important Medical History

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Specialists you saw *usually or always* seemed to know the important information about your medical history	761	0.033	0.029	0.065	-0.012
Specialists you saw *always* seemed to know the important information about your medical history?	761	-0.071	-0.079	-0.029	-0.091

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.
[a] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.25. Transportation Needs Met

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference- in-Differences Estimate[b]	Level 3-Equivalent Difference- in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
In the last 3 months, did you need help with transportation to visits at your provider's office?					
[Person level][c]	1,582	0.013	-0.005	0.014	**0.116***
[Cohort level][c]	1,960	-0.006	-0.017	-0.030	0.040
Among the 10% of respondents who needed help with transportation, this provider's office helped with transportation					
[Person level][c]	95	0.092	**0.109†**	0.095	0.004
[Cohort level][c]	264	0.048	0.037	0.079	-0.009

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted 'cohort-level' analyses, including those with a valid response at either baseline or follow-up.

Exhibit N.26. Coordination with Home Health: PPIC: Access to Home Services

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Did you need home health services to manage a health condition?					
[Person level][c]	1,635	0.053	0.050	**0.065†**	0.011
[Cohort level][c]	1,975	0.028	0.037	0.045	0.008
Did anyone in this provider's office ask if you needed more services at home to manage your health conditions?					
[Person level][c]	1,633	0.017	-0.009	0.012	-0.101
[Cohort level][c]	1,979	0.005	-0.013	-0.003	-0.078
Did anyone in this provider's office help you get the services you need at home to manage your health condition?					
[Person level][c]	149	-0.253	-0.232	-0.161	-0.100
[Cohort level][c]	359	-0.085	-0.003	0.047	-0.156
PPIC: Access to home services scale[d]	1,638	-0.815	-2.102	-0.980	-8.531

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

[c] Person-level analyses include only those with valid responses at both baseline and follow-up. Because these restrict the sample size and interpretation of the results, for some variables we also conducted "cohort-level" analyses, including those with a valid response at either baseline or follow-up.

[d] This scale includes (1) In the last 12 months, did anyone in this provider's office ask if you needed more services at home to manage your health conditions? (2) In the last 12 months, did anyone in this provider's office help you get the services you need at home to manage your health condition?

Exhibit N.27. Cultural Competence: Treated Unfairly Because of Race, Ethnicity or Language Skills

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate[b]	Level 3-Equivalent Difference-in-Differences Estimate[b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
N*ever* treated unfairly because you did not speak English very well?	856	**0.098†**	**0.128****	0.088	0.106
Usually or always treated unfairly at this provider's office because of your race or ethnicity	6,419	0.001	-0.003	0.013	0.020
Never or sometimes treated unfairly at this provider's office because of your race or ethnicity	6,419	-0.001	0.003	-0.013	-0.020
Always treated unfairly at this provider's office because of your race or ethnicity?	6,419	-0.004	-0.005	0.000	0.014
Ever treated unfairly because of race OR no English	6,419	0.002	-0.006	0.013	0.014
Unfair treatment because of race AND no English	8,697	0.003	0.000	**0.005****	**0.028****

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).

† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Bold indicates statistically significant results (p<0.10).

[a] Sample size for each survey question (i.e., for each row in the table) varies based on survey rotation. The beneficiary survey had four versions. Across these versions, 75 percent of items were considered core items and were repeated across each survey version. However, the noncore questions varied so only 25 percent of the sample had the option to complete the version-specific questions. Additionally, row-specific sample sizes vary because of clinically detailed skip patterns that varied the cohort for survey questions. Finally, these analyses include survey responses from beneficiaries who report data at two points in time.

[b] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.

Exhibit N.28. SF–12 Physical and Mental Health Scores

Survey Item	Total N Unweighted (Baseline)[a]	Level 3 Difference-in-Differences Estimate [b]	Level 3-Equivalent Difference-in-Differences Estimate [b]	Medical Home Effect #2, Level 3 vs. No Recognition (Demo and Comparison Sites)	Medical Home Effect #3, Level 3 vs. No Recognition (Comparison Sites only)
Short Form (SF)–12 Mental Health [b]	9,616	-0.287	-0.352	-0.460	0.835
SF–12 Physical Health [b]	9,616	0.288	-0.229	0.194	-0.200

SOURCE: RAND analysis of the RAND Medicare Beneficiary Survey Data (2014–2016).
† p<0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.
[a] P-values vary from multivariable logistic or linear regression adjusting for baseline beneficiary- and site-level covariates. Analyses are weighted with survey weights (sampling design and non-response) and propensity score weights to balance the groups with and without recognition. Estimate presented is the interaction between recognition status and time.
[b] For the Short Form (SF) SF–12 Physical Component Score (PCS) and Mental Component Score (MCS), missing data were imputed via multiple imputation (n = 5). All SF–12 analyses account for imputation.

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