

**Maryland Health Care Commission**

**Evaluation of the Maryland Multi-Payor Patient  
Centered Medical Home Program**

**First Annual Report**

***Draft***

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## EXECUTIVE SUMMARY

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The Maryland Health Care Commission (MHCC), an agency of the State of Maryland, launched the Maryland Multi-Payer Patient Centered Medical Home Program (MMPP) on April 14, 2011, as a three-year pilot in response to a legislative mandate enacted in 2010. The MHCC selected 52 practices to participate in the demonstration and created the Maryland Learning Collaborative (MLC) to provide education, technical assistance, and customized coaching to help practices transform into patient centered medical homes (PCMHs).

The goals of the MMPP are to improve the health and satisfaction of patients and to slow the growth of health care costs in Maryland, while supporting the satisfaction and financial viability of primary care providers in the state. The MHCC contracted with IMPAQ to conduct an assessment of whether the MMPP achieves these goals and also reduces health disparities. In addition, the evaluation assesses the practice transformation process and the benefits received by practices from shared savings.

To achieve these goals, the MHCC defined the following overarching research questions:

- Will the PCMH program improve access to, and delivery of, health care?
- Does the PCMH program improve the quality of care, particularly with regard to prevention and chronic care management?
- Does the PCMH program lower the cost of care through reduced utilization?
- Does the PCMH program reduce health disparities?
- Are patients more satisfied in a PCMH?
- Are physicians and other clinical staff more satisfied in a PCMH?

IMPAQ's evaluation is both quantitative and qualitative in nature and consists of several components, including interviews with participating practices, administrative data analysis, and patient and provider surveys. To examine the research questions, the evaluation consists of three parts. IMPAQ is assessing the following areas: (1) access, quality, utilization, disparities, and cost outcomes, using administrative data; (2) implementation and practice transformation, using interviews, site visits, and administrative data; and (3) satisfaction among patients and providers, using surveys. The administrative data and provider survey analyses use two comparison groups: one group that appeared to be largely unexposed to the PCMH concept and the other composed of practices participating in the CareFirst BlueCross BlueShield PCMH program.

This report provides interim analysis results about the progress of MMPP implementation. In particular, it provides baseline information on the transformation of sites and on patient and provider satisfaction with the program and also compares the 2011 analysis measures to the baseline measures (2010). Since primary data collection occurs at the beginning and end of the program, this report provides only baseline analyses for transformation and program

satisfaction. However, the program outcome measures of quality, utilization, and cost of care are constructed from the administrative data, which are supplied annually. Thus, some early trends of the results of MMPP implementation could be analyzed.

While the analysis period covered by this report is early in the life of the MMPP, the analysis suggests that MMPP will achieve some of its goals. The findings from the first year are outlined below.

- Program Implementation
  - Practices that operated on a smaller scale reported more success in implementing transformation elements and involving providers and staff in transformation processes. This was also seen in the quantitative analysis of recognition levels.
  - The affiliation with a hospital positively affected practices' ability to transform, particularly in terms of staff resources and the ability to coordinate care.
  - Structured PCMH oversight teams working in conjunction with PCMH champions served as an important element of success.
- Patient Satisfaction
  - Patients are generally pleased with the care they received from MMPP participating providers.
  - Although there were few statistically significant differences, generally the more vulnerable populations (African-American, Medicaid, and patients with chronic conditions) rated their provider or practice more highly.
  - For patients with chronic conditions, providers pay attention to their mental health, discuss medication decisions with them, how well providers communicate with patients, and the overall rating of the provider.
- Provider Satisfaction
  - MMPP providers expressed greater satisfaction in their current job than the comparison group of PCMH providers.
  - At MMPP practices, medical assistants and administrative staff are more likely to take responsibility for some duties that clinicians perform in the comparison practices.
  - Providers in the MMPP group, however, were more likely to feel that their compensation plans rewarded hard workers and that the business office and administration are valued by the practice.
- Program Outcomes

MMPP practices/patients experienced:

  - Larger decrease in the proportion of young adults with a hospital admission due to asthma

- A relative increase in the annual rates of well-care visits among adolescents
- An increase in the proportion of patients with one or more office visits to the attributed primary care physician
- A decrease in the mean number of specialist office visits among patients with such visits
- A relative decrease in total outpatient payments
- A relative decrease in total other payments (excluding inpatient, outpatient, emergency department, office visits, home health, nursing home, hospice, radiology, and lab).

In addition, over time the patients who maintained the PCMH affiliation in both years had higher gains in the program outcome where the MMPP had an impact.

# 1. INTRODUCTION

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## 1.1 Background

The patient-centered medical home (PCMH) has been promoted as a potential solution to many of the problems facing the American health care system (e.g., fast-rising costs, medical errors/declining quality of care, and lack of coordination of care). Early evaluations of PCMHs in a number of states show improvements in quality of care, disease prevention, chronic disease management, error rates, and patient satisfaction.<sup>1,2,3</sup>

The Maryland Health Care Commission (MHCC), an agency within the Maryland Department of Health and Mental Hygiene, launched the Maryland Multi-Payer Patient Centered Medical Home Program (MMPP) on April 14, 2011 as a three-year pilot in response to a legislative mandate enacted in 2010. The MHCC selected 52 practices to participate in the demonstration and created the Maryland Learning Collaborative (MLC) to provide education, technical assistance, and customized coaching to help practices transform into PCMHs. The MHCC has defined the PCMH as follows:

The PCMH is a model of practice in which a team of health professionals, guided by a primary care provider, provides continuous, comprehensive, and coordinated care in a culturally and linguistically sensitive manner to patients throughout their lives. The PCMH provides for all of a patient's health care needs, or collaborates with other qualified professionals to meet those needs. Participating practices will provide patient centered care through:

- Evidence-based medicine;
- Expanded access and communication;
- Care coordination and integration; and
- Care quality and safety.<sup>4</sup>

The 52 MMPP practices have over 300 providers—family practice and internal medicine physicians, pediatricians, geriatricians, and nurse practitioners.<sup>5</sup> The participating practices are located throughout the state, in urban, rural, and suburban areas. They encompass a variety of

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<sup>1</sup> Jackson, G.L., Powers, B.J., Chatterjee, R., et al. (2013). The patient-centered medical home: a systematic review. *Annals of Internal Medicine*, 158(3): 169-178.

<sup>2</sup> Hoff, T., Weller, W., DePuccio, M. (2012). The patient-centered medical home: a review of recent research. *Medical Care Research and Review*, 69(6): 619-44.

<sup>3</sup> Fifield, J., Forrest, D.D., Burlison, J.A., Martin-Peele, M., & Gillespie, W. (2013). Quality and efficiency in small practices transitioning to patient centered medical homes: a randomized trial. *Journal of General Internal Medicine*, 28(6): 778-86. epub March 2, 2013.

<sup>4</sup> <http://mhcc.maryland.gov/pcmh/>.

<sup>5</sup> The MHCC selected 53 practice sites to participate in the pilot. One practice site initially in the demonstration (Crossroads Internal Medicine) decided to cease participation in spring 2012.

practice settings, including privately owned practices, hospital-owned practices, and Federally Qualified Health Centers (FQHCs).

The goals of the MMPP are to improve the health and satisfaction of patients and to slow the growth of health care costs in Maryland, while supporting the satisfaction and financial viability of primary care providers in the state. The MHCC contracted with IMPAQ to conduct an assessment of whether the MMPP achieves these goals and also reduces health disparities. In addition, the evaluation assesses the practice transformation process and the benefits received by practices from shared savings.

To explore these goals, the MHCC defined the following overarching research questions:

- Will the PCMH program improve access to, and delivery of, health care?
- Does the PCMH program improve the quality of care, particularly with regard to prevention and chronic care management?
- Does the PCMH program lower the cost of care through reduced utilization?
- Does the PCMH program reduce health disparities?
- Are patients more satisfied in a PCMH?
- Are physicians and other clinical staff more satisfied in a PCMH?

The evaluation is both quantitative and qualitative in nature and consists of several components, including interviews with participating practices, administrative data analysis, and patient and provider surveys. To examine these overarching questions, the evaluation consists of three parts. It assesses (1) access, quality, utilization, disparities, and cost outcomes, using administrative data; (2) implementation and practice transformation, using interviews, site visits, and administrative data; and (3) satisfaction among patients and providers, using surveys. The administrative data and provider survey analyses uses two comparison groups: one group that appeared to be largely unexposed to the PCMH concept and the other composed of practices participating in the CareFirst BlueCross BlueShield PCMH program.

## **1.2 Purpose of the Report**

This report provides interim results about the progress of MMPP implementation. In particular, it provides baseline information on the transformation of sites and on patient and provider satisfaction with the program and also compares the 2011 analysis measures to the baseline measures (2010). Since primary data collection occurs at the beginning and end of the program, this report provides analyses only of the baseline data for transformation and program satisfaction. However, the program outcome measures of quality, utilization, and cost of care are constructed from the administrative data, which are supplied annually. The use of administrative data allowed for some analysis of early trends resulting from MMPP implementation.

In this initial assessment of the MMPP, IMPAQ used a pre/post, mixed methods evaluation design. First, to assess the process and the costs of practice transformation, IMPAQ conducted site visits between September 2012 and February 2013 to a sample of nine practices, which included interviews with providers and staff. These site visits allowed us to capture earlier implementation progress and issues. IMPAQ qualitatively analyzed the data from the interviews and site visit notes. In addition, using data from the National Committee for Quality Assurance (NCQA) recognition database, IMPAQ monitored the implementation of the NCQA PCMH model quantitatively. These data allowed us to analyze changes in NCQA recognition levels between 2010 and 2012. The results of the implementation analyses are presented in Chapter 2.

Chapter 3 reports the initial analysis of satisfaction with the MMPP. IMPAQ collected and analyzed patient and provider survey data to examine satisfaction with the MMPP and with the care provided. The survey of MMPP patients targeted a purposeful sample of patients of the 52 MMPP practices. The survey of commercially insured patients was administered from January through February 2013, through IMPAQ's Survey Center. Similarly, the survey of Medicaid patients was conducted between July and November 2013.<sup>6</sup> All identified providers of MMPP practices were invited to participate in the web-based provider survey. IMPAQ also invited providers from a set of matched nonparticipating practices to participate in the provider survey in order to formulate comparison groups. While the current report focuses only on early satisfaction with the MMPP, IMPAQ will conduct a second wave of both satisfaction surveys after the conclusion of the MMPP, which will allow us to assess changes in satisfaction as the program matured.

Finally, for the 44 measures based on claims data, IMPAQ generated annual measures of quality (16), utilization (19), and costs (9) for MMPP practices and a group of matched nonparticipating practices (see Appendix A for a further description of the matching process). These measures were calculated for the baseline year (2010) and the first year of the MMPP (2011). Thus, IMPAQ was able to use a difference-in-differences (DID) approach to estimate the impact of the MMPP on quality, utilization, and cost during the program's first year. Chapter 4 reports the results of these analyses.

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<sup>6</sup> The difference in collection periods was due to a delay in the receipt of contact information for Medicaid patients.

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## 2. PRACTICE TRANSFORMATION

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A critical aspect of the effectiveness of the MMPP is the transformation of practices to the PCMH model. While the Maryland Community Health Resources Commission and the MLC will assist with resources and strategies for transformation, consideration of future expansion of PCMH will benefit from an analysis of the transformation experience. The evaluation can provide lessons learned and identify keys to success. The evaluation is organized into two parts: (1) a qualitative process evaluation of the transformation and its outcomes, and (2) a quantitative analysis of the achievement of recognition levels.

### 2.1 Site Visits

The evaluation team conducted site visits with nine MMPP practices to explore the process of transformation, provider and staff experiences with transformation, and the effect of the program on quality and the cost of care. The findings provide insight into the types of practices that are most likely to successfully implement PCMH, the kinds of outstanding results that can be shared for possible replication, and the aspects of PCMH that have the most impact on improved quality and reduced costs.

#### 2.1.1 Methodology

The MMPP evaluation focuses on whether PCMHs result in cost savings for participating practices while increasing quality and coordination of care, reducing health disparities, increasing patient satisfaction, and increasing work satisfaction for primary care clinicians and their staff. The evaluation methodology uses a mixed methods approach, consisting of site visits at participating practices, administrative data analyses, and patient and provider surveys. The qualitative data are derived from on-site interviews with staff who are implementing PCMH transformation. The interviews provide information about infrastructure changes, and participants' perspectives, experiences, and satisfaction with the transformation process and the overall outcomes of transformation.

The qualitative evaluation will be based on two rounds of site visits: one in the early stages of transformation, which is reported here, and another in the later stages. The specific issues covered in both rounds of site visits reflect the interests of the MHCC. The evaluation seeks to answer four key questions about PCMH transformation:

1. Which types of practices are most likely to successfully implement a PCMH?
2. Can increased provider satisfaction and positive results from the financial cost/benefit analysis be used to encourage other primary care providers to adopt PCMH?
3. What types of outstanding results achieved by specific MMPP practices throughout the course of the pilot can be provided and shared for possible replication in other practices through the program's learning collaborative and other methods?

4. Which aspects of PCMH have the most impact on improved quality and reduced costs?

While the interviews in both rounds of site visits will address similar topics, the first round centered on understanding each practice’s unique approaches to and experiences with transformation. The second round is intended to capture the practices’ experiences with the more mature program and will focus more heavily on the lessons learned from the implementation and transformation processes. This analysis will reveal how the sites evolved and which strategies continued over the duration of the transformation process.

### Interview Guides

In preparation for the first round of site visits, a multidisciplinary team was formed to develop questions to assess the important aspects of PCMH transformation. The team included a physician, a nurse practitioner, and several qualitative researchers with expertise in quality improvement innovation. This group convened over a period of several months and developed formal interview guides, one for each of the four groups affected by transformation: PCMH leads/care managers, practice managers, physicians, and staff. Although the overarching research foci were the same, the evaluation team tailored the questions to fit each audience, in order to better understand their different perspectives. The guides included key questions and potential probing questions for five important themes: (1) the transformation process, (2) staff perceptions and compliance with transformation, (3) health outcomes and disparities, (4) care coordination, and (5) financial costs and savings. Illustrative questions are shown in Exhibit 1. The complete interview guides can be found in Appendix B.

**Exhibit 1: Selected Research Domains and Illustrative Questions**

Research Domain	Illustrative Question
Transformation process	What requirements have been the easiest to achieve? Most difficult?
	How have your practice characteristics positively or negatively influenced the practice’s transformation?
	Which efforts or strategies were successful in helping the practice to transform?
Staff perceptions and compliance	How do you ensure staff/providers comply with the new transformation activities?
	Have you observed changes in work satisfaction among providers/staff?
	How has the practice environment or culture changed since the transformation?
Health outcomes and disparities	How do you monitor outcomes and achievements of transforming?
	Have you observed changes in health outcomes? In which ways?
	Do you expect that the PCMH program will have an impact on health disparities?
Care coordination	Tell me about the patient care coordination process. How has it changed since transforming?

Research Domain	Illustrative Question
	Have providers' relationships with specialists changed at all as a result of the project?
	Tell me about how the practice involves patients and their families? How has this changed since transforming?
Financial costs and savings	Have there been cost savings? In which areas?
	How have financial costs hindered transformation, if at all? What aspects have been affected?
	What role did fixed transformation payments and shared savings play in transformation?

## Site Selection

The evaluation team sampled practices across geographic areas, settings, and practice types. IMPAQ targeted three practices in three geographical settings—urban, rural, and suburban. In urban practices, one was an FQHC, one was privately owned, and one was hospital owned. This methodology was applied to the rural and suburban practices as well. However, since there are only two FQHCs and no participating suburban FQHCs in the MMPP, IMPAQ selected one privately owned suburban practice with a high proportion of Medicaid patients, another suburban private practice, and one hospital-owned practice. Within these locations, IMPAQ sought to select a mix of practices to include family and internal medicine, pediatrics, and geriatrics. While five pediatric practices are participating in the program, two were selected for site visits. To represent the high concentration of family medicine practices in Maryland, this type of practice constituted the majority of practices in the qualitative data sample.

Nine sites were originally selected; however, two sites declined to participate in the site visit evaluation. The site contact indicated that their staff did not have adequate time or resources to participate in one-hour interviews. Based on site characteristics, IMPAQ selected two alternative sites and made several attempts to contact them. When there was no response from the two alternative sites, two other sites were selected.

Exhibit 2 provides a description of the nine sites that participated in the qualitative study. The sites were selected to have varied characteristics in order to gain a comprehensive picture of the transformation process. In the exhibit, “attribution” refers to the percentage of patients at the practice who are included in the PCMH model of care.

### Exhibit 2: Selected Practices\*

Practice	Practice Location	Practice Setting	Selected Characteristics	Attribution Percentage	NCQA Recognition
1	Rural	Private	Family; Internal; High Volume; High Medicare; Nurse Practitioner	26%	Level II
2	Suburban	Hospital-owned	Geriatric; High Medicare	30%	Level I
3	Suburban	Private	Pediatric; High Volume	19%	Level I

Practice	Practice Location	Practice Setting	Selected Characteristics	Attribution Percentage	NCQA Recognition
4	Suburban	Private	Pediatric; High Medicaid	36%	Level III
5	Urban	FQHC	Pediatric; Family ; High Medicaid;	7%	Level I
6	Rural	Hospital-owned	Family; Internal; Nurse Practitioner	23%	Level II
7	Rural	FQHC	Family; Nurse Practitioner, Physician Assistant	16%	Level II
8	Urban	Private	Family	73%	Level I
9	Urban	Hospital-owned	Internal	35%	Level III

\*Site-specific data were obtained in February 2012.

## Site Visits

The evaluation team conducted nine first-round site visits between September 2012 and February 2013 (Exhibit 3). At each site, team members conducted a total of four to six in-depth interviews with the PCMH lead, practice manager, care manager, clinical staff (e.g., nurses and physicians), and support staff (e.g., medical assistants and front desk staff).

### Exhibit 3: PCMH Site Visits

Practice	Date
1	Sept. 11, 2012
2	Sept. 19–20, 2012
3	Oct. 9, 2012
4	Oct. 17, 2012
5	Nov. 11, 2012
6	Nov. 27, 2012
7	Dec. 12–13, 2012
8	Feb. 7, 2013
9	Feb. 12, 2013

Two team members conducted the interview sessions: an experienced interviewer and a note-taker. The team members audio-recorded each session for additional support of the written record and to help clarify any discrepancies. Each interview began with a description of the study and a review of the institutional review board (IRB) language to obtain informed consent. Upon receiving consent to continue, the interviewer conducted an in-depth interview using the IRB-approved interview guide.

In collaboration with the MMPP contact at each site, the evaluation team identified appropriate staff involved in or affected by transformation. The team then conducted a total of 45 key informant interviews to gather information from people directly involved with the design, implementation, and ongoing management of key components of the PCMH transformation. Exhibit 4 shows the number of interviews at each site by type of interviewee.

#### Exhibit 4: Site Interviewees

Practice	PCMH Lead*	Practice Manager	Care Manager	Clinical Staff	Clinical Support Staff	Admin Support Staff
1	0	1	0	2	0	1
2	1	0	1	2	0	1
3	1	1	0	1	1	1
4	2	1	0	2	0	0
5	1	0	1	1	1	1
6	1	0	1	1	1	1
7	1	1	0	2	1	0
8	1	1	1	1	0	1
9	1	0	2	2	1	0
<b>Total</b>	<b>9</b>	<b>5</b>	<b>6</b>	<b>14</b>	<b>5</b>	<b>6</b>

\* PCMH leads serve as the primary lead—both internally within the practice and externally with the MHCC and NCQA—for all transformation efforts at participating practices.

#### Analysis Methodology

After each site visit, the evaluation team used interview notes and audio recordings to prepare a “topline” report, or case study, that presented findings and observations organized by research domain. IMPAQ examined the responses to each question and then summarized them at the domain level. The topline reports also highlighted key overarching themes from each visit and incorporated respondent quotations where appropriate.

Next, IMPAQ used the nine topline reports to analyze the data across sites according to the qualitative comparative case method, also known as cross-case analysis (Yin 2009).<sup>7</sup> For each research domain, IMPAQ synthesized the main points and selected quotations from the topline reports to create a document that highlighted the primary findings from each site visit across all respondents. To ensure that every site was represented in the analysis, IMPAQ examined similarities and differences between the experiences and perceptions of respondents at each of the sites. The following sections of this report present the findings from this comparative analysis. Although the data are analyzed at the site level, respondent-level findings were incorporated to emphasize a particular point or to draw attention to an outlier.

<sup>7</sup> Yin, R.K. (2009). *Case Study Research: Design and Methods*. 4th ed. Thousand Oaks, CA: Sage Publications.

## **Operational Limitations**

The quality of data obtained from interviews depends on the interviewees chosen and their knowledge. The main audiences targeted were PCMH leads, practice managers, care managers, clinical staff, clinical support staff, and administrative support staff. The site contacts provided by the MHCC were the main recruitment contacts for all of the audiences. IMPAQ worked extensively with the site contacts to select the most appropriate interviewees, but had to rely on the contacts' judgment and ability to recruit individuals to participate in the interviews.

### **2.1.2 Analysis Result: Transformation Process**

The following sections present the findings from the interviews conducted during the site visits. The findings are organized by main themes contained in the interview guides and discussed during the interviews. Similarities and differences in responses across the practices are highlighted for each theme. Site-specific examples and quotations are also included, where appropriate, to give further details and to capture individual perceptions and experiences.

#### **Areas of Inquiry**

To understand the motivation for participating in the MMPP, the interviewer asked key informants to discuss why their practice chose to participate in the pilot, what they perceived to be the importance of the program, who led the effort to transform, and how champions motivated staff to participate in the transformation process.

To investigate the process of transformation undertaken at each practice, the interviewer asked respondents to describe the initial efforts made by the practice to transform and the strategies and activities employed to meet transformation objectives. The interviewer also asked respondents to describe which NCQA requirements were the easiest and which the most difficult to achieve, and how the Maryland Learning Collaborative (MLC) assisted practices in meeting transformation requirements.

In addition, the interviewer asked respondents to describe how the PCMH model has affected specific quality improvement activities, referrals, and the way that the practice involves patients and their families. Finally, the interviewer asked respondents to describe how the unique characteristics of their practice positively or negatively influenced transformation.

#### **Reason to Participate and Importance of Program**

The primary reasons for participating in the MMPP were consistent across practices. Respondents believed that transformation into a medical home would equip their practices with the tools and processes needed to provide better quality of care to their patients. Respondents explained that efforts involved in becoming a medical home would allow providers and clinical staff to "get to know patients better," leading to an increased awareness of "the whole patient" and improved health outcomes. Respondents also agreed that PCMH

transformation would encourage self-management by increasing patient education and helping patients track their health care plans.

Respondents had similar views about which aspects of the program were most important, and these aspects were aligned with their reasons for participating in the program. Clinical staff, in particular, viewed improved coordination of care, standardization of processes, and better patient follow-up as significant aspects of the program. As one respondent commented, “[Prior to participation] we [physicians] were too free to do anything we wanted, and in the process, we were not talking to each other or fully communicating with our patients.”

Several respondents highlighted the program’s emphasis on increasing collaboration and communication throughout the practice. As one respondent at Practice 3 noted, the program encourages the practice to “get everybody on the same page from department to department” by standardizing new processes and documenting processes that the practice was already implementing. Also, respondents appreciated the program’s emphasis on transparency of data, to track both patients’ medical history and providers’ performance. Respondents believed that increased data transparency would increase the quality of care and improve health outcomes over the long term. Several respondents across all practices thought greater transparency of data, heightened communication, and increased care coordination resulting from the program would lead to a “positive change or culture shift” at the practice.

Several respondents, primarily PCMH leads and practice managers, noted that the financial benefits tied to the program were also important aspects of the program. Respondents emphasized that the resources provided by the program, such as the MLC, were significant features of the program. Many respondents thought that without the resources from the MHCC, both financial and nonfinancial, transformation would be considerably more challenging if not impossible.

### **PCMH Champions**

A majority of sites established a “core team” of physicians and clinical and administrative staff who directed the transformation process. Respondents viewed these teams as champions of the program because team members actively educated staff about the PCMH model and engaged staff in the transformation process. Practices that established special PCMH teams tended to experience much more cohesion of transformation efforts across the practice compared to practices that did not have such teams. While most PCMH teams consisted of physicians and staff working directly in the practice, the PCMH team at Practice 9 consisted of administrative staff located off-site who provide oversight for the transformation of five network-affiliated primary care practices. The network-level PCMH team works in coordination with the PCMH lead at Practice 9 to implement PCMH activities and to track and report quality and cost data.

A majority of respondents at all practices noted that the PCMH lead served as the primary champion of the transformation process. At most sites, PCMH leads were either hired or

repositioned specifically for the role; at a few sites, lead physicians or other administrative staff added the role of PCMH lead to their regular responsibilities. Both arrangements appeared to be equally effective in the transformation process in the opinion of respondents; however, PCMH leads who were also physicians or filled other roles reported that they sometimes felt overwhelmed by their workload. Many respondents also commented that their practice's CEO and lead physician, if not also serving as the PCMH lead, were champions of the program.

Champions used a variety of strategies to engage and motivate staff. PCMH core teams or PCMH leads often held regular meetings with all staff members to update them on the transformation process and provide feedback on staff performance. During these meetings, PCMH team leads often shared information that they had learned from MLC meetings and patient success stories. A few sites instituted one-on-one meetings with administrative and clinical staff members to obtain input on PCMH-related policies and procedures. A few sites also established financial incentives and rewards to motivate staff. For instance, Practice 3 set up trivia games, with prizes such as gift cards, to quiz staff on their knowledge of PCMH. Two sites provided financial rewards to staff who completed patient charts according to protocols. One of these sites also established "Employee Day" to recognize staff "who went out of their way to do more to achieve transformation goals and improve on quality metrics."

### **Initial Efforts to Transform**

Respondents at all sites reported that the initial efforts to transform have been successful overall, but that the process of transformation is not complete. Respondents noted that they need to continue to develop strategies to mitigate challenges, and they voiced a desire to develop new protocols to support implementation and improve upon existing policies and procedures. Several respondents also expressed a need to continue to work with staff to increase the efficiency of work flow because staff still felt overwhelmed by the increased workloads and requirements.

Initial efforts to transform were similar across practices. Most sites instituted PCMH teams consisting of clinical and administrative staff to guide the transformation process. Respondents reported that these teams engaged staff in periodic meetings to disseminate information about the medical home, discuss PCMH-related policies and procedures, and gain staff support for the program. At practices that did not establish PCMH teams, the PCMH lead and other champions used regular staff meetings and one-on-one discussions to educate staff about the transformation process.

Respondents noted that, as an initial effort, practices established the care manager position. Because the care manager role was a new concept at all but one practice, the PCMH leads, practice managers, providers, and other staff worked collaboratively with the care managers to develop procedures for including and engaging patients on the care management list and to develop protocols for communicating about patients. Respondents also reported that their practices put significant effort into developing protocols and making changes to their electronic health record (EHR) system to comply with NCQA requirements. Respondents at all sites noted

that “tweaking” the EHR system to accommodate all staff and fulfill all reporting requirements was an ongoing process.

In addition, respondents described PCMH leads and teams as working with departments to document practice policies and procedures as part of the initial effort to transform. As noted by several of the respondents, many of these policies and procedures were in place prior to transformation; however, the practices’ objective was to properly document these policies and activities to meet NCQA requirements and to “build a more formal system for future sustainability.” One respondent at Practice 5 reported that the practice made a list of procedures and processes and had providers check which ones they performed. The practice hoped that this process would help to determine common practices and procedures that could be standardized across the facility.

Respondents at all sites agreed that the MLC has provided significant support to practices throughout the initial phases of transformation. They commented that the MLC coaches have been exceptionally helpful with developing strategies to meet NCQA requirements. Practices appreciated the coaches’ site visits and the opportunity at the MLC meetings to learn from other practices undergoing transformation. A few respondents noted that the long distance to MLC meetings created challenges for their practices; limited resources often restricted full participation.

### **Experience with NCQA Requirements**

Not surprisingly, respondents reported that the NCQA requirements that were the easiest to meet were ones that the practices were already performing. For example, respondents at four practices—two FQHCs and two pediatric groups—had policies in place before the transformation to increase access for patients, such as extended hours and same-day appointments. Respondents at the FQHCs also mentioned the documentation of patient demographics as another NCQA requirement that was already in place.

Most of the respondents agreed on the requirements that were the most difficult to achieve. The most demanding challenge, identified by respondents at the all practices, was designing the EHR system to fulfill the NCQA requirements. While all sites had some kind of EHR system prior to transformation, the practices varied in their level of engagement and use. For this reason, practices experienced varying levels of difficulty in making changes to the EHR system and developing processes to document and track patient records, and to abstract patient data for reporting purposes. For example, Practice 1 used electronic records for limited purposes prior to implementation. Providers and other clinical staff described the transition from paper to electronic records as challenging and resource intensive because the medical staff was required to complete both paper and electronic records during the transition phase. Administrative staff at this practice also noted that the transition resulted in “missing pieces in the EHR,” because administrators and providers were continuing to “work out kinks” in the system for reporting purposes.

Respondents noted mixed reactions to implementing an EHR system at the practices. Many staff members expressed excitement about the ability to better track patient outcomes, but some staff expressed hesitation about the transition from paper to electronic records. Respondents at hospital-owned practices, in contrast to private practices and FQHCs, noted that the transition to EHR requirements occurred smoothly due to the practices' resources (staff and financial) and the ability to partner with the hospital to receive support. A few respondents commented that investments in EHR systems were quite daunting and that limited resources constrained their practices from obtaining highly sophisticated EHR systems or upgrading to better systems.

In addition to EHR requirements, respondents across all sites considered it challenging to work with the EHR system to "data mine" for physician performance and patient outcomes. Respondents reported that administrators had to develop, and were continuing to develop, workarounds to obtain and synthesize such data.

To overcome the challenges associated with EHRs, the practices made the transition gradually and worked collaboratively with clinical and administrative staff to address concerns. Respondents at all sites agreed that the EHR system has been an instrumental part of transformation and has been of assistance in coordinating care and tracking patients.

Another challenge commonly described by respondents was documenting protocols and policies for NCQA certification, including the care coordination process. Respondents noted that although many required protocols and policies were in place prior to transformation, these were rarely documented. The practices therefore allocated a significant amount of time and resources to collecting documents such as policies and protocols. As one respondent commented and others concurred, "Getting everybody on the same page about what to do [how to document policies and protocols] was very difficult, particularly determining how actions at the front desk will affect those in the back." Respondents also noted that systematizing communication within and across departments and motivating staff and providers to sustain and follow through with formalized protocols and policies continued to be a challenge.

### **Specific PCMH Activities**

The practices have implemented a variety of quality improvement activities to support the transformation process. The pediatric practices have focused much of their attention on standardizing practices and improving EHR documentation to ensure that patients receive essential preventive treatments, such as immunizations and flu shots. Five of the nine sites have established education classes for patients, such as diabetes and asthma self-management courses, to help patients and their families understand and manage medical conditions. A majority of practices noted that they are using or are in the process of setting up their EHR system to collect data on quality benchmarks (for both PCMH and meaningful use) so that the practices can track quality outcomes and other measures. The practices intend to use this

information to modify existing protocols and develop new ones to increase the quality of care for all patients.

Four of the nine practices have online portals to communicate with patients and their families, although the intensity of use varied across sites. Through the online portal, patients and parents can request appointments and referrals and review lab and test results. Respondents at practices without a patient portal reported that they plan to develop one because of its importance for keeping in contact, and following up, with patients. All practices have established same-day appointments for patients and have developed more sophisticated, proactive models to track and follow up with patients. The level of adoption and success of these new protocols varied across sites, however, primarily because the level of implementation and adoption of EHRs across sites varied so widely. Some practices had been using them for several years prior to transformation, while others had recently acquired or significantly upgraded their EHR system to achieve transformation requirements. Practices have also established policies that require staff to respond to telephone calls within 24 hours.

### **Practice Characteristics**

A number of practice characteristics appear to have influenced the transformation process, including the type of practice, practice size, and practice location. Respondents cited widely varying characteristics that they thought had affected transformation.

#### ***Type of Practice***

*FQHCs.* Respondents from the FQHCs noted that patient characteristics greatly affected the process of transformation. Because many patients are uninsured or underinsured and are considered low-income, it was difficult to “get patients to be active in their own care.” Respondents in FQHCs noted that their patients often required extensive follow-up and assistance from the practice to take medications properly, follow through with medical visits, and engage in preventive measures. In addition, their patients often need assistance beyond what can be provided in a medical visit, such as assistance with transportation, food, and housing. FQHC respondents explained that their limited resources restrict their ability to assist patients with these needs, but noted that the care manager has significantly helped their practices to better care for these patients.

*Hospital-owned practices.* Respondents at hospital-owned practices stated that their affiliation with a hospital positively affected their ability to transform because they can call on hospital staff resources (which freed providers from the work of setting up the PCMH) and can coordinate care with the in-patient system. Since these practices had specialists “on hand,” they could easily refer patients to the hospital and follow up on test and lab results. Though several non-hospital-owned practices worked with neighboring hospitals to share EHRs and other resources, respondents at hospital-owned practices stated that sharing information and resources has been “a very smooth and easy process for everyone.”

*Pediatric practices.* Respondents at pediatric practices commented that being a pediatric practice had a positive influence on transformation. They explained that since many aspects of the PCMH model are embedded in the pediatric-care model—such as care for the whole patient, increased access, and engagement of patients and their families—support from staff was not difficult to achieve. Respondents noted, however, that the PCMH model focuses heavily on chronic conditions, whereas pediatric practices focus more on preventive measures. As a result, respondents desired more contact with the MLC and other pediatric practices undergoing transformation to generate ideas on ways their practices could transform more in accordance with their own parameters. In addition, respondents noted that family involvement can sometimes be difficult in pediatric practices, particularly if parents are separated or divorced.

### ***Size and Location of Practice***

*Smaller practices.* Respondents at smaller practices, including both FQHCs, stated that their limited resources affect the practices' ability to transform. For instance, respondents at these practices noted that they would like to implement more sophisticated EHR systems to assist with better data tracking and reporting, hire more staff to assist with coordination, and purchase additional equipment to support staff, but they do not have the resources to do so. Respondents at smaller, more tightly operated practices stated that although there was some initial resistance, it was "easier to communicate among staff and providers since we are used to working together and fulfilling many roles."

*Larger practices.* On the other hand, respondents at larger, high-volume practices with several internal departments and partnering facilities stated that the size of their practice, in terms of number of sites, providers, and patients, may complicate the practice's ability to effectively communicate among departments and obtain agreement and support. Respondents at these practices expressed difficulty in obtaining buy-in from providers and staff. While most practices experienced some degree of staff resistance, respondents at larger sites noted continued challenges as a result of limited communication among departments and facilities.

*Rural practices.* Respondents in rural practices reported difficulty in developing strong referral systems because specialists were often located long distances from the primary care practices. As described by respondents, this often affected practices' ability to track and follow up on referrals.

## **2.1.3 Analysis Results: Care Coordination**

### **Areas of Inquiry**

To better understand the process of care coordination, which is a key PCMH component, the interviewer asked respondents to describe how the practice coordinates care for all patients and for those who are managed by the care manager. The interviewer also asked respondents to share how the process has changed since transforming and how the practice tracks progress.

## **Care Coordination Process**

To achieve Level 1 recognition, NCQA requires care management and coordination by specially trained team members. Care managers are therefore an integral element of transformation. They are responsible for population management (identifying participating patients at risk for poor outcomes), care review and planning, care coordination, follow-up, and system development (supporting quality improvement for chronic care and providing clinical and self-management support training).

Respondents at all sites reported that the care coordination process has improved significantly since transforming, although they noted that their practices are continually working to improve the care coordination process. The most significant change has been the addition of care managers. All of the practices hired new care managers to assist with the care coordination process at the start of the program. Care managers provide a range of services that help providers to coordinate care, particularly for patients with unmanaged chronic conditions and patients who frequent hospital and emergency facilities. Although a variety of protocols to coordinate care existed before transformation, care managers significantly helped the practices to provide services to a larger number of patients and to develop and standardize coordination processes.

### ***Care Manager Caseload***

All of the practices developed a standard protocol—some more formal than others—to generate and maintain a list of patients who are part of the care manager’s caseload. All the practices targeted patients who have high HbA1c levels or high blood pressure and who visit the emergency department frequently. Some practices targeted additional patients such as those who are uninsured or underinsured. Care managers at all sites reported that, in addition to including patients with specific health indicators on the care coordination list, they regularly communicate with providers to determine whether certain patients need more assistance or would benefit from targeted care coordination. Also, if providers observe problematic lab results, they may refer the patient to the care manager. Care managers indicated that they remove a patient from the care coordination list if the patient reaches predetermined indicator goals or if the care manager no longer feels that targeted care coordination is needed. Many care managers noted, however, that some patients who had been removed from the list ended up being added again due to complex obstacles for which they needed continual support.

### ***Care Manager Activities***

Care managers at all sites reported that they are responsible for monitoring and managing patients’ care during and between visits in collaboration with physicians and non-physician staff. They meet regularly with medical staff to communicate about a patient’s progress and to determine whether additional support or care is needed or if anything about a patient’s care plan needs attention. Care managers also meet one-on-one with patients during or after medical visits or at other times, if needed, to discuss the patient’s progress, educate the patient on pertinent health subjects, and address any outstanding challenges that the patient might be facing. They speak with patients to ascertain whether daily living activities such as diets, stress,

and exercise affect improvement. Care managers use this information to modify their interactions with patients. These modifications may include increasing patient education, enrolling patients in a self-management or cooking course, or visiting their homes to assess external factors that may be contributing to their negative health outcomes.

Respondents stated that the care manager role allowed staff to better monitor patient progress and follow up with patients about their medical appointments and other matters. The PCMH “mentality of understanding the whole patient” has encouraged providers and other medical staff also to spend more time with patients who have not been involved in the care management process, to educate them about their medical conditions and their role in self-management. Respondents at a few sites reported that they have witnessed changes in patients’ attitudes about their health and that patients have expressed satisfaction with the quality of care they have received as a consequence of PCMH activities.

Practices that also have referral coordinators<sup>8</sup> have developed protocols to monitor patients’ health and follow up on specialist visits. For instance, at Practice 5, the clinical and referral coordinators work directly with the care manager and providers to make sure that patients go to their referral appointments and complete their lab work as directed. If the patient needs outside services to attend specialist appointments (e.g., transportation), the care manager will connect the patient to appropriate service organizations. Practices that do not have clinical or referral coordinators rely entirely on care managers to follow up with patients and obtain lab work and test results from specialists.

As a result of the program, several care managers have begun to develop or expand relationships with nearby hospitals and specialists to increase communication across systems. For instance, one practice has access to a nearby hospital’s EHR system and can track whether any of their patients have been checked into the emergency department, the reason for the visit, and the visit’s outcome. This information is used to follow up with the patient to reduce the chances of that patient returning to the emergency department at a later time. Care managers at another practice coordinate care with hospital care management teams by meeting and communicating electronically to monitor patients. As one respondent stated, “This enables care managers at the practice to know in real time which patients are receiving which treatments at which hospitals.”

### ***Care Coordination Challenges***

While care coordination among providers, non-physician staff, and care managers has improved as a result of the MMPP, many respondents expressed frustration with coordination efforts outside of the practice, particularly with hospitals, specialists, and other primary care practices. Respondents, particularly care managers, noted that obtaining medical records from other systems has been challenging because facilities have different health record systems.

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<sup>8</sup> Referral coordinators are responsible for providing referrals to patients who need to visit a specialist. Referral coordinators also follow up with patients to ensure that they attend scheduled visits and with the specialists to obtain patients’ medical records.

They stated that following up with specialists and other providers slowed down the coordination process and often generated obstacles to keeping on top of patients' health plans.

#### **2.1.4 Analysis Results: Staff Perceptions and Compliance with Transformation**

##### **Areas of Inquiry**

To understand how staff perceived and responded to the transformation process, the interviewer asked respondents to share what they believed to be the incentives for or benefits of transforming their practice. The interviewer asked respondents to describe how staff, particularly non-providers, perceived the program, if they had noticed changes in work satisfaction among providers and staff, and if they had seen or experienced resistance from staff or providers. Finally, the interviewer asked respondents whether they thought the practice environment or culture had changed since transformation and, if so, in what ways.

##### **Perception by Providers and Staff**

A majority of respondents at all practices agreed that administrative and clinical staff understood the concept of the program and its importance. However, respondents reported variations in the way staff reacted to changes related to transformation. Many respondents noted an initial resistance driven by unfamiliarity with the PCMH model, uncertainty about how the program would affect their workload and responsibilities, and a lack of the advanced computer skills needed to effectively use the EHR system. Respondents reported, however, that as the program was introduced and implemented, most staff adapted to the changes and "warmed up" to the program. Nevertheless, they continued to be dissatisfied with some aspects of the program. At most sites, the primary source of dissatisfaction was the increased responsibilities required of staff, especially new patient follow-up procedures and EHR protocols, and the technical difficulties related to EHR documentation and reporting. As many respondents stated, change has been "hard for everyone."

There were other sources of dissatisfaction with the program. For instance, the care managers at two sites expressed frustration with their roles. One care manager felt as though she was being overworked because she served as both a nurse and a care manager. The other wanted to be more involved in the clinical aspects of medicine and "practice medicine the way she learned in school." Respondents at another site noted some turnover among staff, due to the perception of the transformation as "more work" and the need for advanced computer skills and technical knowledge.

Respondents identified two aspects of the practice environment that has changed since transformation: communication among staff and interaction with patients. Most respondents believed that the transformation had positively affected the work environment by increasing communication and allowing staff to "see and learn how their different roles interacted." Clinical staff also observed more team effort and coordination among providers. Many respondents attributed open communication and coordination to periodic team and one-on-

one meetings and to new protocols such as better EHR documentation, standardization of procedures, and patient care plans.

Respondents at sites that had a high level of communication and collaboration prior to transformation, particularly smaller, more tightly operated practices, noted that transformation has allowed them to enhance and further develop these features and therefore improve staff efficiency. Respondents also described enhanced interaction with patients, which has positively affected the work environment.

### **Ensuring Staff Compliance**

Respondents described various methods for ensuring staff and provider compliance with PCMH policies and protocols, although most practices have not established formal compliance measures or consequences for noncompliance. Most practices use informal staff meetings and one-on-one meetings to communicate with staff about their performance on PCMH policies and procedures. Respondents from two practices explained that administrators perform periodic chart audits to ensure that staff is complying with EHR procedures. These practices have not developed formal consequences for noncompliance; instead, administrators meet individually with clinical staff and providers who need to improve on compliance. Respondents at Practice 3 reported that administrators provide incentives, such as gift cards, to staff who comply with EHR documentation. Respondents at Practice 1 noted that administrators are considering providing incentives to staff who comply with PCMH policies and procedures.

## **2.1.5 Analysis Results: Health Disparities and Outcomes**

### **Areas of Inquiry**

To understand how transformation to a PCMH affects health disparities and outcomes, the interviewer asked respondents to describe how their practice monitored health outcomes and achievements of transformation. The interviewer also asked respondents whether they had observed changes in health outcomes and, if so, to describe those changes. The interviewer then asked whether respondents expected the MMPP to have a long-term impact on health disparities. Finally, the interviewer asked if the transformation process had changed their practice's ability to support patients with complex needs and their families.

### **Monitoring Health Outcomes and Achievements of Transformation**

Respondents described a variety of methods that their practices used to monitor health outcomes and achievements of transformation. Several respondents indicated that practice administrators, such as PCMH leads, use reports generated from the EHR system for meaningful use and NCQA requirements to internally monitor quality metrics and outcomes. For instance, administrators at one site use the EHR system to run registry reports and conduct chart audits for reporting and monitoring compliance. These reports and audits are used to reward physicians and staff for meeting quality metrics and accurately completing charts. Similarly,

administrators at another site analyze reports provided by the MLC and those generated internally to monitor outcomes. Periodically, they select three to five quality measures to improve on, and then work with physicians and staff to create new processes to meet targeted goals. Physicians and staff are given financial awards if they meet their quality goals.

Respondents at a third site reported that the practice has established regular administrator and physician meetings to discuss physician performance on clinical quality measures. Administrators generate reports each week through their EHR system that detail physician performance. Reports are shared with the physicians and discussed during weekly one-on-one provider meetings. Practices also use these meetings to track patient-specific outcomes and progress and to determine if physicians need to follow up on patient records, such as lab and test results or proof of immunization. Though only one site has established regular monitoring and reporting meetings, several administrators at other practices noted that they hope to establish regular performance meetings and better embed performance monitoring and reporting into their practice environment. These administrators felt that the PCMH model has been a catalyst for them to improve health outcomes by rethinking how quality is monitored and reported.

Care managers at each of the practices also track patient-level information and data to monitor progress over time. For example, care managers track the lab results of diabetic patients to determine if HbA1c levels are improving.

In addition to using EHR reporting, Practice 2 monitors outcomes at the individual level through patient care plans. Patient care plans are documents provided to patients at the end of their medical visit that summarize visit outcomes, such as diagnoses, prescribed medications and doses, and other directives. Physicians and non-physician staff use patient care plans to determine whether patients are meeting goals for treatment and to make adjustments to care and treatment based on patient behavior.

Two sites use patient experience surveys to monitor and improve health outcomes and transformation activities. These practices have implemented patient surveys every one or two years, depending on resources, to observe changes over time. The practices use the data obtained from the surveys to modify activities to increase patient satisfaction and engagement, which respondents believe “will lead to increased positive health outcomes over the long term.”

### **Effect on Health Outcomes and Disparities**

Respondents expressed various opinions on the effect of the transformation on health outcomes. Most respondents stated that it is too soon to determine whether the program is affecting health outcomes. Those who believed that the transformation is positively affecting health outcomes could not provide quantitative evidence but cited anecdotal information. For instance, many care managers stated that they had observed improvements in health indicators, such as HbA1c and blood pressure levels, for some of the patients that they manage

and attributed these results to transformation. Some care managers also described specific instances where they were able to assist a patient with challenges at home, which contributed to improvements in health outcomes.

Although many respondents commented that they have not observed either negative or positive effects of transformation on health outcomes, they believe that elements of transformation will play a role in improving health outcomes over the long term. Respondents stated that new policies that increase open access and better communication between the practice and patients will positively affect patients' willingness and ability to access and increase engagement with health care professionals. Respondents noted that the use of patient care plans during each visit gives patients more knowledge about their health status and medication use, which will lead to a positive impact on their health over time. A few respondents thought that the new procedures, such as standardized order sets and other protocols, will help to improve health outcomes.

Several respondents emphasized that the care coordination process will play a significant role in improving health outcomes as the program continues. As one respondent stated, "Because the care manager is actively involved in patients' care—the manager reaches out to patients, communicates with their physician about the patient's status, and develops a care plan—this will lead to better engagement and follow-up, which will lead to improved health outcomes in the future."

Respondents expressed various opinions about the effect of the MMPP on health disparities. Many respondents felt that the MMPP, as compared to traditional primary care delivery, better supports poor patients and has begun to address some racial disparities. A majority of respondents thought that the program is having a positive effect on their practices' ability to support patients with complex needs, defined as those who experience mental illness, multiple chronic conditions, and substance abuse. Respondents primarily attributed this effect to care coordination and the care manager's role. The care manager supports patients in a comprehensive manner and serves as a link between the patient and the provider to increase patient education and fill in gaps that cannot be addressed or are not observed by medical providers. For instance, one provider, who also serves as the PCMH lead, noted that care managers allow practices with many patients to better and more efficiently manage providers' case loads and coordinate care.

Respondents also stated that the care manager's role in tracking patients, including those with complex needs that often go beyond the scope of the physician's office, will increase the practice's ability to proactively work with patients, their providers, and resources outside the practice to provide better support and increase patient engagement. As one respondent stated, "If PCMH doesn't address patient engagement, it will mute any benefit. You have to tackle that engagement piece. You have to tackle that behavior piece to have any effect on health disparities." In addition, respondents suggested that if PCMH leads to better identification and management of chronic disease, either through care managers or other mechanisms, then the

program will help with some health disparities as a result of the ability to intervene with those who are more disadvantaged.

In contrast, two respondents at different practices did not think the program would impact health disparities. These respondents noted that because many patients with complex needs do not have insurance, the practice will not be able to reach them. One respondent said, “If anything, the gap in quality of health care could actually become bigger since those with health insurance should improve. If those without insurance stay stagnant, by definition the gap becomes bigger.”

## **2.1.6 Analysis Results: Financial Costs and Savings**

### **Areas of Inquiry**

The interviewer asked respondents to discuss whether they had observed any cost savings as a result of the program and, if so, in which areas. The interviewer also asked respondents to describe financial investments that the practice has made since transforming and whether these investments have hindered transformation. Finally, the interviewer asked respondents to comment on what role the fixed transformation payments and shared savings have played in transformation and how the fixed transformation payments from their carrier (an insurer, Medicaid, or self-insured employer) have been used.

### **Cost Savings**

Respondents across all practices stated that they have not seen any cost savings as a result of the MMPP. Many respondents noted, however, that this is most likely because the program is new, and they are optimistic that they will see cost savings in the next year or two.

Only one respondent (a PCMH lead) reported shared savings. The practice recently received \$13,000 from the MMPP, which it plans to use to recoup administrative expenses and to develop programs that incentivize staff to meet targeted quality metrics.

### **Financial Investments**

The major financial investments made by all practices as part of the PCMH program included technology, such as new or upgraded EHR systems and computers; new staff, such as care managers, PCMH leads, and other clinical staff; staff education; and patient-focused programming.

Respondents explained that investments in new and upgraded technology have enabled practices to better monitor and coordinate care both internally and externally with specialists and hospitals. The addition of care managers and other clinical staff has allowed practices to fill in gaps and meet additional work responsibilities resulting from the transformation process. Some respondents also noted that travel and education costs for care managers and other staff

to attend MLC and other meetings and conferences have been significant program-related investments. Other respondents reported that their practices have invested in new or additional education programs for patients with diabetes and asthma, and in developing or improving their online patient portals.

Respondents also described investments that they would like to make in the near future to assist with the transformation process. For instance, respondents at Practice 6 noted that they are looking at a software program that will allow the practice to more easily and efficiently monitor patients' care plans, their barriers to healthy outcomes, and needed next steps. The software will also generate reports that can be used for monitoring and reporting aggregate trends. Respondents at other sites stated that they would like to invest in similar software and to develop or improve online patient portals and other tools to communicate with patients and monitor outcomes.

### **Role of Fixed Transformation Payments**

Most respondents either were not aware of the fixed transformation payments or did not know how they were used. The few respondents who were aware of the payments noted that they were beneficial and enabled the practice to afford to participate in the program, particularly to pay for the EHR system, new equipment, and staff such as the care managers.

#### **2.1.7 Discussion**

Although the practices participating in the MMPP are in the early phases of transforming, key findings from the initial site visits provide valuable insights into the four key questions about PCMH transformation:

- Which types of practices are most likely to successfully implement the model?
- What is the effect of increased provider satisfaction and positive results on adoption of the model?
- What types of outstanding results can be replicated in other practices?
- Which aspects of the PCMH principles have the most impact on improved quality and reduced costs?

### **Practice Factors That Contribute to Success**

The site visit findings showed that practice characteristics can influence the ability to implement transformation elements. Smaller and medium-sized practices that were undergoing transformation at a single location had the most success communicating transformation objectives to all staff and collaborating across roles to develop and implement PCMH-related initiatives and practices. As a result, these practices experienced more success in obtaining provider and staff support. Larger practices that managed transformation at multiple facilities experienced many obstacles to coordinating activities and communicating across all partners.

Disjointed communication reduced provider and staff satisfaction. On the other hand, practices that operated on a smaller scale reported more success in implementing transformation elements and involving providers and staff in transformation processes.

In addition to size, practice type, which largely influences a practice's model of operation, played a significant role in the ability to successfully implement transformation elements and meet MHCC/NCQA recognition requirements. For instance, pediatric practices, which operate under a family-centered model, experienced success in engaging families in care delivery. FQHCs, which emphasize patient access, adapted most easily to the access requirements.

The type of ownership also had an effect on implementation. The affiliation of hospital-owned practices with a hospital positively affected their ability to transform, particularly in terms of staff resources (which freed providers from the work of setting up the PCMH) and the ability to coordinate care. Providers and staff at hospital-owned practices had the ability to refer patients to the hospital and quickly follow up on test and lab results. Often these practices and their affiliated hospitals operated under the same EHR system, which allowed practices to easily access patient data and communicate outcomes across facilities. Moreover, the practices had access to hospital staff that had extensive knowledge of EHR systems and prior EHR experience within the practice. For this reason, hospital-owned practices did not experience the challenges that most other practices faced in setting up and operating EHR systems to report required metrics.

Finally, regardless of the size or type of the practice, structured PCMH oversight teams working in conjunction with PCMH champions served as an important element of success. Practices that established oversight teams at the start of transformation and used them to educate providers and staff about transformation and to communicate PCMH objectives and activities experienced the most cohesion in understanding across the site and overall support from providers and staff.

### **Effect of Satisfaction and Results on Adoption by Other Practices**

Though providers and staff appreciated the concept of the PCMH model, satisfaction varied within and across practices. Initial resistance was driven by unfamiliarity with the PCMH model, uncertainty about how the program would affect provider and staff workload and responsibilities, and a lack of the advanced computer skills required to effectively use the EHR system. As the program was introduced and implemented, however, most providers and staff adapted to the changes and supported the program. The primary sources of continued dissatisfaction were the increased responsibilities required of providers and staff, especially regarding new patient follow-up procedures and EHR protocols, and the technical difficulties related to EHR documentation and reporting.

As a result of mixed satisfaction levels and limited knowledge of financial cost/benefit outcomes, it is too early to tell whether the results to date can be used to encourage other primary care providers to adopt the model. Although the practices reported that they have not

seen cost savings as a result of the PCMH program, many expressed optimism that cost savings would be realized in the near future. A high degree of optimism in regard to long-term positive financial outcomes and a trend toward satisfaction as transformation progresses may indicate potential for using these factors to encourage other providers to transform. The second round of site visits will provide more insight into this question.

### **Useful Results for Replication**

Several results uncovered by the site visits can be shared for possible replication in other practices through the MLC and other methods. One factor that greatly influenced the success of transformation and led to positive results was provider and staff support of transformation. Involving and educating providers and staff early in the process significantly increased collaboration and satisfaction. Practices in which PCMH teams and PCMH champions educated providers and staff about the program and its objectives, and involved providers and staff in decision-making processes early in the transformation process, experienced heightened awareness, engagement, and overall approval among providers and staff.

To meet quality goals, some practices have initiated activities that encourage providers and staff to meet specified quality metrics; often the metrics that practices need to improve on to receive financial incentives. Providers and staff appeared to appreciate such activities, because these activities create an incentive to work collaboratively to reach a common goal, which strengthened team work and inter-office communication.

Practices that had limited internal and external resources often sought creative solutions to increase quality of care for their patients. For instance, one rural practice that served many low-income patients had a need for mental health professionals. Because the community did not have a mental health provider and the practice did not have the resources to hire one, the practice turned to its network for support. The rural practice developed a partnership with an urban hospital to offer telemedicine services, such as patient counseling and provider consultations, using Skype.<sup>9</sup> Though the partnership was in an early phase at the time of the site visit, the providers and staff viewed this relationship as a vital step in providing better care to their patients, as well as increasing the ability of the practice to manage and coordinate care across other providers.

Several practices noted challenges to communicating and following up with specialists on patient health care and outcomes. To mitigate this challenge, one practice collaborated with specialists to whom the practice often referred patients to design a standard communication protocol. The protocol included (1) a standardized tracking checklist that was maintained at the primary care practice and used to facilitate and coordinate communication between the practices, and (2) standardized patient history forms that were shared with the specialist prior

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<sup>9</sup> Skype is a voice-over-IP service and instant messaging client, currently developed by the Microsoft Skype Division.

to patients' visits. This partnership allowed the practice to better coordinate with specialists and follow up on patient outcomes, regardless of whether they operated the same EHR system.

### **Most Influential Aspects of PCMH on Quality and Cost**

The site visits revealed three aspects of PCMH that administrators, providers, and staff believe improve quality of care and reduce costs: (1) care coordination, (2) monitoring and reporting of cost and quality outcomes, and (3) standardization of procedures and policies.

As emphasized by all practices, improved care coordination processes had an expected significant positive impact on the quality of care. Improved care coordination was primarily achieved by the addition of care managers who worked with providers and non-physician staff to coordinate patient care. The care managers conducted between-visit monitoring of high-risk patients, including those who frequent the emergency department and those who are at risk for exacerbation of their chronic conditions (such as diabetics with high HbA1c levels, or hypertensive patients with continued elevated blood pressure). Care managers served as a key facilitator to closing gaps in care and allowing practices to care for the whole patient. Practices believed that implementing and continually improving on this role will increase quality of care and begin to address the health disparities seen within their communities.

In addition to care managers, the practices also cited implementation and improvement of EHR systems as an important aspect of improved care coordination. While establishing and optimizing EHR systems has been challenging for most practices, these systems have been instrumental in increasing coordination across facilities and within the practice. Using the EHR system to monitor aggregate and patient-level outcomes has also provided a platform to coordinate practice-wide activities and communicate about patient follow-up and care plans.

In line with improved care coordination, the practices viewed PCMH's emphasis on patient education as a way to increase patient engagement and self-management, which they believe will lead to improved health outcomes. Many practices noted that patient engagement can be challenging, particularly with low-income and high-risk populations. Care managers were seen as an important way to increase involvement of these patients in their health care, although the practices expressed a need for additional tools and opportunities to encourage patient engagement.

Improving efforts to monitor and report cost and quality outcomes to providers and staff was also viewed by practices as a necessary step to increase quality and reduce costs. PCMH has been a catalyst for rethinking how quality and costs can be monitored and reported to improve health outcomes. As with care coordination, EHR systems were seen as a vital tool to monitor and report outcomes. Transparency of cost and quality data, promoted through meetings and reports, allowed providers and non-physician staff to better understand their performance and work together to improve on outlying metrics. Providers, in particular, appreciated the transparency of data because they could monitor their own performance and track outcomes over time. Transparency appeared to positively affect satisfaction.

The practices also perceived standardization of procedures and policies as an important aspect of improving quality and reducing costs. Although standardization was cited by many practices as a challenging requirement, administrators, providers, and staff understood the value in standardization across the practice using evidence-based medicine and best practices. Standardization, many believed, will help to improve communication within their practice, with other facilities, and with patients. They expect that these factors will lead to improved quality of care and ultimately better patient health outcomes. For instance, standardizing the use of patient care plans employed during each patient visit allows providers and staff to document and monitor patient health and gives patients more knowledge about their health state and medication use, which may lead to a positive impact on health outcomes and reduce costs over time.

Overall, transformation has been a positive experience for practices and has allowed them to acquire the resources and knowledge to implement new processes and protocols. Looking forward, the practices are eager to develop strategies to mitigate current challenges, design new protocols to support transformation activities, and improve policies and procedures. Moreover, the practices are working with staff to increase the efficiency of work flow so that providers and non-physician staff can continue to improve quality and reduce the costs of care.

## **2.2 NCQA Recognition Level**

To provide a more comprehensive assessment of the implementation of the PCMH model among the MMPP practices, IMPAQ also analyzed the achievement of NCQA recognition levels by the practices.

### **2.2.1 Methodology**

IMPAQ initially performed simple frequencies of the practices' level of NCQA PCMH recognition at the beginning of the demonstration. IMPAQ also looked at the change in the recognition levels between the baseline (2010) and the most recent year of data (2012). A time trend analysis of these measures provides insight on how practices transformed during the demonstration. IMPAQ also compared changes in the PCMH recognition level and individual practice characteristics (e.g., geography, ownership, size, and specialty). This allowed us to search for significant relationships between a single practice characteristic and progress in PCMH implementation.

### **2.2.2 Analysis Results**

Exhibit 5 contains the distribution of MMPP practices across NCQA recognition levels. At the start of the MMPP, in 2011, each practice site had achieved some level of PCMH recognition. There were a significant proportion of practice sites at each recognition level. The largest proportion of practices had achieved Level 3 (40.4 percent), and the smallest proportion (25.0 percent) had achieved Level 1.



**Exhibit 5: NCQA Recognition Levels of MMPP Practices in 2010 and 2012**

NCQA Recognition Level	2010		2012	
	Count	Percent	Count	Percent
Level 1	13	25.0%	0	0.0%
Level 2	18	34.6%	23	44.2%
Level 3	21	40.4%	29	55.8%

Exhibit 5 also shows that many MMPP practices had achieved higher NCQA recognition levels by the end of the second year of the demonstration (2012). Twelve practice sites advanced from Level 1 to Level 2, and one practice even went from Level 1 to Level 3 between 2010 and 2012. In addition, seven practices with Level 2 recognition in 2010 achieved Level 3 by the end of 2012.

To help determine if certain practice characteristics are associated with achievement of higher recognition levels, Exhibit 6 and Exhibit 7 compare the practice characteristics of the MMPP practices with Level 2 recognition in 2010 and that achieved Level 3 recognition in 2012 to those that remained at Level 2.<sup>10</sup> Similar to the findings from the site visits, solo practices, which generally were smaller, were more likely to improve to Level 3 than to remain at Level 2. Although it had been suggested by respondents in the site visits that pediatric practices were more naturally aligned with the PCMH model, the two of the three pediatric practices that had achieved Level 2 in 2010 did not achieve Level 3 by 2012. Family medicine practices were also more likely to remain at Level 2 as were practices in large metropolitan areas. The MMPP practices that achieved Level 3 by 2012 had more Maryland Health Insurance Plan (MHIP) patients, which likely reflects the belief that the PCMH model is particularly beneficial for patients with chronic conditions. These practices also had more CareFirst patients.

**Exhibit 6: Geographic Location of MMPP Practices with NCQA Recognition Level 2 in 2010**

Practice Characteristic	Level 2		Level 3	
	Count	Percent	Count	Percent
<b>Geography</b>				
Large Metropolitan	8	66.7%	4	33.3%
Small Metropolitan	1	50.0%	1	50.0%
Adjacent to Large Metropolitan	0	0.0%	1	100.0%
Non-metropolitan	1	100.0%	0	0.0%
<b>Ownership</b>				
Private	10	58.8%	7	41.2%
Public	1	100.0%	0	0.0%
<b>Practice Type</b>				
Solo	1	33.3%	2	66.7%
Single Specialty	6	75.0%	2	25.0%
Multi-Specialty	3	50.0%	3	50.0%
Staff Hospital	1	100.0%	0	0.0%

<sup>10</sup> The practices with Level 1 Recognition in 2010 are not discussed, because all but one had achieved Level 2 recognition by 2012.

Practice Characteristic	Level 2		Level 3	
	Count	Percent	Count	Percent
<b>Primary Specialty</b>				
Family Medicine	8	80.0%	2	20.0%
Internal Medicine	1	33.3%	2	66.7%
Pediatrics	2	66.7%	1	33.3%
Nurse Practitioner	0	0.0%	1	100.0%

**Exhibit 7: Descriptive Statistics of Practice Characteristics for MMPP Practices with NCQA Recognition Level 2 in 2010**

2012 NCQA Recognition Level	Number of Physicians		Number of Mid-Level Providers		Normalized Number of MHIP Patients		Normalized Number of CF Patients	
	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Level 2	4.45	9.51	0.60	0.84	0.24	0.24	13.52	17.21
Level 3	4.57	4.24	1.00	1.67	3.88	9.75	65.40	135.35

### 2.2.3 Discussion

The original analysis plan focused on the Maryland recognition levels and its specific requirements. The MMPP requires practices to achieve the Maryland recognition levels. Furthermore, it is important to understand the obstacles that prevent practices from achieving these recognition levels. Thus, IMPAQ had planned to analyze measures that capture the requirements that were difficult for MMPP practices to attain. However, the data were not available for this report. The planned analysis also required detailed NCQA PCMH responses during the MMPP. This information was only available for the NCQA recognition levels captured prior to the start of the MMPP. Without comparable data captured during the program, IMPAQ were not able to assess which parts of the PCMH model were difficult for the practices to implement.

### Limitations

The differences between the practices that achieved greater recognition levels and those that did not were not tested for statistical significance because of small sample size. Only 18 practices originally had Level 2 recognition in 2010.

### **3. PROGRAM SATISFACTION**

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To complement the implementation evaluation and the outcomes evaluation, IMPAQ conducted surveys to examine satisfaction among patients and providers. This section reports the findings of the first wave (of two planned collections) of survey data. The results presented below describe patient experience and satisfaction during the first year of the program, among adults and children, insured by commercial plans or by Medicaid, who received care from MMPP participating practices. In addition, this chapter describes the attitudes and satisfaction of health care providers participating in the MMPP during the first year, relative to those of responding providers in two matched groups of comparison practices. One group of comparison practices appeared to be largely unexposed to the PCMH concept, and the other was composed of practices participating in the CareFirst BlueCross BlueShield PCMH program (hereafter, CF PCMH).

After the second wave of data are collected (during the final year of the pilot), the evaluation results will offer insight into the patient and provider perspective on the following five research questions specified by the MHCC:

- Will the PCMH Program improve access to, and delivery of, health care?
- Does the PCMH Program improve the quality of care, particularly with regard to prevention and chronic care management?
- Does the PCMH Program reduce health disparities?
- Are patients more satisfied in a PCMH?
- Are physicians and other clinical staff more satisfied in a PCMH?

The first wave of survey data was collected during 2013. The data are analyzed in this report and provide a baseline for addressing the research questions.

#### **3.1 Patient Satisfaction**

##### **3.1.1 Methodology**

Improving the patient-centeredness of primary care is a major goal of the PCMH. The purpose of the patient surveys was to assess how patients perceive the care they receive. IMPAQ collected data for the evaluation of patient satisfaction through two cross-sectional rounds of surveys of the patients attributed to MMPP providers. The first wave (baseline) was conducted between January and February 2013 for the commercially insured sample and between July and November 2013 for the Medicaid sample. The second wave will occur at the end of the 3-year demonstration.

## **Data Collection Instrument**

There are two types of surveys. One is the “adult” survey, which is given to patients who are 18 years of age or older. The other is the “child” survey, which is used when the patient is less than 18 years of age and has a caregiver. A caregiver is a family member or friend who helps the child with his/her health care. The caregiver answered the questions about the child under his/her care.

IMPAQ developed comprehensive adult and child patient survey instruments to evaluate the research topics of patient satisfaction and experience of care, potential health disparities, and access to and delivery of health care. Both instruments include items from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH Survey, the CAHPS supplemental topic areas, and the Patient Assessment of Care for Chronic Conditions (PACIC).

The administered versions of the Adult Survey and the Child Survey can be found in Appendix C and Appendix D, respectively. Both surveys include skip patterns and logic that move the respondent through the appropriate set of questions. In addition, both surveys include a set of questions to identify those with chronic conditions and then follow up with questions relevant to those patients.

## **Pilot Testing the Surveys**

To test survey content, ensure that the wording of the questions was understandable, ensure the adequacy of response options, and measure the time needed for completion, IMPAQ pilot tested the adult and child patient satisfaction surveys, which were provided in the Report on Data Collection, submitted to the MHCC on April 23, 2012. Four adult patients with chronic conditions and two caregivers of children with chronic conditions participated in the pilot by completing the instrument via a telephone call and by participating in a follow-up telephone interview. IMPAQ used the findings from the pilot tests to revise the surveys.

The pilot Adult Survey consisted of 80 questions and required 19.2 minutes, on average, to complete. The pilot Child Survey consisted of 92 questions and required 29 minutes, on average. Both surveys took more than the desired 15 minutes. In revising the survey, IMPAQ deleted some questions. The revised adult and child patient surveys had 75 and 67 questions, respectively. In addition to the revisions based upon the pilot data, IMPAQ collaborated with the MHCC and its partners to edit the gender questions and to add questions to gather accurate information about live-in support, sexual orientation, and gender identity. Details about the revisions to the adult and child patient satisfaction surveys may be found in the September 25, 2012 report submitted to the MHCC.

## **CATI Instrument Programming and Testing**

The baseline surveys were conducted using computer-assisted telephone interviewing (CATI) technology. IMPAQ’s in-house Survey Center implemented, managed, and monitored all

aspects of the telephone data collection process. Upon final approval of the instrument by the MHCC, IMPAQ programmed the instrument for CATI administration, using Blaise software, a powerful state-of-the-art system for computer-assisted data capture and processing. In addition, programmers loaded the telephone numbers<sup>11</sup> of sampled patients and case numbers to Blaise. Sampled patients were assigned non-repeating and sequential case numbers that were sent in an advance letter (Appendix E). These numbers allowed interviewers to easily search for patients when they called to schedule a survey time or to ask questions about the survey.

After the initial phase of programming was completed, senior Survey Center staff tested and evaluated the programmed instrument. The staff checked skip logic, single response versus multiple responses, mutual exclusivity of responses, consistency in the onscreen CATI presentation, spelling/grammatical errors, survey error messages, and interviewing and respondent instructions. The CATI programming was then updated based on the results of the testing.

### **Interviewer Training**

To ensure the collection of high-quality patient data, the interviewers received training. The training program addressed the following areas: administration of the patient questionnaire (adult and child), CATI navigation, coding of responses based on established guidelines, and handling of refusals. The training included presentations, role-playing exercises, and mock interviews. The training manual contained information about the MMPP, procedures for contacting respondents, the CATI management and tracking system, a review of frequently asked questions (FAQs [Appendix F]), questionnaire specifications and probing guidelines, refusal avoidance, protection of data confidentiality and the rights of study subjects, and procedures on quality control, recording, and editing.

The Interviewers were initially trained on January 9, 2013 for the execution of the survey with the commercially insured sample. The commercially insured sample recruitment was initiated on January 10, 2013 and continued through February 28, 2013. The Medicaid samples were delayed, and therefore a refresher interviewer training took place on July 22, 2013. The Medicaid sample recruitment was initiated on July 23, 2013 and completed on December 1, 2013.

### **CATI Patient Survey Execution**

Execution of the patient survey included (1) sending sampled patients an advance letter that explained the purpose and importance of the study, included consent and confidentiality statements, and informed the sample patients that they would be contacted by telephone to participate in a brief survey; (2) making up to eight call attempts to contact the sampled patients; and (3) using established best survey practices for securing cooperation, averting

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<sup>11</sup> IMPAQ received patient telephone numbers from MHCC for Medicaid patients and commercial patients.

refusals, and maximizing response rates. The survey took an average of 14 minutes to complete (an average of 15.1 minutes for the Adult Survey and 12.2 minutes for the Child Survey). The respondents were not paid for participation, and the survey was conducted in English only. Interviewers were provided with a set of frequently asked questions (FAQs) in order to anticipate respondents' questions and provide patients with consistent answers. Before administering the survey, interviewers obtained informed consent from all of the sampled (or proxy) patients. As part of the Institutional Review Board (IRB) package for the project, IMPAQ prepared a consent form that was read to respondents. For IRB purposes, IMPAQ requested a waiver of signed consent and this was approved. The screen for the verbal consent is shown in Exhibit 8.

### Exhibit 8: Consent Screen for Adult Patients

PCMH | Non Response | Appointment | Other | No Answer | Messages | Disconnected | Busy | Help | PhoneCollection

RESPONDENT: Myra Moose-Racoon.

We recently mailed you an introduction letter about this survey, but just in case you did not receive it, it is about your experiences and satisfaction with the health care you receive. Your answers are very important to our study. You may choose to participate or not - it is entirely optional. Whether you decide to participate or not, the health care you receive will not be affected. If you do choose to participate, your responses will be kept private and your provider will never know how you answered. The interview should take about 15 minutes to complete and the call may be monitored for quality assurance.

May we begin?

INTERVIEWERS: IF PROXY, PLEASE GAIN VERBAL CONSENT FROM THE SAMPLE MEMBER BEFORE MOVING FORWARD WITH PROXY. THE PROXY MUST BE 18 YEARS OLD OR OLDER.

INTERVIEWER: IF R HAS QUESTIONS, USE HELP TAB TO ACCESS FAQs.

1. OK TO CONTINUE  
 0. NOT A GOOD TIME FOR SM  
 4. OK TO CONTINUE WITH PROXY  
 7. REFUSED  
 9. R HESITATES TO DO SURVEY  
 6. R HAS QUESTIONS ABOUT THE STUDY

auxTestScre	1	Continue	InfoScreen_
Intro1	1	Avail	S3
Content			Content_2
InfoScreen			InfoScreen_2
NotAvailable			S4
S1			NotAvailable_
S2			
Content_			

Experienced survey supervisors closely monitored the interviews to ensure a smooth data collection process. To increase the response rate, a voicemail message was left, requesting the respondent to call the survey center to complete the interview (Appendix G). In addition, the advance letter sent to patients provided a toll-free number that patients could call to complete the survey at a time of their choice. Interviewers were available in the evenings or on weekends if requested by the patient. The survey team generated daily status reports to ensure oversight of daily activities and progression of the field effort. These reports allowed the Survey Center supervisors to gain detailed information regarding the number of calls completed, the dispositions codes, and the results of each sample member.

The Survey Center managed all inbound calls initiated by participants after receiving the advance letter. The team's approach to successful telephone data collection relied on precise and detailed sample management and case tracking. The Survey Center emphasizes efficient scheduling to distribute call attempts at optimum times. The CATI system facilitates case delivery for the interviewing staff by setting call-backs at preset times and resuming partially completed interviews. The system also produces progress reports and clean data files.

IMPAQ also established a toll-free number, listed in the advance letter, and fielded several inquiries from respondents seeking additional information about the study. Potential participants who called in to request removal from the survey were pulled from the sample and excluded from the survey. Similarly, CATI interviewers did not attempt interviews with respondents they identified as “refusals” or “ineligible,” and removed from the sample those identified as “deceased.”

## Advance Letters

IMPAQ mailed advance letters to each of the patients selected to participate in the telephone survey. The introductory letter may be found in Appendix E. For quality assurance purposes, at the start of each wave the team manually verified 2–4 percent of the advance letters to ensure that the names and ID numbers matched on both the mailed letters and the CATI system records.

During the baseline field effort, 4,290 advance letters were mailed to patients from participating practices. Exhibit 9 details the timing and size of the seven waves of mailed advance letters.

**Exhibit 9: Patient Survey Summary of Waves (Replicates)**

Wave Number	Count	Mailing Date	Wave Starts in CATI System
<b>Commercial Sample</b>			
Wave 1	300	1/7/2013	1/10/2013
Wave 2	520	1/18/2013	1/22/2013
Wave 3	481	1/28/2013	1/31/2013
Wave 4	920	2/8/2013	2/11/2013
Wave 5	182	7/19/2013	7/23/2013
Wave 6	56	8/22/2013	8/26/2013
<b>Medicaid Sample*</b>			
Wave 1	829	7/19/2013	7/23/2013
Wave 2	539	8/22/2013	8/26/2013
Wave 3	389	10/16/2013	10/21/2013
Wave 4	30	11/7/2013	11/11/2013
Wave 5	44	11/22/2013	11/25/2013
<b>Total letters</b>	<b>4,290</b>		

\* A small number of additional responses from commercially insured patients were needed after the conclusion of the data collection. The required sample was recruited during the Medicaid sample field effort and is included in the Medicaid wave counts.

The post office was unable to deliver 245 (5.7 percent) of the 4,290 advance letters mailed during the seven waves of mailings. The reasons are shown in Exhibit 10.

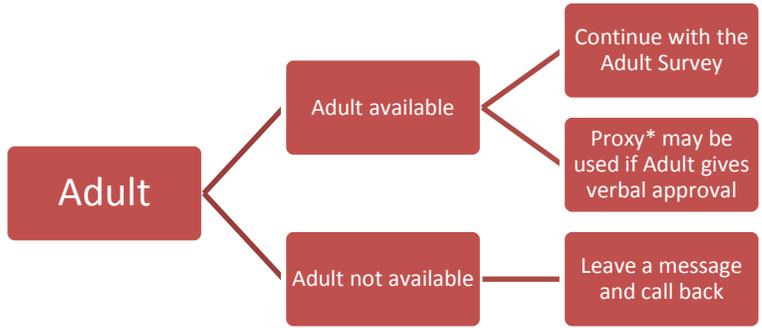
**Exhibit 10: Results of Patient Introductory Letters Not Delivered**

<b>Reason for Advance Letter Not Delivered</b>	<b>Number Not Delivered</b>	<b>Percent</b>
Moved with no forwarding address	13	5%
Attempted - not known	50	20%
Not deliverable as addressed	103	42%
No mail receptacle	7	3%
Insufficient address	10	4%
Forwarding time expired	36	15%
Vacant	9	4%
No such street or no such number	5	2%
Box closed	3	1%
No longer at address	1	0%
Unclaimed	3	1%
Returned (other or no reason given)	5	2%
<b>Total</b>	<b>245</b>	<b>100%</b>

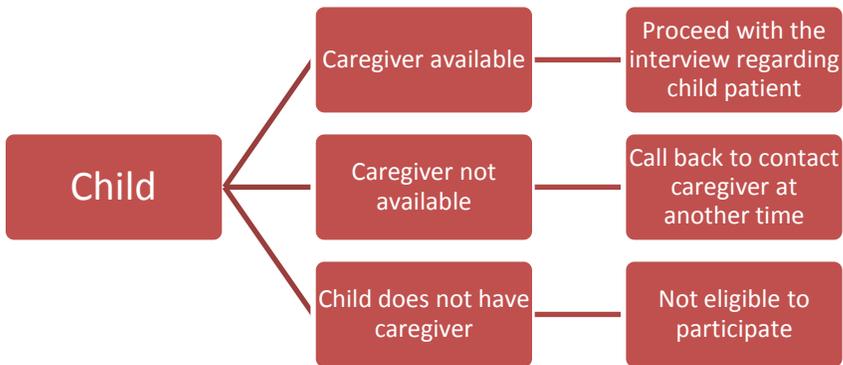
**Proxy Implementation**

Proxies were used for the patients who were under 18 years of age and for adults who could give verbal consent for their spouse or caregiver to answer the survey questions if they were unable to do so themselves. The caregiver or the person who knew most about the child’s health care was asked to participate and answer the survey questions about the child. If a proxy was used for an adult, the participant was asked for permission and then the interviewer reached out to the proxy. In addition a few demographic questions were asked of the caregiver for analytical purposes only. Exhibit 11 illustrates the decision process that was followed by the CATI interviewers when initiating the surveys with patients or their proxies.

### Exhibit 11: Decision Tree for Surveys



\* Proxy must be 18 years of age or older



The screens for the identification of the proxy and verbal consent are shown in Exhibit 12.

### Exhibit 12: Consent Screen for Proxy for a Child Patient or Adult Proxy (as needed)

**Proxy Screens:**

PCMH | Non Response | Appointment | Other | No Answer | Messages | Disconnected | Busy | Help | PhoneCollection

. RESPONDENT: Noel Nightowl.

Hello, this is [your name] calling from IMPAQ International on behalf of Maryland Health Care Commission. We are conducting a survey to learn about Marylanders' experience with their healthcare provider. Noel Nightowl is among Maryland children randomly chosen to participate in this survey and I am calling to speak with his caregiver - a family member or friend who helps Noel Nightowl with his health care.

INTERVIEWER: IF YOU CANNOT PROCEED, PLEASE USE THE PROPER TAB TO RECORD AN OUTCOME

1. ENTER 1 TO CONTINUE

auxTestScre	<input type="checkbox"/> 1	Continue	InfoScreen_
Intro1			S3
Content			Content_2
InfoScreen			InfoScreen_2
NotAvailable			S4
S1	<input type="checkbox"/>		NotAvailable_
S2	<input type="checkbox"/>		
Content_			

PCMH | Non Response | Appointment | Other | No Answer | Messages | Disconnected | Busy | Help | PhoneCollection

, RESPONDENT: Noel Nightowl.

**May I please speak to Noel's caregiver?**

INTERVIEWER: IF A CHILD HAS MULTIPLE CAREGIVERS AT HOME, ASK TO SPEAK WITH ANYONE OF THE CAREGIVERS AVAILABLE AT HOME. YOU MAY WISH TO LEAVE THE CHOICE OF WHICH ONE TO SPEAK WITH TO THE PERSON ON THE LINE. JUST INFORM HIM THAT YOU WOULD LIKE TO SPEAK WITH SOMEONE WHO IS KNOWLEDGEABLE ABOUT THE CHILD'S HEALTHCARE.

IF YOU CANNOT PROCEED, PLEASE USE THE PROPER TAB TO RECORD AN OUTCOME.

1. SPEAKING WITH CAREGIVER  
 2. SPEAKING WITH SOMEONE ELSE BUT CAREGIVER CAME TO THE LINE  
 3. CAREGIVER IS NOT AVAILABLE

auxTestScre	1	Continue	InfoScreen_
Intro1			S3
Content			Content_2
InfoScreen			InfoScreen_2
NotAvailable			S4
S1	<input type="checkbox"/>	Continue	NotAvailable_
S2	<input type="checkbox"/>		
Content_			

PCMH | Non Response | Appointment | Other | No Answer | Messages | Disconnected | Busy | Help | PhoneCollection

, RESPONDENT: Noel Nightowl.

**We recently mailed you an introduction letter about this survey, but just in case you did not receive it, it is about your experiences and satisfaction with the health care Noel receives. Your answers are very important to our study. You may choose to participate or not - it is entirely optional. Whether you decide to participate or not, the health care Noel receives will not be affected. If you do choose to participate, your responses will be kept private and Noel's provider will never know how you answered. The interview should take about 15 minutes to complete and the call may be monitored for quality assurance. May we begin?**

INTERVIEWER: IF R HAS QUESTIONS, USE HELP TAB TO ACCESS FAQs.

1. OK TO CONTINUE  
 0. NOT A GOOD TIME FOR SM  
 7. REFUSED  
 9. R HESITATES TO DO SURVEY  
 6. R HAS QUESTIONS ABOUT THE STUDY

auxTestScre	1	Continue	InfoScreen_
Intro1			S3
Content			Content_2
InfoScreen			InfoScreen_2
NotAvailable			S4
S1	<input type="checkbox"/>	Continue	NotAvailable_
S2	<input type="checkbox"/>	Speaking	
Content_	<input type="checkbox"/>		

## Patient Survey Analysis Methodology

IMPAQ begin the analysis of the patient satisfaction data with a description of the characteristics of the patients who responded to the survey. Due to stratification (on site and insurance status) and oversampling, patients were included in the sample with different selection probabilities. The data were therefore weighted before analysis in order to remove any bias that may have resulted from the sampling plan. IMPAQ estimated the distributions of characteristics using Stata survey procedures (Stata v. 12.1), taking the design strata (practice and commercially insured vs. Medicaid) into account and employing sampling weights to reflect the population from which cases were sampled. Additional detail regarding the sampling design is provided below. For continuous variables, the mean with standard error is shown; for categorical variables, the number and percentage.

IMPAQ also reports the following aspects of patient satisfaction and experience of care collected in the Adult Survey: (1) access to care, (2) cultural competency, and (3) patient-centeredness as measured by the CAHPS Survey. The same three aspects of care are reported for the Child Survey. The Child Survey has domains similar to those in the Adult Survey but contains fewer sub-domains. In addition, the results report four items describing family engagement that were measured only in the Adult Survey. For adults and children identified as

having a chronic condition, this analysis contains an assessment of the quality of chronic care as measured by the PACIC.

IMPAQ generated composite scores for items that constitute previously validated scales specific to the area of focus. For the items and scales from the CAHPS Survey, the results report the “top box” score, which refers to the percentage of responses in the most positive response categories. The top box is the “Always” response category in the 4-point response set ranging from “Never” to “Always”; the “A lot” response category in the 4-point response set ranging from “Not at all” to “A lot”; points 9 and 10 combined when providers are rated with 0 indicating the worst and 10 the best; the “Yes” response category for Yes/No questions; and the “Yes, definitely” response category in the 3-point response set of “No,” “Yes, somewhat,” and “Yes, definitely.” The top box indicates excellent performance for a given measure. This reporting method is recommended by the American Institutes for Research as an approach that is easily understood and interpreted.<sup>12</sup> For scales from the PACIC, the results report mean and standard deviation. To further examine the issue of health disparities that may exist for chronically ill patients or for African Americans, scores are stratified by chronic condition status and by race.

In addition, IMPAQ tested whether score differences are statistically significant between chronically ill patients and those without a chronic condition or illness, and also between African Americans and Caucasians. To do so IMPAQ constructed ordinal logistic regression models for ordinal outcomes (e.g., top box score for a scale, PACIC scales) and logistic regression models for binary outcomes (e.g., top box score for a single item). For measures in the Adult Survey, IMPAQ adjusted for the respondent’s age, gender, education level, whether the respondent lives with others, self-rated overall health, self-rated mental health, length of experience with the provider, Medicaid or commercial insurance status, and practice type. For measures in the Child Survey, IMPAQ adjusted for the child’s age, gender, guardian-rated overall health, length of experience with the provider, Medicaid or commercial insurance status, practice type, and also characteristics of the respondent or guardian, including age, gender, education level, and relationship to the child. IMPAQ also accounted for the design strata (practice and commercially insured vs. Medicaid) and weighted the sample to reflect the population.

### **3.1.2 Data Collection**

#### **Sampling Design for Patient Surveys**

The universe of potential participants was supplied to IMPAQ by the MHCC and the Hilltop Institute, University of Maryland Baltimore County. Given the target analysis sample size of 500

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<sup>12</sup> American Institutes for Research (AIR). How to Report Results of the CAHPS Clinician & Group Survey. Robert Wood Johnson Foundation. Accessed on Nov 25, 2013 at: <https://cahps.ahrq.gov/surveys-guidance/cg/cgkit/HowtoReportResultsofCGCAHPS080610FINAL.pdf>.

patients and the estimate of a 50 percent response rate, IMPAQ designed a survey sample of 1,000 patients. The patient survey data were collected from a stratified sample of patients randomly selected from the universe of attributed patients associated with the 52 practices in the pilot and for whom valid contact information was available. The patient universe was explicitly stratified by practice and the patient's insurance type; that is, patients were sampled independently from each participating practice, and separately for Medicaid patients and commercially insured patients. The purpose of this stratification was to ensure representation of all practices, as well as their respective Medicaid and commercially insured populations.

To address the study's objectives, children, African Americans, and chronically ill patients had to be well represented in the sample. Due to the lack of proper stratification variables (i.e., race) and a small initial sample of 1,000 patients, the patient universe was not stratified beyond the practice and the patient's insurance type.<sup>13</sup> However, pediatric practices and other practices with pediatricians were oversampled to increase the likelihood of selecting children in the sample. Practices located in urban areas with a high concentration of African Americans also were oversampled.<sup>14</sup> In the absence of the distribution of chronically ill patients by practice, IMPAQ used the number of MHIP enrollees as a proxy variable for chronic illness.

Due to oversampling, patients were included in the sample with different selection probabilities. Therefore, the survey data were weighted before analysis in order to remove any possible selection bias. The sample can be adjusted post hoc using weights to represent the overall age and gender distributions of the attributed population.

The sample was initially allocated by insurance type, proportionally to the number of patients with Medicaid and commercial insurance (58,216 patients had Medicaid, while 146,341 had commercial insurance, for a total of 204,557 patients). This led to the allocation of 330 Medicaid patients and 670 commercially insured patients to the sample. With no further stratification, and no oversampling, these numbers would lead to selection probabilities of 0.00567 (obtained as a ratio of 330 to 58,216) for Medicaid patients and 0.0044578 (obtained as the ratio of 670 to 146,341) for commercially insured patients.

To determine the oversampling rates, IMPAQ used the two binary variables representing the existence of a pediatrician on staff and the practice location in a city with a high percentage of African Americans, as well as the number of MHIP enrollees. Only practices among the top 25 percent with respect to the number of MHIP enrollees were oversampled. The oversampling strategy was based on a system of points where the presence of a pediatrician and an MHIP enrollment in the top 25 percent among all practices would increase the initial selection probability by a factor of 4. The practice location in areas with a high concentration of African

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<sup>13</sup> We initially estimated a response rate of 50 percent and assumed that a survey sample of 1,000 patients would provide an analysis sample of 500 patients. However, the response rate was significantly lower than expected (14.4 percent) and a larger sample are therefore required.

<sup>14</sup> In 2011, Blacks/African Americans made up 63.7 percent of the population in Baltimore, 53.4 percent in Waldorf, and 48.7 percent in Bowie.

Americans would increase its selection probability by a factor of 5. The result of this sample allocation is shown in Exhibit 13.

**Exhibit 13: Sample Allocation across Practices**

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
AGHS Berlin Primary Care	3	2	5	N	N	27
AGHS Townsend Medical Center	3	6	9	N	N	54
Andrew S. Dobin, M.D., P.A.	0	10	10	N	Y	19
Bay Crossing Family Medicine (Ramona Seidel)	3	2	5	N	N	2
Calvert Convenient Care	3	2	5	N	N	1
Calvert Family Care	3	2	5	N	N	5
Calvert Internal Medicine Group, P.A. (Prince Frederick)	3	40	43	N	N	111
Calvert Internal Medicine Group, P.A. (Dunkirk)	0	2	2	N	N	22
Calvert Internal Medicine Group, P.A. (Solomons)	0	2	2	N	N	17
Cambridge Pediatrics, LLC	22	18	40	All	Y	14
Children's Medical Group, P.A.	20	12	32	All	N	13
Comprehensive Women's Health	0	2	2	N	N	24
Family Health Centers of Baltimore	18	2	20	Y	Y	0
Family Medical Associates, LLC (Manchester)	3	2	5	N	N	18
Family Medical Associates (Eldersburg)	3	2	5	N	N	24
Family Medical Associates, (Finksburg)	3	2	5	N	N	1
Family Medical Associates, (Reisterstown)	0	2	2	N	N	0
Family Care of Easton	3	3	6	Y	N	26
Gerald Family Care, P.C.	3	2	5	N	N	2
Green Spring Internal Medicine, LLC	0	2	2	N	N	32
Hahn & Nelson Family Medicine	3	2	5	N	N	12
Johns Hopkins at Montgomery County	3	22	25	N	N	58
Johns Hopkins Community Physicians at Canton Crossing	3	19	22	Y	Y	20
Johns Hopkins Community Physicians at Hagerstown	3	2	5	N	N	23
Johns Hopkins Community	16	15	31	Y	N	27

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
Physicians at Water's Edge						
Johns Hopkins Community Physicians at Wyman Park	3	26	29	N	Y	42
Johnston Family Medicine	0	2	2	N	N	21
Joseph K. Weidner, Jr., MD dba Stone Run Family Medicine	3	2	5	N	N	8
MedPeds LLC	5	62	67	Y	N	73
MedStar Health Physicians. Franklin Square Family Health Center	52	46	98	Y	Y	54
Mountain Laurel Medical Center	3	2	5	N	N	22
Parkview Medical Group (Myersville)	0	37	37	N	N	109
Parkview Medical Group (Mt. Airy)	3	37	40	N	N	109
Parkview Medical Group (Frederick)	3	37	40	N	N	109
Patient First–Waldorf	3	20	23	N	Y	38
Potomac Physicians Annapolis Regional Medical Center	10	9	19	Y	N	31
Potomac Physicians, Frederick Medical Center	7	10	17	Y	N	31
Potomac Physicians, Security Health Center	7	13	20	Y	N	20
Primary & Alternative Medical Center	3	2	5	N	N	4
Shah Associates., Calvert (Prince Frederick)	3	2	5	N	N	21
Shah Associates, Hollywood	16	32	48	Y	N	42
Shah Associates, Waldorf	3	28	31	N	Y	58
The Pediatric Group, LLP at Crofton	3	15	18	All	N	15
The Pediatric Group, LLP at Davidsonville	8	49	57	All	N	41
The Pediatric Group, LLP at Severna	5	5	10	All	N	1
Twin Beaches Community Health Center	3	2	5	N	N	4
Ulmer Family Medicine, PC	3	2	5	N	N	8
Union Primary Care	3	2	5	N	N	27
University of Maryland Family Medical Associates, P.A.	28	41	69	N	Y	55
University of Maryland Pediatric Associates, P.A.	18	2	20	Y	Y	0

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
University Care at Edmondson Village	14	4	18	N	Y	4
Vanessa Allen, M.D.	0	4	4	N	Y	10

### Recruitment of Participants

The actual survey sample was significantly larger than the planned size of 1,000 patients from the sampling plan shown above. Although IMPAQ initially expected a response rate of 50 percent, the actual rate was significantly lower, and the rate of not-up-to-date telephone numbers was higher than expected. IMPAQ took advantage of the ability of the CATI reporting system to identify the practices from which additional survey sample members were needed to achieve the target analysis sample size for each practice. Thus, the sample size grew to 4,290 patients, of which one was a duplicate. A total of 4,289 patients were therefore loaded into the CATI system.

Of the 4,289 patients who were called from the survey sample, the CATI interviewers completed 620 patient surveys during the field period. Exhibit 14 and Exhibit 15 illustrate the results of all call attempts for the commercially insured and Medicaid sample by outcome category. The overall response rate was 14.4 percent (16.3 percent for commercially insured patients and 11.9 percent for Medicaid patients). The greatest contributors to the low response rate were non-responses due to bad telephone numbers (35.5 percent) and reaching the maximum number of eight call attempts (20.8 percent). Patient refusal to participate in the survey only accounted for 8 percent of the patients called.

**Exhibit 14: Outcome of Call Attempts to Commercially Insured Sample**

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Completed	401	16%	290	15%	111	20%
Partially completed	8	0%	7	0%	1	0%
Non-response (no answer, busy, unlocatable, connection issue, wrong number, disconnected number, number not working, etc.)	856	35%	669	35%	187	33%
Respondent deceased	3	0%	2	0%	1	0%
Mental/physical inability	1	0%	1	0%	0	0%
No caregiver and less than 18 years old	1	0%	0	0%	1	0%
Refusal	237	10%	190	10%	47	8%
Language barrier	8	0%	5	0%	3	1%
Voice mail or privacy managers, left message household member	214	9%	164	9%	50	9%
Other	82	3%	64	3%	18	3%
Reached 8 calls	647	26%	503	27%	144	26%

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
<b>Total</b>	<b>2,458</b>	<b>100%</b>	<b>1,895</b>	<b>100%</b>	<b>563</b>	<b>100%</b>

**Exhibit 15: Outcome of Call Attempts to Medicaid Sample**

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Completed	219	12%	96	10%	123	14%
Partially completed	7	0%	3	0%	4	0%
Non-response (no answer, busy, un-locatable, connection issue, wrong number, disconnected number, number not working, etc.)	668	36%	371	40%	297	33%
Respondent deceased	4	0%	4	0%	0	0%
Mental/physical Inability	2	0%	2	0%	0	0%
No caregiver and less than 18 years old	1	0%	0	0%	1	0%
Refusal	105	6%	53	6%	52	6%
Language barrier	15	1%	0	0%	15	2%
Voice mail or privacy managers, left message household member	192	10%	101	11%	91	10%
Other	67	4%	43	5%	24	3%
Reached 8 calls	238	13%	96	10%	142	16%
Completed under wrong regnum when new sample given to IMPAQ*	34	2%	15	2%	19	2%
Sample member not part of new sample when given to IMPAQ*	279	15%	152	16%	127	14%
<b>Total</b>	<b>1,831</b>	<b>100%</b>	<b>936</b>	<b>100%</b>	<b>895</b>	<b>100%</b>

\* IMPAQ originally designed a sampling plan for the Medicaid patients based on assignments provided by the MHCC in August 2012. The assignment values were based on a snapshot of patients on a particular date and were not based on encounters or utilization. The original contact information for Medicaid patients did not contain their actual assignments, and so IMPAQ estimated them with an algorithm that used claims for visits and encounters. IMPAQ then received the official assignments, which were based on actual visits and encounters over a specified period of time. IMPAQ then redesigned the sampling plan based on the latter distribution of patient assignments across MMPP practice sites. During the collection of patient data before receiving the final assignment IMPAQ had collected data from patients as part of the sample for the wrong practice site, and IMPAQ also sent advance letters to patients who were no longer assigned to any MMPP practice in the updated data.

IMPAQ collected 386 responses to the Adult Survey. The analysis sample excludes 38 (9.8 percent) because these respondents indicated that they did not receive care from the MMPP practice sites (n=31), did not know whether they went to the practice site for care (n=6), or refused to answer the question (n=1). As a result, IMPAQ analyzed 348 responses to the Adult Survey. Of the 234 responses to the Child Survey, IMPAQ excluded 19 respondents who indicated that their child did not see the provider that was on record for them, and one respondent who did not know whether the child went to the practice site for care. IMPAQ analyzed 214 responses to the Child Survey.

Exhibit 16 compares the number of available patients, the target analysis sample size, and the resulting analysis sample size for each practice by insurance type.

**Exhibit 16: Completed Surveys by Practice**

REGNUM	Practice	Commercial Insurance			Medicaid		
		Available	Needed	Completed**	Available	Needed	Completed**
1012	Johns Hopkins Community Physicians at Water's Edge	2105	7	6	2303	8	6
1027	Family Medical Associates, LLC (Manchester)	455	1	1	28	2	1
1038	University of Maryland Family Medicine Associates, P.A.	2634	21	26	2068	14	17
1061	Calvert Family Care	209	1	2	114	2	1
1067	Green Spring Internal Medicine, LLC	511	1	1		0	0
1069	Potomac Physicians Annapolis Regional Medical Center	1692	5	6	1336	5	11
1107	Potomac Physicians Frederick Medical Center	1430	5	4	991	4	3
1112	Potomac Physicians Security Health Center	2676	6	7	993	4	4
1121	Andrew S, Dobbin, M.D., P.A.	1130	5	5		0	0
1122	The Pediatric Group, LLP at Davidsonville	3385	25	33	495	4	12
1130	Children's Medical Group, P.A.	1641	6	6	2346	10	9
1150	Johnston Family Medicine	1330	1	1		0	0
1155	Cambridge Pediatrics, LLC	1315	9	10	1694	11	11
1161	Vanessa Allen, M.D. (Natural Family Wellness)	575	2	2		0	0
1202	Johns Hopkins Community Physicians at Hagerstown	1452	1	1	5	2	0
1212	The Pediatric Group, LLP at Crofton	1903	8	8	297	2	2
1224	MedPeds, LLC	4540	31	35	364	3	3
1225	Family Care of Easton	415	2	2	97	2	2
1239	Calvert Internal Medicine Group, P.A. (Prince of Frederick)	4849	20	25	45	2	2

REGNUM	Practice	Commercial Insurance			Medicaid		
		Available	Needed	Completed**	Available	Needed	Completed**
1241	Calvert Internal Medicine Group, P.A. (Dunkirk)	1030	1	1		0	0
1242	Calvert Internal Medicine Group, P.A. (Solomons)	569	1	1	114	2	2
1247	Hahn & Nelson Family Medicine	266	1	1	114	2	2
1248	MedStar Health Physicians; Franklin Square Family Health Center	1036	23	23	2706	26	23
1249	Johns Hopkins Community Physicians at Wyman Park	1936	13	17	8	2	3
1264	Johns Hopkins at Montgomery County	2898	11	16	2	2	0
1266	Ulmer Family Medicine, PC	252	1	1	12	2	2
1290	The Pediatric Group, LLP at Severna Park	504	2	4	23	3	4
1305	Shah Associates, Hollywood	1957	16	19	631	8	6
1306	Union Primary Care	1240	1	1	1242	2	2
1310	AGHS Berlin Primary Care	422	1	1	165	2	2
1317	Family Medical Associates, LLC (Eldersburg)	277	1	2	145	2	2
1318	AGHS Townsend Medical Center	309	3	4	27	2	1
1319	Family Medical Associates, LLC (Finksburg)	259	1	2	65	2	3
1328	Family Medical Associates, LLC (Reisterstown/Mt Airy)		1	0	20	0	0
1336	Shah Associates, Calvert (Prince Frederick)	661	1	1	224	2	0
1342	Shah Associates, Waldorf	2060	14	15	61	2	6
1354	Family Health Centers of Baltimore	119	1	1	1560	9	9
1369	Primary and Alternative Medical Center	232	1	1	282	2	2

REGNUM	Practice	Commercial Insurance			Medicaid		
		Available	Needed	Completed**	Available	Needed	Completed**
1373	Johns Hopkins Community Physicians at Canton Crossing	1552	10	13	6	2	2
1376	University Care at Edmondson Village	597	2	3	1894	7	8
1384	University of Maryland Pediatric Associates. P.A.	138	1	0	1541	9	10
1385	Joseph L. Weidner, Jr. MD LLC (dba Stone Run Family Medicine)	981	1	1	168	2	3
1396	Gerald Family Care, PC	524	1	1	257	2	2
1397	Mountain Laurel Medical Center	455	1	2	214	2	2
1398	Calvert Conventional Care	290	1	2	10	2	2
1399	Twin Beaches Community Health Center	340	1	1	72	2	2
1414	Bay Crossing Family Medicine (Ramona Seidel)	124	1	1	12	2	1
1435	Comprehensive Women's Health	1551	1	1		0	0
1441	Parkview Medical Group (Frederick)	7615	18	16	339	2	5
1461	Patient First—Waldorf	1097	10	11	2	2	0
1464	Parkview Medical Group (Mt. Airy)	3428	18	16		0	0
1465*	Parkview Medical Group (Myersville)	708	18	15	62	2	0
<b>Total Completes</b>				<b>374</b>			<b>188</b>

\* Originally combined with 1441 and 1464 because no sample was provided for these practices.

## Chronic Conditions

As mentioned earlier, patients with chronic conditions are a population of special interest in the PCMH model. Thus, survey respondents were asked questions regarding their health in part to identify whether they had been diagnosed with a chronic condition. For this project, chronic conditions were defined using the CAHPS definitions as follows:

- An adult is said to have a chronic condition if he/she received health care three or more times for a condition that has lasted for at least three months (excluding pregnancy or menopause) or who is taking a prescribed medication to treat a condition that has lasted for at least three months, excluding birth control.
- A child (less than 18 years old) is said to have a chronic condition if he/she fulfills *any one* of the following conditions:

- He/she takes a prescribed medicine (other than vitamins) for a condition that is expected to last for at least 12 months,
- He/she needs/uses more medical care, more mental health services, or more educational services than is usual for most children of the same age for a condition that is expected to last for at least 12 months,
- He/she is limited/prevented in his/her ability to do the things most children of the same age can do due to a condition that is expected to last for at least 12 months,
- He/she needs/gets special therapy, such as physical, occupational, or speech therapy for a condition that is expected to last 12 months, or
- He/she needs/gets treatment or counseling for any kind of emotional, developmental, or behavioral problem that is expected to last for at least 12 months.

Exhibit 17 and Exhibit 18 show the frequency of identified chronic conditions among the commercially insured and Medicaid sample patients, respectively, by age category. Overall, 52.7 percent of the analysis sample was identified as having at least one chronic condition. Among the four subsamples, adult commercially insured patients have the highest prevalence of chronic conditions (68.5 percent) and commercially insured children have the lowest (25.0 percent).

**Exhibit 17: Percent of Commercially Insured Respondents with Chronic Conditions**

	<b>Total Completes</b>	<b>Commercially Insured Sample with Chronic Condition(s)</b>	<b>Percent</b>
Adult	270	185	68.5%
Child	104	27	25.0%
Total	374	212	56.7%

**Exhibit 18: Percent of Medicaid Respondents with Chronic Conditions**

	<b>Total Completes</b>	<b>Medicaid Sample with Chronic Condition(s)</b>	<b>Percent</b>
Adult	77	46	60.0%
Child	109	40	36.7%
Total	186	86	46.2%

**Data Coding, Editing, and Cleaning**

To ensure the quality of the data, the CATI programmers implemented appropriate range, logic, and inter-item consistency checks for question types and expected responses. Range checks are necessary to minimize key entry errors and highlight unusual responses. IMPAQ scripted skip

logic into the CATI instruments to ensure that respondents received the appropriate questions based on previous responses. Internal consistency checks allowed interviewers to make necessary corrections to data while still on the phone with the respondent. In addition, IMPAQ included the following robust set of validations and data quality checks:

- Restrict interviewers to entering only valid responses for a specific data type, such as dates, times, whole numbers, and decimal numbers.
- Enforce both hard checks (where specific rules must be satisfied before a response is accepted) and soft checks (where the software suggests that a specific response may be incorrect, but allows the user to override the check).
- Enforce upper and lower boundaries on numeric entries, and enforce maximum lengths on open-ended verbatim responses.
- Drive both simple and advanced item skip logic based on data provided in prior responses.
- Enforce that every question has a response by allowing any individual question to be answered with “Don’t Know” or “Refused,” and perform inter-item consistency checks to confirm that new responses are consistent with earlier responses.
- Ensure consistency in the onscreen presentation of the online survey.

## **Lessons Learned**

IMPAQ learned a number of lessons about the sampling and implementation by working with the commercial insurance and Medicaid data sets. Because the design was based on the practice counts and not related to the actual data sets, the initial sampling frame was skewed towards larger sample sizes for each practice. Once the data sets were cleaned, the true available data set was apparent, and, in many practices, many fewer sample members were available to meet the completion goals.

When sampling for these populations in the future, the sampling plan will be designed using a cleaned universe of patients rather than the raw patient counts that are not connected to the contact information data set. Using the data’s distribution of patients across practices will increase the likelihood that IMPAQ has enough patients to achieve the target analysis sample size for each practice and insurance type combination. IMPAQ will only consider patients who have valid contact information (i.e., plausible phone numbers and addresses). IMPAQ will also need to de-duplicate the data so that patients in the same household with the same phone number will not all remain in the universe of patients from which IMPAQ samples. Since their opinions are not likely to be independent, especially those of children with the same adult proxy, only one of the duplicates will remain in the universe for selecting the sample.

In implementing the survey, various tasks will be modified in the future as well. Response rate projections compared to actual response rates varied, and actual responses were lower than expected. Out-of-date contact information for the sample in the data set required a larger sample than anticipated to obtain the target completes per practice. Thus, the population

resembled a general population survey in terms of response rates rather than a survey of a client-listed sample of those connected to the topic. In the next phase IMPAQ will send out 10 advance letters for every survey IMPAQ hopes to complete. If there are additional resources for the patient survey data collection, more call attempts per case could be implemented. IMPAQ would increase the maximum number of attempts to 12 per sample member (compared with 8 in the current data collection). In an examination of the 2003 CAHPS Fee-for Service survey data, Campbell et al. found that “diminished returns” were not experienced until after 12 call attempts.<sup>15</sup> In fact, the researchers found that as the call attempts increased, the rate of completion also increased and did not begin to flatten out until they were near the maximum of 10–12 attempts. Increasing the number of call attempts to households would also mitigate non-response bias. In a study of enhanced calling efforts, Kristal et al. found that records that had been coded with non-response dispositions (i.e., answering machine, busy) in the first set of call attempts were categorized as “hard to reach” households. When additional attempts were made to reach those households, 79 percent resulted in not only a live contact but also a completed survey.<sup>16</sup> The subsequent attempts helped to increase the overall response rate (on average a 2–3 percent increase) for those “hard to reach” households. A similar study of increased call attempts found that increasing the number of call attempts also increased contact rates and therefore resulted in higher response rates (5.5–8 percent higher on average).<sup>17</sup>

### 3.1.3 Analysis Results

#### Characteristics of Respondents: Adult Survey

Exhibit 19 displays several characteristics of the adult weighted sample. Overall, most patients were aged between 35 and 64 years, with 12 percent of patients 65 years of age or older, and about two-thirds of the patients were women. About 60 percent of the patients were Caucasian, and about 25 percent of the adult patients were African American. About 20 percent lived alone. Half were in very good or excellent health, and 70 percent were in very good or excellent mental health. The majority of the patients (68 percent) reported a health problem that requires at least three months of health care visits or medicine prescriptions (the CAHPS definition of having a chronic illness). The provider rated is the usual provider for most of the patients (95 percent), and half had been seeing that provider for five years or more.

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<sup>15</sup> Campbell, L.N., Brown, G.G., Carpenter, L., & Dimitropoulos, L.L. Analyzing marginal response rates in the CAHPS Medicare Fee-for-Service Survey. Presented at the 60th Annual Conference, American Association for Public Opinion Research, Miami Beach, FL, May 2005. Available at: <http://www.rti.org/pubs/campbellpaper.pdf>.

<sup>16</sup> Kristal, A.R., White, E., Davis, J.R., Corycell, G., Raghunathan, T., Kinne, S., & Lin, T.K. (1993). Effects of enhanced calling efforts on response rates, estimates of health behavior, and costs in a telephone health survey using random-digit dialing. *Public Health Reports*, 108(3): 372-379.

<sup>17</sup> McGuckin, N., Liss, S., & Keyes, M. A. Hang-ups—Looking at Non-Response in Telephone Surveys. Washington, DC: U.S. Department of Transportation, Federal Highway Administration, 2001. Accessed at: <http://www.isctsc.cl/archivos/2001/McGuckin>.

Among 348 respondents, 78 respondents had Medicaid, and 270 had commercial insurance. Medicaid patients were younger ( $p=0.004$ ): 45 percent were under the age of 35, while only 17 percent of commercially insured patients were in that age category. Patients 65 years of age or older constituted 6 percent of the Medicaid group and 13 percent of the commercially insured group. Caucasian respondents accounted for 30 percent of the respondents in the Medicaid group and 67 percent those in the commercially insured group; African Americans accounted for 58 percent of the Medicaid group and 22 percent of the commercially insured group. Generally, Medicaid patients self-reported poorer health ( $p<0.001$ ). Those seeing their provider for five years or more represented 39 percent of the Medicaid patients and 52 percent of the commercially insured patients. Exhibit 19 presents additional details.

### Characteristics of Respondents: Child Survey

The characteristics of the Child Survey subjects are shown in Exhibit 20. One-third of subjects were five to nine years and another third were 10 to 14 years old. The children were roughly evenly divided between female and male patients in both the Medicaid and the commercially insured groups. In the Medicaid group, most children were African American (61 percent), while a slim majority of children in the commercially insured group were Caucasian (56 percent). Almost 90 percent of the children received overall health ratings (by their guardian) of “Excellent” or “Very Good.” About one-third of the children had a condition or problem that required treatment for at least 12 months (the CAHPS definition of chronic illness): 37 percent in the Medicaid group and 23 percent in the commercially insured group. Seventy-three percent of the children had been seeing the indicated providers for at least three years. Exhibit 20 presents more information about the characteristics of the children and the respondents who answered the survey on the children’s behalf.

### Exhibit 19: Characteristics of Patients: Adult Survey

	Commercial Insurance	Medicaid	p value*	Overall
<b>Demographics</b>				
Age				
Under 35	17%	45%	0.004	20%
35 - 44	21%	20%		21%
45 - 54	30%	21%		29%
55 - 64	18%	8%		17%
65 or older	13%	6%		12%
Gender				
Male	36%	28%	0.365	35%
Female	64%	73%		65%
Race				
Caucasian	67%	30%	<0.001	63%
African American	22%	58%		26%
Other	11%	12%		11%
Education				
Some high school, but did not graduate	3%	17%	<0.001	4%
High school graduate or GED	20%	47%		23%

	Commercial Insurance	Medicaid	p value*	Overall
Some college or two-year degree	37%	25%		35%
Four-year college graduate	17%	5%		15%
More than four-year college degree	24%	6%		22%
Household member				
Lives alone	17%	35%	0.019	19%
Lives with spouse, partner, relative, or others	83%	65%		81%
<b>Health Conditions</b>				
Self-rated overall health				
Poor	1%	17%	<0.001	3%
Fair	10%	16%		11%
Good	38%	33%		37%
Very good	35%	21%		34%
Excellent	16%	13%		16%
Self-rated mental or emotional health				
Poor	1%	6%	0.002	2%
Fair	4%	18%		6%
Good	22%	27%		22%
Very good	39%	22%		37%
Excellent	34%	26%		33%
The respondent has a chronic condition or problem				
No	32%	31%	0.868	32%
Yes	68%	69%		68%
<b>Relationship with the rated provider</b>				
The rated provider is the respondent's usual source of care				
No	4%	6%	0.663	5%
Yes	96%	94%		95%
Length of experience with the rated provider				
Less than one year	14%	15%	0.564	14%
At least one year, less than three years	18%	21%		18%
At least three years, less than five years	17%	24%		17%
Five years or more	52%	39%		50%

\* Pearson's chi-squared tests were used to compare distributions between Medicaid group and commercial insurance group.

### Exhibit 20: Characteristics of Patients: Child Survey

	Commercial Insurance	Medicaid	p value*	Overall
<b>Demographics</b>				
Age				
0-4	16%	22%	0.684	19%
5-9	36%	32%		34%
10-14	32%	26%		30%
15-17	15%	19%		17%
Gender				
Male	51%	51%	0.987	51%
Female	49%	49%		49%
Race				
Caucasian	56%	28%	<0.001	44%

	Commercial Insurance	Medicaid	p value*	Overall
African American	31%	61%		44%
Other	13%	11%		12%
<b>Health Conditions</b>				
Self-rated overall health				
Poor	0%	0%	0.021	0%
Fair	1%	5%		3%
Good	8%	11%		9%
Very good	37%	18%		29%
Excellent	53%	66%		59%
<b>Self-rated mental or emotional health</b>				
Poor	1%	2%	0.107	1%
Fair	1%	11%		5%
Good	12%	15%		13%
Very good	24%	21%		23%
Excellent	62%	52%		57%
The child has a chronic condition or problem				
No	77%	63%	0.034	71%
Yes	23%	37%		29%
<b>Relationship with the rated provider</b>				
The rated provider is the respondent's usual source of care				
No	4%	1%	0.345	3%
Yes	96%	99%		97%
Length of experience with the rated provider				
Less than one year	5%	8%	0.840	6%
At least one year, less than three years	21%	20%		21%
At least three years, less than five years	21%	17%		19%
Five years or more	53%	55%		54%
<b>Characteristics of Surrogate Respondents</b>				
Age				
Under 35	24%	39%	0.028	30%
35 - 44	34%	39%		37%
45 - 54	38%	16%		28%
55 or older	5%	5%		5%
Gender				
Male	33%	8%	<0.001	22%
Female	67%	92%		78%
Education				
Some high school, but did not graduate	1%	15%	<0.001	7%
High school graduate or GED	12%	44%		26%
Some college or two-year degree	21%	31%		25%
Four-year college graduate	31%	10%		22%
More than four-year college degree	35%	1%		20%
Relationship with the child				
Mother or father	98%	91%	0.069	95%
Other	2%	9%		5%

\* Pearson's chi-squared tests were used to compare distributions between Medicaid group and commercial insurance group.

## Characteristics of Chronically Ill Patients

Exhibit 21 and Exhibit 22 display the characteristics of the adult and child patients, respectively, who reported having at least one chronic condition that requires continuous care or medication. Forty-three percent of chronically ill adults rated their own overall health as “Very Good” or “Excellent,” 40 percent rated it as “Good,” and 17 percent rated it as “Fair” or “Poor.” The majority of the patients (66 percent) rated their mental or emotional health as “Very Good” or “Excellent.” For child patients, none were rated in terms of overall health as “Poor” by their guardians, 7 percent were rated as “Fair,” 16 percent as “Good,” and 77 percent as “Very Good” or “Excellent.” In terms of mental health, 27 percent of child patients in the Medicaid group were rated as “Poor” or “Fair,” compared with only 12 percent in the commercial group.

### Exhibit 21: Characteristics of Chronically Ill Patients: Adult Survey

	Commercial Insurance	Medicaid	p value*	Overall
<b>Demographics</b>				
Age				
Under 35	7%	38%	0.001	11%
35 - 44	23%	24%		23%
45 - 54	32%	19%		31%
55 - 64	20%	10%		18%
65 or older	19%	9%		17%
Gender				
Male	33%	30%	0.811	33%
Female	67%	70%		67%
Race				
Caucasian	69%	30%	0.002	65%
African American	22%	57%		26%
Other	9%	14%		10%
Education				
Some high school, but did not graduate	2%	19%	0.003	4%
High school graduate or GED	19%	43%		22%
Some college or two-year degree	36%	28%		35%
Four-year college graduate	16%	5%		15%
More than four-year college degree	26%	5%		24%
Household member				
Lives alone	15%	23%	0.380	16%
Lives with spouse, partner, relative, or others	85%	77%		84%
<b>Health Conditions</b>				
Self-rated overall health				
Poor	1%	21%	0.001	4%
Fair	12%	22%		13%
Good	41%	31%		40%
Very good	36%	19%		34%
Excellent	10%	6%		9%
Self-rated mental or emotional health				
Poor	1%	9%	0.004	2%
Fair	4%	25%		7%
Good	26%	20%		26%
Very good	37%	25%		36%
Excellent	31%	21%		30%
<b>Relationship with the rated provider</b>				
The rated provider is the respondent's usual source of care				
No	5%	4%	0.950	5%
Yes	95%	96%		95%
Length of experience with the rated provider				
Less than one year	12%	18%	0.146	12%
At least one year, less than three years	19%	17%		19%
At least three years, less than five years	13%	30%		15%
Five years or more	57%	35%		54%

\*Pearson's chi-squared tests were used to compare distributions between Medicaid group and commercial insurance group.

**Exhibit 22: Characteristics of Chronically Ill Patients: Child Survey**

	Commercial Insurance	Medicaid	p value*	Overall
<b>Demographics</b>				
Age				
0-4	7%	6%	0.778	6%
5-9	41%	36%		38%
10-14	37%	31%		34%
15-17	15%	28%		22%
Gender				
Male	44%	55%	0.477	50%
Female	56%	45%		50%
Race				
Caucasian	56%	28%	0.186	40%
African American	36%	65%		52%
Other	9%	7%		8%
<b>Health Conditions</b>				
Self-rated overall health				
Poor	0%	0%	0.097	0%
Fair	3%	9%		7%
Good	18%	14%		16%
Very good	54%	21%		35%
Excellent	25%	56%		42%
Self-rated mental or emotional health				
Poor	6%	2%	0.423	4%
Fair	6%	25%		16%
Good	17%	23%		21%
Very good	27%	17%		21%
Excellent	45%	32%		38%
<b>Relationship with the rated provider</b>				
The rated provider is the respondent's usual source of care				
No	0%	0%		0%
Yes	100%	100%		100%
Length of experience with the rated provider				
Less than one year	3%	10%	0.596	7%
At least one year, less than three years	15%	13%		14%
At least three years, less than five years	30%	20%		24%
Five years or more	52%	58%		55%

\* Pearson's chi-squared tests were used to compare distributions between Medicaid group and commercial insurance group.

**Consumer Assessment of Healthcare Providers and Systems (CAHPS) Scales by Chronic Condition Status: Adult Survey**

Exhibit 23 summarizes the adult responses to the CAHPS survey question by chronic condition status. Generally, adult patients reported high scores for their providers' cultural competency. About 90 percent of the patients reported that their providers are always polite and

considerate. Fifty-six percent of adult patients reported always receiving advice from their providers on staying healthy. Seventy-six percent of the chronically ill patients and 59 percent of those without chronic conditions gave 9 or 10 points on a 0–10-point scale when rating trust in their providers. In terms of access to care, roughly half of the patients reported that they always receive timely appointments, care, and information. Adult patients also rated provider communication highly, with 80 percent reporting in the most positive category among the chronically ill, and 75 percent among patients without chronic illnesses. There are no statistically significant differences in respondents' ratings of cultural competency or access to care between patients who have chronic conditions and those who do not.

The CAHPS PCMH scales generally received lower scores than those for access to care and cultural competency. The percentage reporting in the most positive categories ranged from 23 percent to 64 percent across scales, among all insurance types and chronic condition types. Chronically ill patients reported higher scores in all three CAHPS PCMH scales compared to patients without chronic conditions, but the difference reached statistical significance in only one scale. Those with chronic illnesses were more likely to report that providers discuss medication decisions with them (63 percent in the most positive categories) than those with no chronic illnesses (42 percent in the most positive categories,  $p=0.001$ ).

With the exception of asking for the name of a family member or trusted friend, providers were rated somewhat poorly on engaging family members. Providers do not always talk with patients about how a family member can help them in maintaining a healthy diet plan and appropriate physical activity, or in following the treatment plan. Less than one-fourth of patients indicated that their providers always mention the possible involvement of a family member. However, respondents indicated that it is very common that the provider's office asks for the name and contact information of a family member or trusted friend who may have access to medical information in the event that the patient is not available, particularly for the chronically ill patients. The differences between chronically ill patients and patients without chronic conditions, however, were not statistically significant for these items.

### **Consumer Assessment of Healthcare Providers and Systems (CAHPS) Scales by Chronic Condition Status: Child Survey**

The results of the CAHPS survey questions from the Child Survey, by chronic condition status, are shown in Exhibit 24. Ratings regarding overall performance of the provider, trust in provider, provider communication, and advice on staying healthy are very high. More than 70 percent of the responses are in the most positive categories for these scales. Approximately half of the children were reported to always receive timely access to care and information, and to receive support from their providers in self-care.

In the Medicaid group, respondents for chronically ill children reported higher scores in all of the scales than respondents for children without chronic problems. However, in the commercially insured group, respondents for chronically ill children, compared with respondents for children without chronic problems, reported lower scores in all of the scales,

except for the scale “providers support you in taking care of your own health.” Overall, the differences between children with and without chronic conditions were not statistically significant for all these items. Two items showed a trend toward significance: provider communication ( $p=0.077$ ) and overall rating of the provider ( $p=0.077$ ) were higher for chronically ill children than for children without chronic conditions.

**Exhibit 23: Consumer Assessment of Healthcare Providers and Systems (CAHPS) Scales by Chronic Condition and Medicaid or Commercial Insurance Status: Adult Survey**

	Medicaid Chronically Ill		Commercial Chronically Ill		Overall Chronically Ill		
	Yes	No	Yes	No	Yes	No	p value*
	% in the most positive response categories						
<b>CAHPS: access to care</b>							
Getting timely appointments, care, and information (five-item scale)	48%	55%	47%	44%	47%	46%	0.821
How well providers communicate with patients (six-item scale)	81%	76%	80%	74%	80%	75%	0.433
Patient's overall rating of the provider	62%	66%	70%	51%	69%	53%	0.177
<b>CAHPS: cultural competency</b>							
Providers are polite and considerate (three-item scale)	89%	89%	92%	92%	92%	91%	0.128
Providers give advice on staying healthy (four-item scale)	74%	57%	59%	56%	61%	56%	0.225
Patient's rating of trust in provider	67%	61%	77%	58%	76%	59%	0.074
<b>CAHPS: patient-centered medical home</b>							
Providers pay attention to your mental or emotional health (three-item scale)	64%	28%	35%	27%	39%	27%	0.206
Providers support you in taking care of your own health (two-item scale)	39%	23%	39%	28%	39%	27%	0.246
Providers discuss medication decisions (three-item scale)	64%	56%	63%	40%	63%	42%	0.001
<b>Engagement of family</b>							
Provider talks about how your family can help you maintain a healthy diet and healthy eating habits	34%	21%	12%	23%	15%	23%	0.777
Provider talks about how your family can help you with exercise and physical activity	33%	20%	15%	16%	17%	17%	0.461
Provider ever discusses with you how you might engage a family member or trusted friend to help you in following your treatment plan	39%	28%	21%	19%	23%	20%	0.633
Provider's office ask for the name and contact information of a family member or trusted friend to whom you would like to provide access to your medical information in the event that you are not available	77%	23%	75%	69%	75%	65%	0.221

\*Adjusted for respondent's age, gender, race, education level, whether the respondent lives with others, self-rated overall health, self-rated mental health, length of experience with the provider, Medicaid or commercial insurance status, and practice type.

**Exhibit 24: CAHPS Scales by Chronic Condition and Medicaid or Commercial Insurance Status: Child Survey**

	Medicaid Chronically Ill		Commercial Chronically Ill		Overall Chronically Ill		
	Yes	No	Yes	No	Yes	No	p value*
	% in the most positive response categories						
<b>CAHPS: access to care</b>							
Getting timely appointments, care, and information (five-item scale)	63%	54%	38%	53%	52%	53%	0.289
How well providers communicate with patients (six-item scale)	97%	87%	76%	84%	88%	85%	0.077
Patient's overall rating of the provider	95%	79%	69%	75%	84%	76%	0.077
<b>CAHPS: cultural competency</b>							
Providers give advice on staying healthy (two-item scale)	87%	76%	74%	78%	81%	77%	0.493
Patient's rating of trust in provider	92%	89%	73%	76%	83%	81%	0.824
<b>CAHPS: patient-centered medical home</b>							
Providers support you in taking care of your own health (two-item scale)	60%	52%	42%	32%	52%	40%	0.172

\*Adjusted for child's age, gender, race, guardian-rated overall health, length of experience with the provider, Medicaid or commercial insurance status, practice type, and also characteristics of the respondent or guardian (age, gender, education level, and relationship to the child).

**Consumer Assessment of Healthcare Providers and Systems (CAHPS) Scales by Race: Adult and Child Surveys**

Exhibit 25 and Exhibit 26 compare the responses to the Adult Survey and the Child Survey, respectively, by race. Upon testing the overall response differences between African Americans and Caucasians, a significant difference among adult patients in any scale was not found, except that African Americans were more likely to report that their providers give advice on staying healthy (69 percent among African Americans and 56 percent among Caucasians,  $p=0.048$ ).

Despite the general lack of significant differences, the overall pattern of results showed African Americans to have generally higher scores than Caucasians in the adult Medicaid group, particularly in getting timely care and information (56 percent vs. 35 percent responded in the most positive categories), providers being polite and considerate (94 percent vs. 82 percent), and providers always talking about how family can help with a healthy diet (39 percent vs. 24 percent). However, among adults with Medicaid, Caucasian patients were more likely than African Americans to report that providers support them in taking care of their own health (42 percent vs. 31 percent). In the commercially insured group, Caucasians reported higher ratings than African Americans of their providers' overall performance (69 percent vs. 57 percent), and asking for the name and contact information of a family member or trusted friend to provide access to medical information (76 percent vs. 64 percent). However, African Americans reported higher scores in scales related to self-care, including advice on staying healthy (67

percent vs. 56 percent), support in self-care (42 percent vs. 32 percent), and involvement of family to maintain a healthy diet (24 percent vs. 13 percent) and physical activity (18 percent vs. 14 percent).

Similar to the Adult Survey responses by race, the responses from the Child Survey generally showed no statistically significant differences between African Americans and Caucasians (Exhibit 26), with one exception. Respondents for African American children were statistically more likely to say that providers support children in taking care of their own health compared to respondents for Caucasian children ( $p=0.010$ ).

**Exhibit 25: Consumer Assessment of Healthcare Providers and Systems (CAHPS) Scales by Race and Medicaid or Commercial Insurance Status: Adult Survey**

	Medicaid			Commercial Insurance			Overall			p value*	
	African American	Caucasian	Other	African American	Caucasian	Other	African American	Caucasian	Other		
	<b>% in the most positive response categories</b>										
<b>CAHPS: access to care</b>											
Getting timely appointments, care, and information (five-item scale)	56%	35%	57%	46%	45%	53%	48%	44%	54%	0.545	
How well providers communicate with patients (six-item scale)	84%	75%	75%	80%	79%	73%	81%	79%	73%	0.168	
Patient's overall rating of the provider	73%	54%	48%	57%	69%	54%	61%	68%	53%	0.185	
<b>CAHPS: cultural competency</b>											
Providers are polite and considerate (three-item scale)	94%	82%	84%	91%	93%	89%	92%	92%	89%	0.724	
Providers give advice on staying healthy (four-item scale)	74%	66%	57%	67%	56%	54%	69%	56%	54%	0.048	
Patient's rating of trust in provider	65%	63%	71%	71%	71%	72%	70%	71%	72%	0.755	
<b>CAHPS: patient-centered medical home</b>											
Providers pay attention to your mental or emotional health (three-item scale)	53%	53%	54%	40%	31%	30%	44%	32%	33%	0.265	
Providers support you in taking care of your own health (two-item scale)	31%	42%	34%	42%	32%	43%	40%	32%	41%	0.274	
Providers discuss medication decisions (three-item scale)	67%	57%	49%	58%	59%	54%	61%	59%	53%	0.666	
<b>Engagement of family</b>											
Provider talks about how your family can help you maintain a healthy diet and healthy eating habits	39%	24%	14%	24%	13%	16%	28%	14%	15%	0.129	
Provider talks about how your family can help you with exercise and physical activity	34%	30%	13%	18%	14%	16%	22%	15%	16%	0.546	

	Medicaid			Commercial Insurance			Overall				
	African American	Caucasian	Other	African American	Caucasian	Other	African American	Caucasian	Other	p value*	
	<b>% in the most positive response categories</b>										
Provider ever discusses with you how you might engage a family member or trusted friend to help you in following your treatment plan	44%	27%	25%	22%	19%	21%	28%	20%	22%	0.530	
Provider's office ask for the name and contact information of a family member or trusted friend to whom you would like to provide access to your medical information in the event that you are not available	64%	66%	62%	64%	76%	74%	64%	76%	72%	0.135	

\*Adjusted for respondent's age, gender, education level, whether the respondent lives with others, self-rated overall health, self-rated mental health, presence of chronic conditions, length of experience with the provider, Medicaid or commercial insurance status, and practice type.

**Exhibit 26: CAHPS Scales by Race and Medicaid or Commercial Insurance Status: Child Survey**

	Medicaid			Commercial Insurance			Overall			p value*
	African American	Caucasian	Other	African American	Caucasian	Other	African American	Caucasian	Other	
	<b>% in the most positive response categories</b>									
<b>CAHPS: access to care</b>										
Getting timely appointments, care, and information (five-item scale)	60%	57%	43%	36%	58%	46%	51%	57%	45%	0.392
How well providers communicate with patients (six-item scale)	93%	86%	93%	79%	84%	82%	88%	85%	86%	0.972
Patient's overall rating of the provider	84%	84%	95%	67%	75%	83%	77%	78%	87%	0.730
<b>CAHPS: cultural competency</b>										
Providers give advice on staying healthy (two-item scale)	84%	81%	57%	84%	72%	83%	84%	75%	72%	0.284
Patient's rating of trust in provider	90%	92%	84%	64%	78%	94%	80%	82%	90%	0.332
<b>CAHPS: patient-centered medical home</b>										
Providers support you in taking care of your own health (two-item scale)	61%	45%	48%	45%	29%	29%	55%	34%	37%	0.010

\*Adjusted for child's age, gender, guardian-rated overall health, presence of chronic conditions, length of experience with the provider, Medicaid or commercial insurance status, practice type, and also characteristics of the respondent or guardian (age, gender, education level, and relationship to the child).

## Patient Assessment of Chronic Illness Care

The five PACIC scale scores reported by chronically ill adults and children are displayed in Exhibit 27 and Exhibit 28, respectively. Of the five scales, chronically ill adults reported the highest scores in the delivery system design/decision support scale (mean=3.63 on a 5-point scale, standard error=0.09) and in problem solving/contextual counseling (mean=3.59, standard error=0.10). The scale with the lowest scores is follow-up/coordination (mean=2.24, standard deviation=0.11). The mean score of 2.24 indicates that, on average, follow-up and coordination “generally did not occur” or occurred only “sometimes.” Patients in the Medicaid group generally reported higher scores than patients with commercial insurance. Differences by insurance status are statistically significant in one scale—problem solving/contextual counseling (p=0.017).

Chronically ill children in the Medicaid group reported the highest scores in the delivery system design/decision support scales (mean=4.11, standard error=0.25). Among commercially insured children, the delivery system design/decision support scale (mean=3.81, standard error=0.24) and the problem solving/contextual counseling scale (mean=3.78, standard error=0.17) received the highest scores. Both groups reported the lowest score in the follow-up/coordination scale (mean=2.93 in the Medicaid group, and mean=2.29 in the commercially insured group). Respondents for children in the Medicaid group also reported higher scores in all five PACIC scales than children in the commercially insured group, but the differences were not statistically significant.

**Exhibit 27: Patient Assessment of Chronic Illness Care: Adult Survey**

	Medicaid		Commercial Insurance			Overall	
	mean	SE	mean	SE	p value*	mean	SE
Patient activation	3.55	0.26	3.38	0.11	0.299	3.37	0.10
Delivery system design/decision support	3.85	0.23	3.60	0.10	0.310	3.63	0.09
Goal setting	3.26	0.25	2.70	0.11	0.060	2.79	0.10
Problem solving/contextual counseling	3.91	0.23	3.58	0.11	0.017	3.59	0.10
Follow-up/coordination	2.85	0.26	2.16	0.12	0.090	2.24	0.11

\*Adjusted for respondent’s age, gender, race, education level, whether the respondent lives with others, self-rated overall health, self-rated mental health, length of experience with the provider, Medicaid or commercial insurance status, and practice type.

**Exhibit 28: Patient Assessment of Chronic Illness Care: Child Survey**

	Medicaid		Commercial Insurance			Overall	
	mean	SE	mean	SE	p value*	mean	SE
Patient activation	4.07	0.26	3.42	0.30	0.117	3.37	0.10
Delivery system design/decision support	4.11	0.25	3.81	0.24	0.381	3.63	0.09
Goal setting	3.60	0.26	2.89	0.21	0.213	2.79	0.10
Problem solving/contextual counseling	4.08	0.25	3.78	0.17	0.355	3.59	0.10
Follow-up/coordination	2.93	0.32	2.29	0.22	0.300	2.24	0.11

\*Adjusted for child’s age, gender, race, guardian-rated overall health, length of experience with the provider, Medicaid or commercial insurance status, practice type, and also characteristics of the respondent or guardian (age, gender, education level, and relationship to the child).

**3.1.4 Discussion**

IMPAQ obtained reasonable distributions across age groups and insurance status. IMPAQ sought to oversample African Americans and were able to obtain sufficient sample size to analyze opinions separately for that group. IMPAQ also sought to increase sample size among providers serving large percentages of patients in the Maryland Health Insurance Plan (MHIP), the state’s high-risk pool, as a proxy for large portions of chronically ill patients. Indeed, percentages of respondents with chronic illness were much higher than IMPAQ estimated they would be based on the projections in the literature. In 2004, it was projected that 37 percent of adults would have chronic illnesses in 2012.<sup>18</sup> Similarly, in the late 1990s (the most recent estimate IMPAQ could find), 15–18 percent of children were considered chronically ill.<sup>19,20</sup> However, in IMPAQ’s sample, 67 percent of the adults were chronically ill and so were 31 percent of the children. The oversampling strategy may have been highly successful. On the other hand, the differences between the estimated and observed population may be due to varying definitions of chronic illness between the above reports and CAHPS, or may indicate that the projections were too low and a larger portion of the population has become chronically ill over time.

Patients at the first measurement in this evaluation (at one year) were generally pleased with the care they received from MMPP participating providers. Adults reported high cultural competency, provider communication, and always receiving timely appointments, care, and information. Respondents for children were pleased with overall performance of the provider, provider communication, and advice on staying healthy. They tended to trust highly in their provider.

<sup>18</sup> Anderson G. & Horvath, J., (2004). The growing burden of chronic disease in American. Public Health Reports,119(3): 263-270.

<sup>19</sup> Newacheck, P.W., Strickland B., Shonkoff, J.P., et al. (1998). An epidemiologic profile of children with special health care needs. Pediatrics, 102(1 Pt 1): 117-123.

<sup>20</sup> Stein R.E., Silver, E.J. (1999). Operationalizing a conceptually based noncategorical definition: a first look at US children with chronic conditions. Archives of Pediatrics & Adolescent Medicine, 153(1): 68- 74.

Areas for potential improvement include items and scales rated lower by patients. Adult patients indicated that providers do not always talk with them about how a family member can help them in maintaining a healthy diet plan and appropriate physical activity, or in following the treatment plan. Among respondents for children, lower scoring scales were related to getting timely appointments and provider support in taking care of children's health.

Scores on most scales were equivalent between Medicaid and commercially insured patients, between the chronically ill and those without chronic conditions, and between African American and Caucasian patients, suggesting few disparities in patient experience, at least on these characteristics. Typically, the group that would be considered the more vulnerable population tended to rate their provider or practice more highly; cases where the more vulnerable population rated providers lower were not statistically significant.

Adult patients who have chronic conditions and those who do not assessed cultural competency, access to care, and engagement of family equivalently, but there were statistically significant differences in whether providers discuss medication decisions with them. Respondents for chronically ill children gave slightly higher ratings to how well providers communicate with patients and the overall rating of the provider than respondents for children who are not chronically ill.

African Americans judged all CAHPS scales similarly to Caucasians, except that African Americans were more likely to receive advice from their providers on staying healthy, and respondents for African American children were more likely to feel that the provider supported the children in taking care of their own health.

Analyses of the PACIC scales for chronically ill patients showed that patients rated problem solving/contextual counseling, delivery system redesign/decision support, and patient activation most highly. Follow up/coordination was rated lower. Statistically significant differences by insurance status were seen among adults in goal setting, problem solving/contextual counseling, and follow-up/coordination, but not among respondents for children.

## **Limitations**

The patient survey data offer insights into the first year of the MMPP from the patients' perspective. However, there are some limitations to the analysis, including the sometimes small samples that resulted when IMPAQ looked at subgroups, such as chronically ill children with commercial insurance (n=27). In addition, IMPAQ collected the bulk of the commercially insured patient survey data during a period several months prior to the collection of the Medicaid patient survey data, due to difficulties in obtaining the patient contact information. If participation in the MMPP improves patients' experiences, the difference in survey collection periods may have biased findings toward better results in the Medicaid population, because the PCMH model had been in effect longer when these patients were surveyed.

## 3.2 Provider Satisfaction

The purpose of the provider survey is to assess providers' experiences and satisfaction with the MMPP and its PCMH principles. The target population for this survey implementation was primary care providers in participating MMPP practices and non-MMPP primary care providers in the comparison practices.

### 3.2.1 Methodology

#### MMPP and Comparison Provider Surveys

For the provider survey, IMPAQ used instruments developed by the Patient-Centered Medical Home Evaluators' Collaborative, established by the Commonwealth Fund. The survey questions were primarily aimed at clinicians (physicians, physician assistants, and advanced practice nurses). IMPAQ examined provider satisfaction by using the following 12 domains for clinicians from the PCMH Evaluators' Collaborative instrument:

- Work content: Activities in a typical day
- Work perceptions: Satisfaction
- Work perceptions: Burnout
- Work perceptions: Intent to leave
- Work perceptions: Work control (clinicians only)
- Work perceptions: Chaos
- Culture: Values alignment with leaders (clinicians only)
- Culture: Care Team functioning
- Culture: Care Team functioning – within team
- Culture: Care Team functioning – within whole practice
- Culture: Communication openness and organizational learning
- Work perceptions: Time pressure (clinicians only)

IMPAQ developed three additional question sets to measure domains of specific relevance to the MMPP:

- Perceptions of PCMH transformation
- Provider satisfaction with chronic illness management
- Satisfaction with PCMH demonstration.

Both the MMPP provider survey and the comparison group provider survey consisted of 98 questions and sub-questions. Both surveys included skip patterns and logic that move the respondent through the appropriate set of questions.

### **Pilot Testing the Survey**

IMPAQ pilot tested the provider survey, which was submitted to the MHCC on April 23, 2012, in the Report on Data Collection. The purpose was to test survey content, ensure that the wording of the questions was understandable, ensure the adequacy of response options, and measure the time needed for completion. Emails were sent to potential pilot subjects together with an electronic copy of the provider survey. Providers were invited to participate in the pilot test by completing the survey and a brief follow-up telephone interview.

A total of nine providers participated in the pilot. Of these providers:

- Seven completed the survey and participated in a follow-up telephone interview.
- One provider completed the survey and did not volunteer for a follow-up telephone interview.
- One provider provided feedback (in writing) about items in the instrument without answering individual questions in the survey and did not participate in a follow-up interview.

In addition, IMPAQ received feedback from a subject matter expert who is a member of the team. IMPAQ used the findings from the pilot test to revise the survey. The pilot version of the survey had 134 questions, counting sub-questions as individual questions.

Providers who participated in the follow-up interview noted that the survey was too long and that IMPAQ would obtain an improved response rate if the survey were shortened. Completing the provider survey took 19.37 minutes on average, more than the desired 15 minutes. This means that the providers completed about seven sub-questions per minute. To reach the desired average completion time of 15 minutes, the survey had to be reduced to about 100 questions.

Revision of the provider survey included the following:

- Deletion of some questions
- Rewording of some sub-questions
- Addition of sub-questions
- Addition of comment boxes
- Elaboration of sub-questions that were found confusing
- Revision of response options.

The revised MMPP provider survey is in Appendix H, and the comparison provider survey in Appendix I.

## Data Collection Methodology

IMPAQ planned to collect data on 393 providers in 52 MMPP practices and on providers in the comparison groups through two rounds of surveys. The first wave was conducted during 2013 (baseline), and the second wave will be conducted at the end of the three-year MMPP demonstration.

IMPAQ administered the baseline survey online using Snap Surveys software (<http://www.snapsurveys.com/>). Snap Surveys supports advanced skip patterns, as well as consistency and quality control checks. In addition, it features a variety of customizable options, including an auto-fill function that allows defined values to be pre-populated in question text, automatic email invitations and reminders, survey login for added security, and the ability to track responses. Snap Surveys has self-certified its adherence to the privacy and security standards of the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

## Instrument Programming and Testing

After the MHCC approved the final provider instruments, IMPAQ programmed the instrument for online administration and then tested it. The protocol included various testing scenarios to ensure that the online instrument was performing correctly. Staff checked such features as skip logic, single response versus multiple responses, mutual exclusivity of responses, consistency in the onscreen presentation of the online survey, spelling/grammatical errors, survey error messages, and instructions for the respondents.

IMPAQ populated the online instrument with providers' contact information using the Maryland Board of Physicians (MBP) licensure database.<sup>21</sup> In addition, IMPAQ reached out to the practices to collect additional contact information for physicians who could not be located in the MBP database and for their mid-level providers. An Excel spreadsheet populated with provider contact information (e.g., practice name, first and last name of contact person, email address) was linked to the online instrument.

A paper version of the instrument was mailed to identified MMPP providers for whom IMPAQ did not have an email address and to providers who preferred a paper-based version. The team keyed the responses from the paper-based surveys into the online instrument so that there was a single analytic data file for each group of providers (MMPP and comparison groups).

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<sup>21</sup> The advance letter to providers referenced the email address found in the MBP database for each provider and asked them to update the address if it was not current. For physicians without an email address in the database, we requested one.

## Survey Execution

Execution of the provider survey included the following steps:

1. Sending an advance letter from the MHCC Executive Director to providers that explained the purpose and importance of the study; it informed them that they would receive an email containing a link to the web-based survey, and information on how to access, complete, and submit responses electronically (see Appendix J).
2. Sending an email from IMPAQ to practice champions to ask for their assistance in encouraging their providers to complete the provider survey and to confirm the provider information known to the team (see Appendix K)
3. Sending an advance letter from IMPAQ to MMPP providers requesting their email address or verification that the email listed in the letter was correct (see Appendix L)
4. Sending the target respondent an email with a link to the web-based survey (see Appendices M and N)
5. Sending a letter containing the web link, unique user and password information, and a paper version of the survey to those MMPP providers without listed email addresses (Appendix O)
6. Opening the web-based instrument and sending five reminders to providers during fielding (Appendix P). As part of the advance letters, IMPAQ provided a telephone number and an email address ([PCMH@impaqint.com](mailto:PCMH@impaqint.com)) for any general inquiries or email address updates.

IMPAQ sent the advance letters to the MMPP and comparison providers on April 3 and April 8, 2013, respectively, and opened the surveys on April 8, 2013. The surveys were available for online completion for five months. During this submission period IMPAQ tracked survey participation using the online system. Starting approximately two weeks after the initial email was sent to providers, the team sent email reminders to prompt participants who had not yet responded to complete the survey. Each email reminder contained the web address and the unique login information. For providers without an email address, IMPAQ used mailing addresses from the MBP database to send a paper version (Appendix Q) of the instrument. A cover letter and the paper survey were sent to MMPP providers who did not have listed email addresses or whose email address failed (n=140). In addition, a reminder postcard (Appendix R) was sent to providers who did not complete the survey. IMPAQ also reminded MMPP providers about the survey during the March 28, 2013 MLC meeting. The MHCC sent a participation encouragement email on May 30, 2013, requested participation during a presentation at the August 6, 2013 MLC meeting, and individually reached out to practices with no participation at the same MLC meeting. The timeline for the fielding of the web survey is shown in Exhibit 29.

**Exhibit 29: Provider Satisfaction Survey Timeline**

<b>Task</b>	<b>Date of Completion</b>
Email sent by the MHCC to MMPP providers	3/27/2013
Letter sent by IMPAQ to MMPP providers	4/3/2013
Email sent by IMPAQ to Practice Champions	3/28/2013
Email sent by IMPAQ to MMPP providers	4/8/2013
Email sent by IMPAQ to Comparison Group Providers	4/8/2013
MMPP provider survey goes live	4/8/2013
Comparison provider survey goes live	4/8/2013
First reminder emails	4/17/2013
Second reminder emails	5/8/2013
Mail survey to MMPP providers without email addresses	5/17/2013
Third reminder emails	5/22/2013
Fourth reminder emails	5/29/2013
Last reminder email	6/6/2013
Official end	6/14/2013
Surveys closed	MMPP 9/24/2013 Comparison 9/25/2013

**Analysis Methodology**

In the analysis of provider satisfaction, IMPAQ first produced descriptive statistics about the provider sample and their practices. IMPAQ used percentages or means with standard deviations to describe the characteristics of responding providers from the MMPP and comparison group practices, including respondents’ age, gender, race, professional licensing, and years in their current practice. The results also report characteristics of the practices where these respondents work, including ownership, practice type, and use of electronic health record (EHR) system. IMPAQ obtained practice variables from the MBP licensure database.

IMPAQ compared these characteristics between respondents in MMPP sites and those in practices in the two comparison groups (the CareFirst [CF] PCMH group and the unexposed group) selected using a propensity score matching approach (described further in Appendix A). IMPAQ used one-way analysis of variance (ANOVA) to test the differences between the three groups for continuous variables (i.e., age) and chi-squared tests or Fisher’s exact tests for categorical characteristics, such as gender and race. For the two comparison groups, IMPAQ also described their self-reported level of exposure to the PCMH concept.

From the data collected in the provider survey, IMPAQ reports the following aspects of provider attitudes, satisfaction, and experience:

1. Satisfaction with care
2. Job satisfaction
3. Work content
4. Care team composition
5. Within-care-team functioning

6. Values alignment with leaders
7. Communication openness and organizational learning
8. Perceptions of the PCMH demonstration.

IMPAQ generated composite scores for items that constitute validated scales specific to the area of focus. For each group, the results report means and standard deviations. To assess differences in these measures among the MMPP, CF PCMH, and unexposed provider respondents, IMPAQ constructed ordinal logistic regression models that were adjusted for age, gender, race, profession, length of experience in the profession, practice type, and use of an EHR system. Ordinal logistic regression is appropriate, because the item categories and composite scales are ordered, but not interval (i.e., the distance between two categories is not always the same), and are not normally distributed. IMPAQ also used robust clustering to account for shared variation among providers in the same practice site. IMPAQ reports p-values for differences between the MMPP group and the CF PCMH group, and between the MMPP group and the unexposed group.

### 3.2.2 Data Collection

The sample for the survey of provider satisfaction and attitudes included all providers (physicians, nurse practitioners, advanced practice nurses, and physician assistants) listed as participants in the MMPP in state documents or information received from practice leads. The sample of comparison providers included all physicians that could be identified as associated with any practice selected as a comparison based on the propensity score modeling approach. This approach seeks to identify practices that are as close as possible on all measurable criteria to practices that applied and were selected to participate in the MMPP.

Of the sample of 248 MMPP providers, 105 completed the survey; of the sample of 416 comparison providers, 136 completed the survey (53 CF PCMH and 83 unexposed providers). Exhibit 30 illustrates the eligibility of the providers in each sample.

**Exhibit 30: Eligibility of Providers in Each Sample**

	Comparison Providers			MMPP Providers
	Unexposed Comparison Practices	CF PCMH Comparison Practices	Total	
Eligible (with email address)	224	192	416	248
Eligible (no email address)	6	6	12	127*
Not eligible	6	0	6**	6†
Duplicate Providers	0	0	0	12
Total	236	198	434	393

\* Includes 11 providers who completed the paper survey.

\*\* Two providers were in outpatient urgent care practice, one was in general pediatric care, two were hospitalists, and one no longer practiced in Maryland.

† Five providers were no longer in practice, and one provider was part-time.

### Exhibit 31: Completed Surveys by Provider Group

	Total Sample	Total Eligible Sample (with email addresses)	Completed	% Complete
MMPP Practices	393	248	105	42%
Unexposed Comparison Practices	236	224	83	37%
CF PCMH Comparison Practices	198	192	53	28%

\* Includes 11 surveys completed using the paper version and then entered into the online web survey.

Eleven providers completed the survey using the paper version. These survey responses were then entered into the online web survey by IMPAQ.

#### Data Coding, Editing, and Cleaning

IMPAQ carried out various data quality control checks at all stages of the data collection process. The programmer implemented appropriate range, logic, and skip patterns (routing). The data from the paper surveys were entered into the web-based survey so that the same data quality checks could be applied.

#### Lessons Learned

The lessons learned from the provider survey include developing methods for obtaining and verifying the email addresses of the providers, de-duplicating the sample within groups and between groups to identify the unique members of each sample, and developing methods to increase response rates. If the option is available, incentives have been shown to increase response rates with this target population. In addition, IMPAQ may develop and format the survey for mobile devices, since this is an innovative format for data collection. This development would need to be explored for appropriate use and budgeted.

### 3.2.3 Analysis Results

#### Characteristics of Respondents

IMPAQ received usable responses from 105 providers in the MMPP group, 53 in the CF PCMH group, and 83 in the unexposed group. The response rate for each individual question ranged from 78 percent to 99.6 percent. Exhibit 32 shows the individual and practice characteristics of respondents; their average age was about 50, they were roughly evenly divided between men and women, and the majority race was Caucasian. Most had worked in their current practice for more than two years.

There were no statistically significant differences between the three groups in age, gender, race, or years in current practice. However, there were nurse practitioners, advanced practice

nurses, and physician assistants in the MMPP group in addition to physicians, while in the two comparison groups, there were only physician respondents. This is a limitation introduced by IMPAQ’s reliance on the MBP licensure database (which contains data only on physicians) to identify comparison group respondents. In addition, some MMPP providers and some unexposed providers reported working in a “hospital/other” facility type, while no CF PCMH providers reported practicing in that setting. Significantly more providers in the unexposed practices worked in the “hospital/other” setting as compared to providers in the MMPP practices. Providers in the two comparison groups were also more likely to have an EHR system in their practice than those in the MMPP practices. As expected, the CF PCMH providers showed greater exposure to the PCMH concept than the unexposed providers. Among CF PCMH providers, 53 percent reported active participation in a PCMH program, while only 13 percent of responding providers in “unexposed” practices reported such participation.

**Satisfaction with Care and with Current Job**

Exhibit 33 displays providers’ ratings of satisfaction with care provided to their chronically ill patients and to their entire panel. At one year, there were no statistical differences between MMPP respondents and those in the two control groups in satisfaction with care overall or in the 11 specifically surveyed aspects of care. Generally, providers’ satisfaction with care for their chronically ill patients was lower than their satisfaction with care for their entire patient panel. MMPP providers, compared with providers in the two comparison groups, reported higher overall satisfaction with care and also higher scores in the 11 specific care processes, but these differences did not reach statistical significance at the five percent level.

However, MMPP providers were significantly more satisfied with their current job than the CF PCMH providers (p=0.02) (Exhibit 34). There was no statistically significant difference between MMPP providers and those in the unexposed group. In addition, no statistically significant difference among providers in the three groups could be discerned regarding intention to leave their job. All three groups also reported a similar pace (i.e., how calm, busy, or hectic schedules were) in a day-to-day practice.

**Exhibit 32: Characteristics of Provider Respondents by MMPP Participation Status**

	MMPP (n=105)		Comparison Group				P value*
			CF PCMH Match (n=53)		Unexposed Match (n=83)		
	N	%	N	%	N	%	
<b>Personal characteristics</b>							
Age, mean (SD)							
25-34	8	9%	2	4%	5	9%	0.497
35-44	22	26%	12	27%	21	37%	
45-54	23	27%	14	31%	8	14%	

	MMPP (n=105)		Comparison Group				P value*
			CF PCMH Match (n=53)		Unexposed Match (n=83)		
	N	%	N	%	N	%	
55-64	25	29%	15	33%	19	33%	
65 and older	8	9%	2	4%	4	7%	
Gender							
Female	46	52%	26	57%	29	47%	0.602
Male	43	48%	20	43%	33	53%	
Race							
Caucasian	66	74%	30	67%	50	82%	0.629
African American	8	9%	6	13%	3	5%	
Asian	13	15%	7	16%	7	11%	
Other	2	2%	2	4%	1	2%	
Professional licensing							
MD or DO	80	78%	53	100%	83	100%	<0.001
NP or advanced practice nurse	12	12%	0	0%	0	0%	
Physician assistant	11	11%	0	0%	0	0%	
Years in the current practice							
Less than one year	7	7%	2	4%	3	4%	0.315
one-two years	13	13%	2	4%	6	7%	
More than two years	84	81%	49	92%	74	89%	
<b>Practice characteristics</b>							
Ownership							
Private	102	97%	53	100%	83	100%	0.322
Public	3	3%	0	0%	0	0%	
Practice type							
Solo	7	7%	6	11%	4	5%	<0.001
Single specialty	43	41%	24	45%	20	24%	
Multi-specialty	36	34%	23	43%	7	8%	
Hospital/Other	19	18%	0	0%	52	63%	
Use of an electronic medical record system							
No	14	14%	5	9%	7	8%	<0.001
Yes, all electronic	54	52%	47	89%	72	87%	
Part electronic, part paper	35	34%	1	2%	4	5%	
Exposure to the PCMH concept							
Unaware of the PCMH concept			0	0%	4	7%	<0.001
Aware of the concept, but have no involvement			1	2%	26	43%	
Exploring becoming a PCMH			14	31%	16	27%	
Applied for a PCMH program/Seeking PCMH recognition			6	13%	6	10%	
Actively involved in a PCMH program or recognized as a PCMH			24	53%	8	13%	

\*One-way analysis of variance (ANOVA) was used for age; chi-squared tests or Fisher's exact tests were used for categorical characteristics.

### Exhibit 33: Satisfaction with Care for Chronically Ill Patients

	MMPP (n=103)		Comparison Group				P value*		
			CF PCMH Match (n=51)		Unexposed Match (n=27)				
	Mean	SD	Mean	SD	Mean	SD	CF PCMH vs. MMPP	Unexposed vs. MMPP	
<b>Overall satisfaction with care</b>									
Entire patient panel	5.36	0.60	5.15	0.60	5.20	0.90	0.205	0.446	
Chronically ill patients	5.09	0.79	4.96	0.71	4.99	0.93	0.617	0.649	
<b>Satisfaction with specific care processes</b>									
Communication with patient and family (scale)	4.92	0.78	4.72	0.68	4.73	0.85	0.133	0.605	
Communicating with patients	5.20	0.81	5.12	0.69	5.10	0.89	0.342	0.695	
Communicating with family caregivers	5.01	0.90	4.82	0.83	4.99	0.94	0.255	0.856	
Educating family caregivers	4.90	0.91	4.59	0.91	4.68	1.03	0.201	0.292	
Motivating patients to participate in maximizing their health	4.69	0.99	4.61	0.86	4.56	1.10	0.609	0.819	
Referrals to community resources	4.79	0.90	4.40	0.97	4.29	1.22	0.167	0.541	
Management of chronic care (scale)	4.93	0.77	4.72	0.68	4.73	0.85	0.133	0.605	
Coordinating the care received from all providers	4.68	1.13	4.24	1.03	4.19	1.29	0.175	0.197	
Monitoring patients' chronic conditions	4.97	0.77	4.78	0.76	4.62	1.05	0.620	0.248	
Efficiency of office visits	4.71	1.08	4.44	0.91	4.25	1.19	0.178	0.093	
Access to evidence-based guidelines for chronic conditions	5.04	0.97	4.82	0.81	4.94	0.96	0.083	0.276	
Efficiency of practice team	4.80	0.99	4.74	0.78	4.37	1.30	0.284	0.352	
Availability of clinical information about your patients	4.86	1.01	4.76	1.00	4.58	1.29	0.718	0.597	

\*Adjusted for age, gender, race, profession type, length of experience in the profession, practice type, and use of EHR system in the practice, using ordinal logistic regression models.

### Exhibit 34: Job Satisfaction

	MMPP (n=97)		Comparison Group				P value*	
			CF PCMH Match (n=49)		Unexposed Match (n=66)			
	Mean	SD	Mean	SD	Mean	SD	CF PCMH vs. MMPP	Unexposed vs. MMPP
Satisfaction with job	4.25	0.87	3.80	0.93	3.95	1.06	0.020	0.589
Intention to leave in two years	2.02	1.15	2.02	1.27	2.33	1.21	0.528	0.366
Atmosphere in your practice	3.28	0.83	3.24	0.72	3.33	0.87	0.775	0.965

\*Adjusted for age, gender, race, profession type, length of experience in the profession, practice type, and use of EHR system in the practice, using ordinal logistic regression models.

### Work Content and Task Division

The Work Content domain asked providers to specify which job role performs various tasks related to patient care and coordination of care in their practice. Exhibit 35 displays the job role indicated by the majority of respondents as having primary responsibility for that task, and the percentage of respondents who indicated this as well. In all three groups, the clinician has the primary role to screen patients for disease, gather information on screening and chronic disease management, call patients to provide laboratory results, advise patients on how to care for their health conditions, and evaluate patients and make treatment decisions. In all three groups, the medical assistant has the main role to take vital signs, and administrative staff has the primary role for checking in and orienting patients, answering phone calls from patients, deciding how soon patients who call for an appointment will be seen, and calling patients who are due for a visit. However, in the MMPP sites, medical assistants and administrative staff were statistically more likely to be described as having the main role for some tasks that are primarily performed by clinicians in the two comparison groups. These tasks include asking patients whether they smoke, obtaining immunization histories from patients, communicating with pharmacies, and communicating with insurance companies.

### Care Team Composition

Exhibit 36 displays how often each type of provider and staff is featured as a member of the care team in the respondent's practice. In all three groups, the most commonly mentioned team members are primary care physicians, medical assistants, and clerks/receptionists. In MMPP sites, care teams are more likely to involve physician assistants and nurse practitioners as well. Fifty-six percent of the MMPP providers reported that their care team always includes physician assistants and nurse practitioners, less than one-third of the comparison providers reported always having a physician assistant in the care team, and less than half always have a nurse practitioner. This may partially reflect the fact that physician assistants and nurse practitioners were surveyed in the MMPP group, while only primary care physicians could be

included in the comparison groups. Thus, physician assistants and nurse practitioners may have been more likely than physicians to note that they are included on the care team. However, the pattern still exists when the sample is limited to only physician respondents in all three groups (further details about team composition may be found in Appendix S).

**Exhibit 35: Work Content and Job Role**

	MMPP (n=99)		Comparison Group				P value*
			CF PCMH Match (n=49)		Unexposed Match (n=67)		
	Job Role	%	Job Role	%	Job Role	%	
Checking in and orienting patients	Administrative Staff	61%	Administrative Staff	65%	Administrative Staff	58%	0.293
Taking vital signs	Medical Assistant	89%	Medical Assistant	75%	Medical Assistant	82%	0.042
Screening patients for diseases	Clinician	60%	Clinician	82%	Clinician	72%	0.002
Asking patients whether they smoke	Medical Assistant	57%	Clinician	50%	Clinician	63%	<0.001
Obtaining immunization histories from patients	Medical Assistant	49%	Clinician	53%	Clinician	64%	<0.001
Gathering information on screening	Clinician	46%	Clinician	81%	Clinician	81%	<0.001
Gathering information on chronic disease management	Clinician	66%	Clinician	94%	Clinician	82%	0.004
Deciding how soon patients who call for an appointment will be seen	Administrative Staff	35%	Administrative Staff	47%	Clinician	33%	0.335
Obtaining medical records from other providers outside the practice	Administrative Staff	47%	Administrative Staff	63%	Administrative Staff	51%	<0.001
Communicating with insurance companies	Administrative Staff	42%	Administrative Staff	63%	Administrative Staff	46%	0.001
Communicating with pharmacies	Medical Assistant	34%	Clinician	37%	Clinician	34%	0.005
Calling patients who are due for a visit	Administrative Staff	48%	Administrative Staff	60%	Administrative Staff	55%	0.125
Calling patients to provide them laboratory results	Clinician	32%	Clinician	39%	Clinician	55%	0.107
Answering phone calls from patients	Administrative Staff	35%	Administrative Staff	49%	Administrative Staff	38%	0.065
Advising patients on how to care for their health conditions	Clinician	76%	Clinician	88%	Clinician	86%	0.090

	MMPP (n=99)		Comparison Group				P value*
			CF PCMH Match (n=49)		Unexposed Match (n=67)		
	Job Role	%	Job Role	%	Job Role	%	
Evaluating patients and making treatment decisions	Clinician	93%	Clinician	100%	Clinician	97%	0.515
Completing different kinds of forms upon patients' arrival at the facility	Clinician	33%	Administrative Staff	46%	Clinician	47%	0.122

\* From chi-squared test or Fisher's exact test.

**Exhibit 36: Team Composition**

	MMPP (n=95)			Comparison Group						P value*
				CF PCMH Match (n=47)			Unexposed Match (n=62)			
	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	
Primary care physicians	0%	7%	93%	2%	4%	93%	10%	13%	77%	0.007
Physician assistants	27%	16%	56%	49%	19%	33%	61%	19%	20%	0.000
Nurse practitioners	18%	27%	56%	40%	13%	47%	31%	32%	37%	0.015
Registered nurses or nurse case managers	11%	18%	71%	40%	18%	42%	25%	21%	54%	0.003
Licensed vocational nurses (LVNs or LPNs)	49%	20%	31%	59%	23%	18%	63%	19%	18%	0.271
Medical assistants	0%	9%	91%	2%	9%	89%	5%	19%	76%	0.045
Clerks or receptionists	4%	9%	86%	4%	11%	85%	5%	13%	82%	0.965
Health educators	40%	35%	26%	43%	43%	13%	63%	33%	3%	0.002
Pharmacists	48%	39%	14%	49%	44%	7%	46%	38%	16%	0.669
Social workers	48%	33%	18%	49%	36%	16%	37%	42%	22%	0.644
Community health workers	61%	37%	2%	71%	24%	4%	70%	28%	2%	0.504
Visiting nurses	47%	52%	1%	37%	57%	7%	49%	43%	8%	0.134
Nutritionists or dieticians	40%	53%	7%	37%	51%	12%	46%	44%	10%	0.758
Mental (behavioral) health professionals	43%	48%	9%	51%	38%	11%	45%	42%	13%	0.779

\* From chi-squared test or Fisher's exact test.

In addition, MMPP care teams are more likely to include registered nurses or nurse care managers, medical assistants, and health educators. In the MMPP group, 71 percent report that registered nurses or nurse care managers are always part of the care team, but in the CF PCMH and unexposed groups, the percentages are 42 percent and 54 percent, respectively. Ninety-one percent of MMPP respondents always have a medical assistant in the care team, and only 76 percent of respondents do in the unexposed group. Also, 26 percent of the providers in the MMPP group always have a health educator on the care team, while the percentage is 13 percent and 3 percent, respectively, for the CF PCMH group and unexposed group. Finally, although only primary care physicians were surveyed in the comparison groups, some reported that their care team *never* involves a primary care physician.

### **Culture: Within-Care-Team Functioning, Values Alignment with Leaders, and Communication Openness and Organization Learning**

IMPAQ reports means and standard deviations for both the practice culture scales and the individual items. Exhibit 37, Exhibit 38, and Exhibit 39 display scores for within-care-team functioning, values alignment with leaders, and communication openness and organization learning, respectively. At one year, average scores did not statistically differ across the three groups in within-care-team functioning (Exhibit 37) or communication openness and organizational learning (Exhibit 39). However, two items in values alignment with leadership were significantly higher in the MMPP group compared to the unexposed group (Exhibit 38). Providers in the MMPP group were more likely to believe that their compensation plans reward people who work hard for the practice ( $p=0.013$ ) and that the business office and administration are considered to be very important parts of the group practice ( $p=0.007$ ).

### **Perceptions of PCMH Pilot**

The survey asked all MMPP providers to express their agreement or disagreement with 11 statements assessing their perceptions of the patient-centered medical home. In addition, respondents in the comparison groups who were at least aware of the PCMH concept were also asked these questions. Respondents in all three groups agreed that PCMHs enhance (or would enhance) care because of the role of a care manager/coordinator (mean=3.73–3.94 on a 5-point scale). Among all the statements regarding PCMHs, respondents were least likely to agree that the PCMH would take up more time (mean=2.09–2.45 on a 5-point scale). The only item that received significantly different scores across groups was the statement that “a PCMH may reduce my control over the aspects of practice that matter most to me.” The MMPP providers reported higher scores on this item than providers in the unexposed group ( $p=0.031$ ), but not significantly different from scores for providers in the CF PCMH.

### Exhibit 37: Within-Care-Team Functioning

	MMPP (n=96)		Comparison Group				P value	
			CF PCMH Match (n=45)		Unexposed Match (n=62)		CF PCMH vs. MMPP	Unexposed vs. MMPP
	Mean	SD	Mean	SD	Mean	SD		
<b>Within-care-team functioning (scale)</b>	3.14	0.33	3.19	0.37	3.10	0.29	0.779	0.231
Team membership is clear—everybody knows exactly who is and isn’t on your team.	3.94	0.90	4.05	0.99	3.72	1.02	0.314	0.460
Different people are constantly joining and leaving your team. (reverse coded <sup>22</sup> )	2.82	1.11	2.63	1.03	2.73	1.20	0.210	0.069
Members of your team have their own individual jobs to do, with little need to work together. (reverse coded)	2.04	0.87	1.91	0.97	2.27	0.96	0.748	0.343
Members of your team have to depend heavily on one another to get the team’s work done.	2.15	0.96	2.27	0.95	2.50	1.02	0.129	0.053
Your team is larger than it needs to be. (reverse coded)	1.95	0.79	1.93	0.95	1.98	0.83	0.990	0.632
Your team has too few members for what it has to accomplish. (reverse coded)	3.08	1.21	2.93	1.28	3.03	1.19	0.995	0.724
Some members of your team lack the knowledge and skills that they need to do their parts of the team’s work. (reverse coded)	2.91	1.13	2.58	1.24	2.70	1.13	0.072	0.588
It is clear what is—and what is not—acceptable member behavior in your team.	2.25	1.03	2.14	0.98	2.43	1.13	0.467	0.625
Members of your team agree about how members are expected to behave.	3.78	0.85	3.82	0.84	3.70	0.96	0.906	0.949
Your practice recognizes and rewards teams that perform well.	3.38	1.08	3.29	0.89	3.03	1.09	0.381	0.150
Team members can easily obtain training or technical advice when they need it.	3.51	1.01	3.80	0.72	3.36	1.00	0.476	0.192
In your practice, teams do not receive adequate training for the work they have to do. (reverse coded)	3.40	0.96	3.82	0.95	3.50	1.13	0.248	0.879
Everyone on your team is motivated to have the team succeed.	3.62	0.97	3.65	0.84	3.45	0.93	0.749	0.330
Some members of your team do not carry their fair share of the	3.11	0.96	3.09	1.00	2.97	0.98	0.720	0.334

<sup>22</sup> Reverse coding is used for negatively-worded questions. High response levels are recoded to low values and vice versa. This has the effect of allowing high ratings to indicate good results, consistent with positively worded questions.

	MMPP (n=96)		Comparison Group				P value	
			CF PCMH Match (n=45)		Unexposed Match (n=62)		CF PCMH vs. MMPP	Unexposed vs. MMPP
	Mean	SD	Mean	SD	Mean	SD		
overall work. (reverse coded)								
Members of your team actively share their special knowledge and expertise with one another.	3.76	0.80	3.66	0.71	3.57	1.01	0.426	0.996
There is a lot of unpleasantness among members of your team. (reverse coded)	3.97	0.94	4.09	0.87	3.85	1.00	0.928	0.416
Working together energizes and uplifts members of your team.	3.88	0.77	3.91	0.71	3.75	0.75	0.791	0.381

**Exhibit 38: Values Alignment with Leaders**

	MMPP (n=97)		Comparison Group				P value*	
			CF PCMH Match (n=47)		Unexposed Match (n=64)			
	Mean	SD	Mean	SD	Mean	SD	CF PCMH vs. MMPP	Unexposed vs. MMPP
<b>Values alignment with leaders (scale)</b>	2.58	0.76	2.83	0.72	2.24	0.70	0.919	0.072
There is broad involvement of clinicians in most financial decisions.	2.25	1.13	2.77	1.18	2.11	1.10	0.344	0.768
Our physician compensation formula is well aligned with our practice’s goals.	2.56	0.99	2.94	0.92	2.27	1.01	0.928	0.617
Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	2.45	1.00	2.70	0.93	2.06	0.92	0.214	0.641
Our compensation plan rewards those who work hard for our practice.	2.63	1.13	2.87	1.05	2.16	0.95	0.179	0.013
Our clinician compensation formula is well understood by our clinicians.	2.54	1.03	2.96	0.95	2.19	1.08	0.721	0.416
Our administrative decision-making process can accurately be described as consensus building.	2.56	0.95	2.64	1.01	2.21	0.99	0.638	0.143
The business office and administration are considered to be very important parts of our group practice.	3.15	0.76	3.22	0.81	2.60	0.81	0.871	0.007
There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs.	2.53	0.85	2.54	0.84	2.38	0.91	0.421	0.968

\*Adjusted for age, gender, race, profession type, length of experience in the profession, practice type, and use of EHR system in the practice, using ordinal logistic regression models.

**Exhibit 39: Communication Openness and Organizational Learning**

	MMPP (n=96)		CF PCMH Match (n=45)		Unexposed Match (n=62)		P value*	
	Mean	SD	Mean	SD	Mean	SD	CF PCMH vs. MMPP	Unexposed vs. MMPP
<b>Communication openness and organization learning (scale)</b>	3.76	0.74	3.79	0.68	3.61	0.71	0.561	0.489
Providers in the practice are open to staff ideas about how to improve care processes.	4.09	0.73	4.04	0.67	4.07	0.80	0.164	0.546
Staff are encouraged to express alternative viewpoints in the practice.	3.82	0.98	3.96	0.74	3.70	1.08	0.547	0.732
Staff are afraid to ask questions when something does not seem right. (reverse coded)	3.76	0.89	3.76	1.11	3.64	1.03	0.639	0.809
It is difficult to voice disagreement in this practice. (reverse coded)	3.75	1.05	3.82	1.01	3.69	0.97	0.381	0.653
When there is a problem in the practice, we see if we need to change the way we do things.	3.77	0.85	3.91	0.76	3.60	1.02	0.713	0.890
The practice is good at changing care processes to make sure the same problems don't happen again.	3.56	1.08	3.54	0.98	3.26	0.96	0.430	0.153
After the practice makes changes to improve the patient care process, we check to see if the changes worked.	3.59	0.97	3.47	0.97	3.31	0.93	0.567	0.264

\*Adjusted for age, gender, race, profession type, length of experience in the profession, practice type, and use of EHR system in the practice, using ordinal logistic regression models.

**Exhibit 40: Perceptions of PCMHs**

	MMPP (n=94)		Comparison Group				P value*	
			CF PCMH Match (n=47)		Unexposed Match (n=56)			
	Mean	SD	Mean	SD	Mean	SD	CF PCMH vs. MMPP	Unexposed vs. MMPP
<b>Being a PCMH would</b>								
Require a fundamental transformation in how we operate.	3.48	1.07	3.04	1.19	3.62	1.20	0.142	0.682
Help my practice take better care of patients.	3.80	0.80	3.70	0.91	3.54	1.05	0.652	0.740
Take up more time.	2.09	0.80	2.16	0.89	2.45	0.96	0.290	0.438
Be too expensive.	3.05	0.89	3.13	0.82	3.06	0.87	0.785	0.382
Generate new revenue.	3.23	0.86	3.39	0.77	2.96	0.86	0.789	0.337
Require the use of financial resources beyond the fixed transformation payments.	2.68	0.85	-		-		-	-
Lead to improved care coordination with specialists.	3.42	1.03	3.61	0.99	3.46	0.91	0.751	0.943
Improve the way I interact with patients' family members.	3.18	0.89	3.20	1.01	3.18	1.02	0.994	0.701
Enhance care due to the role of a care manager/coordinator.	3.94	0.94	3.78	0.95	3.73	0.92	0.453	0.445
Improve patient health outcomes.	3.54	0.90	3.81	0.91	3.44	0.97	0.123	0.780
Reduce my control over the aspects of practice that matter most to me.	3.63	0.86	3.68	0.74	3.31	0.93	0.215	0.031

\*Adjusted for age, gender, race, profession type, length of experience in the profession, practice type, and use of EHR system in the practice using ordinal logistic regression models.

**3.2.4 Discussion**

In summary, responding providers in the MMPP, unexposed, and CF PCMH practices were equivalent in most characteristics at the first measurement in this evaluation (at one year). Practices selected as “unexposed” comparisons did in fact show less exposure to the PCMH concept.

At the one year point in the MMPP, intervention providers are more satisfied in their current job than CF PCMH providers. In addition, there seem to be some structural differences between MMPP and comparison practices, with medical assistants and administrative staff more likely to take responsibility for some duties that clinicians take on in the comparison practices. In fact, these tasks—asking patients whether they smoke, obtaining immunization histories, and communicating with pharmacies and insurance companies—do not necessarily require clinical training to accomplish effectively. Thus, clinician workload may be reduced by shifting these tasks to other roles in the practice. In addition, care teams in MMPP practices are more likely to feature physician assistants, nurse practitioners, registered nurses or nurse care managers, medical assistants, and health educators. The expansion of the care team may increase attention to patient needs while allowing physicians to focus primarily on duties requiring their extensive training and expertise. Although some primary care physicians reported that their care team *never* involves a primary care physician, IMPAQ suspects that respondents interpreted this question as asking whether the care team involved *a primary care physician other than the respondent*.

The measurement of practice culture showed that early in the intervention, MMPP practices were not statistically different in respondents' assessment of within-care-team functioning, communication openness and organizational learning, or most items included in values alignment with leadership. Providers in the MMPP group, however, were more likely to believe that their compensation plans reward hard workers and that the business office and administration are valued by the practice. Finally, respondents in the MMPP or the CF PCMH practices were more likely than respondents from unexposed practices to agree that the PCMH had changed their operations and reduced their control.

Similarities between intervention and comparison practices at baseline are not unusual. It will be interesting to see whether changes in these measures in MMPP practices occur at a faster rate over time than in comparison group practices (particularly, the unexposed group). This would suggest that the PCMH model changes provider satisfaction and other aspects of the provider experience to a greater degree than is seen in usual care or in an alternative PCMH model.

## **Limitations**

This analysis provides unique data on the provider perspective in MMPP practices, as well as in the two comparison groups, practices largely unexposed to the PCMH concept and practices participating in the CareFirst BlueCross BlueShield program. However, it also has limitations, including the fact that the overall response rate was relatively low: 42.3 percent in the MMPP group, 37.1 in the unexposed comparison group, and 27.6 percent in the CF PCMH comparison group. This may result in some bias in the results if non-respondents are different in important ways from providers who chose to respond. Non-respondents are generally considered to be less positive than respondents, although it is unclear how this would have affected the differences observed between MMPP and comparison groups (since non-responders from both groups might be more negative than respondents). It should also be noted that IMPAQ was

unable to contact many providers in the MMPP and comparison group pools due to a lack of accurate contact information (physical and email addresses). Again, this may have introduced some bias into the observed results, although it is unclear in which direction this bias would be likely to run.

In addition, the source for the comparison group data (namely, the MBP licensure database) did not include contact information for any providers except physicians; thus, comparison group respondents were exclusively physicians. As a result, the differences between the MMPP group and the comparison groups may have been driven primarily by the addition of nurse practitioner and physician assistant perspectives; these practitioners were not included in the comparison group data. Particularly, this may have affected the team composition questions. Therefore, IMPAQ also analyzed the team composition questions using only physicians' responses in all three groups. Though the differences were smaller than in the results from all survey responses, the patterns were similar.

## 4. PROGRAM OUTCOMES

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The program outcomes evaluation of the MMPP aims to assess the effectiveness of PCMH practices in improving health care access, delivery and quality while reducing disparities, utilization, and costs. IMPAQ hypothesized that compared to patients in nonparticipating practices, patients in participating primary care practices would experience improved quality of care, decreased utilization of costly services such as hospitalizations, and lower payer costs of care. To test these hypotheses IMPAQ used a matched comparison group of practices and a difference-in-differences (DID) analysis, which allowed IMPAQ to account for outcome changes that would have occurred over time regardless of the MMPP intervention.

Commercially insured patients attributed to the 52 primary care practices in the MMPP and the 104 comparison practices were eligible for inclusion in the evaluation. Patient-level administrative claims data for these patients were used to develop practice-level information on utilization, cost, and quality of care. For this report, two calendar years of claims data were processed—baseline (2010) and year one (2011) of the program. The purpose of this section of the report is to describe the approach and results from the evaluation of outcomes measures for the first year post-implementation.<sup>23</sup>

### 4.1 Methodology

#### 4.1.1 Data

##### Data Sources

The two main data sources used for the outcomes analysis of commercially insured patients are the Maryland Medical Care Database (MCDB) and the Maryland Board of Physicians (MBP) licensure database. The MCDB, which is an all-payer administrative claims system containing utilization and cost information, includes data collected from Maryland insurance companies and health maintenance organizations (HMOs). The database contains institutional and outpatient medical services claims for services received by privately insured Maryland residents. These administrative claims were processed by Social and Scientific Systems (SSS). Under a separate contract, the University of Maryland, Baltimore used the raw data to develop person-level analytic files. There was one person-level file per calendar year, and each file included one record per year for each person attributed to the MMPP or comparison practices of interest. These files contained a unique patient identifier, patient characteristics (age, date of birth, gender), and enrollment information for the analysis year that was used to determine eligibility for the evaluation. Additionally, these person-level files contained the information necessary to construct each outcome measure.

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<sup>23</sup> Three MMPP sites (regnum 1441, 1464, 1465) were aggregated as one site (regnum 1441) because the three sites could not be uniquely identified in the claims data.

The MBP database contains a roster of physicians by practice site. This database was used to refine the attribution of patients to specific practice sites by identifying the physicians associated with each site.

The complete Medicaid administrative encounter data needed for the evaluation were not available to the team in time to be included in this report. IMPAQ will submit the Medicaid analysis in a separate document.

### **Practice attribution**

Practice attribution to the MMPP and comparison practices was done by SSS using federal Taxpayer Identification Numbers (TINs) associated with patients' medical claims. Attribution to MMPP sites was considered to be accurate since these sites have a contractual obligation with the MHCC to identify the patients that belong to their practice.

The assignment of patients to comparison practice sites, however, could only be done by using information from their administrative claims. The assignment for the comparison group patients was initially done using only the TIN. Since one TIN may be used by multiple sites that are in the same practice group, an accurate assignment was not always possible. For this reason, Physician National Provider Identifiers (NPIs), a unique identifier for physicians, were used to refine the patient attribution to comparison sites. Furthermore, the MBP database was used to identify the NPIs associated with each comparison practice site.

After the initial patient assignment by SSS, IMPAQ refined the attribution using a two-step process, based on frequency of visits and proximity to the patient:

- *Step 1: Identification of the most commonly visited NPI within the TIN associated with the initially assigned practice.* This was done by summing the frequency of office visits within the year and determining the most commonly visited NPI at each comparison practice site (sites were identified by the TIN).
- *Step 2: Selection of the practice based on proximity to the patient.* IMPAQ compared the NPI's zip code from the MBP database and the patient's home address from the patient files to select only the practice (i.e., NPI) whose zip code was closest to the patient's zip code.

The two-step refinement process is detailed below.

#### **Step 1 – Identification of the most commonly visited NPI:**

1. IMPAQ assessed all the professional service claims for all the patients assigned to a comparison practice by SSS and selected only the claims bearing the TIN of the comparison practice site selected for the evaluation. IMPAQ also checked to ensure that the NPI fields were populated.
  - IMPAQ identified 3,912,259 and 4,012,667 professional service claims in 2010 and 2011, respectively.

- Among these claims, 12,128 (0.31 percent) and 12,038 (0.3 percent) in 2010 and 2011, respectively, did not have a TIN on the claim. These claims without sufficient information were dropped.
  - Among these claims, 123,592 (3.06 percent) in 2010, and 23,030 (0.57 percent) in 2011, had a TIN, but the NPI fields were not populated. These claims without sufficient information were dropped.
2. Among the professional service claims with a TIN of a selected comparison site, IMPAQ restricted the assessment to claims with Evaluation & Management (E&M) procedure codes or place of service suggesting an office visit. The following E&M codes and place of service codes were used:
- Office or other outpatient services (99201–99215)
  - Preventive medicine services (99381–99429 )
  - Place of service (value 11=office)
3. For each patient with claims bearing either of the above E&M codes or place of service codes, IMPAQ identified the NPI associated with the most frequent number of visits within the year using all the NPI fields on the patient’s claims. IMPAQ considered NPIs that were either included in, or excluded from, the MBP database. IMPAQ considered the following four different NPI fields as they appear on the claims:
- NPI
  - Provider NPI
  - Billing NPI
  - Provider Organization NPI

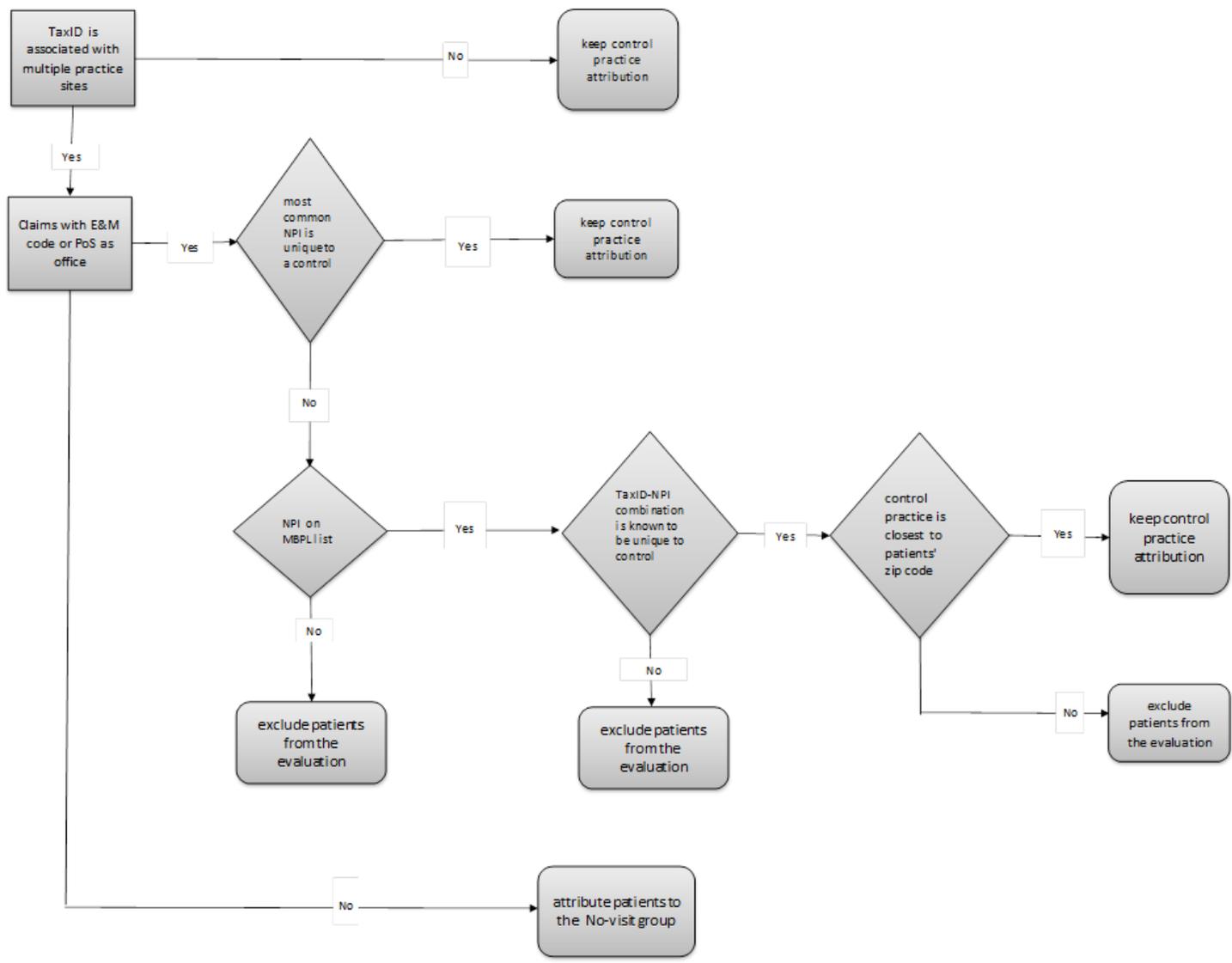
If the most common NPI was not found in the MBP database, then IMPAQ selected the most common NPI that *was* found in the MBP database.

4. When the most common NPI (i.e., the NPI associated with the maximum visits within the year) was selected, approximately 25 percent of all the patients had a tie. For this group of patients, IMPAQ randomly assigned an NPI to the patient.

Step 2 – Selection of the practice based on proximity to the patient:

To further refine the assignment and ensure that the attributed comparison practice was the one most likely utilized by the patient for his/her primary care, IMPAQ used the algorithm shown in the flowchart in Exhibit 41.

**Exhibit 41: Algorithm for Patient Attribution Refinement to the Comparison Practices**



The methodology of this algorithm is described as follows:

1. From the MBP database, IMPAQ determined if the TIN of the selected comparison practice originally assigned to the patient by SSS was identified as unique to a practice (i.e., there was only one practice using the TIN for billing). If so, then the initial patient assignment to this practice by SSS was retained.
2. However, if the TIN of the selected comparison practice was not unique (i.e., the TIN was used by multiple practices for billing), then IMPAQ used the most commonly visited NPI, which was identified and assigned in Step 1 and performed the following:
  - a. If the most commonly visited assigned NPI was unique to the SSS-assigned comparison practice (as determined from the MBP database), the assignment to the comparison practice was retained.
  - b. If the most commonly visited assigned NPI was not unique to a practice (i.e., the NPI was associated with multiple practice sites), IMPAQ assessed the proximity to the patient's home address. IMPAQ used a SAS function (<http://support.sas.com/kb/36/091.html>) that calculates the distance between two zip codes.
    - i. If the practice site closest to the patient's home address (using zip code) was found to be the SSS-assigned comparison practice, IMPAQ retained this patient's practice assignment. If there was a tie with another practice, IMPAQ excluded the patient.
    - ii. If the pair of the most commonly visited assigned NPI and the TIN was not known to be unique to the comparison practice site, IMPAQ excluded the patients assigned to this practice site.
3. IMPAQ also identified patients assigned to a comparison practice by SSS, but who did not have a professional service suggesting an office visit. For this group, IMPAQ created a new group called "No visit group." They were excluded from the evaluation.

### **Patient Inclusion Criteria**

Patients were included in the analysis if they were continuously enrolled in a participating commercial health plan in 2010 and 2011, for 11 or more months in each calendar year. Since Medicare is not participating in the MMPP, patients aged 65 years or more were excluded. These inclusion and exclusion criteria were applied to patients attributed to the MMPP and to those attributed to the comparison practices.

In addition, as a result of the two-step attribution refinement process described above, patients assigned to the comparison practices were subject to further inclusion criteria. As noted previously, these inclusion criteria were needed to refine the original SSS-assigned practice

since the originally assigned comparison practice, based on TIN only, was not always sufficient to ascertain attribution. Thus, comparison practice patients were included in the analysis if the SSS-assigned attributed practice:

had a TIN that was unique to a single site of practice

OR

had multiple sites per TIN and the physicians (NPIs) practiced at multiple sites

AND

- the physician (NPI) visited most by the patient was unique to the attributed practice

OR

- the physician (NPI) visited most by the patient was in the MBP database AND the assigned practice was closest to the patient’s home address by zip code.

In other words, patients originally attributed to the comparison practices were excluded if the attributed practice had multiple sites per TIN, the physician (NPI) visited most by the patient practiced at multiple sites, and one of the following was true:

- The address of the physician (NPI) visited most by the patient was not the closest to the patient’s home address.
- The physician (NPI) visited most by the patient was not in the MBP database.
- The TIN–NPI combination was not unique to the selected comparison practice.

The MCDB data received from SSS contained 271,567 unique commercially insured patients—244,873 patients in 2010, and 234,489 patients in 2011. IMPAQ assessed these MMPP and comparison patients for the inclusion criteria in the following sequence: (1) age 64 years and younger, and (2) 11 or more months of insurance coverage. Exhibit 42 provides details about how many patients were retained at each step of the inclusion criteria by study period and site type. Less than 80 percent of the patients were retained in each year–site type combination.

**Exhibit 42: Patients by Inclusion Criteria**

Criteria	MMPP		Comparison Sites	
	2010	2011	2010	2011
Total number of patients received	95,945	107,188	118,216	126,809
Aged 64 years or younger	86,768	96,409	101,054	107,371
With 11+ months of coverage	73,842 (77.0%)	84,786 (79.1%)	86,617 (73.3%)	96,996 (76.5%)

As described above, the 86,617 and 96,996 comparison site patients in 2010 and 2011, respectively, were further refined by physician NPIs, the MBP database list, and zip codes. The results from the application of the algorithm used to refine assignment to comparison practices are given in Exhibit 43. Following this attribution refinement, the patient-level analysis files

contained 51,133 comparison patients in 2010 and 55,405 comparison patients in 2011. The distribution of patients in each practice site by each criterion listed above is included in Appendix T.

**Exhibit 43: Distribution of Comparison Practice Patients by Refinement Algorithm**

Attribution Algorithm Criteria	2010	2011	Included in Evaluation
	N=86,617	N=96,996	
Assigned practice has a unique Taxpayer Identification Number (TIN)	23,755	25,927	YES
Assigned practice has multiple sites per TIN but has unique NPI	22,175	23,980	YES
Most common NPI is in the MBP list, and the assigned practice is closest to the patient’s home address by zip code	5,203	5,498	YES
Most common NPI is in the MBP list, and the assigned practice is <b>not</b> the closest to the patient’s home address by zip code	5,223	5,576	NO
Assigned practice has multiple sites per TIN, and NPI is not on the MBP list	21,942	25,601	NO
Assigned practice has multiple sites per TIN, and the TIN–NPI combination is not known to be unique to the assigned practice	4,241	4,690	NO
No claims with E&M codes indicating an office visit	4,078	5,724	NO

In 2010, IMPAQ assessed a total of 124,975 patients (73,842 at MMPP sites and 51,133 at comparison sites). In 2011, IMPAQ included a total of 140,191 patients (84,786 at MMPP sites and 55,405 patients at the comparison sites). Of the patients who met the inclusion criteria for the evaluation in 2010, 75.7 percent were assigned to the same practice site in both 2010 and 2011. Exhibit 44 provides further details.

**Exhibit 44: Number of All Patients Meeting Inclusion Criteria Who Were in the Same Practice in Both 2010 and 2011**

Site	Number of <u>ALL</u> patients meeting inclusion criteria in 2010	Number of patients in <u>BOTH</u> 2010 and 2011
MMPP sites	73,842	60,437
All comparison sites	51,133	34,185
CF PCMH	39,677	26,178
Unexposed	11,456	8,007

**Practice Sites Excluded**

As a result of applying the inclusion criteria and the refinement algorithm, fewer practice sites than initially selected were included in the analysis, because some practice sites were dropped due to a lack of eligible patients—one MMPP site in 2010 and 2011, 15 comparison sites (6 CF PCMH and 8 unexposed) in 2010, and 16 comparison sites (seven CF PCMH and eight unexposed) in 2011. Therefore, the year one evaluation of outcome measures includes 50

MMPP sites in each year and 89 and 88 comparison sites in 2010 and 2011, respectively. The excluded sites are shown in Exhibit 45.

**Exhibit 45: Practice Sites Excluded from the Outcomes Evaluation**

Year	MMPP Practices	CF PCMH Comparison Practices	Unexposed Comparison Practices
2010	1254	2016, 2046, 2054, 2066, 2070, 2104	2001, 2038, 2039, 2040, 2053, 2067, 2072, 2084
2011	1254	2016, 2018, 2046, 2054, 2066, 2070, 2104	2001, 2038, 2039, 2040, 2053, 2067, 2072, 2084

#### 4.1.2 Outcome Measures

The outcomes measures fall within three domains: quality, utilization, and costs. After conferring with the MHCC, IMPAQ selected established quality measures from the PCMH Evaluator’s Collaborative, the Agency for HealthCare Research and Quality (AHRQ), the National Quality Forum (NQF), the National Committee on Quality Assurance (NCQA), and the Healthcare Effectiveness Data and Information Set (HEDIS). The health care utilization and cost measures used in the outcomes evaluation focus on reducing emergency department visits, preventing potentially avoidable hospitalizations, optimizing utilization of primary care and prevention services, and reducing total direct health care costs. Appendix U provides a description of each of the selected measures. One quality measure from IMPAQ’s Report on Data Collection, submitted to the MHCC on April 23, 2012, was dropped—percentage of deliveries that received a prenatal care visit in the first trimester; it could not be operationalized because gestational age cannot be measured in claims data.

#### Construction of Measures

Since the MHCC requested that the analysis be performed on the practice level, the person-level files received from SSS had to be transformed for this evaluation. To construct the measures, IMPAQ used the following information from the data files: diagnoses (e.g., asthma, hypertension), health care utilization (e.g., emergency department visits, hospitalizations), and costs both in aggregate and broken out by location of care received (i.e., physician office visits, specialty visits, laboratory and x-rays, emergency department, inpatient, nursing home, and hospice). Not only were these components necessary to construct the quality, utilization, and cost measures, but they were also an indicator for inclusion in each measure’s numerator and denominator. Practice-level files were constructed by the University of Maryland, Baltimore, under a separate contract with the MHCC, using the patient-level files received from SSS.

The final analytic files contain one record per practice site, per time period (monthly or yearly, depending on the measure). Each record has a unique identifier for the practice site; records were keyed on the practice site identifier and time period, allowing records built from a variety of sources to be linked.

In addition to the quality, utilization, and cost measures, these practice-level analytic files also contained the following practice characteristics derived from information received from the MHCC and from the MBP database: practice size (i.e., number of physicians), number of patients, average patient age, proportion of female patients, and case-mix based on the Johns Hopkins Adjusted Clinical Groups (ACG) Case-Mix System. IMPAQ used these practice-level files for the practice-level evaluation analysis.

### 4.1.3 Analysis Methodology

#### Descriptive Statistics

Univariate analysis was carried out at the practice-type level (i.e., MMPP practices, CF PCMH comparison practices, and unexposed comparison practices). From these, IMPAQ produced summary descriptive statistics (mean, median, max, min, and frequencies).

#### Program Impact Analysis

Using a DID approach, IMPAQ estimated average changes in annual outcome measures (health care quality, cost, and utilization) for the MMPP sites in the first year of exposure to the PCMH (2011) that were not explained by concurrent changes for the comparison sites. For each outcome measure, IMPAQ estimated two models: one unadjusted and another adjusted for practice characteristics. The simple, unadjusted DID estimator can be expressed as follows:

$$\overline{\Delta MMPP} - \overline{\Delta COMPARISON} \quad (\text{eq. 1})$$

The notation  $\overline{\Delta MMPP}$  and  $\overline{\Delta COMPARISON}$  are the changes between 2010 and 2011 in the average of the outcome of interest at the MMPP sites and the comparison sites, respectively.

However, to provide estimates that are less likely to be biased, IMPAQ estimated the DID estimator using the following regression equation to adjust for other potential influences:

$$Y_{it} = \beta_0 + \beta_1 T_t + \beta_2 P_i + \beta_3 T_t * P_i + \beta_4 X_{it} + e_{it} \quad (\text{eq. 2})$$

The dependent variable,  $Y_{it}$ , is the outcome measure of interest for practice  $i$  at time  $t$ . The variable  $T_t$  equals one if the observed measure is in 2011 and zero if the observation is in 2010. Thus,  $\beta_1$  estimates the change in the dependent variable that occurs over time, regardless of implementation of the MMPP.

The variable  $P_i$  equals one if the observed measure is for an MMPP site and zero if it is for a comparison practice. The estimate of  $\beta_2$  captures the group effect; that is, it controls for any differences in the dependent variable associated with the site's status as an MMPP practice or a comparison practice regardless of whether the time period is 2010 or 2011.

The notation  $P_i * T_t$  only equals one if the measure is for an MMPP site in 2011. Therefore, the estimate of  $\beta_3$  captures the effect of the MMPP on the outcome of interest.

To account for other factors that may influence the value of the outcome variables, IMPAQ included a vector,  $X_{it}$  of practice-level variables. These variables include location (proximity to large/small metropolitan area), practice type (solo vs. other), and case-mix. The case-mix adjustment was scored using the Adjusted Clinical Groups (ACGs). This tool permits IMPAQ to compare morbidity patterns by taking into account differences such as the gender, age, and chronic condition prevalence of patients at the practice sites. The relationships between these covariates and the outcome variable are measured by the estimates of  $\beta_4$ .

The term  $e_{it}$  represents the error term, which includes variations due to unobserved variables.

The parameter of interest is  $\beta_3$ , since it estimates the effect of the MMPP on the outcome of interest. If  $\beta_3$  is statistically significant ( $p < 0.10$ ), then the null hypothesis that the MMPP had no effect on the outcome/measure is rejected.<sup>24</sup> All analyses were conducted with SAS version 9.2 (SAS Institute, Cary, NC).

To estimate the DID regressions in equation 2, IMPAQ used two types of modes. For binary outcome measures (aggregated as proportions at the practice site level), IMPAQ used grouped logistic regression models. For continuous outcome measures, IMPAQ applied a generalized linear regression model. In both types of models, IMPAQ accounted for the repeated measures over time. IMPAQ reports the ratio of odds ratios for the binary measures (e.g., proportion of patients within the practice with one or more ambulatory care sensitive emergency department visits) and a DID estimate in the measure's unit of measurement for the continuous measures (e.g., total inpatient costs).

IMPAQ also conducted a sensitivity analysis in which length of exposure to health care services was examined. In this analysis, IMPAQ limited the sample to patients that met the eligibility criteria in the same practice site in both years (i.e., the patients had at least 11 months of coverage in 2010 and 2011 in a single practice site). By including only this population, IMPAQ limited the subgroup analysis to patients attributed to MMPP and comparison groups who shared a longer duration of access to health care services from a single provider. The reported results, therefore, include two sets of estimates: one with all patients meeting the eligibility criteria in either or both years, and another with a subset of patients meeting the eligibility criteria in both years. For each set of tables, IMPAQ reports the unadjusted and adjusted DID results.

To ensure that a practice's influence on the estimates is proportional to its number of attributed patients, IMPAQ's analyses are weighted. In the unadjusted DID analyses, IMPAQ used the weighted means of each outcome measure. The adjusted estimates were calculated

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<sup>24</sup> Although most research uses the 5% significance level, we used the 10% level in this analysis due to the small sample size ( $n=140$ ).

using weighted regressions. In both types of analyses, IMPAQ used the number of attributed patients within the practice site as the weight.

## **4.2 Results**

### **4.2.1 Descriptive Statistics**

The following exhibits provide a summary of the descriptive statistics aggregated at the MMPP and comparison sites for all patients meeting the inclusion criteria (Exhibit 46) and for the subgroup of patients in the same practice in both 2010 and 2011 (Exhibit 47). IMPAQ compared the MMPP sites to the comparison sites on the following variables: practice size, number of patients, patients' age, and proportion of female patients. Relative to all comparison sites, MMPP sites had, on average, more than 2.5 times as many patients ( $p < 0.05$ ) and twice as many physicians per practice ( $p < 0.0001$ ) in both 2010 and 2011. Similarly, patients in MMPP sites were younger ( $p < 0.05$ ) and more likely to be female ( $p < 0.05$ ) relative to all patients in comparison sites, despite the fact that unexposed patients were significantly older ( $p < 0.0001$ ). While patients who met eligibility requirements in 2010 and 2011 in the same practice were also more likely to be female at MMPP practices, they did not differ significantly in mean age when MMPP sites were compared to comparison sites.

**Exhibit 46: Practice Characteristics of All Privately Insured Patients Meeting Eligibility Criteria in 2010 or 2011**

Analysis Sites	Year	N	Mean (practice rate/ proportion)	SD	Minimum Value	Maximum Value	Median	Pr>  t	Total in Denominator	Total in Numerator
<b>Practice size (Number of NPIs)</b>										
Participating Sites	2010	50	6.74	5.21	1	26	6	.	50	337
Comparison Sites		89	3.07	2.90	1	15	2	<.0001	89	273
CF PCMH		51	3.61	3.26	1	15	3	0.0005	51	184
Unexposed		38	2.34	2.15	1	10	1	<.0001	38	89
Participating Sites	2011	50	6.74	5.21	1	26	6	.	50	337
Comparison Sites		88	3.06	2.91	1	15	2	<.0001	88	269
CF PCMH		50	3.6	3.30	1	15	3	0.0005	50	180
Unexposed		38	2.34	2.15	1	10	1	<.0001	38	89
<b>Number of patients</b>										
Participating Sites	2010	50	1,476.84	1,985.57	3	12,466	986	.	50	73,842
Comparison Sites		89	574.53	663.92	2	4,286	371	0.003	89	51,133
CF PCMH		51	777.98	758.00	7	4,286	581	0.023	51	39,677
Unexposed		38	301.47	371.89	2	1,922	189	0.000	38	11,456
Participating Sites	2011	50	1,695.72	2,278.89	2	14,312	1,158.5	.	50	84,786
Comparison Sites		88	629.6	776.62	3	5,057	403.5	0.002	88	55,405
CF PCMH		50	873.86	899.09	9	5,057	633.5	0.021	50	43,693
Unexposed		38	308.21	401.18	3	2,193	198	<.0001	38	11,712
<b>Patient age</b>										
Participating Sites	2010	73842	36.38	17.883	0	64	40	.	73,842	2,686,567
Comparison Sites		51133	36.60	19.046	0	64	41	0.041	51,133	1,871,535
CF PCMH		39677	35.46	19.549	0	64	40	<.0001	39,677	1,407,049
Unexposed		11456	40.55	16.598	0	64	44	<.0001	11,456	464,486
Participating Sites	2011	84786	36.28	17.942	0	64	40	.	84,786	3,076,240
Comparison Sites		55405	36.82	19.16	0	64	41	<.0001	55,405	2,039,928
CF PCMH		43693	35.64	19.666	0	64	40	<.0001	43,693	1,557,299
Unexposed		11712	41.21	16.414	0	64	45	<.0001	11,712	482,629
<b>Proportion of female patients</b>										
Participating Sites	2010	50	0.59	0.11	0.33	1	0.57	.	50	43,505
Comparison Sites		89	0.54	0.096	0.25	0.8	0.54	0.008	89	27,539

Analysis Sites	Year	N	Mean (practice rate/ proportion)	SD	Minimum Value	Maximum Value	Median	Pr>  t	Total in Denominator	Total in Numerator
CF PCMH		51	0.54	0.088	0.29	0.8	0.54	0.028	51	21,139
Unexposed		38	0.54	0.108	0.25	0.75	0.53	0.024	38	6,400
Participating Sites	2011	49	0.59	0.103	0.38	1	0.57	.	50	49,811
Comparison Sites		88	0.56	0.101	0.22	0.88	0.55	0.051	88	30,217
CF PCMH		50	0.54	0.091	0.22	0.75	0.54	0.012	50	23,480
Unexposed		38	0.58	0.111	0.25	0.88	0.57	0.469	38	6,737

**Exhibit 47: Practice Characteristics of All Privately Insured Patients Meeting Eligibility Criteria in 2010 and 2011**

Analysis Sites	Year	N	Mean (practice rate/ proportion)	SD	Minimum Value	Maximum Value	Median	Pr >  t	Total in Denominator	Total in Numerator
<b>Practice size (Number of NPIs)</b>										
Participating Sites	2010	50	6.74	5.21	1	26	6	.	50	337
Comparison Sites		88	3.06	2.91	1	15	2	<.0001	88	269
CF PCMH		50	3.6	3.30	1	15	3	0.001	50	180
Unexposed		38	2.34	2.15	1	10	1	<.0001	38	89
Participating Sites	2011	50	6.74	5.21	1	26	6	.	50	337
Comparison Sites		88	3.06	2.91	1	15	2	<.0001	88	269
CF PCMH		50	3.6	3.30	1	15	3	0.0005	50	180
Unexposed		38	2.34	2.15	1	10	1	<.0001	38	89
<b>Number of patients</b>										
Participating Sites	2010	50	1,208.74	1,641.89	1	10,284	768.5	.	50	60,437
Comparison Sites		88	388.47	474.82	2	3,029	207.5	0.001	88	34,185
CF PCMH		50	523.56	554.87	7	3,029	353	0.007	50	26,178
Unexposed		38	210.71	255.47	2	1,174	127.5	<.0001	38	8,007
Participating Sites	2011	50	1,208.74	1,641.89	1	10,284	768.5	.	50	60,437
Comparison Sites		88	388.47	474.82	2	3,029	207.5	0.001	88	34,185

Analysis Sites	Year	N	Mean (practice rate/ proportion)	SD	Minimum Value	Maximum Value	Median	Pr >  t	Total in Denominator	Total in Numerator
CF PCMH		50	523.56	554.87	7	3,029	353	0.007	50	26,178
Unexposed		38	210.71	255.47	2	1,174	127.5	<.0001	38	8,007
<b>Patient age</b>										
Participating Sites	2010	60,437	36.79	17.8	0	63	41	.	60,437	2,223,615
Comparison Sites		34,185	36.80	19.3	0	63	42	0.937	34,185	1,258,090
CF PCMH		26,178	35.30	19.9	0	63	41	<.0001	26,178	924,020
Unexposed		8,007	41.72	16.3	0	63	46	<.0001	8,007	334,070
Participating Sites	2011	60,437	37.79	17.8	1	64	42	.	60,437	2,284,052
Comparison Sites		34,185	37.80	19.3	1	64	43	0.937	34,185	1,292,275
CF PCMH		26,178	36.30	19.9	1	64	42	<.0001	26,178	950,198
Unexposed		8,007	42.72	16.3	1	64	47	<.0001	8,007	342,077
<b>Proportion of female patients</b>										
Participating Sites	2010	49	0.61	0.11	0.36	1	0.58	.	50	36,355
Comparison Sites		87	0.56	0.10	0.20	0.80	0.55	0.009	88	18,685
CF PCMH		50	0.55	0.09	0.29	0.76	0.54	0.004	50	14,081
Unexposed		37	0.57	0.11	0.20	0.80	0.56	0.165	38	4,604
Participating Sites	2011	49	0.61	0.11	0.36	1	0.58	.	50	36,355
Comparison Sites		87	0.56	0.10	0.20	0.80	0.55	0.009	88	18,685
CF PCMH		50	0.55	0.09	0.29	0.76	0.54	0.004	50	14,081
Unexposed		37	0.57	0.11	0.20	0.80	0.56	0.165	38	4,604

## 4.2.2 Program Impact Analysis

To estimate the impact of the MMPP, 13 quality, 12 utilization, and 12 cost measures were analyzed. IMPAQ studied changes in these outcome measures among patients meeting the eligibility criteria at an MMPP or comparison practice in either 2010 or 2011, and also among the subgroup of patients attributed to same practice in both years.

Here, this section focuses on the adjusted DID analyses. A summary of significant findings for each outcome measure in the adjusted DID analysis is presented for patients meeting the eligibility criteria in either year (Exhibit 48) and in both analysis years. Appendix V contains all estimated effects of the MMPP on all outcome measures from the adjusted DID analysis as well as the unadjusted estimates.

**Exhibit 48: Adjusted Effects Results of PCMH on Quality, Utilization, and Cost Measures, with significant findings (p<0.1) for privately insured ALL patients meeting eligibility criteria in 2010 or 2011\***

Analysis Sites	Year	Weighted Mean	Adjusted Ratio of Odds Ratio (90% CI)	Adjusted DID Estimate	SE	P-value
<b>Proportion of young persons (≤40yrs) with asthmas with one or more asthma-related hospital admissions within the year</b>						
Participating Sites	2010	0.0019				
Comparison Sites		0.0019				
Participating Sites	2011	0.0003	0.019 (0.002 to 0.245)	.	.	0.011
Comparison Sites		0.0022				
<b>Adolescent well-care visits (12-21 years ), ALL</b>						
Participating Sites	2010	0.459				
Comparison Sites		0.565				
Participating Sites	2011	0.449	.	0.033	0.013	0.011
Comparison Sites		0.529				
<b>Adolescent well-care visits (12-21 years), within attributed practice</b>						
Participating Sites	2010	0.369				
Comparison Sites		0.512				
Participating Sites	2011	0.385	.	0.057	0.013	<0.0001
Comparison Sites		0.476				
<b>Proportion of patients with one or more attributed practice office visits</b>						
Participating Sites	2010	0.863				
Comparison Sites		0.963				
Participating Sites	2011	0.897	1.747 (1.442 to 2.116)	.	.	<0.0001
Comparison Sites		0.947				
<b>Mean non-attributed practice office visits among patients with one or more non-attributed practice physician visits</b>						
Participating Sites	2010	3.340				
Comparison Sites		3.457				
Participating Sites	2011	3.268	.	-0.109	0.031	<0.001

Analysis Sites	Year	Weighted Mean	Adjusted Ratio of Odds Ratio (90% CI)	Adjusted DID Estimate	SE	P-value
Comparison Sites		3.474				
<b>Mean total outpatient payments among patients with outpatient services</b>						
Participating Sites	2010	1,974.45				
Comparison Sites		1,950.59				
Participating Sites	2011	2,067.94		-145.89	68.33	0.033
Comparison Sites		2,162.28				
<b>Mean total attributed practice office visit payments among patients with attributed practice visits</b>						
Participating Sites	2010	257.55				
Comparison Sites		255.99				
Participating Sites	2011	269.23		-8.32	5.02	0.097
Comparison Sites		285.13				
<b>Mean total other costs among all patients</b>						
Participating Sites	2010	602.91				
Comparison Sites		640.07				
Participating Sites	2011	635.96		-55.90	23.68	0.018
Comparison Sites		722.63				

\*Adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), and case-mix; difference-in-differences estimators are reported as effects and are based on regression models, as described in the analysis plan.

**Exhibit 49: Adjusted Effects Results of PCMH on Quality, Utilization and Cost Measures, with significant findings (p<0.1) for privately insured patients meeting eligibility criteria in 2010 and 2011\***

Sites	Year	Weighted Mean	Adjusted Ratio of Odds Ratio (90% CI)	Adjusted DID Estimate	SE	P-value
<b>Proportion of women (21-64 years) with one or more cervical cancer screening within the year</b>						
Participating Sites	2010	0.425				
Comparison Sites		0.434				
Participating Sites	2011	0.369	1.089 (1.030 to 1.151)	.	.	0.012
Comparison Sites		0.365				
<b>Adolescent well-care visits (12-21 years ), ALL</b>						
Participating Sites	2010	0.464				
Comparison Sites		0.588				
Participating Sites	2011	0.440	.	0.040	0.016	0.010
Comparison Sites		0.534				
<b>Adolescent well-care visits (12-21 years), within attributed practice</b>						
Participating Sites	2010	0.365				
Comparison Sites		0.532				
Participating Sites	2011	0.368	.	0.065	0.014	<0.0001
Comparison Sites		0.479				
<b>Proportion of patients with one or more attributed practice office visits</b>						
Participating Sites	2010	0.850				
Comparison Sites		0.955				

Sites	Year	Weighted Mean	Adjusted Ratio of Odds Ratio (90% CI)	Adjusted DID Estimate	SE	P-value
Participating Sites	2011	0.886	1.854 (1.551 to 2.217)	.	.	<0.0001
Comparison Sites		0.936				
<b>Mean non-attributed practice office visits among patients with one or more non-attributed practice physician visits</b>						
Participating Sites	2010	3.382				
Comparison Sites		3.522				
Participating Sites	2011	3.355	.	-0.092	0.034	0.006
Comparison Sites		3.547				
<b>Mean total outpatient payments among patients with outpatient services</b>						
Participating Sites	2010	1,935.74				
Comparison Sites		1,877.12				
Participating Sites	2011	2,105.95		-156.24	69.38	0.024
Comparison Sites		2,180.07				
<b>Mean total laboratory payments among patients with laboratory visits</b>						
Participating Sites	2010	241.04				
Comparison Sites		233.81				
Participating Sites	2011	217.86		-18.47	9.29	0.047
Comparison Sites		226.95				

\* Adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), and case-mix; difference-in-differences estimators are reported as effects and are based on regression models, as described in the analysis plan.

## Quality Measures

At MMPP sites, the proportion of young adults with a hospital admission due to asthma decreased relative to the proportion at comparison sites over the same period. This resulted in a significant ratio of odds ratios when the MMPP sites were compared to comparison sites from 2010 to 2011 (0.019,  $p=0.011$ ). This measure could not be evaluated among patients in the same practice in both 2010 and 2011 due to the small sample size.

While both practice site types experienced a decrease in the average number of well-care visits by adolescents, the DID estimate of these visits found a statistically significant increase among the MMPP sites relative to the comparison sites (0.033,  $p=0.011$ ) due to a larger decrease at the comparison sites. This difference was also seen when the visits were restricted to those made to the adolescent patient's attributed practice (0.057,  $p<0.0001$ ). Similar differences were also seen when assessing patients in the same practice in 2010 and 2011; 0.04 ( $p=0.01$ ) visits overall, and 0.065 ( $p<0.0001$ ) when restricted to the visits made to the patient's attributed practice.

The subgroup analysis of patients with a visit to the same practice in both years showed a significant finding not seen when assessing all patients meeting the eligibility criteria. The proportion of women who had a Pap test to screen for cervical cancer experienced a smaller decrease between 2010 and 2011 in the MMPP sites than in the comparison sites. The resulting

ratio of odds ratios was significantly different when the MMPP sites were compared to the comparison sites (1.09,  $p=0.012$ ).

### **Utilization Measures**

Although the proportion of patients with one or more office visits to the attributed primary care physician increased among the MMPP sites in the first year of the program, the proportion decreased in the comparison sites. The resulting adjusted ratio of odds ratios was significantly greater than 1.00 for the MMPP sites relative to the comparison sites (1.74,  $p<0.0001$ ). This ratio was also significant among patients in the same practice in both years (1.85,  $p<0.0001$ ).

Among patients with one or more visits to specialty physicians (non-attributed practice physicians), the mean number of office visits decreased in the MMPP sites between 2010 and 2011. However, over the same period, this mean remained approximately the same in the comparison sites (3.46 in 2010 and 3.47 in 2011). The resulting DID estimate was significant ( $-0.109$ ,  $p<0.001$ ). This DID estimate was also significant among patients in the same practice in 2010 and 2011 ( $-0.092$ ,  $p=0.006$ ).

### **Cost Measures**

In the first year, the MMPP appears to have decreased the expenditures in four cost categories. The DID estimate shows that the total outpatient payments among MMPP sites decreased significantly ( $-\$146$ ,  $p=0.033$ ). While the payments at the MMPP and comparison sites both increased during the first year of the MMPP, the findings suggest that the increase was smaller at the MMPP sites. This estimate was also significant within the subgroup of patients in the practice in both years ( $-\$156$ ,  $p=0.024$ ).

The analysis of patients attributed to any practice in 2010 or 2011 also demonstrated a negative impact by the MMPP on expenditures for office visits and non-specified costs. Among all patients with an attributed practice visit, the mean total office visit payments increased at both MMPP and comparison sites. However, over time, the increase at MMPP sites was significantly smaller ( $-\$8$ ,  $p=0.097$ ). Similarly, at the MMPP and comparison sites, the total other costs (payments not included in other cost measures) increased over time, but the increase was significantly smaller at the MMPP sites. Thus, the resulting DID estimator for the MMPP sites was  $-\$56$  ( $p=0.018$ ) over the same period.

Among patients attributed to the same practice in 2010 and 2011, there was an additional cost impact by the MMPP. For these patients who had laboratory visits, the mean total laboratory payments were significantly smaller over time at the MMPP sites relative to the comparison sites ( $-\$18.5$ ,  $p=0.047$ ).

## 4.3 Discussion

### Limitations

The findings about the impact on the outcome measures should be interpreted with the following limitations in mind. First, the refinement process of patient attribution to comparison practices may introduce selection bias. Patients attributed to practices with multiple sites had to have an E&M code or visit indicator suggesting an office visit in order to correctly identify the NPI associated with the maximum frequency. This criterion may have overestimated the number of visits to primary care physicians in the comparison sites when compared to patients in the MMPP sites, who were not required to have this visit indicator.

Also, the assignment of patients to the most common primary care provider using NPIs in the claims data assumes that this physician delivers a meaningful proportion of the care for assigned patients. Most studies on patient attribution have not found physician cost and quality assessment to be very sensitive to the rules used to attribute patients to physicians. However, Mehrotra et al. found important effects of attribution on results, indicating that the effects of attribution may be sensitive to the particular context in which it is studied.<sup>25</sup> The authors conclude that there may be no uniformly best rule; the preferred rule depends on the purpose, context, and stakeholder perspective. Given that the context for this evaluation is outpatient care, the rationale for using only primary care physicians is that they are most likely to be responsible for a patient's office visits.

Similarly, by using zip codes, IMPAQ assumes that a patient will receive most of his/her care from the closest practice to his/her home address. It overlooks individual factors such as personal preference or sites close to patients' place of employment.

Several factors limited the statistical power for comparing the quality and utilization measures between MMPP and comparison sites. The number of patients eligible for some measures was either zero or too small. Hence, the statistical model failed to converge. IMPAQ proposes that the MHCC consider findings that are not statistically significant to be inconclusive rather than evidence of no effects, because IMPAQ suspects that most measures had inadequate power to detect effects that may have existed.

### Strengths

This analysis, which was based on the administrative claims data of commercial payers, has several strengths. First, IMPAQ used the DID design, a well-accepted, rigorous, quasi-experimental approach when random assignment is not possible. Moreover, comparison sites were matched to MMPP sites in the baseline year (i.e., they were similar in terms of the type of

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<sup>25</sup> Mehrotra, A., Adams, J.L., Thomas, J.W., & McGlynn, E.A. (2010). The impact of different attribution rules on individual physician cost profiles. *Annals of Internal Medicine*, 152(10): 649-654.

providers, use of health information technology, and estimated patient characteristics). Therefore, both MMPP sites and comparison groups were considered comparable at baseline, and IMPAQ can distinguish effects of the PCMH from preexisting differences between the MMPP and comparison groups.

## **Conclusion**

IMPAQ's analysis provides some evidence that during the first year of the adoption of the PCMH model by primary care practices in the MMPP, some of the program goals were met. Furthermore, for measures that were significantly different, the patients who maintained the PCMH affiliation at the same practice in both years had slightly better gains over time. As noted above, however, because of the small sample sizes used to evaluate some measures, IMPAQ proposes that the MHCC consider the findings that are not statistically significant as inconclusive rather than as evidence of no effects.

## 5. CONCLUSIONS

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This report provides interim analysis results about the progress of the Maryland Multi-Payer Patient Centered Medical Home Program. In particular, it provides baseline information on the transformation of practice sites and on patient and provider satisfaction with the program and it also compares the 2011 analysis measures to the baseline measures (2010). IMPAQ's evaluation was both quantitative and qualitative in nature and consisted of several components, including interviews with participating practices, administrative data analysis, and patient and provider surveys. Where possible, IMPAQ used a pre/post evaluation design. To examine the overarching questions of concern by the MHCC, the evaluation consisted of three parts. IMPAQ assessed (1) access, quality, utilization, disparities, and cost outcomes, using administrative data; (2) implementation and practice transformation, using interviews, site visits, and administrative data; and (3) satisfaction among patients and providers, using surveys.

To assess the process and costs of practice transformation, IMPAQ conducted site visits to a sample of nine practices, including interviews with providers and staff. These site visits occurred between September 2012 and February 2013. In addition, IMPAQ monitored the implementation of the NCQA PCMH model quantitatively, using data from the NCQA recognition database. Overall, transformation has been a positive experience for practices and has allowed them to acquire the resources and knowledge to implement new processes and protocols. By the end of 2012, all MMPP practices had achieved at least Level 2 NCQA recognition, and many had increased their recognition level since the start of the program.

IMPAQ's analysis revealed several elements that contributed to successful implementation of the PCMH model: small or medium practice size at a single location, the resources of affiliation with a hospital, creativity, and PCMH oversight teams and champions. When the PCMH team and champion involved and educated providers and staff early in the transformation process, there was an increase in collaboration and satisfaction with the PCMH model. The MMPP practices had an easier time working toward the MMPP quality and cost goals when incentives were provided to providers and staff and when they implemented care coordination, monitoring and reporting of cost and quality outcomes, and standardization of procedures and policies.

To assess satisfaction with the program, IMPAQ administered (1) a patient survey to commercially insured patients from January through February 2013, (2) the same survey to Medicaid patients between July and November 2013, and (3) a web-based provider survey to MMPP and comparison practice providers. Through the patient survey, IMPAQ found that adult patients and the guardians of child patients were generally pleased with the care received from MMPP participating providers. However, some areas that might benefit from improvement are (1) provider discussions with adult patients about how a family member can help them in maintaining a healthy diet plan and appropriate physical activity, and in following the treatment plan; (2) getting timely appointments; and (3) provider support in taking care of children's health.

Satisfaction with the MMPP providers and practices was equivalent between Medicaid and commercially insured patients, between the chronically ill and those without chronic conditions, and between African American and Caucasian patients, suggesting few disparities in patient experience, at least on these characteristics. Where there were any differences, the group that would be considered the more vulnerable population tended to rate their provider or practice more highly. Adult patients with chronic conditions were more likely to have discussions about medication decisions with their provider than those without a chronic condition. Respondents for chronically ill children gave slightly higher ratings on how well providers communicate with patients and the overall performance of the provider than did respondents for children who were not chronically ill. Finally, African Americans were more likely to receive advice from their providers on staying healthy, and African American children were more likely to feel that their provider supported them in taking care of their own health.

MMPP providers were more satisfied in their current job than CF PCMH providers. In addition, there seem to be some structural differences between MMPP and comparison practices, with medical assistants and administrative staff more likely to take responsibility for some duties that clinicians take on in the comparison practices. These tasks do not necessarily require clinical training to accomplish effectively. Thus, clinician workload may have been reduced by shifting these tasks to other roles in the practice. In addition, care teams in MMPP practices are more likely to feature physician assistants, nurse practitioners, registered nurses or nurse care managers, medical assistants, and health educators. The expansion of the care team may increase attention to patient needs, while allowing physicians to focus primarily on duties requiring their extensive training and expertise. Furthermore, providers in the MMPP group were more likely to believe that their compensation plans rewarded hard workers and that the business office and administration were valued by the practice.

To assess program outcomes, IMPAQ used claims data from the MCDB to generate baseline (2010) and first year (2011) measures of quality, utilization, and costs for the MMPP practices and a group of matched non-participating practices. To analyze these data for program impacts, IMPAQ used a difference-in-differences (DID) approach. This analysis provided some evidence that during the first year of the adoption of the PCMH model by primary care practices in the MMPP, some of the program goals were met. In particular, the program increased well-care visits by adolescents, Pap tests, and office visits to the attributed primary care physician, and decreased hospital admission due to asthma by young adults and the number of office visits to specialists. These results indicate an increased focus on primary care.

The analysis also suggests that the MMPP program had some early success in its goal to slow the growth of health care costs in Maryland. Patients of MMPP practices had decreased expenditures in four cost categories —outpatient, office visit, laboratory, and non-categorized costs.

The analysis period of the current report is early in the life of the MMPP. Thus, while many results are small or not significant, it is encouraging to see progress towards the goals of the

MMPP this soon after its start. These early results set an expectation for stronger effects of the MMPP in IMPAQ's future analysis of the final two years of the program.

## **APPENDIX A: MATCHING TECHNIQUE USED TO SELECT COMPARISON PRACTICES**

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Propensity score matching is a technique developed to reduce bias in estimates of a treatment when there is non-random assignment to the treatment group. In the MMPP, there are two steps in the selection process that make the MMPP practices a non-random sample of practices in the state of Maryland. First, since practices chose to apply for participation in the MMPP, it is likely that the practices that applied are different from those that chose not to apply in ways that influence outcomes relevant to this evaluation. Second, the MHCC evaluated the practice applications based upon certain criteria that are likely to influence outcomes and selected a subset of the applications for MMPP participation in the MMPP. This increases the likelihood that the MMPP practices are materially different from the non-MMPP Maryland practices.

Reduced bias in estimates of the impact of the MMPP can be achieved by comparing MMPP and non-MMPP practices that are similar in characteristics that influence the evaluated outcomes. Propensity score matching will permit such an estimate by matching each MMPP practice with non-MMPP practices that were just as likely to have received MMPP participation had they applied (in the case of those that did not) or had infinite slots been available in the program (in the case of those that did apply and were rejected). This likelihood of treatment is known as the propensity score. It summarizes the influential characteristics into a single value.

IMPAQ used a logistic regression to create propensity scores by estimating the following model using MMPP and non-MMPP Maryland practices:

$$Y_i = \beta X_i + \epsilon$$

The dependent variable,  $Y_i$ , equals one if the practice participates in the MMPP and zero otherwise. The explanatory variables,  $X_i$ , are practice characteristics associated with participation (see below). It is important to note that these characteristics do not necessarily *cause* participation; they are merely characteristics that are found among participating practices and *may influence* the selected outcome measures. Using the coefficient estimates from the above regression, IMPAQ obtained propensity scores for the MMPP and non-MMPP practices as the predicted probability ( $p$ ), or  $\log[p/(1 - p)]$ , that any practice is participating in the MMPP. A high probability of participation for a non-MMPP practice means that the practice is very much like the participating practices.

Finally, IMPAQ matched each MMPP practice to one CF PCMH and one unexposed comparison practice using nearest neighbor matching, which matches MMPP practices to non-MMPP practices with the nearest propensity scores. IMPAQ did not use caliper matching, which matches nearest neighbors within a pre-specified range, because what a reasonable range would be could not be determined *a priori*.

This new sample of participants and matched non-participants will be used for the DID outcomes evaluation of the MMPP. Since IMPAQ used propensity matching, it will be important

to conduct analyses using methods that appropriately account for non-independence of the matched sample.

### Characteristics Used in Selecting Comparison Practices

Characteristic	Data Source
Setting (i.e., freestanding physician office, HMO, hospital, FQHC)	MBP database
Ownership (i.e., private, public)	MBP database
Type of practice (i.e., solo, multispecialty group, hospital, other facility)	MBP database
Location of practice (i.e., urban, suburban, or rural)	ARF
Median income of county where practice is located	ARF
Percent of practice's county residents enrolled in Medicare	ARF
Percent African American or black in county where practice is located	ARF
Percent Hispanic in county where practice is located	ARF
Number of physicians (practice size)	MBP database
Number of mid-level practitioners in practice	MBP database
Whether practice has an electronic medical record system	MBP database
Percent of physicians participating in Medicaid	MBP database
Percent of physicians participating in Medicare	MBP database
Whether practice charges annual fee to patients for being on panel (e.g., concierge practice)	MBP database
Dominant specialty types in practice	MBP database
Range of specialty types in practice	MBP database
Charity care hours	MBP database
Primary race of physicians in the practice	MBP database
Racial diversity of physicians in the practice	MBP database
County	MBP database
Number of MHIP attributed patients (normalized by physicians' hours in patient care)	MHCC file (7/11/12)
Number of CF attributed patients (normalized by physicians' hours in patient care)	MHCC file (7/11/12)

## APPENDIX B: SITE VISIT INTERVIEW GUIDES

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## PCMH LEADS/CARE MANAGERS

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### Introduction

Hello, my name is \_\_\_\_\_, from IMPAQ International, a research and consulting firm that is working with the Maryland Health Care Commission (MHCC) to conduct an evaluation of the Maryland Multi-payer Patient Centered Medical Home Program. I want to thank you for agreeing to be interviewed. We have scheduled this interview with you because we would like to understand your opinions and experiences with the transformation process into a PCMH. The MHCC is interested in learning whether the PCMH can improve health care quality and, thereby, health outcomes, while reducing costs of care. Also, we wish to explore the practice transformation process and the benefits received by practices from shared savings. I'm not an expert on PCMH or healthcare; I just want to hear your honest opinions and may ask follow up questions for clarification.

MHCC will take into consideration comments from this interview as well as comments from other interviews we are conducting all over the state with other practices who have transformed to PCMHs. Please keep in mind that your participation in this interview is completely voluntary. Please be assured that your responses will be kept confidential. We will provide all the information we collect to MHCC in a combined form only, with any potentially identifying information removed. You may not answer any questions that you prefer not to answer. If for any reason you wish to discontinue the interview, you may.

I would also like to remind you of a few things:

- The interview is being audio taped.
- There is no right or wrong answer to these questions.
- Again, all answers are private, so feel free to speak your mind.
- You may excuse yourself from the conversation at any time for any reason.
- This interview is set to last about 60 minutes.

Before coming into the room, you were asked to review and sign an informed consent form for your participation in the discussion. I just want to go over some of the key points on the consent form to make sure we are in agreement. **[Review consent form, emphasizing audio-taping, observers, and confidentiality.]**

Do you have any questions before I begin?

## General Understanding and Background

1. When did you become a PCMH? What motivated you or your practice to apply?
2. What do you perceive to be the importance of the program? Which aspects do you feel are the most significant?
3. Who were the champions leading this effort (to transform) in your practice? What role did they play?
  - a. To what extent were the champions the appropriate person (people) to lead this effort?
  - b. How effective have the champion(s) been at engaging staff?
  - c. What methods did they use to motivate staff?

## Transformation Process

4. Tell me about the first efforts applied to transform. What strategies did you employ? What activities were generated? Who has been involved?
5. Which requirements have been the easiest to achieve? Tell me more about why that is?
6. Which requirements were most difficult to achieve? Tell me about why that is?
  - a. Let's talk about any difficulties you may have had working toward transformation. Which activities were not as successful?
  - b. What have been the barriers?
7. How do you ensure staff/providers comply with the new transformation activities? How and when does MLC become involved with compliance?
  - a. What are the consequences of the failure to meet requirements?
  - b. How do you create incentives for staff to comply? What are the incentives?
8. Let's talk about the unique characteristics of your practice. How have your practice characteristics positively or negatively influenced the practice's transformation? Tell me more about why that is.
  - a. Patient population and characteristics (Medicare, Medicaid, youth, etc.)
  - b. Geographic location (urban, rural, suburban)
  - c. Ownership type (private, hospital, FQHC)
9. How has the MLC assisted in meeting transformation requirements? Do you or staff from this practice attend the MLC meetings?
  - a. Tell me about your interaction with your coach? How involved has your coach been with your practice's transformation? How frequently, what is discussed?
  - b. What educational materials are provided?

- c. How have elements offered by the MLC been helpful?
10. In your opinion, do you feel the practice has been successful in transforming? Which activities have attributed to that success? What were the facilitators?

### **Staff Perceptions and Compliance of Transformation**

11. From your perspective, what are the incentives or benefits to your practice for being a PCMH? Are there any financial incentives? What are those?
12. How do staff (non-providers) perceive the program? How has it been received? Has there been turnover as a result of the transformation since the start? How is morale?
13. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?
14. Have you seen or experienced resistance from staff or providers? In what ways? What has it been regarding? How are you overcoming that?
15. How has the practice environment or culture changed since the transformation?
- a. How has the interaction between staff and providers change?
  - b. How has the stress levels changed?
  - c. How have the interactions between care managers and patients changed?
  - d. What is the quality of relationships and how have interactions between staff and providers changed?

### **Outcomes**

16. How do you monitor outcomes and achievements of transforming? How are you measuring for success? What is the burden of monitoring compliance?
17. Tell me about the patient care coordination process. How has it changed? What are those changes? How are you tracking progress?
18. Have you observed changes in health outcomes? In which ways? How are you tracking progress?
- a. Prevention and chronic care management?
  - b. Utilization
  - c. Quality

19. Do you expect that the PCMH program will have an impact on health disparities (racial/ethnic, rural vs. urban, income/wealth)?
- In what direction?
  - What will be the mechanism or why expect to have impact?
  - Have observed any impact? If so what?

## Specific Activities

20. What specific quality improvement activities are you working on? How have you observed changes in the quality improvement process? In which ways? How do you monitor and track progress? What activities have you implemented to coordinate care?
21. Tell me about how the practice involves patients and their families? How has this changed since transforming?
- Is there an online portal for patients and family to access?
  - What is the procedure if patient/family calls with questions? How has that changed since transforming?
  - What is your policy for returning phone calls and emails? How has that changed since transforming?
  - What is your policy for following up with patients? How has that changed since transformation?
  - How has your scheduling procedures changed? Greater access to open schedules? Better access for appointments?
22. Has the transformation process changed your (or your practice's) ability to support patients with complex needs (e.g. mental illness, multiple chronic conditions, dementia, substance abuse) and their families? Would you say that the transformation has led to improvements in this area? If so, in what ways?
23. How are providers able to track referrals? How has that changed since transforming?
24. Have providers' relationships with specialists changed at all as a result of the medical home demonstration project?
- How have relationships changed?
  - Which types of specialists?
  - Have they changed the amounts that they are referring patients to specialist (e.g. keeping more patients in house) and to whom they are referring patients?
25. Let's talk about change fatigue. Are you experiencing this? How are you handling this? If you have not experienced this yet, how do you plan to deal with this in the future?
26. Since transforming, are you using EHR? What have been the challenges with implementing that? How are you or how do you plan to overcome those challenges?

## **Financial Costs and Savings**

27. Have there been cost savings? In which areas? Do you anticipate further cost savings?
28. Tell me about the financial investments you have made since transforming? Have there been additional expenses? New staff? Were new staff hired specifically for the transformation?
29. Can you estimate the financial investment in terms of salary of new staff, new equipment, staff attendance of meetings for the transformation? How many staff attended and how many hours? Educational trainings?
30. How have financial costs hindered transformation, if at all? What aspects have been affected?
31. What role did fixed transformation payments and shared savings play in transformation?
32. How have the Fixed Transformation Payments from the carrier (an insurer, Medicaid, or self-insured employer) been utilized?

## **Recommendations and Lessons Learned**

33. What strategies do you suggest for other practices that are going to transform?
34. What lessons can be learned from the unsuccessful efforts?
35. What recommendations do you suggest moving forward with your own practice's transformation?
36. Is there anything else you want to discuss that we have not gone over yet?

## PROVIDERS

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### Introduction

Hello, my name is \_\_\_\_\_, from IMPAQ International, a research and consulting firm that is working with the Maryland Health Care Commission (MHCC) to conduct an evaluation of the Maryland Multi-payer Patient Centered Medical Home Program. I want to thank you for agreeing to be interviewed. We have scheduled this interview with you because we would like to understand your opinions and experiences with the transformation process into a PCMH. The MHCC is interested in learning whether the PCMH can improve health care quality and, thereby, health outcomes, while reducing costs of care. Also, we wish to explore the practice transformation process and the benefits received by practices from shared savings. I'm not an expert on PCMH or healthcare; I just want to hear your honest opinions and may ask follow up questions for clarification.

MHCC will take into consideration comments from this interview as well as comments from other interviews we are conducting all over the state with other practices who have transformed to PCMH's. Please keep in mind that your participation in this interview is completely voluntary. Please be assured that your responses will be kept confidential. We will provide all the information we collect to MHCC in a combined form only, with any potentially identifying information removed. You may not answer any questions that you prefer not to answer. If for any reason you wish to discontinue the interview, you may.

I would also like to remind you of a few things:

- The interview is being audio taped.
- There is no right or wrong answer to these questions.
- Again, all answers are private, so feel free to speak your mind.
- You may excuse yourself from the conversation at any time for any reason.
- This interview is set to last about 60 minutes.

Before coming into the room, you were asked to review and sign an informed consent form for your participation in the discussion. I just want to go over some of the key points on the consent form to make sure we are in agreement. **[Review consent form, emphasizing audio-taping, observers, and confidentiality.]**

Do you have any questions before I begin?

## General Understanding and Background

1. When did you become a PCMH? What motivated you or your practice to apply?
2. What do you perceive to be the importance of the program? Which aspects do you feel are the most significant?
3. Who were the champions leading this effort in your practice? What role did they play?
  - a. To what extent were the champions the appropriate person (people) to lead this effort?
  - b. How effective have the champion(s) been at engaging staff?
  - c. What methods did they use to motivate staff?

## Transformation Process

4. Tell me about the first efforts applied to transform. What strategies did you employ? What activities were generated? Who has been involved?
5. Which requirements have been the easiest to achieve? Tell me more about why that is?
6. Which requirements were most difficult to achieve? Tell me about why that is?
  - a. Let's talk about any difficulties you may have had working toward transformation. Which activities were not as successful?
  - b. What have been the barriers?
7. Let's talk about the unique characteristics of your practice. How have your practice characteristics positively or negatively influenced the practice's transformation? Tell me more about why that is.
  - a. Patient population and characteristics (Medicare, Medicaid, youth, etc.)
  - b. Geographic location (urban, rural, suburban)
  - c. Ownership type (private, hospital, FQHC)
8. In your opinion, do you feel the practice has been successful in transforming? Which activities have attributed to that success? What were the facilitators?

## Staff Perceptions and Compliance of Transformation

9. From your perspective, what are the incentives or benefits to your practice for being a PCMH? Are there any financial incentives? What are those?
10. How do staff (non-providers) perceive the program? How has it been received? Has there been turnover as the result of the transformation since the start? How is morale, increase, decrease, same?

11. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?
12. Have you seen or experienced resistance from staff or providers? In what ways? What has it been regarding? How are you overcoming that?
13. How has the practice environment or culture changed since the transformation?
  - a. How has the interaction between staff and providers change?
  - b. How has the stress levels changed?
  - c. How have the interactions between care managers and patients changed?
  - d. What is the quality of relationships and how have interactions between staff and providers changed?

## Outcomes

14. Tell me about the patient care coordination process. How has it changed? What are those changes? How are you tracking progress?
15. Have you observed changes in health outcomes? In which ways? How are you tracking progress?
  - a. Prevention and chronic care management?
  - b. Utilization
  - c. Quality
16. Do you expect that the PCMH program will have an impact on health disparities (racial/ethnic, rural vs. urban, income/wealth)
  - a. In what direction?
  - b. What will be the mechanism or why expect to have impact?
  - c. Have observed any impact? If so what?

## Specific Activities

17. What specific quality improvement activities are you working on? How have you observed changes in the quality improvement process? In which ways? How do you monitor and track progress? What activities have you implemented to coordinate care?
18. Tell me about how the practice involves patients and their families? How has this changed since transforming?
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  - c. What is your policy for returning phone calls and emails? How has that changed since transforming?

- d. What is your policy for following up with patients? How has that changed since transformation?
  - e. How has your scheduling procedures changed? Greater access to open schedules? Better access for appointments?
19. Has the transformation process changed your (or your practice's) ability to support patients with complex needs (e.g. mental illness, multiple chronic conditions, dementia, substance abuse) and their families? Would you say that the transformation has led to improvements in this area? If so, in what ways?
20. How are providers able to track referrals? How has that changed since transforming?
21. Have providers' relationships with specialists changed at all as a result of the medical home demonstration project?
- f. How have relationships changed?
  - g. Which types of specialists?
  - h. Have they changed the amounts that they are referring patients to specialist (e.g. keeping more patients in house) and to whom they are referring patients?
22. Let's talk about change fatigue. Are you experiencing this? How are you handling this? If you have not experienced this yet, how do you plan to deal with this in the future?
23. Are there changes to the scheduling template? Greater access due to open schedules? Additional providers available or on call? Other changes to improved access or quality of care?
24. Since transforming, are you using EHR? What have been the challenges with implementing that? How are you or how do you plan to overcome those challenges?

## **Financial Costs and Savings**

25. Have there been cost savings? In which areas? Do you anticipate further cost savings?
26. Tell me about the financial investments you made since transforming? Have there been additional expenses? New staff? Were new staff hired specifically for the transformation?
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29. What role did fixed transformation payments and shared savings play in transformation?

### **Recommendations and Lessons Learned**

30. What strategies do you suggest for other practices that are going to transform?

31. What lessons can be learned from the unsuccessful efforts?

32. What recommendations do you suggest moving forward with your own practice's transformation?

33. Is there anything else you want to discuss that we have not gone over yet?

## PRACTICE MANAGERS

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### Introduction

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  - b. How effective have the champion(s) been at engaging staff?
  - c. What methods did they use to motivate staff?

## Transformation Process

4. Tell me about the first efforts implemented in your transformation process. What strategies did you employ? What activities were generated? Who has been involved?
5. Which requirements have been the easiest to achieve? Tell me more about why that is?
6. Which requirements were most difficult to achieve? Tell me about why that is?
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7. How do you ensure staff/providers comply with the new transformation activities? How and when does MLC become involved with compliance?
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12. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?
13. Have you seen or experienced resistance from staff or providers? In what ways? What has it been regarding? How are you overcoming that?
14. How has the practice environment or culture changed since the transformation?
  - a. How has the interaction between staff and providers change?
  - b. How has the stress levels changed?
  - c. How have the interactions between care managers and patients changed?
  - d. What is the quality of relationships and how have interactions between staff and providers changed?

## Outcomes

15. Tell me about the patient care coordination process. How has it changed? What are those changes? How are you tracking progress?
16. Have you observed changes in health outcomes? In which ways? How are you tracking progress?
  - a. Prevention and chronic care management?
  - b. Utilization
  - c. Quality
17. Do you expect that the PCMH program will have an impact on health disparities (racial/ethnic, rural vs. urban, income/wealth)
  - a. In what direction?
  - b. What will be the mechanism or why expect to have impact?
  - c. Have observed any impact? If so what?

## Specific Activities

18. What specific quality improvement activities are you working on? How have you observed changes in the quality improvement process? In which ways? How do you monitor and track progress? What activities have you implemented to coordinate care?
19. Tell me about how the practice involves patients and their families? How has this changed since transforming?
  - a. Is there an online portal for patients and family to access?
  - b. What is the procedure if patient/family calls with questions? How has that changed since transforming?
  - c. What is your policy for returning phone calls and emails? How has that changed since transforming?
  - d. What is your policy for following up with patients? How has that changed since transformation?
  - e. How has your scheduling procedures changed? Greater access to open schedules? Better access for appointments?
20. Has the transformation process changed your (or your practice's) ability to support patients with complex needs (e.g. mental illness, multiple chronic conditions, dementia, substance abuse) and their families? Would you say that the transformation has led to improvements in this area? If so, in what ways?
21. How are providers able to track referrals? How has that changed since transforming?
22. Have providers' relationships with specialists changed at all as a result of the medical home demonstration project?
  - a. How have relationships changed?
  - b. Which types of specialists?
  - c. Have they changed the amounts that they are referring patients to specialist (e.g. keeping more patients in house) and to whom they are referring patients?
23. Let's talk about change fatigue. Are you experiencing this? How are you handling this? If you have not experienced this yet, how do you plan to deal with this in the future?
24. Are there changes to the scheduling template? Greater access due to open schedules? Additional providers available or on call? Other changes to improved access or quality of care?
25. Since transforming, are you using EHR? What have been the challenges with implementing that? How are you or how do you plan to overcome those challenges?
  - a. Other reporting requirements?
  - b. Registry functions?

## **Financial Costs and Savings**

26. Have there been cost savings? In which areas? Do you anticipate further cost savings?
27. Tell me about the financial investments you made since transforming? Have there been additional expenses? New staff? Were new staff hired specifically for the transformation?
28. Can you estimate the financial investment in terms of salary of new staff, new equipment, staff attendance of meetings for the transformation? How many staff attended and how many hours? Educational trainings?
29. How have financial costs hindered transformation, if at all? What aspects have been affected?
30. What role did fixed transformation payments and shared savings play in transformation?
31. How have the Fixed Transformation Payments from the carrier (an insurer, Medicaid, or self-insured employer) been utilized?

## **Recommendations and Lessons Learned**

32. What strategies do you suggest for other practices that are going to transform?
33. What lessons can be learned from the unsuccessful efforts?
34. What recommendations do you suggest moving forward with your own practice's transformation?
35. Is there anything else you want to discuss that we have not gone over yet?

## STAFF

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### Introduction

Hello, my name is \_\_\_\_\_, from IMPAQ International, a research and consulting firm that is working with the Maryland Health Care Commission (MHCC) to conduct an evaluation of the Maryland Multi-payer Patient Centered Medical Home Program. I want to thank you for agreeing to be interviewed. We have scheduled this interview with you because we would like to understand your opinions and experiences with the transformation process into a PCMH. The MHCC is interested in learning whether the PCMH can improve health care quality and, thereby, health outcomes, while reducing costs of care. Also, we wish to explore the practice transformation process and the benefits received by practices from shared savings. I'm not an expert on PCMH or healthcare; I just want to hear your honest opinions and may ask follow up questions for clarification.

MHCC will take into consideration comments from this interview as well as comments from other interviews we are conducting all over the state with other practices who have transformed to PCMH's. Please keep in mind that your participation in this interview is completely voluntary. Please be assured that your responses will be kept confidential. We will provide all the information we collect to MHCC in a combined form only, with any potentially identifying information removed. You may not answer any questions that you prefer not to answer. If for any reason you wish to discontinue the interview, you may.

I would also like to remind you of a few things:

- The interview is being audio taped.
- There is no right or wrong answer to these questions.
- Again, all answers are private, so feel free to speak your mind.
- You may excuse yourself from the conversation at any time for any reason.
- This interview is set to last about 60 minutes.

Before coming into the room, you were asked to review and sign an informed consent form for your participation in the discussion. I just want to go over some of the key points on the consent form to make sure we are in agreement. **[Review consent form, emphasizing audio-taping, observers, and confidentiality.]**

Do you have any questions before I begin?

## General Understanding and Background

1. When did you become a PCMH? What motivated you or your practice to apply?
2. What do you perceive to be the importance of the program? Which aspects do you feel are the most significant?
3. Who were the champions leading this effort (to transform) in your practice? What role did they play?
  - a. To what extent were the champions the appropriate person (people) to lead this effort?
  - b. How effective have the champion(s) been at engaging staff?
  - c. What methods did they use to motivate staff?

## Transformation Process

4. Tell me about the first efforts applied to transform. What strategies did you employ? What activities were generated? Who has been involved?
5. Which requirements have been the easiest to achieve? Tell me more about why that is?
6. Which requirements were most difficult to achieve? Tell me about why that is?
  - a. Let's talk about any difficulties you may have had working toward transformation. Which activities were not as successful?
  - b. What have been the barriers?
7. Let's talk about the unique characteristics of your practice. How have your practice characteristics positively or negatively influenced the practice's transformation? Tell me more about why that is.
  - a. Patient population and characteristics (Medicare, Medicaid, youth, etc.)
  - b. Geographic location (urban, rural, suburban)
  - c. Ownership type (private, hospital, FQHC)
8. In your opinion, do you feel the practice has been successful in transforming? Which activities have attributed to that success? What were the facilitators?

## Staff Perceptions and Compliance of Transformation

9. From your perspective, what are the incentives or benefits to your practice for being a PCMH? Are there any financial incentives? What are those?

10. How do staff (non-providers) perceive the program? How has it been received? Has there been turnover as the result of the transformation since the start? How is moral, increase, decrease, same?
11. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?
12. Have you seen or experienced resistance from staff or providers? In what ways? What has it been regarding? How are you overcoming that?
13. How has the practice environment or culture changed since the transformation?
  - a. How has the interaction between staff and providers change?
  - b. How has the stress levels changed?
  - c. How have the interactions between care managers and patients changed?
  - d. What is the quality of relationships and how have interactions between staff and providers changed?

## Outcomes

14. Tell me about the patient care coordination process. How has it changed? What are those changes? How are you tracking progress?
15. Have you observed changes in health outcomes? In which ways? How are you tracking progress?
  - a. Prevention and chronic care management?
  - b. Utilization
  - c. Quality

## Specific Activities

16. Tell me about how the practice involves patients and their families? How has this changed since transforming?
  - a. Is there an online portal for patients and family to access?
  - b. What is the procedure if patient/family calls with questions? How has that changed since transforming?
  - c. What is your policy for returning phone calls and emails? How has that changed since transforming?
  - d. What is your policy for following up with patients? How has that changed since transformation?
  - e. How has your scheduling procedures changed? Greater access to open schedules? Better access for appointments?

17. Has the transformation process changed your (or your practice's) ability to support patients with complex needs (e.g. mental illness, multiple chronic conditions, dementia, substance abuse) and their families? Would you say that the transformation has led to improvements in this area? If so, in what ways?
18. Has there been a change in the amount that physicians are referring patients to specialist (e.g. keeping more patients in house) and to whom they are referring patients?
19. Let's talk about change fatigue. Are you experiencing this? How are you handling this? If you have not experienced this yet, how do you plan to deal with this in the future?
20. Since transforming, are you using EHR? What have been the challenges with implementing that? How are you or how do you plan to overcome those challenges?

### **Recommendations and Lessons Learned**

21. What strategies do you suggest for other practices that are going to transform?
22. What lessons can be learned from the unsuccessful efforts?
23. What recommendations do you suggest moving forward with your own practice's transformation?
24. Is there anything else you want to discuss that we have not gone over yet?

## APPENDIX C: ADULT PATIENT SURVEY QUESTIONS

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1. Our records show that you got care from [NAME OF PRACTICE] in the last 12 months. Is that right?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO CORE QUESTION #41]

What is the name of your primary care provider? \_\_\_\_\_

In the questions that I'm going to ask you, I'll refer to [NAME OF PROVIDER] as "this provider." Please think of [NAME OF PROVIDER] as you answer my questions.

[IF RESPONDENT DOES NOT REMEMBER PROVIDER NAME, TELL HIM/HER THAT THE QUESTIONS YOU ARE GOING TO ASK HIM/HER ARE ABOUT THIS PROVIDER WHOSE NAME HE/SHE COULD NOT REMEMBER].

2. Is this the provider you usually see if you need a check-up, want advice about a health problem, or get sick or hurt?

<sup>1</sup>  YES

<sup>2</sup>  NO

3. How long have you been going to this provider? Is it...[READ LIST]

<sup>1</sup>  Less than 6 months,

<sup>2</sup>  At least 6 months but less than 1 year,

<sup>3</sup>  At least 1 year but less than 3 years,

<sup>4</sup>  At least 3 years but less than 5 years, or

<sup>5</sup>  5 years or more?

The next questions ask about **your own** health care. **Do not** include care you got when you stayed overnight in a hospital. **Do not** include the times you went for dental care visits.

4. In the last 12 months, how many times did you visit this provider to get care for yourself?  
Would you say...[READ LIST]

- <sup>0</sup>  None → [IF NONE, GO TO CORE QUESTION #41]  
<sup>1</sup>  1 time,  
<sup>2</sup>  2,  
<sup>3</sup>  3,  
<sup>4</sup>  4,  
<sup>5</sup>  5 to 9, or  
<sup>6</sup>  10 or more times?

5. In the last 12 months, did you phone this provider's office to get an appointment for an illness, injury, or condition that **needed care right away**?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO CORE QUESTION #7]

6. 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?

Would you say... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

7. In the last 12 months, did you make any appointments for a **check-up or routine care** with this provider?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO CORE QUESTION #9]

8. 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?

Would you say... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

9. In the last 12 months, did you phone this provider's office with a medical question during regular office hours?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO #11]

10. 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?

Would you say... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

11. In the last 12 months, did you phone this provider's office with a medical question **after** regular office hours?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO CORE QUESTION #13]

12. 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?

Would you say... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

13. 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?

Would you say... [READ LIST]

- 1  Never  
2  Sometimes  
3  Usually  
4  Always

14. In the last 12 months, how often did this provider explain things in a way that was easy to understand?

Would you say... [READ LIST]

- 1  Never  
2  Sometimes  
3  Usually  
4  Always

15. In the last 12 months, how often did this provider listen carefully to you?

Would you say... [READ LIST]

- 1  Never  
2  Sometimes  
3  Usually  
4  Always

16. In the last 12 months, how often did this provider interrupt you when you were talking?

Would you say... [READ LIST]

- 1  Never  
2  Sometimes  
3  Usually  
4  Always

**17.** In the last 12 months, how often did this provider talk too fast when talking with you?

Would you say... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**18.** In the last 12 months, how often did this provider use a condescending, sarcastic, or rude tone or manner with you?

Would you say... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**19.** In the last 12 months, did you talk with this provider about any health questions or concerns?

- <sup>1</sup> YES
- <sup>2</sup> NO → [IF NO, GO TO CORE QUESTION #21]

**20.** In the last 12 months, how often did this provider give you easy to understand information about these health questions or concerns?

Would you say... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**21.** In the last 12 months, did you and this provider talk about a healthy diet and healthy eating habits?

Would you say... [READ LIST]

- <sup>1</sup> Yes, definitely
- <sup>2</sup> Yes, somewhat
- <sup>3</sup> No

**22.** In the last 12 months, did you and this provider talk about the exercise or physical activity you get?

Would you say... [READ LIST]

- <sup>1</sup> Yes, definitely
- <sup>2</sup> Yes, somewhat
- <sup>3</sup> No

**23.** In the last 12 months, did you and this provider talk about how your family can help you maintain a healthy diet and healthy eating habits?

Would you say... [READ LIST]

- <sup>1</sup> Yes, definitely
- <sup>2</sup> Yes, somewhat
- <sup>3</sup> No

**24.** In the last 12 months, did you and this provider talk about how your family can help you with exercise and physical activity?

Would you say... [READ LIST]

- <sup>1</sup> Yes, definitely
- <sup>2</sup> Yes, somewhat
- <sup>3</sup> No

**25.** In the last 12 months, how often did this provider seem to know the important information about your medical history?

Would you say... [READ LIST]

- 1  Never
- 2  Sometimes
- 3  Usually
- 4  Always

**26.** In the last 12 months, how often did this provider show respect for what you had to say?

Would you say... [READ LIST]

- 1  Never
- 2  Sometimes
- 3  Usually
- 4  Always

**27.** In the last 12 months, how often did this provider spend enough time with you?

Would you say... [READ LIST]

- 1  Never
- 2  Sometimes
- 3  Usually
- 4  Always

**28.** In the last 12 months, did you and this provider talk about starting or stopping a prescription medicine? [THE INTENT OF THIS QUESTION IS TO FIND OUT WHETHER THE PATIENT HAD A DISCUSSION WITH HIS/HER PROVIDER ABOUT THE PRESCRIPTION MEDICINE HE/SHE IS TAKING AND NOT JUST ABOUT "STARTING" OR "STOPPING" A PRESCRIPTION MEDICINE PER SE.]

- 1  YES
- 2  NO → [IF NO, GO TO CORE QUESTION #32]

**29.** 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?

Would you say... [READ LIST]

- <sup>1</sup> Not at all
- <sup>2</sup> A little
- <sup>3</sup> Some
- <sup>4</sup> A lot

**30.** 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?

Would you say... [READ LIST]

- <sup>1</sup> Not at all
- <sup>2</sup> A little
- <sup>3</sup> Some
- <sup>4</sup> A lot

**31.** When you talked about starting or stopping a prescription medicine, did this provider ask you what you thought was best for you?

- <sup>1</sup> YES
- <sup>2</sup> NO

**32.** Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider?

- 0 = WORST PROVIDER POSSIBLE
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = BEST PROVIDER POSSIBLE

The next questions are about your provider's support in taking care of your own health.

**33.** In the last 12 months, did anyone in this provider's office talk with you about specific goals for your health?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**34.** 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?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**35.** In the last 12 months did this provider ever discuss with you how you might engage a family member or trusted friend to help you in following your treatment plan, like taking your prescribed medicines or challenges you face in following your treatment plan?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**36.** 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?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**37.** 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?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**38.** 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?

- <sup>1</sup>  YES  
<sup>2</sup>  NO

**39.** Using any number from 0 to 10, where 0 means that you do not trust this provider at all and 10 means that you trust this provider completely, what number would you use to rate how much you trust this provider?

- 0 = DO NOT TRUST THIS PROVIDER AT ALL
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = TRUST THIS PROVIDER COMPLETELY

**40.** Does this provider’s office ask for the name and contact information of a family member or trusted friend to whom you would like to provide access to your medical information in the event that you are not available; for example information about lab or test results?

- <sup>1</sup> Yes
- <sup>2</sup> No

The next questions are about you

**41.** In general, how would you rate your overall health?

Would you say... [READ LIST]

- <sup>1</sup> Excellent,
- <sup>2</sup> Very good,
- <sup>3</sup> Good,
- <sup>4</sup> Fair, or
- <sup>5</sup> Poor

42. In general, how would you rate your overall mental or emotional health?

Would you say... [READ LIST]

- <sup>1</sup>  Excellent,
- <sup>2</sup>  Very good,
- <sup>3</sup>  Good,
- <sup>4</sup>  Fair, or
- <sup>5</sup>  Poor?

43. In the last 12 months, did you get health care 3 or more times for the same condition or problem?

- <sup>1</sup>  YES
- <sup>2</sup>  NO → [IF NO, GO TO QUESTION #45]

44. Is this a condition or problem that has lasted for at least 3 months? Please do **not** include pregnancy or menopause.

- <sup>1</sup>  YES → [IF YES, GO TO QUESTION #47]
- <sup>2</sup>  NO

45. Do you now need or take medicine prescribed by a provider? Please do **not** include birth control.

- <sup>1</sup>  YES
- <sup>2</sup>  NO → [IF NO, GO TO QUESTION #67]

46. Is this medicine to treat a condition that has lasted for at least 3 months? Please do **not** include pregnancy or menopause.

- <sup>1</sup>  YES → [IF YES, GO TO QUESTION #47]
- <sup>2</sup>  NO → [IF NO, GO TO QUESTION #67]

Staying healthy can be difficult when you have a chronic condition. The next questions are about the type of help you get with your condition from your health care team. This might include your regular doctor, nurse, or physician assistant who treats your illness. Your answers will be kept confidential and will not be shared with your physician or clinician.

Please use the following response set to answer the questions that I am going to ask you: **None of the time**, **A little of the time**, **Some of the time**, **Most of the time**, or **Always**. Please also note that the time frame for the questions I am going to ask you is **the past six months**.

NOTE TO THE PROGRAMMER – PLEASE PROGRAM QUESTIONS 47 TO 66 SUCH THAT THE RESPONSE OPTIONS APPLY FOR Q47-Q50 (TO GET THE RESPONDENT THE FEEL OF THE RESPONSE OPTIONS AND THEN ONCE HE/SHE IS USED TO THE RESPONSE OPTIONS AND THEN); FOR Q54, FOR Q58, AND FOR Q62.

NOTE TO THE PROGRAMMER - PLEASE ALSO APPLY THE “OVER THE PAST 6 MONTHS....” PART OF THE QUESTION BEFORE Q47, BEFORE Q54, BEFORE Q58, AND BEFORE Q62.

**Over the past 6 months**, when you received care for your chronic condition(s), ...

**47.** Were you asked for your ideas when making your treatment plan?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**48.** Were you given choices about treatment to think about?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**49.** Were you asked to talk about any problems with your medicines or their effects?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**50.** Were you given a written list of things you should do to improve your health?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**51.** Were you satisfied that your care was well organized?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**52.** Were you shown how what you did to take care of yourself influenced your condition(s)?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**53.** Were you asked to talk about your goals in caring for your condition(s)?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**54.** Were you helped to set specific goals to improve your eating or exercise?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**55.** Were you given a copy of your treatment plan?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**56.** Were you encouraged to go to a specific group or class to help you cope with this condition(s)?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**57.** Were you asked questions, either directly or on a survey, about your health habits?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**58.** Were you sure that your regular health care team thought about your values, beliefs, and traditions when they recommended treatments to you?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**59.** Were you helped to make a treatment plan that you could carry out in your daily life?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**60.** Were you helped to plan ahead so you could take care of your condition(s), even in hard times? [HARD TIMES IS DEFINED AS TIMES WHEN YOUR CONDITION IS GIVING YOU A LOT OF TROUBLE]

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

**61.** Were you asked how this condition(s) affect(s) your life?

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

**62.** Were you contacted after a visit to see how things were going?

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

**63.** Were you encouraged to attend programs in the community that could help you?

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

**64.** Were you referred to a dietitian, health educator, or counselor?

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

65. Were you told how your visits with **other types of doctors**, like an eye doctor or surgeon, helped your treatment? [CARDIOLOGISTS, PSYCHIATRISTS, AND RADIOLOGISTS CAN BE GIVEN TO THE RESPONDENT AS ADDITIONAL EXAMPLES OF “OTHER TYPES OF DOCTORS” IF NECESSARY.]

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

66. Were you asked how your visits with other doctors were going?

Would you say... [READ LIST]

- 1  None of the time
- 2  A little of the time
- 3  Some of the time
- 4  Most of the time
- 5  Always

The following few questions are about you.

**67.** What is your age? Is it...[READ LIST]

- <sup>1</sup> Under 18
- <sup>2</sup> 18 to 24,
- <sup>3</sup> 25 to 34,
- <sup>4</sup> 35 to 44,
- <sup>5</sup> 45 to 54,
- <sup>6</sup> 55 to 64,
- <sup>7</sup> 65 to 74, or
- <sup>8</sup> 75 or older?

**68.** What was your assigned sex at birth?  
Was it...[READ LIST]

- <sup>1</sup> Male, or
- <sup>2</sup> Female?

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

Is it...[READ LIST]

- <sup>1</sup> 8th grade or less,
- <sup>2</sup> Some high school, but did not graduate,
- <sup>3</sup> High school graduate or GED,
- <sup>4</sup> Some college or 2-year degree,
- <sup>5</sup> 4-year college graduate, or
- <sup>6</sup> More than 4-year college degree?

**70.** Are you of Hispanic or Latino origin or descent?

- <sup>1</sup> YES, HISPANIC OR LATINO
- <sup>2</sup> NO, NOT HISPANIC OR LATINO

**71.** I am now going to ask about your race. I will read you a list of choices. You may choose one or more.

	YES	NO
[A.] Are you White?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[B.] Are you Black or African American?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[C.] Are you Asian?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[D.] Are you Native Hawaiian or Other Pacific Islander?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[E.] Are you American Indian or Alaska Native?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[F.] Are you another race?	1 <input type="checkbox"/>	2 <input type="checkbox"/>

**72.** I am now going to ask you about individuals who live in the same household as you. I will read you a list of choices. You may choose one or more. When I say **adult**, I am referring to someone who is 18 years or older.  
Is there... [READ THE LIST]

	YES	NO
[A.] A spouse or partner?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[B.] An adult child?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[C.] An adult grandchild?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[D.] An adult sibling?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[E.] Other adult relative (Grandparent, In-law, Aunt, Cousin, Nephew, Niece, etc.)?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[G.] A nursing assistant or primary care home visitor? <sup>1</sup>	<input type="checkbox"/>	2 <input type="checkbox"/>
[H.] Other adult nonrelative?	1 <input type="checkbox"/>	2 <input type="checkbox"/>

[IF RESPONSE IS OTHER ADULT NONRELATIVE] Please specify \_\_\_\_\_

**73.** [ASK ONLY IF RESPONSE TO QUESTION 72.A IS "YES"] Is your spouse/partner?

... [READ THE LIST]

- <sup>1</sup>  An opposite-sex spouse/partner
- <sup>2</sup>  A same-sex spouse/partner
- <sup>3</sup>  Other

[IF RESPONSE IS "OTHER"] Please specify \_\_\_\_\_

**74.** What do you consider yourself to be?

Is it... [READ LIST]

- <sup>1</sup> Straight or heterosexual
- <sup>2</sup> Gay or lesbian
- <sup>3</sup> Bisexual
- <sup>4</sup> Something else

[IF SOMETHING ELSE] Please state \_\_\_\_\_

**75.** What is your current gender identity? Gender identity is how an individual understands one's own gender.

Is it... [READ LIST]

- <sup>1</sup> Male
- <sup>2</sup> Female
- <sup>3</sup> Transgender, male to female
- <sup>4</sup> Transgender, female to male

**That completes the survey. Thank you very much for your participation. Good bye.**

## APPENDIX D: CHILD PATIENT SURVEY QUESTIONS

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1. Our records show that <PARTICIPANT> got care from [NAME OF PRACTICE] in the last 12 months. Is that right?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO CORE QUESTION #26]

What is the name of <PARTICIPANT'S> primary care provider? \_\_\_\_\_

In the questions that I am going to ask you, I will refer to [NAME OF PARTICIPANT'S PROVIDER] as "this provider." Please think of [NAME OF PARTICIPANT'S PROVIDER] as you answer my questions.

[IF RESPONDENT DOES NOT REMEMBER PARTICIPANT'S PROVIDER NAME, TELL HIM/HER THAT THE QUESTIONS YOU ARE GOING TO ASK HIM/HER ARE ABOUT THIS PARTICIPANT'S PROVIDER WHOSE NAME HE/SHE COULD NOT REMEMBER].

2. Is this the provider <PARTICIPANT> usually sees if he/she needs a check-up, has a health problem, or gets sick or hurt?

<sup>1</sup>  YES

<sup>2</sup>  NO

3. How long has <PARTICIPANT> been going to this provider?

Is it...[READ LIST]

<sup>1</sup>  Less than 6 months,

<sup>2</sup>  At least 6 months but less than 1 year,

<sup>3</sup>  At least 1 year but less than 3 years,

<sup>4</sup>  At least 3 years but less than 5 years, or

<sup>5</sup>  5 years or more?

The next questions ask about < **PARTICIPANT**>'s health care. Do **not** include care < PARTICIPANT> got when he or she stayed overnight in a hospital. Do **not** include the times < PARTICIPANT> went for dental care visits.

4. In the last 12 months, how many times did < PARTICIPANT> visit this provider for care?

Would you say ... [READ LIST]

- None →[IF NONE, GO TO CORE QUESTION #26]
- 1 time
- 2
- 3
- 4
- 5 to 9
- 10 or more times

5. In the last 12 months, did you phone this provider's office to get an appointment for <PARTICIPANT> for an illness, injury, or condition that **needed care right away**?

- YES
- NO → [IF NO, GO TO QUESTION #7]

6. In the last 12 months, when you phoned this provider's office to get an appointment for **care <PARTICIPANT> needed right away**, how often did you get an appointment as soon as <PARTICIPANT> needed?

Would you say ... [READ LIST]

- Never
- Sometimes
- Usually
- Always

7. In the last 12 months, did you make any appointments for a **check-up or routine care** for <PARTICIPANT> with this provider?

- YES
- NO → [IF NO, GO TO QUESTION #9]

8. In the last 12 months, when you made an appointment for a **check-up or routine care** for <PARTICIPANT> with this provider, how often did you get an appointment as soon as <PARTICIPANT> needed?

Would you say ... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

9. In the last 12 months, did you phone this provider's office with a medical question about <PARTICIPANT> during regular office hours?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO QUESTION #11]

10. 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?

Would you say ... [READ LIST]

- <sup>1</sup>  Never  
<sup>2</sup>  Sometimes  
<sup>3</sup>  Usually  
<sup>4</sup>  Always

11. In the last 12 months, did you phone this provider's office with a medical question about <PARTICIPANT> **after** regular office hours?

- <sup>1</sup>  YES  
<sup>2</sup>  NO → [IF NO, GO TO QUESTION #13]

**12.** 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?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**13.** Wait time includes time spent in the waiting room and exam room. In the last 12 months, how often did <PARTICIPANT> see this provider **within 15 minutes** of his or her appointment time?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**14.** In the last 12 months, how often did this provider explain things about <PARTICIPANT'S> health in a way that was easy to understand?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**15.** In the last 12 months, how often did this provider listen carefully to you?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**16.** In the last 12 months, how often did this provider give you easy to understand information about these health questions or concerns?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**17.** In the last 12 months, how often did this provider seem to know the important information about <PARTICIPANT'S> medical history?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**18.** In the last 12 months, how often did this provider show respect for what you had to say?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**19.** In the last 12 months, how often did this provider spend enough time with <PARTICIPANT>?

Would you say ... [READ LIST]

- <sup>1</sup> Never
- <sup>2</sup> Sometimes
- <sup>3</sup> Usually
- <sup>4</sup> Always

**20.** Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider?

- 0 WORST PROVIDER POSSIBLE
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 BEST PROVIDER POSSIBLE

**21.** In the last 12 months, did you and anyone in this provider's office talk about how much or what kind of food <PARTICIPANT> eats?

- <sup>1</sup>  YES
- <sup>2</sup>  NO

**22.** In the last 12 months, did you and anyone in this provider's office talk about how much or what kind of exercise <PARTICIPANT> gets?

- <sup>1</sup>  YES
- <sup>2</sup>  NO

**23.** In the last 12 months, did anyone in this provider's office talk with you about specific goals for <PARTICIPANT'S> health?

- <sup>1</sup>  YES
- <sup>2</sup>  NO

**24.** 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 <PARTICIPANT'S> health?

- <sup>1</sup>  YES
- <sup>2</sup>  NO

**25.** Using any number from 0 to 10, where 0 means that you do not trust this provider at all and 10 means that you trust this provider completely, what number would you use to rate how much you trust this provider?

- 0  0 DO NOT TRUST THIS PROVIDER AT ALL
- 1  1
- 2  2
- 3  3
- 4  4
- 5  5
- 6  6
- 7  7
- 8  8
- 9  9
- 10  10 TRUST THIS PROVIDER COMPLETELY

The next questions are about <PARTICIPANT>.

**26.** In general, how would you rate <PARTICIPANT'S> overall health?

Would you say ... [READ LIST]

- 1  Excellent
- 2  Very Good
- 3  Good
- 4  Fair
- 5  Poor

**27.** In general, how would you rate <PARTICIPANT'S> overall **mental or emotional** health

Would you say ... [READ LIST]

- 1  Excellent
- 2  Very Good
- 3  Good
- 4  Fair
- 5  Poor

**28.** Does <PARTICIPANT> currently need or use medicine prescribed by a provider, other than vitamins?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO QUESTION #30]

**29.** Is this medicine for a condition that is expected to last for at least 12 months?

<sup>1</sup>  YES

<sup>2</sup>  NO

**30.** Does <PARTICIPANT> need or use more medical care, more mental health services, or more educational services than is usual for most children of the same age?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO QUESTION #32]

**31.** Are these services or medical care for a condition that is expected to last for at least 12 months?

<sup>1</sup>  YES

<sup>2</sup>  NO

**32.** Is <PARTICIPANT> limited or prevented in any way in his or her ability to do the things most children of the same age can do?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO QUESTION #34]

**33.** Is this because of a condition that is expected to last for at least 12 months?

<sup>1</sup>  YES

<sup>2</sup>  NO

**34.** Does <PARTICIPANT> need or get special therapy, such as physical, occupational, or speech therapy?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO, GO TO QUESTION #36]

35. Is this therapy for a condition that is expected to last for at least 12 months?

<sup>1</sup>  YES

<sup>2</sup>  NO

36. Does <PARTICIPANT> have any kind of emotional, developmental, or behavioral problem for which he or she needs or gets treatment or counseling?

<sup>1</sup>  YES

<sup>2</sup>  NO → [IF NO (BUT YES TO QUESTIONS 29, 31, 33, OR 35) GO TO QUESTION #38]

37. Is this treatment or counseling for a condition that is expected to last for at least 12 months?

<sup>1</sup>  YES → [IF YES, GO TO QUESTION #38]

<sup>2</sup>  NO → [IF NO (BUT YES TO QUESTIONS 29, 31, 33, OR 35) GO TO QUESTION #38]

[IF RESPONSE TO QUESTION 37 IS “DO NOT KNOW” BUT RESPONSE IS “YES” TO QUESTIONS 29, 31, 33, OR 35, GO TO QUESTION #38]

[CHILDREN WITH A CHRONIC CONDITION ARE IDENTIFIED BY A “YES” RESPONSE TO ONE OF QUESTIONS 29, 31, 33, 35, OR 37. IF NO TO ALL QUESTIONS 29, 31, 33, 35, AND 37, SKIP TO QUESTION #58.]

Staying healthy can be difficult with a chronic condition. The next several questions are about your and <PARTICIPANT>’s experience regarding the type of care the <PARTICIPANT> receives from his/her health care team for his/her condition(s). This includes his/her regular doctor, nurse, or physician assistant who treats his/her illness. Your answers will be kept confidential and will not be shared with <PARTICIPANT’S> physician, nurse, or clinic.

Please use the following response set to answer the questions that I am going to ask you: **None of the time, A little of the time, Some of the time, Most of the time, or Always.** Please also note that the time frame for the questions that I am going to ask you is **the past six months.**

NOTE TO THE PROGRAMMER – PLEASE PROGRAM QUESTIONS 38 TO 57 SUCH THAT THE RESPONSE OPTIONS APPLY FOR Q38-Q41 (TO GET THE RESPONDENT THE FEEL OF THE RESPONSE OPTIONS AND THEN ONCE HE/SHE IS USED TO THE RESPONSE OPTIONS AND THEN); FOR Q45, FOR Q49, AND FOR Q53.

NOTE TO THE PROGRAMMER - PLEASE ALSO APPLY THE “OVER THE PAST 6 MONTHS...” PART OF THE QUESTION BEFORE Q38, BEFORE Q45, BEFORE Q49, AND BEFORE Q53.

**Over the past 6 months**, when <PARTICIPANT> received care for his/her chronic condition(s) from a member of his/her health care team,

**38.** Was s/he or a caregiver asked for his/her ideas when making his/her treatment plan? (A caregiver is someone who helps < PARTICIPANT > with his/her health care, e.g. a family member or friend or you)?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**39.** Was s/he or a caregiver given choices about treatment to think about?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**40.** Was s/he or a caregiver asked to talk about any problems with his/her medicines or its effects?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**41.** Was s/he or a caregiver given a written list of things he/she should do to improve his/her health?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**42.** Was s/he or a caregiver satisfied that his/her care was well organized?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**43.** Was s/he or a caregiver shown how what he/she did to take care of himself/herself influenced his/her condition(s)?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**44.** Was s/he or a caregiver asked to talk about his/her goals in caring for his/her conditions?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**45.** Was s/he or a caregiver helped to set specific goals to improve his/her eating or exercise?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**46.** Was s/he or a caregiver given a copy of his/her treatment plan?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**47.** Was s/he or a caregiver encouraged to go to a specific group or class to help him/her cope with this condition(s)?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**48.** Was s/he or a caregiver asked questions, either directly or on a survey, about his/her health habits?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**49.** Was s/he or a caregiver sure that his/her health care team thought about his/her values, beliefs, and traditions when they recommended treatments to him/her?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**50.** Was s/he or a caregiver helped to make a treatment plan that he/she could carry out in his/her daily life?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**51.** Was s/he or a caregiver helped to plan ahead so he/she could take care of his/her condition(s) even in hard times? [HARD TIMES IS DEFINED AS TIMES WHEN YOUR CONDITION IS GIVING YOU A LOT OF TROUBLE]

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**52.** Was s/he or a caregiver asked how this condition(s) affect his/her life?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**53.** Was s/he or a caregiver contacted after a visit to see how things were going?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always
- <sup>6</sup> Do not know

**54.** Was s/he or a caregiver encouraged to attend programs in the community that could help him/her?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**55.** Was s/he or a caregiver referred to a dietitian, health educator, or counselor?

Would you say... [READ LIST]

- <sup>1</sup> None of the time
- <sup>2</sup> A little of the time
- <sup>3</sup> Some of the time
- <sup>4</sup> Most of the time
- <sup>5</sup> Always

**56.** Was s/he or a caregiver told how his/her visits with other types of doctors, like an eye doctor or surgeon, helped his/her treatment? [CARDIOLOGISTS, PSYCHIATRISTS, AND RADIOLOGISTS CAN BE GIVEN TO THE RESPONDENT AS ADDITIONAL EXAMPLES OF "OTHER TYPES OF DOCTORS" IF NECESSARY.]

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

**57.** Was s/he or a caregiver asked how his/her visits with other doctors were going?

Would you say... [READ LIST]

- None of the time
- A little of the time
- Some of the time
- Most of the time
- Always

The following few questions are about < PARTICIPANT> and you.

**58.** What is < PARTICIPANT'S> age?

Is it... [READ LIST]

- Less than 1 year old
- \_\_\_\_\_ YEARS OLD [WRITE IN IF OLDER THAN ONE YEAR]

**59.** What was < PARTICIPANT'S > sex assigned at birth?

Was it... [READ LIST]

- Male
- Female

60. Is < PARTICIPANT> of Hispanic or Latino origin or descent?

- <sup>1</sup>  Yes, Hispanic or Latino
- <sup>2</sup>  No, not Hispanic or Latino

61. I am now going to ask about < PARTICIPANT>'s race. I will read you a list of choices. You may choose one or more. Is < PARTICIPANT >... [READ LIST]

	YES	NO
[A.] White?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>
[B.] Black or African American?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>
[C.] Asian?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>
[D.] Native Hawaiian or Other Pacific Islander?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>
[E.] American Indian or Alaska Native?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>
[F.] Another race?	<sup>1</sup> <input type="checkbox"/>	<sup>2</sup> <input type="checkbox"/>

62. What is **your** age? Is it... [READ LIST]

- <sup>0</sup>  Under 18,
- <sup>1</sup>  18 to 24,
- <sup>2</sup>  25 to 34,
- <sup>3</sup>  35 to 44,
- <sup>4</sup>  45 to 54,
- <sup>5</sup>  55 to 64,
- <sup>6</sup>  65 to 74, or
- <sup>7</sup>  75 or older?

63. What was **your** sex assigned at birth? Was it...[READ LIST]

- <sup>1</sup>  Male
- <sup>2</sup>  Female

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

Is it...[READ LIST]

- 1  8th grade or less,
- 2  Some high school, but did not graduate,
- 3  High school graduate or GED,
- 4  Some college or 2-year degree,
- 5  4-year college graduate, or
- 6  More than 4-year college degree?

65. How are you related to < PARTICIPANT>?

Are you a/an...[READ LIST]

- 1  Mother or Father
- 2  Grandparent
- 3  Aunt or Uncle
- 4  Older Brother or Sister
- 5  Other Relative
- 7  Non-relative

[IF RESPONSE IS "NON-RELATIVE"] Please specify: \_\_\_\_\_

66. I am now going to ask you about individuals who live in the same household that you share with <PARTICIPANT> I will read you a list of choices. You may choose one or more. When I say **adult**, I am referring to someone who is 18 years or older. Do you have... [READ THE LIST]

	YES	NO
[A.] A spouse or partner?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[B.] An adult child?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[C.] An adult grandchild?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[D.] An adult sibling?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[E.] Other adult relative (Grandparent, In-law, Aunt, Cousin, Nephew, Niece, etc.)?	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[F.] A nursing assistant or primary care home visitor who helps you with caring for {PARTICIPANT}	1 <input type="checkbox"/>	2 <input type="checkbox"/>
[G.] Other adult nonrelative?	1 <input type="checkbox"/>	2 <input type="checkbox"/>

[IF RESPONSE IS OTHER ADULT NONRELATIVE] Please specify \_\_\_\_\_

**67.** [ASK ONLY IF RESPONSE TO QUESTION 66.A IS “YES”] Is your spouse or partner?

...[READ LIST]

<sup>1</sup>  An opposite-sex spouse or partner

<sup>2</sup>  A same-sex spouse or partner

<sup>3</sup>  Other

[IF RESPONSE IS “OTHER”] Please specify \_\_\_\_\_

**That completes the survey. Thank you very much for your participation. Good bye.**

## **APPENDIX E: ADVANCE LETTER FOR PATIENT SURVEYS**

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STATE OF MARYLAND

Craig P. Tanio, M.D.  
CHAIR



Ben Steffen  
EXECUTIVE DIRECTOR

**MARYLAND HEALTH CARE COMMISSION**

4160 PATTERSON AVENUE – BALTIMORE, MARYLAND 21215  
TELEPHONE: 410-764-3460 FAX: 410-358-1236

{Date}

{Title} {First Name} {Last Name}

{Address}

{City}, {State} {Zip}

Dear {Title} {First Name} {Last Name}:

I am writing to let you know about an opportunity to influence how primary health care is delivered in Maryland. The Maryland Health Care Commission (MHCC) is sponsoring a study about how primary care practices can become more centered around patient needs. I am requesting that you participate in this study because your doctor/nurse practitioner (or your child's) is participating in a Patient Centered Medical Home program. IMPAQ International, LLC, a private research company that specializes in research on health care services, is conducting this study on MHCC's behalf.

We would like to interview you by phone. The interviewer will ask about your personal experiences working with health care providers (like doctors, nurses, and other medical personnel at your primary care office) and your role in making decisions about your health care treatments, or the experiences your child has had. The interview takes about 15 minutes to complete.

In the next few weeks, an interviewer from IMPAQ International will call you to arrange a convenient time to conduct the interview. Your participation in this research study is voluntary and refusal to participate will involve no penalty or loss of benefit to which you are otherwise entitled. You may refuse to answer any question and may terminate the interview at any time without penalty or loss of benefits to which you are otherwise entitled. Your answers will be kept strictly confidential and be used only for research purposes. You will never be personally identified in any report based on the survey. No one will attempt to sell you anything or ask for a donation because you participated in this study. Also, your eligibility for any current programs does not rely on your participation in this survey.

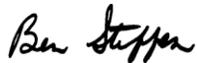
Page 2

If you have any questions or would like to set up an appointment to complete the interview, please call IMPAQ toll-free at 1-855-900-PCMH (7264) and ask for the “Maryland PCMH Survey.” When you call, please reference your Case ID: {primid}. If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov). If you would like more information about our Patient Centered Medical Home program, please see: <http://mhcc.maryland.gov/pcmh>.

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders.

Thank you for your participation!

Sincerely,



Ben Steffen  
Executive Director  
Maryland Health Care Commission

## APPENDIX F: FREQUENTLY ASKED QUESTIONS (FAQS)

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### **Concerns about sponsorship/purpose**

#### **1. What is the purpose of this survey? How will the data be used?**

This survey is part of a study sponsored by the Maryland Health Care Commission about Maryland's Patient-Centered Medical Home (PCMH) program. The survey is designed to gather data about your experiences (with your healthcare provider/the child's healthcare provider). Survey data will be used to improve the quality of healthcare provided to Marylanders like you/the child you are caring for.

#### **2. What is the Patient-Centered Medical Home (PCMH) program?**

The PCMH is a model of care that strengthens the physician-patient relationship by replacing episodic care with coordinated care and a long-term healing relationship. Under the PCMH program, each patient has an ongoing relationship with a personal physician who leads a team at a single location that takes collective responsibility for patient care, providing for the patient's health care needs and arranging for appropriate care with other qualified clinicians. The medical home is intended to result in more personalized, coordinated, effective and efficient care.

#### **3. What is Maryland Health Care Commission (MHCC)?**

The Maryland Health Care Commission (MHCC) is a branch of the Department of Health and mental Hygiene. It's an independent regulatory agency whose mission is to plan for health system needs, promote informed decision-making, increase accountability, and improve healthcare access in Maryland. The Commission aims to achieve this, in a rapidly changing health care environment, by providing timely and accurate information on availability, cost, and quality of services to policy makers, purchasers, providers and the public in general.

#### **4. Who are you? Who do you work for?**

I'm (NAME), an interviewer with IMPAQ International, a survey research organization. Maryland Healthcare Commission has asked my organization to help conduct this survey.

#### **5. What is IMPAQ International?**

IMPAQ International is a survey research organization located Columbia, MD, with whom the Maryland Health Care Commission has contracted to collect the information in this survey.

#### **6. How did you get my name/the child's name? How did I/the child get chosen for the survey?**

We got your name/the child's name from your/the child's **(HEALTH PLAN/MEDICAID)**. You were/the child was selected randomly from among Marylanders who have received healthcare in the last 12 months.

**7. Why was I selected for this study?**

Scientific sampling procedures were used to select a sample of Marylanders to participate in this survey. It would be too expensive for the state to ask everyone in the state to participate in the survey. That is why we conduct the survey using a sample of Marylanders who then represent all Marylanders. Your opinions are valuable because they also represent other Marylanders.

**Concerns about participating**

**8. Do I have to participate?**

You do not have to participate in this survey, and if you do participate you do not have to answer any questions that you do not want to answer. Your help is voluntary, and your decision to participate or not to participate will not affect the health care (you receive from your provider/the child receives from his/her provider). We hope that you will take about 15 minutes to participate. The accuracy of the survey depends on getting answers from you and other Marylanders selected for this survey. This is your opportunity to help us serve you better.

**9. What will my participation involve?**

To participate in the survey you simply have to complete the survey questionnaire through telephone with me today.

**10. How do I know that the information I give will be kept confidential?**

All information you give will be held in confidence and is protected by the Privacy Act. Your name/the child's name and other identifying information will not be revealed to anyone other than authorized research staff at IMPAQ International and Maryland Health Care Commission.

**11. Will I have to buy anything?**

No, you do not have to buy anything and you will not be asked to buy anything in this survey. This is a legitimate survey being sponsored by the Maryland Health Care Commission. Neither the Commission nor IMPAQ International is selling anything nor are they promoting any products in this survey. There is no cost to you for participating in this survey other than your time.

**12. Will I get paid for participating in this survey?**

Participation in this survey is completely voluntary and you will not get paid (in cash or in kind) for completing the survey.

**13. I thought that with the new law about privacy of health information (HIPAA laws), my/ the child's health plan could not release information about me/the child. How did you get my name/the child's name?**

The study we are conducting falls in line with federal laws concerning the privacy of health information. The Maryland Health Care Commission has authorized IMPAQ International to contact Marylanders who received care from their providers to conduct this important and

confidential survey on its behalf. All the information we collect from you/the child will be kept secure and confidential in accordance with federal privacy laws.

**14. Will anyone come to my home?**

No, the data in this study are being collected through telephone. No interviewers or anyone else will come to your home for this survey.

**15. How do I know this is a legitimate survey?**

This survey is a legitimate survey sponsored by the Maryland Health Care Commission, an independent regulatory agency. The Commission conducts surveys like this one to find out about people's experiences with their providers who are participating in Maryland's Patient Centered Medical Home (PCMH) program.

**16. How do I find out more on whether this study is legitimate?**

You can call Donna Perlmutter from IMPAQ at 443-283-2233. You can call Valerie Wooding from Maryland Health Care Commission at 410-764-3570 or email her at [valerie.wooding@maryland.gov](mailto:valerie.wooding@maryland.gov).

**17. I don't do surveys. I'm not interested.**

I can understand that, but I hope you will consider participating. This is an important study for the state of Maryland. The results of the survey will help improve the quality of healthcare provided to Marylanders like you/the child you are caring for.

**18. I'm extremely busy. I don't really have the time.**

I know your time is limited, but I hope you will consider participating. The results of the survey will help improve the quality of healthcare provided to Marylanders like you/the child you are caring for. The survey should only take about 15 minutes to complete.

**19. How long will this take?**

We expect that completing the survey would take about 15 minutes.

**20. I've been advised not to participate in telephone surveys.**

I can understand your concern. But this is an important survey sponsored by the Maryland Health Care Commission. Your participation will help improve the quality of care provided to Marylanders like you/the child you are caring for.

**21. What questions will I be asked?**

The questions you will be asked are mainly about the healthcare you have received/the child you are caring for is receiving and how satisfied you are with the care you have received/the child has received.

**22. I don't want to answer a lot of personal questions.**

I can understand your concern. But this is an important survey, and many people find the questions interesting. If a question does bother you, you can just tell me you'd rather not

answer, and I'll move on to the next question. Why don't we get started and you can see what the questions are like.

**23. Do I have to complete the survey? What happens if I do not? Why should I?**

Your participation is voluntary. There are absolutely no penalties for not participating. But, it is an important survey and your answers will help improve the quality of healthcare provided to Marylanders like you/the child you are caring for. Your answers to the survey will have no effect on the healthcare (you receive from your provider/the child receives from his/her provider), and you may skip any questions you do not wish to answer.

**24. Will I get junk mail if I answer this survey?**

No, you will not get any junk mail. Your name and address will be kept absolutely confidential and will not be seen by anyone other than the research staff.

**25. Who will see my answers? What happens to my answers?**

Your answers will be kept absolutely confidential and your completed survey will not be seen by anyone other than the research staff. Your answers will never be used in any way that could be linked to you or your individual household. Survey results do not show any names or individual answers.

**26. Will my provider/child's provider be affected by my answers? Will my/the child's provider see my responses?**

No. Your answers will be kept absolutely confidential and will not be seen by anyone other than the research staff. Your answers will not be seen by your/the child's provider.

**27. What if (I/the child I am caring for) did not receive any health care services in the past few months?**

It is important that all members are represented in the survey process. We are interested in hearing from all Marylanders who have been randomly selected to participate in this survey, regardless of how much health care services they received in the past few months. Although most of the questions ask about the health care and services individuals received in the past few months, some of the questions ask about individuals' health and other information that we would like to hear about.

**Other questions and concerns**

**28. I have a question/complaint about the care that I have /the child has received from (HEALTH PLAN/MEDICAID). I have a question/complaint about billing or other administrative matters concerning (HEALTH PLAN/MEDICAID).**

We are an independent research organization that is conducting this survey on behalf of Maryland Health Care Commission, not the health plan or Medicaid itself. I suggest that you contact the plan or Medicaid directly to discuss this matter. You may wish to contact the health plan's customer service line at the number listed on your health plan ID card or Medicaid.

## **Survey content questions**

### **29. What does “an adult with a chronic condition” mean?**

An adult is said to have a chronic condition if he/she received health care 3 or more times for a condition that has lasted for at least 3 months (excluding pregnancy or menopause) or who is taking a prescribed medication to treat a condition that has lasted for at least 3 months, excluding birth control.

### **30. What does “a child with a chronic condition” mean?**

A child (less than 18 years old) is said to have a chronic condition if he/she fulfills **any one** of the following conditions:

- He/she takes a prescribed medicine (other than vitamins) for a condition that is expected to last for at least 12 months,
- He/she needs/uses more medical care, more mental health services, or more educational services than is usual for most children of the same age for a condition that is expected to last for at least 12 months,
- He/she is limited/prevented in his/her ability to do the things most children of the same age can do due to a condition that is expected to last for at least 12 months,
- He/she needs/gets special therapy, such as physical, occupational, or speech therapy for a condition that is expected to last 12 months, or
- He/she needs/gets treatment or counseling for any kind of emotional, developmental, or behavioral problem that is expected to last for at least 12 months.

### **31. What does a “transgender” mean?**

“Transgender” is a term used to identify persons whose sex assigned at birth does not match current gender identity or expression.

### **32. What does a “caregiver” mean?**

A caregiver is a family member or friend who helps a child patient with his/her health care.

### **33. What does “gender identity” mean?**

Gender identity is how an individual understands one’s own gender.

## APPENDIX G: VOICEMAIL MESSAGE FOR PATIENT SURVEYS

Hello, this message is for [respondent's name]. My name is [interviewer name], and I'm calling from IMPAQ International on behalf of Maryland Health Care Commission. We are conducting a short telephone survey about the healthcare Maryland receives from their providers. Your opinion Counts in our effort to make health care more centered around patient needs! Please call our toll free survey line at 1-855-900-7263 to participate. When you call, please ask for the "Maryland PCMH Survey" and reference Care ID [case ID]. The Care ID is in the letter we mailed you recently. We look forward to hearing from you soon. Thank you!

### CATI screen shot of voice mail message:

The screenshot shows a CATI (Computer Assisted Telephone Interview) software interface. The main window displays a voice mail message script for a sample member named Jeffrey Fox. The script includes a greeting, the interviewer's name, the organization (IMPAQ International on behalf of Maryland Health Care Commission), and a request for participation in a survey. The survey details include a toll-free number (1-855-900-7263) and a reference Case ID (39). The script concludes with a thank you and a prompt for the respondent to enter 1 to continue.

Blaise 4.8 Data Entry - \\gate3\blApps\PCMH\PCMHtest

Forms Answer Navigate Options Help

PCMH Non Response Appointment Other No Answer Answer machine Disconnected Busy Help PhoneCollection

SAMPLE MEMBER: Jeffrey Fox. Type: Sample member.  
MASTER PHONE NUMBER: 8 1 5553334444

PROBE: READ ANSWER MACHINE / VOICE MAIL OR MESSAGE SCRIPT.

Hello, This message is for Jeffrey Fox. My name is [your name], and I'm calling from IMPAQ International on behalf of Maryland Health Care Commission. We are conducting a short telephone survey about the healthcare Marylanders receive from their providers. Your opinion counts in our effort to make health care more centered around patient needs! Please call our toll free survey line at 1-855-900-7264 to participate. When you call, please ask for the "Maryland PCMH Survey" and reference Case ID: 39. The Case ID is in the letter we mailed you recently. We look forward to hearing from you soon. Thank you!

1. ENTER 1 TO CONTINUE

WhosMach  1 AMFName LangSpecify  
MessageScri  Done   
WhatKind   
OtherKind   
PrivMgr   
Message   
AMRemark   
Lingo

7:36:16 AM 1/1 ENG 39 AMachine.MessageScript 1-4-2013

## APPENDIX H: MMPP PROVIDER SURVEY QUESTIONS: WEB VERSION

User Name

Password



### MMPP Provider Survey

Because you are a provider in a practice that is participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP), your participation in this survey of providers to support the evaluation of the MMPP is very important and greatly appreciated. The purpose of the survey is to gather information about various aspects of your practice, including health care delivery, practice culture, and team dynamics.

Questions are organized into sections and address the following topics:

- Your professional certification and role
- Your satisfaction with chronic illness management provided by you and your staff
- Activities carried out in your practice
- Perceptions about your work situation
- The culture at your practice
- Your perception of your practice's PCMH participation

To move through the survey:

- Click "**Next**" to go to the next page.
- Click "**Back**" to return to the previous page.
- Click "**Reset**" to clear your answers on the current page.
- Click "**Save**" at any point to save your progress for the next time you log in.
- Click "**Submit**" when you reach the end of the survey to complete the survey and submit your answers.
- Clicking on any **underlined blue text** will take you to a page with definitions of key terms.

Next

#### Initial Respondent Characteristics

1. How long have you worked at the practice?

- Less than 6 months
- 6-12 months
- 1-2 years
- More than 2 years

2. What is your job title?

3. Which types of professional licensing or certification do you have? (please check all that apply)

- MD or DO
- NP or advanced practice nurse
- Physician assistant
- Other:

Reset

Save

Next

Progress 

**Provider Satisfaction with Chronic Illness Management**

**4. Please indicate how satisfied or dissatisfied you are with the quality of health care that you and your staff provide to:**

	Very satisfied	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Very dissatisfied
a. Your entire patient panel	<input type="radio"/>					
b. Your <b>chronically ill</b> patients	<input type="radio"/>					

**5. Regarding your chronically ill patients, please indicate how satisfied or dissatisfied you are with the following aspects of care that you and your staff provide as a team:**

	Very satisfied	Satisfied	Somewhat satisfied	Somewhat Dissatisfied	Dissatisfied	Very dissatisfied
a. Communicating with patients	<input type="radio"/>					
b. Communicating with family caregivers	<input type="radio"/>					
c. Educating family caregivers	<input type="radio"/>					
d. Motivating patients to participate in maximizing their health	<input type="radio"/>					
e. Coordinating the care received from all providers	<input type="radio"/>					
f. Monitoring patients' chronic conditions	<input type="radio"/>					
g. <b>Referrals</b> to community resources	<input type="radio"/>					
h. Efficiency of office visits	<input type="radio"/>					
i. <b>Access</b> to evidence-based guidelines for chronic conditions	<input type="radio"/>					
j. Efficiency of practice team	<input type="radio"/>					
k. Availability of clinical information about your patients	<input type="radio"/>					

**Back** **Reset** **Save** **Next**

Progress 

**Work Content**

**6. In a typical day at the practice, what job role performs the following activities most often?**

	Clinician	Nurse	Care manager	Medical assistant	Administrative staff	Other	If "Other," please specify in the box provided
a. Checking in and orienting patients	<input type="radio"/>	<input type="text"/>					
b. Taking vital signs	<input type="radio"/>	<input type="text"/>					
c. Screening patients for diseases (example: a depression screen)	<input type="radio"/>	<input type="text"/>					
d. Asking patients whether they smoke	<input type="radio"/>	<input type="text"/>					
e. Obtaining immunization histories from patients	<input type="radio"/>	<input type="text"/>					
f. Gathering information on screening (example: date of last mammogram)	<input type="radio"/>	<input type="text"/>					
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	<input type="radio"/>	<input type="text"/>					
h. Deciding how soon patients who call for an appointment will be seen	<input type="radio"/>	<input type="text"/>					

**Back** **Reset** **Save** **Next**

6. (Continued) In a typical day at the practice, what job role performs the following activities most often?

	<i>Clinician</i>	<i>Nurse</i>	<i>Care manager</i>	<i>Medical assistant</i>	<i>Administrative staff</i>	<i>Other</i>	If "Other," please specify in the box provided
i. Obtaining medical records from other providers outside the practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
j. Communicating with insurance companies (example: obtaining prior authorizations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
k. Communicating with pharmacies (example: medication refills)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
l. Calling patients who are due for a visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
m. Calling patients to provide them laboratory results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
n. Answering phone calls from patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
o. Advising patients on how to care for their health conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
p. Evaluating patients and making treatment decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
q. Completing different kinds of forms upon patients' arrival at the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

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Progress 

Work Perceptions

7. Please indicate how much you agree or disagree with the following statement:  
Overall, I am satisfied with my current job.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. What is the likelihood that you will leave your current practice within TWO YEARS?

	<i>None</i>	<i>Slight</i>	<i>Moderate</i>	<i>Likely</i>	<i>Definitely</i>
	<input type="radio"/>				

9. Which best describes the atmosphere in your practice?

	<i>1 Calm</i>	<i>2</i>	<i>3 Busy, but reasonable</i>	<i>4</i>	<i>5 Hectic, chaotic</i>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Progress 

**10. Culture: Valued Alignment with Leaders**

To what degree do the following statements reflect the conditions in your practice?

	1 <i>Not at all</i>	2	3	4 <i>To a great extent</i>
a. There is broad involvement of clinicians in most financial decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Our physician compensation formula is well aligned with our practice's goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Our compensation plan rewards those who work hard for our practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Our clinician compensation formula is well understood by our clinicians.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Our administrative decision-making process can accurately be described as consensus building.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. The business office and administration are considered to be very important parts of our group practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Back** **Reset** **Save** **Next**

Progress 

**Culture: Care Team Functioning**

The next set of questions asks about teamwork in your practice. For these questions, please think of your "team" as the group of people you usually work with to directly take care of patients at your practice.

**11. In a typical week at your practice, how often do the following types of providers and staff act as members of your team?**

	<i>Never members of your team</i>	<i>Sometimes members of your team</i>	<i>Always members of your team</i>
a. Primary care physicians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Physician's assistants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Nurse practitioners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Registered nurses or nurse case managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Licensed vocational nurses (LVNs or LPNs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Medical assistants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Clerks or receptionists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Health educators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Pharmacists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Social workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Community health workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Visiting nurses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Nutritionists or dieticians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Mental (behavioral) health professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Other 1:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Other 2:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Other 3:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Back** **Reset** **Save** **Next**

12. Please indicate how much you agree or disagree with the following statements about your team.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Does not apply</i>	<i>Do not know</i>
a. Team membership is clear - everybody knows exactly who is and isn't on your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Different people are constantly joining and leaving your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Members of your team have their own individual jobs to do, with little need to work together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Members of your team have to depend heavily on one another to get the team's work done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Your team is larger than it needs to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Your team has too few members for what it has to accomplish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. It is clear what is - and what is not - acceptable member behavior in your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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12. (Continued) Please indicate how much you agree or disagree with the following statements about your team.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Does not apply</i>	<i>Do not know</i>
i. Members of your team agree about how members are expected to behave.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Your practice recognizes and rewards teams that perform well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Team members can easily obtain training or technical advice when they need it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. In your practice, teams do not receive adequate training for the work they have to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Everyone on your team is motivated to have the team succeed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Some members of your team do not carry their fair share of the overall workload.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Members of your team actively share their special knowledge and expertise with one another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. There is a lot of unpleasantness among members of your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Working together energizes and uplifts members of your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Culture: Communication Openness and Organizational Learning**

13. Please indicate how much you agree or disagree with the following statements about your practice.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply	Don't know
a. Providers in the practice are open to staff ideas about how to improve care processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Staff are encouraged to express alternative viewpoints in the practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Staff are afraid to ask questions when something does not seem right.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. It is difficult to voice disagreement in this practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. When there is a problem in the practice, we see if we need to change the way we do things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. The practice is good at changing care processes to make sure the same problems don't happen again.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Perceptions of PCMH participation.**

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
<b>Being involved in the PCMH demonstration project has...</b>						
a. Required a fundamental transformation in how we operate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Helped my practice take better care of patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Taken up more time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Been too expensive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Generated new revenue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Required the use of financial resources beyond the fixed transformation payments (FTPs).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Led to improved care coordination with specialists.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Improved the way I interact with patient's family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Enhanced care due to the role of the care manager/coordinator.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Improved patient health outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Reduced my control over the aspects of practice that matter most to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please indicate your agreement with the following statement:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
Overall, I am glad we are a part of the PCMH demonstration project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Final Respondent Characteristics**

16. **In what year were you born?**
17. **What was your assigned sex at birth?**  
 Female  
 Male
18. **What is your ethnicity?**  
 Hispanic/Latino  
 Not Hispanic/Latino
19. **What is your race? (Check all that apply)**  
 Black or African American  
 American Indian or Alaska Native  
 Native Hawaiian or Other Pacific Islander  
 Asian  
 White (European, Middle Eastern, other)  
 Other (please specify):

*Thank you very much for taking the time to complete the survey!*



## Definition of Terms

**Chronically ill adult:** An individual who is 18 years or older and who received health care services three or more times for a condition that has lasted for at least three months (excluding pregnancy or menopause) or who takes a prescribed medication to treat a condition that has lasted for at least three months, excluding birth control.

**Chronically ill child:** An individual who is younger than 18 years old and fulfills **any one** of the following conditions:

- Takes a prescribed medicine (other than vitamins) for a condition that is expected to last for at least 12 months,
- Needs/uses more medical care, more mental health services, or more educational services than is usual for most children of the same age for a condition that is expected to last for at least 12 months,
- Is limited/prevented in his/her ability to do the things most children of the same age can do due to a condition that is expected to last for at least 12 months,
- Needs/gets special therapy, such as physical, occupational, or speech therapy for a condition that is expected to last 12 months, or
- Needs/gets treatment or counseling for any kind of emotional, developmental, or behavioral problem that is expected to last for at least 12 months.

**Referrals** refer to the practice's own referrals to other resources as opposed to the availability of referral services in the community.

**Access** refers to whether the provider is satisfied with his or her ability to access guideline-relevant information when caring for patients.

OK

# APPENDIX I: COMPARISON PROVIDER SURVEY QUESTIONS: WEB VERSION

User Name:

Password:



## Maryland Provider Survey

The Maryland Health Care Commission is conducting research to help practices become more effective in healthcare delivery and centered on patient needs. Your participation in this survey is very important and greatly appreciated. The purpose of this survey instrument is to collect information about various aspects of your practice, including health care delivery, practice culture, and team dynamics.

Questions are organized into sections and address the following topics:

- Your professional certification and role
- Your satisfaction with chronic illness management provided by you and your staff
- Activities carried out in your practice
- Perceptions about your work situation
- The culture at your practice

To move through the survey:

- Click "**Next**" to go to the next page.
- Click "**Back**" to return to the previous page.
- Click "**Reset**" to clear your answers on the current page.
- Click "**Save**" at any point to save your progress for the next time you log in.
- Click "**Submit**" when you reach the end of the survey to complete the survey and submit your answers.
- Clicking on any **underlined blue text** will take you to a page with definitions of key terms.

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### Initial Respondent Characteristics

1. How long have you worked at the practice?

- Less than 6 months
- 6-12 months
- 1-2 years
- More than 2 years

2. What is your job title?

3. Which types of professional licensing or certification do you have? (please check all that apply)

- MD or DO
- NP or advanced practice nurse
- Physician assistant
- Other:

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**Provider Satisfaction with Chronic Illness Management**

**4. Please indicate how satisfied or dissatisfied you are with the quality of health care that you and your staff provide to:**

	Very satisfied	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Very dissatisfied
a. Your entire patient panel	<input type="radio"/>					
b. Your <b>chronically ill</b> patients	<input type="radio"/>					

**5. Regarding your chronically ill patients, please indicate how satisfied or dissatisfied you are with the following aspects of care that you and your staff provide as a team:**

	Very satisfied	Satisfied	Somewhat satisfied	Somewhat Dissatisfied	Dissatisfied	Very dissatisfied
a. Communicating with patients	<input type="radio"/>					
b. Communicating with family caregivers	<input type="radio"/>					
c. Educating family caregivers	<input type="radio"/>					
d. Motivating patients to participate in maximizing their health	<input type="radio"/>					
e. Coordinating the care received from all providers	<input type="radio"/>					
f. Monitoring patients' chronic conditions	<input type="radio"/>					
g. <b>Referrals</b> to community resources	<input type="radio"/>					
h. Efficiency of office visits	<input type="radio"/>					
i. <b>Access</b> to evidence-based guidelines for chronic conditions	<input type="radio"/>					
j. Efficiency of practice team	<input type="radio"/>					
k. Availability of clinical information about your patients	<input type="radio"/>					

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**Work Content**

**6. In a typical day at the practice, what job role performs the following activities most often?**

	Clinician	Nurse	Care manager	Medical assistant	Administrative staff	Other	If "Other," please specify in the box provided
a. Checking in and orienting patients	<input type="radio"/>	<input type="text"/>					
b. Taking vital signs	<input type="radio"/>	<input type="text"/>					
c. Screening patients for diseases (example: a depression screen)	<input type="radio"/>	<input type="text"/>					
d. Asking patients whether they smoke	<input type="radio"/>	<input type="text"/>					
e. Obtaining immunization histories from patients	<input type="radio"/>	<input type="text"/>					
f. Gathering information on screening (example: date of last mammogram)	<input type="radio"/>	<input type="text"/>					
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	<input type="radio"/>	<input type="text"/>					
h. Deciding how soon patients who call for an appointment will be seen	<input type="radio"/>	<input type="text"/>					

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6. (Continued) In a typical day at the practice, what job role performs the following activities most often?

	<i>Clinician</i>	<i>Nurse</i>	<i>Care manager</i>	<i>Medical assistant</i>	<i>Administrative staff</i>	<i>Other</i>	If "Other," please specify in the box provided
i. Obtaining medical records from other providers outside the practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
j. Communicating with insurance companies (example: obtaining prior authorizations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
k. Communicating with pharmacies (example: medication refills)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
l. Calling patients who are due for a visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
m. Calling patients to provide them laboratory results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
n. Answering phone calls from patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
o. Advising patients on how to care for their health conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
p. Evaluating patients and making treatment decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
q. Completing different kinds of forms upon patients' arrival at the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

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Work Perceptions

7.	<p>Please indicate how much you agree or disagree with the following statement: Overall, I am satisfied with my current job.</p>	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
8.	<p>What is the likelihood that you will leave your current practice within TWO YEARS?</p>	<i>None</i>	<i>Slight</i>	<i>Moderate</i>	<i>Likely</i>	<i>Definitely</i>
9.	<p>Which best describes the atmosphere in your practice?</p>	<i>1 Calm</i>	<i>2</i>	<i>3 Busy, but reasonable</i>	<i>4</i>	<i>5 Hectic, chaotic</i>

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10. **Culture: Valued Alignment with Leaders**

To what degree do the following statements reflect the conditions in your practice?

	1 <i>Not at all</i>	2	3	4 <i>To a great extent</i>
a. There is broad involvement of clinicians in most financial decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Our physician compensation formula is well aligned with our practice's goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Our compensation plan rewards those who work hard for our practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Our clinician compensation formula is well understood by our clinicians.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Our administrative decision-making process can accurately be described as consensus building.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. The business office and administration are considered to be very important parts of our group practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Culture: Care Team Functioning**

The next set of questions asks about teamwork in your practice. For these questions, please think of your "team" as the group of people you usually work with to directly take care of patients at your practice.

11. In a typical week at your practice, how often do the following types of providers and staff act as members of your team?

	<i>Never members of your team</i>	<i>Sometimes members of your team</i>	<i>Always members of your team</i>
a. Primary care physicians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Physician's assistants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Nurse practitioners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Registered nurses or nurse case managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Licensed vocational nurses (LVNs or LPNs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Medical assistants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Clerks or receptionists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Health educators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Pharmacists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Social workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Community health workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Visiting nurses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Nutritionists or dieticians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Mental (behavioral) health professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Other 1:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Other 2:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Other 3:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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12. Please indicate how much you agree or disagree with the following statements about your team.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Does not apply</i>	<i>Do not know</i>
a. Team membership is clear - everybody knows exactly who is and isn't on your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Different people are constantly joining and leaving your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Members of your team have their own individual jobs to do, with little need to work together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Members of your team have to depend heavily on one another to get the team's work done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Your team is larger than it needs to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Your team has too few members for what it has to accomplish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. It is clear what is - and what is not - acceptable member behavior in your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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12. (Continued) Please indicate how much you agree or disagree with the following statements about your team.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply	Do not know
i. Members of your team agree about how members are expected to behave.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Your practice recognizes and rewards teams that perform well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Team members can easily obtain training or technical advice when they need it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. In your practice, teams do not receive adequate training for the work they have to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Everyone on your team is motivated to have the team succeed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Some members of your team do not carry their fair share of the overall workload.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Members of your team actively share their special knowledge and expertise with one another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. There is a lot of unpleasantness among members of your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Working together energizes and uplifts members of your team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Culture: Communication Openness and Organizational Learning**

13. Please indicate how much you agree or disagree with the following statements about your practice.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Does not apply	Don't know
a. Providers in the practice are open to staff ideas about how to improve care processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Staff are encouraged to express alternative viewpoints in the practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Staff are afraid to ask questions when something does not seem right.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. It is difficult to voice disagreement in this practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. When there is a problem in the practice, we see if we need to change the way we do things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. The practice is good at changing care processes to make sure the same problems don't happen again.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Please indicate the extent of your practice's exposure to the Patient Centered Medical Home (PCMH) concept.

	Unaware of the PCMH concept	Aware of the concept, but have no involvement	Exploring becoming a PCMH	Applied for a PCMH program/ Seeking PCMH recognition	Actively involved in a PCMH program or recognized as a PCMH
My practice leaders are currently:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**Perceptions of PCMH participation.**

15. Please indicate how much you agree or disagree with the following statements about the potential benefits of being a PCMH.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
<b>Being a PCMH would...</b>						
a. require a fundamental transformation in how we operate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. help my practice take better care of patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. take up more time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. be too expensive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. generate new revenue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. lead to improved care coordination with specialists.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. improve the way I interact with patients' family members.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. enhance care due to the role of a care manager/coordinator.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. improve patient health outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. reduce my control over the aspects of practice that matter most to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Please indicate how much you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
Overall, I think being a PCMH practice is a positive thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Progress 

**Final Respondent Characteristics**

17. In what year were you born?

18. What was your assigned sex at birth?  
 Female  
 Male

19. What is your ethnicity?  
 Hispanic/Latino  
 Not Hispanic/Latino

20. What is your race? (Check all that apply)  
 Black or African American  
 American Indian or Alaska Native  
 Native Hawaiian or Other Pacific Islander  
 Asian  
 White (European, Middle Eastern, other)  
 Other (please specify):

Thank you very much for taking the time to complete the survey!



## Definition of Terms

**Chronically ill adult:** An individual who is 18 years or older and who received health care services three or more times for a condition that has lasted for at least three months (excluding pregnancy or menopause) or who takes a prescribed medication to treat a condition that has lasted for at least three months, excluding birth control.

**Chronically ill child:** An individual who is younger than 18 years old and fulfills any one of the following conditions:

- Takes a prescribed medicine (other than vitamins) for a condition that is expected to last for at least 12 months,
- Needs/uses more medical care, more mental health services, or more educational services than is usual for most children of the same age for a condition that is expected to last for at least 12 months,
- Is limited/prevented in his/her ability to do the things most children of the same age can do due to a condition that is expected to last for at least 12 months,
- Needs/gets special therapy, such as physical, occupational, or speech therapy for a condition that is expected to last 12 months, or
- Needs/gets treatment or counseling for any kind of emotional, developmental, or behavioral problem that is expected to last for at least 12 months.

**Referrals** refer to the practice's own referrals to other resources as opposed to the availability of referral services in the community.

**Access** refers to whether the provider is satisfied with his or her ability to access guideline-relevant information when caring for patients.

OK

## APPENDIX J: INTRODUCTORY EMAIL TO MMPP PROVIDERS AND ATTACHMENT LETTER FROM MHCC EXECUTIVE DIRECTOR

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**From:** Valerie Wooding -DHMH- [<mailto:valerie.wooding@maryland.gov>]  
**Sent:** Wednesday, March 27, 2013 1:22 PM  
**To:** Karen Rezabek -DHMH-; Donald Nichols  
**Subject:** Survey Announcement to MMPP Physicians

Dear MMPP Physician,

Attached is a letter from Ben Steffen announcing the upcoming physician survey by IMPAQ, International. Please take the time to complete the survey, as it is an integral part of our program evaluation.

Thanks,

Maryland Health Care Commission staff

Craig P. Tanio, M.D.  
CHAIR



Ben Steffen  
EXECUTIVE DIRECTOR

**MARYLAND HEALTH CARE COMMISSION**

4180 PATTERSON AVENUE – BALTIMORE, MARYLAND 21215  
TELEPHONE: 410-764-3480 FAX: 410-358-1238

March 27, 2013

Dear MMPP Physician,

We are sending this email to request your participation in a survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP).

This survey is part of an evaluation sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model. The purpose of the survey is to gather information from participating providers to assess their experiences and satisfaction with MMPP and its PCMH principles.

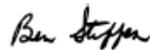
IMPAQ International, LLC (IMPAQ), a private research company that specializes in research on health care services, is conducting the survey on behalf of the MHCC. The provider survey will take about 15 minutes and will be completed online. In approximately one week IMPAQ will send you a link to the web-based survey via e-mail at this email address. Please look out for this email and complete the survey.

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the evaluation and to our understanding of how to improve health care services for Marylanders.

Thank you for your participation!

Sincerely,



Ben Steffen  
Executive Director

TOLL FREE  
1-877-245-1762

TDD FOR DISABLED  
MARYLAND RELAY SERVICE  
1-800-735-2258

## APPENDIX K: IMPAQ EMAIL TO CHAMPIONS

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Dear Dr. XX,

This is a follow up to Wednesday's letter from the Maryland Health Care Commission (MHCC) about the upcoming survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). This survey is part of an evaluation sponsored by MHCC and conducted by IMPAQ International, LLC (IMPAQ).

The survey will begin on April 8, 2013, and participants will have 6 weeks to complete the survey. It is an opportunity for providers to share their thoughts about and experiences in the MMPP. Our goal is 100 percent participation by providers in the MMPP practices.

We are writing to ask practice champions to assist by encouraging the physicians in their practices to complete the survey. During our site visits with a sample of MMPP practices, we learned of the importance of the practice champions and believe your encouragement will help us and MHCC to reach our goal of 100 percent participation in the provider survey.

To assist your efforts, during the survey field period IMPAQ will periodically send progress reports that provide the percent of your practice's providers who have completed the survey (note: the progress report will not provide specific names).

As a first step we would like to ensure that we have the names and email address of all providers in your practice. The physicians that we have been able to identify are in the attached document. We would greatly appreciate your review of this list to verify that it is complete and contains current email addresses.

We are also interested in receiving feedback about the MMPP from mid-level providers (e.g., nurse practitioners and physician assistants). However, we do not have a source to identify these providers. Again, we would greatly appreciate if you could help us and identify any mid-level providers at your practice.

If you have any revisions to the physician list or information for mid-level providers, please add them to the attached document and return to Donald Nichols from IMPAQ at .

If you have questions about this research, please contact me at [dnichols@impagint.com](mailto:dnichols@impagint.com) or 202-696-1004. If you have concerns or complaints about this research study or would like to obtain information about the research or provide input, please contact Valerie Wooding from MHCC at 410-764-3570 or .

Thank you in advance for your assistance!

Sincerely,

Donald Nichols  
Project Director

## APPENDIX L: MMPP PROVIDER SURVEY ADVANCE LETTER



{Date}

{FirstName}{LastName}

{Address1}

{City} {State} {Zip}

Dear {FirstName}{LastName}:

We are writing this letter to request your participation in a survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). This survey is part of a study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model. The purpose of the survey is to gather information from participating providers about the effect of the MMPP on their practices, including health care delivery, practice culture, and team dynamics.

IMPAQ International, LLC (IMPAQ), a private research company that specializes in research on health care services, is conducting the survey on behalf of the MHCC. The provider survey will take about 15 minutes and will be completed online. On April 8, 2013 IMPAQ will send you a link to the web-based survey via e-mail at {e-mail address}.<sup>1</sup> Please look out for this email and complete the survey between April 8, 2013 and May 19, 2013. IMPAQ will send you a reminder email occasionally.

Your participation in the provider survey is voluntary. You may refuse to answer any questions, and you may terminate the survey at any time. Your answers will be kept strictly confidential and be used only for research purposes. You will never be personally identified in any report based on the survey. No one will attempt to sell you anything or ask for a donation because you participated in this study.

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impaqint.com](mailto:PCMH@impaqint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders.

Thank you for your participation!

Sincerely,

Handwritten signature of Donald E. Nichols, Ph.D.

Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC

Handwritten signature of Jill A. Marsteller.

Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

<sup>1</sup> If this is not your current e-mail address, please contact IMPAQ at [PCMH@impaqint.com](mailto:PCMH@impaqint.com) with your current e-mail address. If you do not have an e-mail address or prefer to complete a paper survey, please call Donna Perlmutter from IMPAQ at 443-283-2233.

## APPENDIX M: MMPP PROVIDER EMAIL WITH LOGIN INFORMATION

---

Subject: Maryland Health Care Commission requests your feedback

Email Body:



Dear Donna Perlmutter,

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ International LLC, a research firm, to conduct the survey of primary care providers participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). Your participation in the survey is extremely valuable. The collected information will help MHCC to understand how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model.

Your participation in the provider survey is voluntary. You may refuse to answer any questions, and you may terminate the survey at any time. Your answers will be kept strictly confidential and be used only for research purposes.

The survey will be completed online and will take approximately 15 minutes of your time. You have the option to save and resume your partially completed survey. Please, use the following information to access the survey. You will find more detailed directions on the first page of the Web survey.

Please click on the following link to start the survey: [Click here to access the survey.](#)

Your username: [dperlmutter@impagint.com](mailto:dperlmutter@impagint.com)

Your password: dp123

If you have any questions or have any technical difficulties while accessing the survey, please email us at [PCMH@impagint.com](mailto:PCMH@impagint.com).

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov). Thank you very much for your participation.

## APPENDIX N: COMPARISON PROVIDERS EMAIL WITH LOGIN INFORMATION

---

Subject: Maryland Health Care Commission requests your Feedback



Dear Donna Perlmutter,

We are writing this letter to request your participation in a survey of Maryland providers. This survey is part of a study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs. The purpose of the survey is to gather information about Maryland practices' health care delivery, culture, and team dynamics.

MHCC has contracted with IMPAQ International LLC (IMPAQ), a research firm, to conduct this survey. Your participation in the survey is extremely valuable. Your participation in the provider survey is voluntary; you may refuse to answer any questions, and you may terminate the survey at any time. Your answers will be kept strictly confidential and be used only for research purposes.

The survey will be completed online and will take approximately 15 minutes of your time. You have the option to save and resume your partially completed survey. Please, use the following information to access the survey. You will find more detailed directions on the first page of the web survey.

Please click on the following link to start the survey: [Click here](#)

Your username: [dperlmutter@impagint.com](mailto:dperlmutter@impagint.com)

Your password: dp123

If you have any questions or have any technical difficulties while accessing the survey, please email us at [MD\\_primary\\_care@impagint.com](mailto:MD_primary_care@impagint.com).

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [MD\\_primary\\_care@impagint.com](mailto:MD_primary_care@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Thank you very much for your participation.

## APPENDIX O: PROVIDER LETTER WITH WEB LINK AND LOGIN INFORMATION FOR THOSE PROVIDERS WITHOUT EMAIL ADDRESSES

---



{ID number}

{Date}

Dr. {FirstName} {LastName}

{Address1}

{Address2}

{Address3}

{City}, {State} {Zip}

Dear Dr. {FirstName} {LastName}:

We recently mailed you an introductory letter requesting your participation in a web survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). We want to hear from you as your input is very important to us. Since we did not have an email address for you, we are providing the enclosed paper version of the survey for you to fill out.

The provider survey will take about 15 minutes. You may also fill out the survey online by going to the link below and entering your username and password.

- Link: <http://www.snapsurveys.com/swh/surveylogin.asp?k=135974850652>
- Username: {unique username}
- Password: {unique password}

If you decide to use the paper version, please complete the survey and place it in the postage paid envelope provided and place it in the mail. Please complete either the paper or online survey by June 14, 2013.

Your participation in the provider survey is voluntary. You may refuse to answer any questions. Your answers will be kept strictly confidential and be used only for research purposes. You will never be personally identified in any report based on the survey. No one will attempt to sell you anything or ask for a donation because you participated in this study.

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders.

Thank you for your participation!

Sincerely,

Handwritten signature of Donald Nichols, PhD.

Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC

Handwritten signature of Jill A. Marsteller.

Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

10420 Little Patuxent Parkway, Suite 300, Columbia, MD 21044 USA Tel +1 (443) 367-0088 Fax +1 (443) 367-0477  
1425 K Street NW, Suite 650, Washington, DC 20005 USA Tel +1 (202) 289-0004 Fax +1 (202) 289-0024  
Internet [www.impagint.com](http://www.impagint.com)

## APPENDIX P: REMINDER EMAILS

---

### **MMPP: Reminder Email from IMPAQ**

**Subject line: Reminder to Complete the Maryland Provider Survey**



MARYLAND  
HEALTH CARE  
COMMISSION



IMPAQ  
INTERNATIONAL LLC

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). This survey is part of a study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model.

**Please complete the survey before  
Sunday, May 19, 2013, for your voice to be heard.**

The link is: [fill in link]

Your login name is: [individual login]

Your password is: [password]

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or . If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,

A handwritten signature in black ink that reads 'Donald E. Nichols, Ph.D.'.

Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC

A handwritten signature in black ink that reads 'Jill A. Marsteller'.

Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

## **MMPP Providers: Second and Third Reminder Email from IMPAQ**

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). This survey is part of a study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model.

**If you are receiving this email, your survey responses have not been submitted!**  
**Please remember to hit submit to complete your survey.**  
**Please complete the survey before Sunday, May 19, 2013, for your voice to be heard.**

The link is:

<http://www.snapsurveys.com/swf/surveylogin.asp?k=135974850652&i=1FA5B80650465182DD0BCF258F165AEADA885D1EB2D734B95C9831B70B2F>

Your login name is: [individual login]

Your password is: [password]

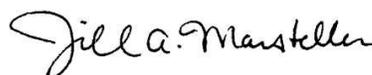
If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,



Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC



Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

## **MMPP Provider: Deadline Extended Email**

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey of Maryland providers who are participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP). This survey is part of a study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs through the Patient Centered Medical Home (PCMH) model.

**If you are receiving this email, your survey responses have not been submitted!**  
**Please remember to hit submit to complete your survey.**  
**Please complete the survey before Friday, June 14, 2013, for your voice to be heard.**

The link is:

<http://www.snapsurveys.com/swf/surveylogin.asp?k=135974850652&i=1FA5B80650465182DD0BCF258F165AEADA885D1EB2D734B95C9831B70B2F>

Your login name is: [individual login]

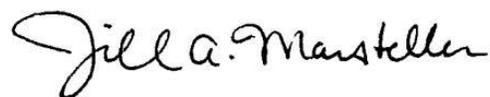
Your password is: [password]

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [PCMH@impagint.com](mailto:PCMH@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov). Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,



Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC



Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

**Comparison: Reminder Email from IMPAQ**

**Subject line: Reminder to Complete the Maryland Provider Survey**



MARYLAND  
HEALTH CARE  
COMMISSION



**IMPAQ**  
INTERNATIONAL LLC

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs.

**Please complete the survey before  
Sunday, May 19, 2013, for your voice to be heard.**

- The link is: [fill in link]
- Your login name is: [individual login]
- Your password is: [password]

If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or MD\_primary\_care@impaqint.com. If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or Valerie.wooding@maryland.gov.

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,

A handwritten signature in black ink that reads "Donald E. Nichols, Ph.D.".

Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC

A handwritten signature in black ink that reads "Jill A. Marsteller".

Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

## Comparison Providers: Second and Third Reminder Email from IMPAQ

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs.

**If you are receiving this email, your survey responses have not been submitted!**

**Please remember to hit submit to complete your survey.**

**Please complete the survey before Sunday, May 19, 2013, for your voice to be heard.**

The link is:

<http://www.snapsurveys.com/swh/surveylogin.asp?k=136276638705&i=1FA5B80650465182DD0BCF258F165AEADA885D1EB2D734B95C9831B70B2F>

Your login name is: [individual login]

Your password is: [password]

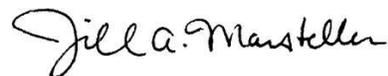
If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [MD\\_primary\\_care@impagint.com](mailto:MD_primary_care@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,



Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC



Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

## **Comparison Provider: Deadline Extended Email**

Dear {FirstName}{LastName}:

This is a ***gentle reminder*** of the request for your participation in the survey study sponsored by the Maryland Health Care Commission (MHCC) about how primary care practices can become more effective in healthcare delivery and centered on patient needs.

**If you are receiving this email, your survey responses have not been submitted!**  
**Please remember to hit submit to complete your survey.**  
**Please complete the survey before Friday, June 14, 2013, for your voice to be heard.**

The link is:

<http://www.snapsurveys.com/swh/surveylogin.asp?k=136276638705&i=1FA5B80650465182DD0BCF258F165AEADA885D1EB2D734B95C9831B70B2F>

Your login name is: [individual login]

Your password is: [password]

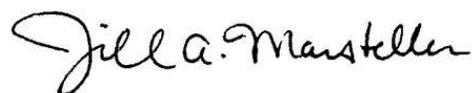
If you have questions about this research or face any injury due to your participation in this research, please contact Donna Perlmutter from IMPAQ at 443-283-2233 or [MD\\_primary\\_care@impagint.com](mailto:MD_primary_care@impagint.com). If you have concerns or complaints about this research study, have questions about your rights, would like to obtain information about the research or provide input, please contact Valerie Wooding at 410-764-3570 or [Valerie.wooding@maryland.gov](mailto:Valerie.wooding@maryland.gov).

Your input is critical to the success of the study and to our understanding of how to improve health care services for Marylanders. If you have already completed the survey and received this email in error, we appreciate your participation.

Thanks in advance,



Donald Nichols, PhD  
Principal Research Associate  
Health Care Financing Practice Area Lead  
IMPAQ International, LLC



Jill A. Marsteller, PhD, MPP  
Associate Professor  
Johns Hopkins School of Public Health

## APPENDIX Q: MMPP PROVIDER MAIL SURVEY

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User ID: 4334

### PARTICIPATING PROVIDER SURVEY

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Because you are a provider in a practice that is participating in the Maryland Multi-payer Patient Centered Medical Home Program (MMPP), your participation in this survey of providers to support the evaluation of the MMPP is very important and greatly appreciated. The purpose of the survey is to gather information about various aspects of your practice, including health care delivery, practice culture, and team dynamics.

If you would prefer to complete this survey online, you may do so at:

<http://www.snapsurveys.com/swh/surveylogin.asp?k=135974850652>

Please use the username and password located on your cover letter

#### FAQ's

Please use these definitions when answering the questions

**Chronically ill adult:** An individual who is 18 years or older who received health care three or more times for a condition that has lasted for at least three months (excluding pregnancy or menopause) or who takes a prescribed medication to treat a condition that has lasted for at least three months, excluding birth control.

**Chronically ill child:** An individual who is younger than 18 years old and fulfills any one of the following conditions:

- Takes a prescribed medicine (other than vitamins) for a condition that is expected to last for at least 12 months,
- Needs/uses more medical care, more mental health services, or more educational services than is usual for most children of the same age for a condition that is expected to last for at least 12 months,
- Is limited/prevented in his/her ability to do the things most children of the same age can do due to a condition that is expected to last for at least 12 months,
- Needs/gets special therapy, such as physical, occupational, or speech therapy for a condition that is expected to last 12 months, or
- Needs/gets treatment or counseling for any kind of emotional, developmental, or behavioral problem that is expected to last for at least 12 months.

**Referrals to community resources:** Referrals refer to the practice's own referrals to other resources as opposed to the availability of referral services in the community.

**Access to evidence-based guidelines for chronic conditions:** Access refers to whether provider is satisfied with his or her ability to access guideline-relevant information when caring for patients.

## INITIAL RESPONDENT CHARACTERISTICS

1. How long have you worked at the practice?

- Less than 6 months    
  6-12 Months    
  1-2 years    
  More than 2 years

2. What is your job title? \_\_\_\_\_

3. Which types of professional licensing or certification do you have? *(please check all that apply)*

- MD or DO    
  NP or advanced practice nurse    
  Physician assistant  
 Other, Please specify: \_\_\_\_\_

## PROVIDER SATISFACTION WITH CHRONIC ILLNESS MANAGEMENT

4. Please indicate how satisfied or dissatisfied you are with the quality of health care that you and your staff provide to:

	Very Satisfied	Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Dissatisfied	Very Dissatisfied
a. Your entire patient panel	<input type="checkbox"/>					
b. Your chronically ill patients	<input type="checkbox"/>					

5. Regarding your chronically ill patients, please indicate how satisfied or dissatisfied you are with the following aspects of care that you and your staff provide as a team:

	Very Satisfied	Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Dissatisfied	Very Dissatisfied
a. Communicating with patients	<input type="checkbox"/>					
b. Communicating with family caregivers	<input type="checkbox"/>					
c. Educating family caregivers	<input type="checkbox"/>					
d. Motivating patients to participate in maximizing their health	<input type="checkbox"/>					

5. Regarding your chronically ill patients, please indicate how satisfied or dissatisfied you are with the following aspects of care that you and your staff provide as a team:

	Very Satisfied	Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Dissatisfied	Very Dissatisfied
<i>e.</i> Coordinating the care received from all providers	<input type="checkbox"/>					
<i>f.</i> Monitoring patients' chronic conditions	<input type="checkbox"/>					
<i>g.</i> Referrals to community resources	<input type="checkbox"/>					
<i>h.</i> Efficiency of office visits	<input type="checkbox"/>					
<i>i.</i> Access to evidence-based guidelines for chronic conditions	<input type="checkbox"/>					
<i>j.</i> Efficiency of practice team	<input type="checkbox"/>					
<i>k.</i> Availability of clinical information about your patients	<input type="checkbox"/>					

## WORK CONTENT

6. In a typical day at the practice, what job role performs the following activities most often?

	Clinician	Nurse	Care Manager	Medical Assistant	Administrative Staff	Other <i>(Please specify)</i>
a. Checking in and orienting patients	<input type="checkbox"/> _____					
b. Taking vital signs	<input type="checkbox"/> _____					
c. Screening patients for diseases (example: a depression screen)	<input type="checkbox"/> _____					
d. Asking patients whether they smoke	<input type="checkbox"/> _____					
e. Obtaining immunization histories from patients	<input type="checkbox"/> _____					
f. Gathering information on screening (example: date of last mammogram)	<input type="checkbox"/> _____					
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	<input type="checkbox"/> _____					
h. Deciding how soon patients who call for an appointment will be seen	<input type="checkbox"/> _____					
i. Obtaining medical records from other providers outside the practice	<input type="checkbox"/> _____					
j. Communicating with insurance companies (example: obtaining prior authorizations)	<input type="checkbox"/> _____					
k. Communicating with pharmacies (example: medication refills)	<input type="checkbox"/> _____					
l. Calling patients who are due for a visit	<input type="checkbox"/> _____					
m. Calling patients to provide them laboratory results	<input type="checkbox"/> _____					
n. Answering phone calls from patients	<input type="checkbox"/> _____					

6. In a typical day at the practice, what job role performs the following activities most often?

	Clinician	Nurse	Care Manager	Medical Assistant	Administrative Staff	Other <i>(Please specify)</i>
o. Advising patients on how to care for their health conditions	<input type="checkbox"/> _____					
p. Evaluating patients and making treatment decisions	<input type="checkbox"/> _____					
q. Completing different kinds of forms upon patients' arrival at the facility	<input type="checkbox"/> _____					

## WORK PERCEPTIONS

7. Please indicate how much you agree or disagree with the following statement:	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Overall, I am satisfied with my current job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. What is the likelihood that you will leave your current practice within TWO YEARS?	None	Slight	Moderate	Likely	Definitely
	<input type="checkbox"/>				

9. Which best describes the atmosphere in your practice?	Calm	$\longleftrightarrow$	Busy, but reasonable	$\longleftrightarrow$	Hectic, chaotic
	<input type="checkbox"/>				

## CULTURE: VALUES ALIGNMENT WITH LEADERS

10. To what degree do the following statements reflect the conditions in your practice?	Not at all	$\longleftrightarrow$		$\longleftrightarrow$	To a great extent
a. There is broad involvement of clinicians in most financial decisions.	<input type="checkbox"/>				
b. Our physician compensation formula is well aligned with our practice's goals.	<input type="checkbox"/>				
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	<input type="checkbox"/>				
d. Our compensation plan rewards those who work hard for our practice.	<input type="checkbox"/>				
e. Our clinician compensation formula is well understood by our clinicians.	<input type="checkbox"/>				
f. Our administrative decision-making process can accurately be described as consensus building.	<input type="checkbox"/>				
g. The business office and administration are considered to be very important parts of our group practice.	<input type="checkbox"/>				
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs	<input type="checkbox"/>				

**CULTURE: CARE TEAM FUNCTIONING**

*The next set of questions asks about teamwork in your practice. For these questions, please think of your "team" as the group of people you usually work with to directly take care of patients at your practice.*

11. In a typical week at your practice, how often do the following types of providers and staff act as members of your team?

	Never members of your team	Sometimes members of your team	Always members of your team
a. Primary care physicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Physician's assistants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Nurse practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Registered nurses or nurse case managers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Licensed vocational nurses (LVNs or LPNs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Medical assistants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Clerks or receptionists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Health educators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Pharmacists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Social workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Community health workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Visiting nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Nutritionists or dieticians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Mental (behavioral) health professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Other (Please Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Other (Please Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Other (Please Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Please indicate how much you agree or disagree with the following statements about your team.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Does Not Apply	Don't Know
a. Team membership is clear—everybody knows exactly who is and isn't on your team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Different people are constantly joining and leaving your team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Members of your team have their own individual jobs to do, with little need to work together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Members of your team have to depend heavily on one another to get the team's work done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Your team is larger than it needs to be.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Your team has too few members for what it has to accomplish.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. It is clear what is—and what is not—acceptable member behavior in your team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Members of your team agree about how members are expected to behave.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Your practice recognizes and rewards teams that perform well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Team members can easily obtain training or technical advice when they need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. In your practice, teams do not receive adequate training for the work they have to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Everyone on your team is motivated to have the team succeed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Some members of your team do not carry their fair share of the overall workload.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Members of your team actively share their special knowledge and expertise with one another.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. There is a lot of unpleasantness among members of your team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Working together energizes and uplifts members of your team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CULTURE: COMMUNICATION OPENNESS AND ORGANIZATIONAL LEARNING**

13. Please indicate how much you agree or disagree with the following statements about your practice.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Does Not Apply	Don't Know
a. Providers in the practice are open to staff ideas about how to improve care processes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Staff are encouraged to express alternative viewpoints in the practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Staff are afraid to ask questions when something does not seem right.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. It is difficult to voice disagreement in this practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. When there is a problem in the practice, we see if we need to change the way we do things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The practice is good at changing care processes to make sure the same problems don't happen again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PERCEPTIONS OF PCMH PARTICIPATION**

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
<i>Being involved in the PCMH demonstration project has...</i>						
a. Required a fundamental transformation in how we do operate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Helped my practice take better care of patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Taken up more time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Been too expensive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Generated new revenue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Required the use of financial resources beyond the fixed transformation payments (FTPs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Led to improved care coordination with specialists.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

<i>Being involved in the PCMH demonstration project has...</i>	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
<i>h. Improved the way I interact with patient's family members.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>i. Enhanced care due to the role of the care manager/coordinator.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>j. Improved patient health outcomes.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>k. Reduced my control over the aspects of practice that matter most to me.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Please indicate your agreement with the following statement:	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
<i>Overall, I am glad we are a part of the PCMH demonstration project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**FINAL RESPONDENT CHARACTERISTICS**

16. In what year were you born?

Y	Y	Y	Y

17. What was your assigned sex at birth?

Female

Male

18. What is your ethnicity?

Hispanic/Latino

Not Hispanic/Latino

19. What is your race? (Check all that apply)

Black or African American

American Indian or Alaska Native

Native Hawaiian or Other Pacific Islander

Asian

White (European, Middle Eastern, other)

Other (*Please specify*)  
\_\_\_\_\_

**THANK YOU VERY MUCH FOR TAKING YOUR TIME TO COMPLETE THE SURVEY!**

**Please place the completed survey in the postage paid envelope and place it in the mail.**

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**APPENDIX R: MMPP MAIL SURVEY REMINDER POSTCARD**

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Thank You in Advance for Your Participation!

Your knowledge and experience with the  
Maryland Multi-Payer Patient Centered  
Medical Home Program (MMPP) are extremely important.

If you have completed the survey, thank you.  
If not, please take a few minutes to complete and return it TODAY.

If you have any questions, please call  
Donna Perlmutter from IMPAQ International at  
443-283-2233 or [PCMH@impaqint.com](mailto:PCMH@impaqint.com).

**APPENDIX S: TEAM COMPOSITION (ONLY PHYSICIAN RESPONDENTS INCLUDED)**

	MMPP (n=95)			Comparison Group						P value*
				CF PCMH Match (n=47)			Unexposed Match (n=62)			
	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	Never members of team (%)	Sometimes members of team (%)	Always members of team (%)	
Primary care physicians	0	7	93	2	4	93	10	13	77	0.015
Physician assistants	33	19	49	49	19	33	61	19	20	0.012
Nurse practitioners	20	33	46	40	13	47	31	32	37	0.057
Registered nurses or Nurse case managers	12	19	70	40	18	42	25	21	54	0.010
Licensed vocational nurses (LVNs or LPNs)	48	21	30	59	23	18	63	19	18	0.386
Medical assistants	0	10	90	2	9	89	5	19	76	0.088
Clerks or Receptionists	4	11	85	4	11	85	5	13	82	0.996
Health educators	42	36	21	43	43	13	63	33	3	0.018
Pharmacists	52	34	13	49	44	7	46	38	16	0.565
Social workers	48	31	21	49	36	16	37	42	22	0.612
Community health workers	66	31	3	71	24	4	70	28	2	0.872
Visiting nurses	44	55	2	37	57	7	49	43	8	0.248
Nutritionists or Dieticians	44	52	5	37	51	12	46	44	10	0.599
Mental (behavioral) health professionals	44	47	9	51	38	11	45	42	13	0.848

## APPENDIX T: INCLUSION CRITERIA BY PRACTICE

### 2010 MMPP Practices' Inclusion Criteria

Regnum	(1)- In assigned practice and in 2011 eligibility file	(2)- in criteria (1) and age <65 years	(3)- in criteria (2) and eligible for 11+ months of coverage
1012	3211	2921	2144
1027	475	444	314
1038	4790	4597	3406
1061	274	236	177
1067	833	650	484
1069	2211	2017	1626
1107	2306	2148	1581
1112	3626	3250	2610
1121	2293	1663	1298
1122	4506	4506	3245
1130	1927	1927	1550
1150	2153	2022	1248
1155	1643	1643	1175
1161	776	762	529
1202	1907	1695	1135
1212	2614	2614	1845
1224	6695	6473	4744
1225	647	501	422
1239	7999	6786	5569
1241	1931	1616	1284
1242	1093	928	771
1247	247	203	142
1248	1614	1505	1064
1249	3055	2686	2081
1264	4188	3907	2722
1266	578	452	357
1290	662	662	493
1305	3595	2975	2345
1306	1966	1723	1120
1310	570	336	274
1317	711	609	439
1318	824	619	498
1319	317	288	196
1328	7	6	3
1336	1201	999	791
1342	3225	2834	2198

<b>Regnum</b>	<b>(1)- In assigned practice and in 2011 eligibility file</b>	<b>(2)- in criteria (1) and age &lt;65 years</b>	<b>(3)- in criteria (2) and eligible for 11+ months of coverage</b>
1354	251	237	185
1369	471	431	290
1373	2240	2162	1507
1376	941	870	663
1384	184	184	138
1385	1458	1270	908
1396	763	654	491
1397	592	488	371
1398	407	364	273
1399	501	439	324
1414	155	150	108
1435	2290	2223	1570
1441	18333	16668	12466
1461	3184	3155	2672

### 2010 Comparison Practices' Inclusion Criteria

Practice identifier	CareFirst flag (1:YES,2:NO , . :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2001	2	0	0	0	0	0	0	0	0	0	0	0	0
2002	2	288	288	225	14	0	0	0	0	0	225	0	225
2003	1	703	703	482	46	0	0	0	0	0	482	0	482
2004	2	448	424	344	5	41	0	0	59	244	0	0	244
2005	1	20	20	14	0	0	0	0	0	0	14	0	14
2006	1	1197	1139	816	55	22	0	0	22	772	0	0	772
2007	1	494	493	387	20	0	0	0	0	0	387	0	387
2008	2	532	474	371	6	0	0	0	0	0	371	0	371
2009	1	289	194	155	3	0	0	0	0	0	155	0	155
2010	1	2709	2570	1995	68	0	0	0	0	0	1995	0	1995
2011	2	44	43	23	2	0	0	0	0	0	23	0	23
2012	2	333	308	244	4	34	0	1	25	178	0	6	184
2013	1	551	551	406	34	0	0	0	0	0	406	0	406
2014	1	936	833	688	15	0	0	0	0	0	688	0	688
2015	2	1207	1120	868	39	0	0	0	0	0	868	0	868
2016	1	0	0	0	0	0	0	0	0	0	0	0	0
2017	2	299	285	104	19	0	0	0	0	0	104	0	104
2018	1	32	32	28	0	0	5	10	3	0	0	10	10
2019	1	307	289	198	12	0	0	0	0	0	198	0	198
2020	2	697	9	4	5	1	0	0	0	3	0	0	3
2021	1	256	256	176	12	0	0	0	0	0	176	0	176
2022	1	8206	7134	4984	176	382	0	0	316	4286	0	0	4286
2023	1	51	51	30	2	3	0	0	3	24	0	0	24
2024	1	1836	1682	1206	58	130	37	0	96	943	0	0	943
2025	1	1012	891	701	32	0	0	0	0	0	701	0	701
2026	2	679	627	452	12	0	0	0	0	0	452	0	452

Practice identifier	CareFirst flag (1:YES,2:NO , . :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2027	2	6	6	4	0	0	0	0	0	0	4	0	4
2028	1	4379	3699	2436	119	218	0	0	170	2048	0	0	2048
2029	2	7	7	6	0	3	0	0	1	2	0	0	2
2030	1	748	696	493	21	53	0	0	90	350	0	0	350
2031	2	178	138	100	5	8	0	42	18	0	0	32	32
2032	1	3580	3171	2018	82	128	0	141	140	188	0	1421	1609
2033	1	664	657	403	15	11	0	18	48	264	0	62	326
2034	1	451	424	307	7	26	0	0	44	237	0	0	237
2035	2	669	669	523	30	0	0	0	0	0	523	0	523
2036	2	140	110	99	0	0	0	0	0	0	99	0	99
2037	2	21	21	18	0	1	0	0	6	11	0	0	11
2038	2	293	267	190	3	12	147	0	31	0	0	0	0
2039	2	0	0	0	0	0	0	0	0	0	0	0	0
2040	2	370	362	62	30	23	0	0	39	0	0	0	0
2041	1	1681	1126	984	17	34	168	1	127	624	0	29	653
2042	2	120	109	91	0	16	0	4	19	36	0	16	52
2043	2	39	33	32	0	0	0	0	0	0	32	0	32
2044	1	520	432	307	14	31	0	149	30	0	0	97	97
2045	1	729	562	483	7	17	0	37	11	287	0	131	418
2046	1	0	0	0	0	0	0	0	0	0	0	0	0
2047	2	1648	998	805	15	0	0	0	0	0	805	0	805
2048	1	15	10	7	0	0	0	0	0	0	7	0	7
2049	2	463	453	279	30	0	0	0	0	0	279	0	279
2050	2	2834	2538	1890	54	83	0	960	111	0	0	736	736
2051	2	308	275	198	6	15	0	0	13	170	0	0	170
2052	2	987	786	687	0	36	0	0	109	542	0	0	542
2053	2	0	0	0	0	0	0	0	0	0	0	0	0
2054	1	0	0	0	0	0	0	0	0	0	0	0	0
2055	2	228	153	101	5	0	0	0	0	0	101	0	101

Practice identifier	CareFirst flag (1:YES,2:NO , . :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2056	1	636	579	347	18	0	0	0	0	0	347	0	347
2057	1	4494	3949	3128	73	173	0	0	1812	1143	0	0	1143
2058	1	1093	987	768	22	0	0	0	0	0	768	0	768
2059	2	203	158	127	2	0	0	0	0	0	127	0	127
2060	1	1605	1551	1178	59	71	0	93	772	123	0	119	242
2061	1	1479	1479	1088	66	0	0	0	0	0	1088	0	1088
2062	2	415	398	257	26	0	0	0	0	0	257	0	257
2063	1	3478	2488	1906	57	135	0	0	45	1725	0	0	1725
2064	1	2781	2562	1892	68	112	313	234	829	0	0	404	404
2065	2	719	631	469	8	0	0	0	0	0	469	0	469
2066	1	5	5	4	0	0	0	4	0	0	0	0	0
2067	2	0	0	0	0	0	0	0	0	0	0	0	0
2068	2	284	257	194	5	0	0	0	0	0	194	0	194
2069	1	222	222	198	5	0	0	0	0	0	198	0	198
2070	1	12277	10655	7907	315	606	2628	0	4673	0	0	0	0
2071	2	279	276	217	1	0	0	0	0	0	217	0	217
2072	2	484	346	273	4	24	169	0	80	0	0	0	0
2073	1	2449	2364	1595	129	187	378	0	72	958	0	0	958
2074	2	2509	2369	1826	59	140	0	0	1106	580	0	0	580
2075	1	1145	849	637	19	0	0	0	0	0	637	0	637
2076	1	2386	1797	1303	20	0	0	0	0	0	1303	0	1303
2077	1	3348	3348	2157	146	0	0	0	0	0	2157	0	2157
2078	1	698	610	429	9	0	0	0	0	0	429	0	429
2079	1	545	508	345	22	25	0	0	49	271	0	0	271
2080	1	9087	7413	6052	93	508	326	54	4160	955	0	49	1004
2081	2	761	402	348	6	0	0	0	0	0	348	0	348
2082	2	381	364	284	8	33	2	0	212	37	0	0	37
2083	1	1244	1244	822	91	24	0	0	68	730	0	0	730
2084	2	807	605	495	8	35	68	0	392	0	0	0	0

Practice identifier	CareFirst flag (1:YES,2:NO , . :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2085	1	2375	2375	1692	130	0	0	0	0	0	1692	0	1692
2086	1	5022	3730	2895	74	219	0	0	1367	1309	0	0	1309
2087	2	500	45	34	2	0	0	0	0	0	34	0	34
2088	2	193	178	129	11	0	0	0	0	0	128	0	128
2089	2	459	279	232	2	0	0	0	0	0	232	0	232
2090	2	215	198	138	10	0	0	0	0	0	138	0	138
2091	1	266	237	178	5	0	0	0	0	0	178	0	178
2092	2	2178	1030	896	10	0	0	0	0	0	895	0	895
2093	1	1297	1170	863	26	0	0	0	0	0	863	0	863
2094	1	869	780	504	31	0	0	0	0	0	504	0	504
2095	1	9982	9982	7014	564	120	0	2305	3079	185	0	1325	1510
2096	1	4214	3721	2853	94	134	0	1170	336	447	0	766	1213
2097	1	965	872	551	33	0	0	0	0	0	551	0	551
2098	2	3896	3507	2287	120	129	0	0	236	1922	0	0	1922
2099	1	2711	2276	1721	45	70	0	0	1070	581	0	0	581
2100	1	926	820	737	3	0	0	0	0	0	737	0	737
2101	1	256	189	153	3	0	0	0	0	0	153	0	153
2102	2	19	19	16	0	0	0	0	0	0	16	0	16
2103*	.	0	0	0	0	0	0	0	0	0	0	0	0
2104	1	72	63	58	0	5	0	0	53	0	0	0	0

\* Practice was dropped due to lack of Tax-ID.

### 2011 MMPP Practices' Inclusion Criteria

Regnum	(1)- In assigned practice and in 2011 eligibility file	(2)- in criteria (1) and age <65 years	(3)- in criteria (2) and eligible for 11+ months of coverage
1012	3273	2961	2524
1027	418	385	318
1038	4798	4578	3671
1061	280	245	209
1067	791	597	533
1069	2281	2067	1816
1107	2289	2115	1777
1112	3687	3289	2970
1121	2265	1604	1484
1122	4628	4628	3994
1130	1986	1986	1781
1150	2076	1925	1724
1155	1688	1688	1504
1161	843	815	703
1202	1892	1667	1418
1212	2657	2657	2278
1224	6712	6468	5777
1225	625	476	403
1239	8018	6696	6122
1241	1852	1525	1384
1242	1059	891	821
1247	231	185	175
1248	1602	1480	1244
1249	3034	2634	2303
1264	4299	3981	3491

<b>Regnum</b>	<b>(1)- In assigned practice and in 2011 eligibility file</b>	<b>(2)- in criteria (1) and age &lt;65 years</b>	<b>(3)- in criteria (2) and eligible for 11+ months of coverage</b>
1266	580	449	418
1290	731	731	652
1305	3509	2874	2567
1306	1881	1615	1342
1310	588	331	299
1317	661	543	495
1318	750	535	441
1319	269	241	209
1328	5	3	2
1336	1167	951	826
1342	3163	2742	2459
1354	274	259	204
1369	427	391	349
1373	2250	2164	1799
1376	901	823	726
1384	215	215	177
1385	1468	1257	1073
1396	781	663	606
1397	605	490	422
1398	417	367	305
1399	513	449	374
1414	162	155	134
1435	2320	2243	1950
1441	18057	16203	14312
1461	2439	2401	2221

### 2011 Comparison Practices' Inclusion Criteria

Practice identifier	CareFirst flag (1:YES,2:NO, .:N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2001	2	0	0	0	0	0	0	0	0	0	0	0	0
2002	2	276	276	241	11	0	0	0	0	0	241	0	241
2003	1	673	673	597	27	0	0	0	0	0	597	0	597
2004	2	427	398	379	5	29	0	0	34	316	0	0	316
2005	1	13	13	9	0	0	0	0	0	0	9	0	9
2006	1	1020	959	860	50	145	0	0	289	426	0	0	426
2007	1	431	430	388	16	0	0	0	0	0	388	0	388
2008	2	498	431	379	6	0	0	0	0	0	379	0	379
2009	1	270	170	159	3	0	0	0	0	0	159	0	159
2010	1	2538	2386	2184	67	0	0	0	0	0	2184	0	2184
2011	2	37	36	32	2	0	0	0	0	0	32	0	32
2012	2	266	238	190	4	44	0	0	56	89	0	1	90
2013	1	531	531	493	25	0	0	0	0	0	493	0	493
2014	1	881	764	697	15	0	0	0	0	0	697	0	697
2015	2	1037	939	833	38	0	0	0	0	0	833	0	833
2016	1	0	0	0	0	0	0	0	0	0	0	0	0
2017	2	287	268	235	18	0	0	0	0	0	235	0	235
2018	1	20	20	19	0	10	0	0	9	0	0	0	0
2019	1	281	261	213	12	0	0	0	0	0	213	0	213
2020	2	670	3	3	5	0	0	0	0	3	0	0	3
2021	1	238	238	214	9	0	0	0	0	0	214	0	214
2022	1	7640	6499	5941	175	547	0	0	337	5057	0	0	5057
2023	1	40	39	34	2	6	0	0	4	24	0	0	24
2024	1	1681	1518	1329	49	165	47	0	133	984	0	0	984
2025	1	927	788	716	31	0	0	0	0	0	716	0	716
2026	2	572	523	451	12	0	0	0	0	0	451	0	451

Practice identifier	CareFirst flag (1:YES,2:NO, :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2027	2	5	4	4	0	0	0	0	0	0	4	0	4
2028	1	4161	3422	3135	119	291	0	0	105	2739	0	0	2739
2029	2	8	8	8	0	0	0	0	0	8	0	0	8
2030	1	727	667	585	21	56	0	0	68	461	0	0	461
2031	2	162	115	104	5	3	0	65	2	0	0	34	34
2032	1	3288	2862	2575	82	244	0	163	249	238	0	1681	1919
2033	1	582	578	449	15	23	0	21	84	245	0	76	321
2034	1	428	401	349	7	42	0	0	32	275	0	0	275
2035	2	586	586	534	22	0	0	0	0	0	534	0	534
2036	2	130	99	90	0	0	0	0	0	0	90	0	90
2037	2	19	19	17	0	2	0	0	4	11	0	0	11
2038	2	242	209	167	3	12	113	0	42	0	0	0	0
2039	2	0	0	0	0	0	0	0	0	0	0	0	0
2040	2	406	398	348	28	32	0	0	316	0	0	0	0
2041	1	1595	1023	948	17	44	180	1	11	678	0	34	712
2042	2	102	95	81	0	12	0	2	32	29	0	6	35
2043	2	36	29	27	0	0	0	0	0	0	27	0	27
2044	1	499	408	361	11	17	0	190	30	0	0	124	124
2045	1	654	484	431	6	21	0	33	14	267	0	96	363
2046	1	0	0	0	0	0	0	0	0	0	0	0	0
2047	2	1540	869	799	15	0	0	0	0	0	799	0	799
2048	1	14	9	9	0	0	0	0	0	0	9	0	9
2049	2	224	218	192	30	0	0	0	0	0	192	0	192
2050	2	2641	2324	2095	51	206	0	888	311	0	0	690	690
2051	2	296	259	230	6	24	0	0	12	194	0	0	194
2052	2	907	698	624	0	54	0	0	28	542	0	0	542
2053	2	0	0	0	0	0	0	0	0	0	0	0	0
2054	1	0	0	0	0	0	0	0	0	0	0	0	0
2055	2	219	135	121	5	0	0	0	0	0	121	0	121

Practice identifier	CareFirst flag (1:YES,2:NO, :N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2056	1	577	519	419	18	0	0	0	0	0	419	0	419
2057	1	4225	3635	3354	72	259	0	0	2236	859	0	0	859
2058	1	974	878	800	22	0	0	0	0	0	800	0	800
2059	2	193	145	135	2	0	0	0	0	0	135	0	135
2060	1	1537	1483	1307	38	89	0	77	919	135	0	87	222
2061	1	1451	1451	1274	37	0	0	0	0	0	1274	0	1274
2062	2	387	368	313	26	0	0	0	0	0	313	0	313
2063	1	3309	2273	2088	57	192	0	0	232	1664	0	0	1664
2064	1	2604	2357	2086	66	176	213	266	1012	0	0	419	419
2065	2	716	621	544	8	0	0	0	0	0	544	0	544
2066	1	4	4	4	0	0	0	3	1	0	0	0	0
2067	2	0	0	0	0	0	0	0	0	0	0	0	0
2068	2	253	225	205	5	0	0	0	0	0	205	0	205
2069	1	240	240	220	1	0	0	0	0	0	220	0	220
2070	1	11598	9846	9023	264	698	3070	0	5255	0	0	0	0
2071	2	228	226	202	1	0	0	0	0	0	202	0	202
2072	2	448	303	284	4	28	167	0	89	0	0	0	0
2073	1	2326	2233	1944	102	142	410	0	212	1180	0	0	1180
2074	2	2453	2287	2113	46	200	0	0	1436	477	0	0	477
2075	1	1074	768	706	19	0	0	0	0	0	706	0	706
2076	1	2214	1606	1463	20	0	0	0	0	0	1463	0	1463
2077	1	2992	2992	2686	81	0	0	0	0	0	2686	0	2686
2078	1	637	539	487	9	0	0	0	0	0	487	0	487
2079	1	471	428	380	21	35	0	0	116	229	0	0	229
2080	1	8539	6773	6230	93	551	409	46	4032	1145	0	47	1192
2081	2	719	355	342	6	0	0	0	0	0	342	0	342
2082	2	362	343	288	6	28	0	0	223	37	0	0	37
2083	1	1065	1065	887	64	55	0	0	33	799	0	0	799
2084	2	757	541	495	8	44	81	0	370	0	0	0	0

Practice identifier	CareFirst flag (1:YES,2:NO, .:N/A)	1- In assigned practice and in 2011 eligibility file	2- in criteria (1) and age <65 years	3- in criteria (2) and eligible for 11+ months of coverage	Unknown date of birth	Attribution algorithm criteria: YES- included from the evaluation, NO- excluded from the evaluation							Total included in the evaluation
						NO	NO	NO	NO	YES	YES	YES	
						No Visits	NPI is unknown float	NPI is furthest	NPI is unknown	NPI is unique	TaxID is unique	NPI is closest	
2085	1	2205	2205	1929	82	0	0	0	0	0	1929	0	1929
2086	1	4764	3412	3174	74	275	0	0	1439	1460	0	0	1460
2087	2	471	34	32	2	0	0	0	0	0	32	0	32
2088	2	139	130	108	11	0	0	0	0	0	108	0	108
2089	2	432	250	235	2	0	0	0	0	0	235	0	235
2090	2	175	156	136	10	0	0	0	0	0	136	0	136
2091	1	243	210	185	3	0	0	0	0	0	185	0	185
2092	2	2104	935	878	10	0	0	0	0	0	878	0	878
2093	1	1223	1082	978	26	0	0	0	0	0	978	0	978
2094	1	738	654	548	31	0	0	0	0	0	548	0	548
2095	1	9406	9406	8339	367	321	0	2609	3846	111	0	1452	1563
2096	1	3926	3382	3093	92	189	0	1212	466	475	0	751	1226
2097	1	833	733	637	32	0	0	0	0	0	637	0	637
2098	2	3593	3170	2786	116	218	0	0	375	2193	0	0	2193
2099	1	2557	2063	1875	39	189	0	0	1056	630	0	0	630
2100	1	871	755	690	3	0	0	0	0	0	690	0	690
2101	1	231	160	144	3	0	0	0	0	0	144	0	144
2102	2	15	15	14	0	0	0	0	0	0	14	0	14
2103*	.	0	0	0	0	0	0	0	0	0	0	0	0
2104	1	68	58	57	0	6	0	0	51	0	0	0	0

\* Practice was dropped due to lack of Tax-ID.

## APPENDIX U: OUTCOME MEASURE SPECIFICATIONS

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**Exhibit: Quality Measures**

<b>Assignment in Results</b>	<b>Measure – Short Name</b>	<b>Description</b>	<b>Numerator</b>	<b>Denominator</b>
<b>Q01</b>	Asthma in younger adults admission rate	All discharges of age less than 40 years old with ICD-9-CM principal diagnosis code of asthma.	Number of patients less than 40 years old per practice with one or more asthma admission in the year	Number of patients younger than 40 years old per practice with asthma
<b>Q02</b>	Chronic Obstructive Pulmonary Disorder (COPD) or Asthma in Older Adults Admission Rate	All discharges of age 40 years and older with ICD-9-CM principal diagnosis code for COPD or asthma in adults age 40 years and older.	Number of patients 40 years and older per practice with one or more COPD or asthma admission in the year	Number of patients 40 years and older per practice with COPD or asthma
<b>Q03</b>	Congestive heart failure (CHF) admission rate**	All discharges of age 18 years and older with ICD-9-CM principal diagnosis code for CHF.	Number of patients 18 years and older per practice with one or more CHF admission in the year	Number of patients 18 years and older per practice with CHF
<b>Q04</b>	Hypertension admission rate	All discharges of age 18 years and older with ICD-9-CM principal diagnosis code for hypertension	Number of patients 18 years and older per practice with one or more hypertension admission in the year	Number of patients 18 years and older per practice with hypertension
<b>Q05</b>	Diabetes short-term complications admissions rate	All discharges of age 18 years and older with ICD-9-CM principal diagnosis code for diabetes short-term complications (ketoacidosis, hyperosmolarity, coma)	Number of patients 18 years and older per practice with one or more diabetes short-term complication admission in the year	Number of patients 18 years and older per practice with diabetes
<b>Q06</b>	HbA1c Management testing	Percentage of patients 18–75 years of age with diabetes who had one or more HbA1c test(s) during the measurement year	Number of patients 18–75 years of age per practice with diabetes and one or more HbA1c tests during the year	Number of patients 18–75 years old per practice with diabetes

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
Q07	HbA1c Test for Pediatric Patients	Percentage of pediatric patients with diabetes with a HbA1c test in a 12-month measurement period	Number of pediatric patients per practice with diabetes and one or more HbA1c tests during the year	Number of pediatric patients per practice with diabetes
Q08	Breast Cancer Screening	Percentage of women age 40–69 years who had a mammogram to screen for breast cancer	Number of women 40–69 year of age with one or more mammogram during the year per practice	Number of women 40–69 years of age per practice
Q09	Cervical Cancer Screening	Percentage of women age 21–64 years who received 1 or more Pap tests to screen for cervical cancer	Number of women 21–64 years of age with one or more pap tests during the year per practice	Number of women 21–64 years of age per practice
Q13a, Q13b	Well Child Visit / First 15 months	The percentage of members who turned 15 months old during the measurement year and who had the following number of well-child visits with a PCP during their first 15 months of life: none, one through 6 well-child visits	(7 different numerators) Number of children with none, one through 6 well-child visits during the first 15 months of life per practice	Number of children turning 15 months during the year per practice
Q11a, Q11b	Well Child Visit / 3rd–6th year of life	The percentage of members 3–6 years of age who received one or more well-child visits with a PCP during the measurement year.	Number of children 3–6 years old with one or more well-child visits during the year per practice	Number of children 3-6 years during the year per practice

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
Q12a, Q12b	Adolescent well-care visits	The percentage of enrolled members 12–21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year.	Number of 12–21 year olds with one or more PCP or OB/GYN visits during the year per practice	Number of 12–21 year olds in the practice during the year
Not operationalized	Prenatal care	Timeliness of prenatal care: percentage of deliveries that received a prenatal care visit as a member of the organization in the first trimester or within 42 days of enrollment in the organization.	Number of women receiving at least one prenatal visit during the first trimester	Number of women who had a live birth during the year per practice
Q10	Postpartum care	Postpartum care: percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery	Number of women with postpartum visit between 21–56 days after live birth	Number of women who had a live birth during the year per practice

### Utilization Outcome Measures

Assignment in Results	Measure	Description	Numerator	Denominator
<b>U01a, U01b</b>	Emergency Department Visits (all)	Percentage of patients within the practice with one or more ED visits	Number of patients with one or more ED visits	Number of patients in the practice within the year
<b>U02a, U02b, U02c, U02d</b>	Emergency Department Visits (ambulatory-care sensitive)	Percentage of patients within the practice with asthma-related, CHF-related, and diabetes-related ED visits, among those patients with the condition.	Number of patients with ambulatory-care sensitive condition	Number of patients in the practice with the ambulatory-care sensitive conditions within the year
<b>U03</b>	Acute inpatient admissions (all)	Percentage of patients within the practice with inpatient hospitalizations	Number of patients within one or more inpatient hospitalization	Number of patients in the practice within the year
<b>U04a, U04b, U04c, U04d</b>	Acute inpatient admissions (ambulatory-care sensitive)	Percentage of patients within the practice with asthma-related, CHF-related and diabetes inpatient hospitalizations, among those patients with the condition.	Number of patients within one or more inpatient hospitalization due to ambulatory-care sensitive condition	Number of patients in the practice within the year with the ambulatory-care sensitive condition
<b>U05</b>	Hospital days	Average number of inpatient hospital days, among patients within the practice with at least one inpatient hospitalization.	Average number of inpatient hospital days across all patients within at least one hospitalization	Number of patients in the practice with at least one hospitalization per practice
<b>U06a, U06b</b>	Readmissions within 30 days	Percentage of patients within the practice with readmissions within 30 days, excluding transfers, among those patients with at least one readmission. Percent of CHF-readmissions.	Number of patients with at least one readmission	Number of patients in the practice during the year (also limited to CHF)

Assignment in Results	Measure	Description	Numerator	Denominator
U07	Nursing home days	Average number of nursing home days per patient within the practice, among those patients with some nursing home stay	Number of nursing home days within the year per practice	Number of patients with at least one nursing home stay during the year per practice
U08	Home health care visits	Average number of home health care visits, among those patients with at least one, within the practice.	Number of home health visits per practice	Number of patients with at least one home health visit during the year
U09	PCP office visits	Percentage of patients with one or more primary care physician office visits	Number of patients with at least one PCP visit per practice within the year	Number of patients within the practice within the year
U10	PCP office visits	Average number of physician office visits within the practice, among those patients with at least one	Number of PCP visits within the year among patients with at least one per practice	Number of patients within the year with at least one PCP visit per practice
U11	Specialty office visits	Average number of specialty physician visits within the practice, among patients with at least one	Number of specialty physician office visits within the year among patients with at least one per practice	Number of patients within the year with at least one specialty physician office visit per practice

**Exhibit: Cost Outcome Measures**

<b>Assignment in Results</b>	<b>Measure</b>	<b>Description</b>	<b>Numerator</b>	<b>Denominator</b>
<b>C01</b>	Total payments	Average total payment, among all patients within the practice	Total payments within the year within the practice	Total number of patients within the practice within the year
<b>C02</b>	Inpatient payments	Average total inpatient payments, among those with an inpatient stay	Total inpatient payments within the year within the practice	Total number of patients with inpatient payments within the practice within the year
<b>C03</b>	Outpatient payments	Average total outpatient payments, among those with outpatient services	Total outpatient payments within the year within the practice	Total number of patients with outpatient payments within the practice within the year
<b>C04</b>	ED payments	Average total ED payments, among those with an ED visit	Total ED payments within the year within the practice	Total number of patients with ED payments within the practice within the year
<b>C07</b>	Nursing home payments	Average total nursing home payments, among those with a nursing home stay	Total skilled nursing facility payments within the year within the practice	Total number of patients with skilled nursing payments within the practice within the year
<b>C06</b>	Home health payments	Average total home health payments, among those with some home health services	Total home health payments within the year within the practice	Total number of patients with home health payments within the practice within the year
<b>C05</b>	PCP office visit payments	Average total PCP office visit payments, among those with PCP visits	Total PCP payments within the year within the practice	Total number of patients with PCP payments within the practice within the year
<b>C09</b>	Special care office visit payments	Average total specialty care office visit payments, among those with special care office visits	Total specialty physician payments within the year within the practice	Total number of patients with physician specialty payments within the practice within the year

Assignment in Results	Measure	Description	Numerator	Denominator
C12	All other costs	Average total other payments	Total payments for all other services within the year within the practice	Total number of patients within the practice within the year

## APPENDIX V: DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS

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### Quality All

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>Q01. Proportion of young persons (≤ 40yrs) with asthmas with one or more asthma-related hospital admissions within the year</b>																
2010	Participating Sites	49	0.002	0.037												
	Comparison Sites	77	0.002	0.038												
	CF PCMH	48	0.002	0.045												
	Unexposed	29	0.003	0.022												
2011	Participating Sites	49	0.000	0.021	0.018	0.002	0.199	.	.	0.006	0.019	0.002	0.245	.	.	0.011
	Comparison Sites	79	0.002	0.033												
	CF PCMH	47	0.002	0.029												
	Unexposed	32	0.005	0.038												
<b>Q02. Proportion of older adults (&gt; 40 years old) with COPD or asthma with one or more asthma-related hospital admissions within the year†</b>																
2010	Participating Sites	43	0.011	0.159												
	Comparison Sites	72	0.003	0.058												
	CF PCMH	40	0.004	0.057												
	Unexposed	32	0.002	0.059												
2011	Participating Sites	45	0.006	0.069	0.245	0.058	1.029	.	.	0.107	---	---	---	.	---	---
	Comparison Sites	71	0.008	0.178												
	CF PCMH	40	0.009	0.237												
	Unexposed	31	0.003	0.026												
<b>Q03. Proportion of people with congestive heart failure (CHF) with one or more CHF-related hospital admissions within the year</b>																
2010	Participating Sites	38	0.025	0.173												
	Comparison Sites	52	0.036	0.231												
	CF PCMH	33	0.046	0.287												
	Unexposed	19	0	0												
2011	Participating Sites	40	0.046	0.217	1.242	0.409	3.774	.	.	0.748	1.209	0.397	3.682	.	.	0.780

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	50	0.046	0.265												
	CF PCMH	35	0.054	0.266												
	Unexposed	15	0.019	0.265												
<b>Q04. Proportion of people with hypertension (HTN) with one or more HTN-related hospital admissions within the year†</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.0001	0.0063												
	<b>Comparison Sites</b>	84	0	0												
	CF PCMH	49	0	0												
	Unexposed	35	0	0												
<b>2011</b>	<b>Participating Sites</b>	48	0.0004	0.0143	---	---	---		---	---	---	---	---		---	---
	<b>Comparison Sites</b>	82	0.0002	0.0085												
	CF PCMH	47	0.0002	0.0073												
	Unexposed	35	0.0003	0.0099												
<b>Q05. Proportion of diabetics (≥18 years) with one or more diabetes short-term complication-related hospital admission within the year†</b>																
<b>2010</b>	<b>Participating Sites</b>	45	0.002	0.085												
	<b>Comparison Sites</b>	77	0.001	0.020												
	CF PCMH	44	0.000	0.008												
	Unexposed	33	0.002	0.028												
<b>2011</b>	<b>Participating Sites</b>	47	0.001	0.103	0.316	0.0428	2.340	.	.	0.344	---	---	---	.	---	---
	<b>Comparison Sites</b>	76	0.001	0.119												
	CF PCMH	43	0.001	0.156												
	Unexposed	33	0.002	0.032												
<b>Q06. Proportion of diabetics (18-75 years) with one or more HbA1c management tests within the year</b>																
<b>2010</b>	<b>Participating Sites</b>	45	0.715	0.934												
	<b>Comparison Sites</b>	77	0.740	1.115												
	CF PCMH	44	0.742	1.293												
	Unexposed	33	0.735	0.837												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
2011	Participating Sites	47	0.681	0.886	0.959	0.846	1.088	.	.	0.586	0.962	0.848	1.091	.	.	0.610
	Comparison Sites	76	0.709	1.278												
	CF PCMH	43	0.715	1.487												
	Unexposed	33	0.692	0.956												
<b>Q07. Proportion of pediatric diabetics (0-17 years) with one or more HbA1c tests within the year</b>																
2010	Participating Sites	20	0.407	0.476												
	Comparison Sites	21	0.575	0.548												
	CF PCMH	15	0.647	0.534												
	Unexposed	6	0.167	0.408												
2011	Participating Sites	17	0.473	0.499	2.293	1.247	4.216	.	.	0.025	1.915	0.968	3.787	.	.	0.117
	Comparison Sites	21	0.514	0.493												
	CF PCMH	16	0.531	0.489												
	Unexposed	5	0.4	0.548												
<b>Q08. Proportion of women (40-69 years) with one or more breast cancer screening within the year</b>																
2010	Participating Sites	47	0.451	1.154												
	Comparison Sites	81	0.470	0.966												
	CF PCMH	47	0.467	0.991												
	Unexposed	34	0.480	0.937												
2011	Participating Sites	47	0.462	1.085	0.959	0.906	1.015	.	.	0.223	0.967	0.920	1.015	.	.	0.257
	Comparison Sites	82	0.481	0.916												
	CF PCMH	45	0.483	0.952												
	Unexposed	37	0.474	0.880												
<b>Q09. Proportion of women (21-64 years) with one or more cervical cancer screening within the year</b>																
2010	Participating Sites	49	0.417	1.374												
	Comparison Sites	87	0.427	1.038												
	CF PCMH	50	0.423	1.083												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	Unexposed	37	0.440	0.970												
<b>2011</b>	<b>Participating Sites</b>	49	0.386	1.365	1.048	1.000	1.099	.	.	0.097	1.044	0.990	1.091	.	.	0.109
	<b>Comparison Sites</b>	87	0.384	1.072												
	CF PCMH	50	0.379	1.036												
	Unexposed	37	0.4	1.111												
<b>Q10. Proportion of women who had live births receiving post-partum care within the year</b>																
<b>2010</b>	<b>Participating Sites</b>	46	0.229	0.575												
	<b>Comparison Sites</b>	66	0.204	0.517												
	CF PCMH	40	0.230	0.535												
	Unexposed	26	0.129	0.469												
<b>2011</b>	<b>Participating Sites</b>	49	0.182	0.664	0.690	0.480	0.990	.	.	0.091	0.800	0.541	1.183	.	.	0.348
	<b>Comparison Sites</b>	71	0.192	0.473												
	CF PCMH	45	0.210	0.478												
	Unexposed	26	0.138	0.456												
<b>Q11a. Well-child visits (3-6 years), ALL*</b>																
<b>2010</b>	<b>Participating Sites</b>	39	0.609	0.692												
	<b>Comparison Sites</b>	56	0.653	0.834												
	CF PCMH	36	0.665	0.848												
	Unexposed	20	0.513	0.629												
<b>2011</b>	<b>Participating Sites</b>	41	0.603	0.761	.	.	.	0.003	0.017	0.844	.	.	.	0.001	0.017	0.940
	<b>Comparison Sites</b>	55	0.645	0.866												
	CF PCMH	35	0.655	0.878												
	Unexposed	20	0.510	0.697												
<b>Q11b. Well-child visits (3-6 years), within attributed practice*</b>																
<b>2010</b>	<b>Participating Sites</b>	39	0.559	1.345												
	<b>Comparison Sites</b>	56	0.634	0.953												
	CF PCMH	36	0.649	0.925												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	Unexposed	20	0.456	0.763												
<b>2011</b>	<b>Participating Sites</b>	41	0.576	1.238	.	.	.	0.014	0.017	0.408	.	.	.	0.013	0.017	0.439
	<b>Comparison Sites</b>	55	0.635	0.888												
	CF PCMH	35	0.645	0.904												
	Unexposed	20	0.498	0.712												
<b>Q12a. Adolescent well-care visits (12-21 years), ALL*</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.459	1.439												
	<b>Comparison Sites</b>	83	0.565	1.530												
	CF PCMH	50	0.583	1.724												
	Unexposed	33	0.503	1.103												
<b>2011</b>	<b>Participating Sites</b>	49	0.449	1.592	.	.	.	0.029	0.013	0.031	.	.	.	0.033	0.013	0.011
	<b>Comparison Sites</b>	81	0.529	1.507												
	CF PCMH	49	0.542	1.734												
	Unexposed	32	0.475	1.015												
<b>Q12b. Adolescent well-care visits (12-21 years), within attributed practice*</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.369	2.189												
	<b>Comparison Sites</b>	83	0.512	1.851												
	CF PCMH	50	0.538	2.022												
	Unexposed	33	0.419	1.416												
<b>2011</b>	<b>Participating Sites</b>	49	0.385	2.219	.	.	.	0.054	0.013	0.000	.	.	.	0.057	0.013	0.000
	<b>Comparison Sites</b>	81	0.476	1.752												
	CF PCMH	49	0.496	1.969												
	Unexposed	32	0.392	1.223												
<b>Q13a. Proportion of children ≤15 months with a Well Child visit*</b>																
<b>2010</b>	<b>Participating Sites</b>	29	0	0												
	No Well-child visit	29	0.253	0.542												
	1 Well-Child visit	29	0.250	0.480												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	2 Well-Child visits	29	0.197	0.505												
	3 Well-Child visits	29	0.098	0.233												
	4 Well-Child visits	29	0.034	0.138												
	5 Well-Child visits	29	0.002	0.027												
	6+ Well-Child visits															
	<b>Comparison Sites</b>															
	No Well-child visit	32	0	0												
	1 Well-Child visit	32	0.257	0.441												
	2 Well-Child visits	32	0.268	0.475												
	3 Well-Child visits	32	0.213	0.402												
	4 Well-Child visits	32	0.105	0.312												
	5 Well-Child visits	32	0.047	0.145												
	6+ Well-Child visits	32	0	0												
	<b>CF PCMH</b>															
	No Well-child visit	26	0	0												
	1 Well-Child visit	26	0.252	0.421												
	2 Well-Child visits	26	0.274	0.424												
	3 Well-Child visits	26	0.217	0.426												
	4 Well-Child visits	26	0.103	0.311												
	5 Well-Child visits	26	0.043	0.120												
	6+ Well-Child visits	26	0	0												
	<b>Unexposed</b>															
	No Well-child visit	6	0	0												
	1 Well-Child visit	6	0.304	0.544												
	2 Well-Child visits	6	0.196	0.671												
	3 Well-Child visits	6	0.174	0.282												
	4 Well-Child visits	6	0.130	0.340												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	5 Well-Child visits	6	0.087	0.206												
	6+ Well-Child visits	6	0	0												
<b>Q13a. Proportion of children ≤15 months with a Well Child visit</b>																
<b>2011</b>	<b>Participating Sites</b>															
	No Well-child visit	27	0	0	.	.	.	0.027	0.026	0.299	.	.	.	0.025	0.026	0.339
	1 Well-Child visit	27	0.055	0.216	.	.	.	0.049	0.027	0.068	.	.	.	0.046	0.026	0.076
	2 Well-Child visits	27	0.073	0.327	.	.	.	0.041	0.029	0.163	.	.	.	0.040	0.029	0.175
	3 Well-Child visits	27	0.070	0.288	.	.	.	-0.010	0.028	0.706	.	.	.	-0.011	0.029	0.711
	4 Well-Child visits	27	0.094	0.337	.	.	.	0.007	0.021	0.748	.	.	.	0.008	0.022	0.712
	5 Well-Child visits	27	0.143	0.418	.	.	.	-0.065	0.045	0.142	.	.	.	-0.064	0.048	0.177
	6+ Well-Child visits	27	0.534	0.777												
	<b>Comparison Sites</b>															
	No Well-child visit		0	0												
	1 Well-Child visit	33	0.033	0.191												
	2 Well-Child visits	33	0.042	0.232												
	3 Well-Child visits	33	0.046	0.293												
	4 Well-Child visits	33	0.111	0.332												
	5 Well-Child visits	33	0.150	0.321												
	6+ Well-Child visits	33	0.598	0.649												
	<b>CF PCMH</b>															
	No Well-child visit	26	0	0												
	1 Well-Child visit	26	0.031	0.171												
	2 Well-Child visits	26	0.041	0.225												
	3 Well-Child visits	26	0.042	0.295												
	4 Well-Child visits	26	0.113	0.363												
	5 Well-Child visits	26	0.145	0.278												
	6+ Well-Child visits	26	0.606	0.603												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Unexposed</b>															
	No Well-child visit	7	0	0												
	1 Well-Child visit	7	0.059	0.263												
	2 Well-Child visits	7	0.059	0.275												
	3 Well-Child visits	7	0.118	0.257												
	4 Well-Child visits	7	0.088	0.188												
	5 Well-Child visits	7	0.235	0.429												
	6+ Well-Child visits	7	0.441	0.764												
<b>Q13b. Proportion of children ≤15 months with a Well Child visit within Attributed Practice*</b>																
<b>2010</b>	<b>Participating Sites</b>															
	No Well-child visit	29	0.055	0.394												
	1 Well-Child visit	29	0.229	0.475												
	2 Well-Child visits	29	0.244	0.465												
	3 Well-Child visits	29	0.177	0.451												
	4 Well-Child visits	29	0.096	0.229												
	5 Well-Child visits	29	0.032	0.141												
	6+ Well-Child visits	29	0	0												
	<b>Comparison Sites</b>															
	No Well-child visit	32	0.033	0.205												
	1 Well-Child visit	32	0.255	0.448												
	2 Well-Child visits	32	0.260	0.467												
	3 Well-Child visits	32	0.199	0.339												
	4 Well-Child visits	32	0.099	0.284												
	5 Well-Child visits	32	0.043	0.138												
	6+ Well-Child visits	32	0	0												
	<b>CF PCMH</b>															
	No Well-child visit	26	0.034	0.226												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	1 Well-Child visit	26	0.249	0.442												
	2 Well-Child visits	26	0.268	0.425												
	3 Well-Child visits	26	0.203	0.356												
	4 Well-Child visits	26	0.097	0.274												
	5 Well-Child visits	26	0.039	0.107												
	6+ Well-Child visits	26	0	0												
	<b>Unexposed</b>															
	No Well-child visit	6	0.022	0.060												
	1 Well-Child visit	6	0.326	0.469												
	2 Well-Child visits	6	0.174	0.611												
	3 Well-Child visits	6	0.152	0.239												
	4 Well-Child visits	6	0.130	0.340												
	5 Well-Child visits	6	0.087	0.206												
	6+ Well-Child visits	6	0	0												
<b>Q13b. Proportion of children ≤15 months with a Well Child visit within Attributed Practice</b>																
<b>2011</b>	<b>Participating Sites</b>							.	.	.	.	.	.	.	.	.
	No Well-child visit	27	0.016	0.222	.	.	.	-0.014	0.012	0.243	.	.	.	-0.012	0.011	0.283
	1 Well-Child visit	27	0.065	0.237	.	.	.	0.056	0.025	0.025	.	.	.	0.053	0.026	0.039
	2 Well-Child visits	27	0.075	0.335	.	.	.	0.029	0.028	0.294	.	.	.	0.026	0.026	0.326
	3 Well-Child visits	27	0.075	0.314	.	.	.	0.044	0.029	0.134	.	.	.	0.044	0.030	0.141
	4 Well-Child visits	27	0.098	0.362	.	.	.	-0.015	0.026	0.564	.	.	.	-0.016	0.027	0.568
	5 Well-Child visits	27	0.139	0.368	.	.	.	0.000	0.022	0.995	.	.	.	0.002	0.023	0.944
	6+ Well-Child visits	27	0.504	0.778	.	.	.	-0.052	0.045	0.246	.	.	.	-0.052	0.048	0.280
	<b>Comparison Sites</b>															
	No Well-child visit	33	0.008	0.121												
	1 Well-Child visit	33	0.036	0.208												
	2 Well-Child visits	33	0.062	0.281												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	3 Well-Child visits	33	0.053	0.335												
	4 Well-Child visits	33	0.116	0.331												
	5 Well-Child visits	33	0.150	0.341												
	6+ Well-Child visits	33	0.556	0.685												
	<b>CF PCMH</b>															
	No Well-child visit	26	0.008	0.137												
	1 Well-Child visit	26	0.034	0.195												
	2 Well-Child visits	26	0.062	0.289												
	3 Well-Child visits	26	0.047	0.330												
	4 Well-Child visits	26	0.118	0.362												
	5 Well-Child visits	26	0.145	0.307												
	6+ Well-Child visits	26	0.564	0.643												
	<b>Unexposed</b>															
	No Well-child visit	7	0	0												
	1 Well-Child visit	7		0.263												
	2 Well-Child visits	7	0.059	0.275												
	3 Well-Child visits	7	0.147	0.302												
	4 Well-Child visits	7	0.088	0.188												
	5 Well-Child visits	7	0.235	0.429												
	6+ Well-Child visits	7	0.412	0.810												

\* Measure is defined as a rate.

‡ Measure has missing values in the unadjusted or adjusted outputs due to inadequate sample size or because the model failed to converge.

### Quality Both

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>Q01. Proportion of young persons (<math>\leq 40</math> yrs) with asthmas with one or more asthma-related hospital admissions within the year†</b>																
2010	Participating Sites	49	0.002	0.025												
	Comparison Sites	76	0	0												
	CF PCMH	48	0	0												
	Unexposed	28	0	0												
2011	Participating Sites	49	0.000	0.027	---	---	---	.	---	---	---	---	---	.	---	---
	Comparison Sites	76	0.001	0.008												
	CF PCMH	47	0.001	0.010												
	Unexposed	29	0	0												
<b>Q02. Proportion of older adults (<math>&gt; 40</math> years old) with COPD or asthma with one or more asthma-related hospital admissions within the year</b>																
2010	Participating Sites	43	0.007	0.091												
	Comparison Sites	68	0.002	0.054												
	CF PCMH	39	0.003	0.072												
	Unexposed	29	0	0												
2011	Participating Sites	44	0.006	0.067	0.167	0.035	0.801	.		0.060	---	---	---	.	---	---
	Comparison Sites	70	0.006	0.064												
	CF PCMH	40	0.006	0.082												
	Unexposed	30	0.005	0.029												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>Q03. Proportion of people with congestive heart failure (CHF) with one or more CHF-related hospital admissions within the year</b>																
2010	Participating Sites	37	0.023	0.200												
	Comparison Sites	44	0.037	0.222												
	CF PCMH	28	0.049	0.275												
	Unexposed	16	0	0												
2011	Participating Sites	40	0.040	0.161	2.224	0.687	7.210	.		0.263	2.228	0.745	6/664	.		0.229
	Comparison Sites	44	0.030	0.113												
	CF PCMH	32	0.041	0.126												
	Unexposed	12	0	0												
<b>Q04. Proportion of people with hypertension (HTN) with one or more HTN-related hospital admissions within the year†</b>																
2010	Participating Sites	49	0.0002	0.0067	---	---	---	.	---	---	---	---	---	.	---	---
	Comparison Sites	79	0	0												
	CF PCMH	46	0	0												
	Unexposed	33	0	0												
2011	Participating Sites	48	0.0004	0.0094												
	Comparison Sites	79	0.0002	0.0082												
	CF PCMH	46	0.0002	0.0055												
	Unexposed	33	0.0005	0.0108												
<b>Q05. Proportion of diabetics (≥18 years) with one or more diabetes short-term complication-related hospital admission within the year</b>																
2010	Participating Sites	45	0.001	0.025												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	76	0.001	0.022												
	CF PCMH	44	0.001	0.010												
	Unexposed	32	0.002	0.030												
<b>2011</b>	<b>Participating Sites</b>	45	0.001	0.086	1.413	0.204	9.775	.	.	0.769	---	---	---	.	---	---
	<b>Comparison Sites</b>	74	0.001	0.119												
	CF PCMH	42	0.000	0.156												
	Unexposed	32	0.002	0.036												
<b>Q06. Proportion of diabetics (18-75 years) with one or more HbA1c management tests within the year</b>																
<b>2010</b>	<b>Participating Sites</b>	45	0.718	0.894												
	<b>Comparison Sites</b>	76	0.744	1.001												
	CF PCMH	44	0.743	1.127												
	Unexposed	32	0.745	0.813												
<b>2011</b>	<b>Participating Sites</b>	45	0.673	0.870	1.027	0.865	1.219	.	.	0.800	1.046	0.870	1.258	.	.	0.688
	<b>Comparison Sites</b>	74	0.687	1.146												
	CF PCMH	42	0.688	1.300												
	Unexposed	32	0.684	0.925												
<b>Q07. Proportion of pediatric diabetics (0-17 years) with one or more HbA1c tests within the year</b>																
<b>2010</b>	<b>Participating Sites</b>	18	0.447	0.492												
	<b>Comparison Sites</b>	19	0.563	0.511												
	CF PCMH	15	0.607	0.501												
	Unexposed	4	0.25	0.5												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
2011	Participating Sites	14	0.395	0.441	1.376	0.643	2.946	.	.	0.490	1.344	0.605	2.989	.	.	0.542
	Comparison Sites	15	0.500	0.488												
	CF PCMH	11	0.550	0.478												
	Unexposed	4	0.25	0.5												
<b>Q08. Proportion of women (40-69 years) with one or more breast cancer screening within the year</b>																
2010	Participating Sites	46	0.460	1.048												
	Comparison Sites	76	0.488	0.816												
	CF PCMH	44	0.486	0.797												
	Unexposed	32	0.494	0.850												
2011	Participating Sites	47	0.467	0.976	1.001	0.952	1.053	.	.	0.973	0.999	0.953	1.048	.	.	0.977
	Comparison Sites	76	0.483	0.802												
	CF PCMH	44	0.483	0.795												
	Unexposed	32	0.482	0.824												
<b>Q09. Proportion of women (21-64 years) with one or more cervical cancer screening within the year</b>																
2010	Participating Sites	49	0.425	1.191												
	Comparison Sites	82	0.434	0.918												
	CF PCMH	47	0.428	0.937												
	Unexposed	35	0.450	0.881												
2011	Participating Sites	49	0.369	1.137	1.090	1.029	1.153	.	.	0.013	1.089	1.030	1.151	.	.	0.012
	Comparison Sites	85	0.365	0.929												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	50	0.353	0.825												
	Unexposed	35	0.393	1.008												
<b>Q10. Proportion of women who had live births receiving post-partum care within the year</b>																
<b>2010</b>	<b>Participating Sites</b>	45	0.232	0.572												
	<b>Comparison Sites</b>	56	0.212	0.517												
	CF PCMH	33	0.237	0.519												
	Unexposed	23	0.149	0.509												
<b>2011</b>	<b>Participating Sites</b>	48	0.184	0.593	0.762	0.479	1.214	.	.	0.337	0.771	0.488	1.218	.	.	0.350
	<b>Comparison Sites</b>	56	0.199	0.494												
	CF PCMH	34	0.214	0.478												
	Unexposed	22	0.160	0.523												
<b>Q11a. Well-child visits (3-6 years), ALL*</b>																
<b>2010</b>	<b>Participating Sites</b>	38	0.615	0.628												
	<b>Comparison Sites</b>	48	0.665	0.823												
	CF PCMH	32	0.675	0.840												
	Unexposed	16	0.524	0.659												
<b>2011</b>	<b>Participating Sites</b>	39	0.599	0.770	.	.	.	-0.008	0.020	0.694	.	.	.	-0.008	0.020	0.707
	<b>Comparison Sites</b>	49	0.658	0.763												
	CF PCMH	33	0.670	0.752												
	Unexposed	16	0.497	0.607												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>Q11b. Well-child visits (3-6 years), within attributed practice*</b>																
2010	Participating Sites	38	0.563	1.223												
	Comparison Sites	48	0.645	0.894												
	CF PCMH	32	0.658	0.873												
	Unexposed	16	0.470	0.751												
2011	Participating Sites	39	0.567	1.169	.	.	.	0.001	0.019	0.948	.	.	.	0.001	0.019	0.946
	Comparison Sites	49	0.649	0.770												
	CF PCMH	33	0.660	0.772												
	Unexposed	16	0.497	0.607												
<b>Q12a. Adolescent well-care visits (12-21 years ), ALL*</b>																
2010	Participating Sites	49	0.464	1.243												
	Comparison Sites	80	0.588	1.311												
	CF PCMH	49	0.605	1.474												
	Unexposed	31	0.528	0.946												
2011	Participating Sites	49	0.440	1.319	.	.	.	0.036	0.015	0.019	.	.	.	0.040	0.016	0.010
	Comparison Sites	80	0.534	1.315												
	CF PCMH	49	0.549	1.500												
	Unexposed	31	0.473	0.895												
<b>Q12b. Adolescent well-care visits (12-21 years), within attributed practice*</b>																
2010	Participating Sites	49	0.365	1.936												
	Comparison	80	0.532	1.580												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Sites</b>															
	CF PCMH	49	0.557	1.738												
	Unexposed	31	0.443	1.189												
<b>2011</b>	<b>Participating Sites</b>	49	0.368	1.850	.	.	.	0.062	0.014	0.000	.	.	.	0.065	0.014	0.000
	<b>Comparison Sites</b>	80	0.479	1.506												
	CF PCMH	49	0.502	1.687												
	Unexposed	31	0.390	1.049												
<b>Q13a. Proportion of children ≤15 months with a Well Child visit*</b>																
<b>2010</b>	<b>Participating Sites</b>															
	No Well-child visit	27	0.252	0.574												
	1 Well-Child visit	27	0.256	0.392												
	2 Well-Child visits	27	0.208	0.449												
	3 Well-Child visits	27	0.102	0.231												
	4 Well-Child visits	27	0.033	0.175												
	5 Well-Child visits	27	0.002	0.031												
	6+ Well-Child visits															
	<b>Comparison Sites</b>															
	No Well-child visit	26	0	0												
	1 Well-Child visit	26	0.235	0.450												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	2 Well-Child visits	26	0.270	0.541												
	3 Well-Child visits	26	0.228	0.447												
	4 Well-Child visits	26	0.104	0.297												
	5 Well-Child visits	26	0.052	0.156												
	6+ Well-Child visits	26	0	0												
	<b>CF PCMH</b>															
	No Well-child visit	22	0	0												
	1 Well-Child visit	22	0.229	0.430												
	2 Well-Child visits	22	0.278	0.479												
	3 Well-Child visits	22	0.232	0.467												
	4 Well-Child visits	22	0.100	0.305												
	5 Well-Child visits	22	0.049	0.135												
	6+ Well-Child visits	22	0	0												
	<b>Unexposed</b>															
	No Well-child visit	4	0	0												
	1 Well-Child visit	4	0.303	0.582												
	2 Well-Child visits	4	0.182	0.858												
	3 Well-Child	4	0.182	0.341												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	visits															
	4 Well-Child visits	4	0.152	0.239												
	5 Well-Child visits	4	0.091	0.236												
	6+ Well-Child visits	4	0	0												
<b>2011</b>	<b>Participating Sites</b>															
	No Well-child visit	26	0	0				-0.007	0.033	0.828	.	.	.	-0.009	0.031	0.765
	1 Well-Child visit	26	0.017	0.155				0.029	0.032	0.367	.	.	.	0.027	0.032	0.404
	2 Well-Child visits	26	0.025	0.215				0.037	0.032	0.247	.	.	.	0.040	0.034	0.236
	3 Well-Child visits	26	0.038	0.268				-0.004	0.028	0.879	.	.	.	-0.004	0.028	0.873
	4 Well-Child visits	26	0.070	0.227				0.032	0.035	0.367	.	.	.	0.032	0.037	0.378
	5 Well-Child visits	26	0.173	0.469				-0.059	0.054	0.279	.	.	.	-0.059	0.055	0.277
	6+ Well-Child visits	26	0.666	0.651												
	<b>Comparison Sites</b>															
	No Well-child visit	27	0	0												
	1 Well-Child visit	27	0.006	0.050												
	2 Well-Child visits	27	0.009	0.084												
	3 Well-Child visits	27	0.020	0.184												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	4 Well-Child visits	27	0.076	0.344												
	5 Well-Child visits	27	0.160	0.428												
	6+ Well-Child visits	27	0.723	0.636												
	<b>CF PCMH</b>															
	No Well-child visit	21	0	0												
	1 Well-Child visit	21	0.006	0.056												
	2 Well-Child visits	21	0.009	0.095												
	3 Well-Child visits	21	0.012	0.110												
	4 Well-Child visits	21	0.078	0.387												
	5 Well-Child visits	21	0.149	0.353												
	6+ Well-Child visits	21	0.739	0.606												
	<b>Unexposed</b>															
	No Well-child visit	6	0	0												
	1 Well-Child visit	6	0	0												
	2 Well-Child visits	6	0	0												
	3 Well-Child visits	6	0.143	0.247												
	4 Well-Child visits	6	0.048	0.102												
	5 Well-Child	6	0.333	0.566												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	visits															
	6+ Well-Child visits	6	0.476	0.601												
<b>Q13b. Proportion of children ≤15 months with a Well Child visit within Attributed Practice*</b>																
<b>2010</b>	<b>Participating Sites</b>															
	No Well-child visit	27	0.058	0.427												
	1 Well-Child visit	27	0.225	0.478												
	2 Well-Child visits	27	0.252	0.409												
	3 Well-Child visits	27	0.187	0.401												
	4 Well-Child visits	27	0.098	0.222												
	5 Well-Child visits	27	0.033	0.158												
	6+ Well-Child visits	27	0	0												
	<b>Comparison Sites</b>															
	No Well-child visit	26	0.032	0.125												
	1 Well-Child visit	26	0.243	0.447												
	2 Well-Child visits	26	0.255	0.511												
	3 Well-Child visits	26	0.213	0.377												
	4 Well-Child visits	26	0.099	0.239												
	5 Well-Child	26	0.047	0.146												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	visits															
	6+ Well-Child visits	26	0	0												
	<b>CF PCMH</b>															
	No Well-child visit	22	0.032	0.133												
	1 Well-Child visit	22	0.235	0.440												
	2 Well-Child visits	22	0.264	0.456												
	3 Well-Child visits	22	0.218	0.388												
	4 Well-Child visits	22	0.094	0.235												
	5 Well-Child visits	22	0.043	0.119												
	6+ Well-Child visits	22	0	0												
	<b>Unexposed</b>															
	No Well-child visit	4	0.030	0.076												
	1 Well-Child visit	4	0.333	0.459												
	2 Well-Child visits	4	0.152	0.772												
	3 Well-Child visits	4	0.152	0.291												
	4 Well-Child visits	4	0.152	0.239												
	5 Well-Child visits	4	0.091	0.236												
	6+ Well-Child visits	4	0	0												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>2011</b>	<b>Participating Sites</b>															
	No Well-child visit	26	0.025	0.315	.	.	.	-0.005	0.013	0.679	.	.	.	-0.003	0.012	0.793
	1 Well-Child visit	26	0.027	0.171	.	.	.	0.035	0.028	0.207	.	.	.	0.031	0.026	0.236
	2 Well-Child visits	26	0.027	0.219	.	.	.	0.003	0.032	0.919	.	.	.	0.004	0.031	0.910
	3 Well-Child visits	26	0.047	0.342	.	.	.	0.049	0.033	0.141	.	.	.	0.050	0.034	0.138
	4 Well-Child visits	26	0.074	0.268	.	.	.	-0.013	0.026	0.622	.	.	.	-0.013	0.025	0.615
	5 Well-Child visits	26	0.165	0.425	.	.	.	0.007	0.034	0.836	.	.	.	0.008	0.035	0.829
	6+ Well-Child visits	26	0.624	0.658	.	.	.	-0.044	0.058	0.451	.	.	.	-0.044	0.058	0.443
	<b>Comparison Sites</b>															
	No Well-child visit	27	0.009	0.088												
	1 Well-Child visit	27	0.009	0.098												
	2 Well-Child visits	27	0.026	0.211												
	3 Well-Child visits	27	0.023	0.227												
	4 Well-Child visits	27	0.087	0.365												
	5 Well-Child visits	27	0.172	0.423												
	6+ Well-Child visits	27	0.668	0.690												
	<b>CF PCMH</b>															

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					ROR	ROR LCL	ROR UCL	Estimate	SE	P-value	ROR	ROR LCL	ROR UCL	Estimate	SE	P-value
	No Well-child visit	21	0.009	0.100												
	1 Well-Child visit	21	0.009	0.111												
	2 Well-Child visits	21	0.028	0.239												
	3 Well-Child visits	21	0.012	0.110												
	4 Well-Child visits	21	0.090	0.411												
	5 Well-Child visits	21	0.161	0.352												
	6+ Well-Child visits	21	0.683	0.667												
	<b>Unexposed</b>															
	No Well-child visit	6	0	0												
	1 Well-Child visit	6	0	0												
	2 Well-Child visits	6	0	0												
	3 Well-Child visits	6	0.190	0.307												
	4 Well-Child visits	6	0.048	0.102												
	5 Well-Child visits	6	0.333	0.566												
	6+ Well-Child visits	6	0.429	0.665												
	* Measure is defined as a rate.															
‡ Measure has missing values in the unadjusted or adjusted outputs due to inadequate sample size or because the model failed to converge.																

### Utilization All

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>U01a. Proportion of patients with one or more ED visits</b>																
2010	Participating Sites	50	0.176	1.629												
	Comparison Sites	89	0.159	0.904												
	CF PCMH	51	0.159	1.069												
	Unexposed	38	0.162	0.630												
2011	Participating Sites	50	0.182	1.760	0.990	0.953	1.028	.	.	0.651	0.992	0.956	1.029	.	.	0.716
	Comparison Sites	88	0.166	1.024												
	CF PCMH	50	0.163	1.217												
	Unexposed	38	0.176	0.680												
<b>U01b Mean number of ED visits among all patients*</b>																
2010	Participating Sites	49	1.444	2.132												
	Comparison Sites	86	1.391	1.494												
	CF PCMH	50	1.393	1.795												
	Unexposed	36	1.386	0.951												
2011	Participating Sites	49	1.466	2.279	.	.	.	-0.007	0.018	0.694	.	.	.	-0.010	0.018	0.567
	Comparison Sites	86	1.419	1.590												
	CF PCMH	49	1.415	1.973												
	Unexposed	37	1.435	0.873												
<b>U02a. Proportion of patients with Asthma, CHF, or Diabetes with one or more ED visits</b>																
2010	Participating Sites	49	0.023	0.267												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	86	0.021	0.190												
	CF PCMH	50	0.021	0.204												
	Unexposed	36	0.019	0.172												
<b>2011</b>	<b>Participating Sites</b>	49	0.023	0.281	1.192	0.923	1.539	.	.	0.258	1.166	0.903	1.504	.	.	0.322
	<b>Comparison Sites</b>	86	0.016	0.177												
	CF PCMH	50	0.017	0.198												
	Unexposed	36	0.015	0.145												
<b>U02b. Proportion of patients with Asthma with one or more Asthma-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.042	0.320												
	<b>Comparison Sites</b>	83	0.040	0.231												
	CF PCMH	48	0.040	0.251												
	Unexposed	35	0.041	0.204												
<b>2011</b>	<b>Participating Sites</b>	49	0.040	0.324	1.192	0.928	1.532	.	.	0.248	1.186	0.923	1.525	.	.	0.263
	<b>Comparison Sites</b>	84	0.031	0.227												
	CF PCMH	49	0.031	0.231												
	Unexposed	35	0.034	0.225												
<b>U02c. Proportion of patients with CHF with one or more CHF-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	39	0.033	0.159												
	<b>Comparison Sites</b>	52	0.024	0.189												
	CF PCMH	33	0.026	0.162												
	Unexposed	19	0.018	0.234												
<b>2011</b>	<b>Participating Sites</b>	40	0.039	0.272	1.214	0.262	5.623	.	.	0.835	1.574	0.337	7.359	.	.	0.628
	<b>Comparison Sites</b>	51	0.017	0.109												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	36	0.022	0.128												
	Unexposed	15	0	0												
<b>U02d. Proportion of patients with Diabetes with one or more Diabetes-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	48	0.001	0.030												
	<b>Comparison Sites</b>	84	0.001	0.026												
	CF PCMH	49	0.001	0.034												
	Unexposed	35	0	0												
<b>2011</b>	<b>Participating Sites</b>	48	0.001	0.037	0.513	0.0092	2.849	.	0.535	0.522	---	---	---	.	---	---
	<b>Comparison Sites</b>	83	0.000	0.017												
	CF PCMH	48	0.001	0.022												
	Unexposed	35	0	0												
<b>U03. Proportion of patients with one or more inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.056	0.543												
	<b>Comparison Sites</b>	89	0.054	0.495												
	CF PCMH	51	0.054	0.564												
	Unexposed	38	0.055	0.390												
<b>2011</b>	<b>Participating Sites</b>	50	0.055	0.514	1.022	0.925	1.129	.	.	0.721	1.016	0.930	1.111	.	.	0.763
	<b>Comparison Sites</b>	88	0.051	0.479												
	CF PCMH	50	0.050	0.565												
	Unexposed	38	0.055	0.334												
<b>U04a. Proportion of patients with Asthma, CHF, or Diabetes with one or more inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.011	0.123												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	86	0.010	0.090												
	CF PCMH	50	0.010	0.102												
	Unexposed	36	0.010	0.071												
<b>2011</b>	<b>Participating Sites</b>	49	0.011	0.123	0.984	0.693	1.397	.	.	0.939	1.020	0.730	1.425	.	.	0.924
	<b>Comparison Sites</b>	86	0.009	0.163												
	CF PCMH	50	0.009	0.195												
	Unexposed	36	0.007	0.104												
<b>U04b. Proportion of patients with Asthma with one or more Asthma-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.011	0.126												
	<b>Comparison Sites</b>	83	0.010	0.094												
	CF PCMH	48	0.011	0.108												
	Unexposed	35	0.008	0.071												
<b>2011</b>	<b>Participating Sites</b>	49	0.011	0.095	0.999	0.631	1.581	.	.	0.996	1.001	0.631	1.589	.	.	0.997
	<b>Comparison Sites</b>	84	0.009	0.105												
	CF PCMH	49	0.009	0.111												
	Unexposed	35	0.007	0.096												
<b>U04c. Proportion of patients with CHF with one or more CHF-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	39	0.079	0.213												
	<b>Comparison Sites</b>	52	0.083	0.264												
	CF PCMH	33	0.082	0.288												
	Unexposed	19	0.088	0.224												
<b>2011</b>	<b>Participating Sites</b>	40	0.085	0.246	1.070	0.535	2.143	.	.	0.872	1.072	0.523	2.194	.	.	0.874
	<b>Comparison Sites</b>	51	0.084	0.352												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	36	0.097	0.364												
	Unexposed	15	0.038	0.319												
<b>U04d. Proportion of patients with Diabetes with one or more Diabetes-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	48	0.005	0.075												
	<b>Comparison Sites</b>	84	0.004	0.124												
	CF PCMH	49	0.003	0.158												
	Unexposed	35	0.006	0.047												
<b>2011</b>	<b>Participating Sites</b>	48	0.004	0.111	0.501	0.180	1.397	.	.	0.268	0.506	0.181	1.417	.	.	0.276
	<b>Comparison Sites</b>	83	0.004	0.134												
	CF PCMH	48	0.004	0.175												
	Unexposed	35	0.004	0.033												
<b>U05. Mean inpatient hospital days among patients with inpatient stays*</b>																
<b>2010</b>	<b>Participating Sites</b>	49	4.284	8.155												
	<b>Comparison Sites</b>	84	4.549	9.732												
	CF PCMH	49	4.488	11.343												
	Unexposed	35	4.755	6.967												
<b>2011</b>	<b>Participating Sites</b>	49	4.654	10.679	.	.	.	0.270	0.283	0.341	.	.	.	0.239	0.279	0.393
	<b>Comparison Sites</b>	85	4.634	11.701												
	CF PCMH	49	4.469	9.653												
	Unexposed	36	5.195	13.906												
<b>U06a. Proportion of patients with inpatient stays with readmissions within 30 days</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.122	0.557												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	84	0.122	0.460												
	CF PCMH	49	0.128	0.509												
	Unexposed	35	0.101	0.375												
<b>2011</b>	<b>Participating Sites</b>	49	0.122	0.738	1.134	0.801	1.607	.	.	0.551	1.117	0.788	1.583	.	.	0.601
	<b>Comparison Sites</b>	85	0.115	0.619												
	CF PCMH	49	0.119	0.523												
	Unexposed	36	0.100	0.735												
<b>U06b. Proportion of patients with CHF-related inpatient stays with readmissions due to CHF within 30 days†</b>																
<b>2010</b>	<b>Participating Sites</b>	17	0.034	0.171												
	<b>Comparison Sites</b>	16	0	0												
	CF PCMH	12	0	0												
	Unexposed	4	0	0												
<b>2011</b>	<b>Participating Sites</b>	16	0.054	0.305	---	---	---		---	---	---	---	---		---	---
	<b>Comparison Sites</b>	13	0	0												
	CF PCMH	11	0	0												
	Unexposed	2	0	0												
<b>U07. Mean nursing home days among patients with nursing home stays*</b>																
<b>2010</b>	<b>Participating Sites</b>	27	18.256	16.014												
	<b>Comparison Sites</b>	35	15.833	19.729												
	CF PCMH	24	16.759	22.061												
	Unexposed	11	13.750	13.748												
<b>2011</b>	<b>Participating Sites</b>	28	23.607	24.201	.	.	.	1.311	4.296	0.760	.	.	.	0.640	3.905	0.870
	<b>Comparison Sites</b>	34	19.867	21.432												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	24	18.709	21.387												
	Unexposed	10	23.050	22.016												
<b>U08. Mean home health care visits among those receiving home health care*</b>																
<b>2010</b>	<b>Participating Sites</b>	45	2.792	6.143												
	<b>Comparison Sites</b>	60	2.894	11.344												
	CF PCMH	41	3.010	13.586												
	Unexposed	19	2.481	3.308												
<b>2011</b>	<b>Participating Sites</b>	42	3.038	3.477	.	.	.	0.382	0.422	0.366	.	.	.	0.333	0.434	0.442
	<b>Comparison Sites</b>	51	2.710	2.950												
	CF PCMH	34	2.513	2.693												
	Unexposed	17	3.104	3.334												
<b>U09. Proportion of patients with one or more attributed practice office visits</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.863	1.631												
	<b>Comparison Sites</b>	89	0.963	1.018												
	CF PCMH	51	0.971	0.734												
	Unexposed	38	0.937	1.205												
<b>2011</b>	<b>Participating Sites</b>	50	0.897	1.748	1.742	1.439	2.109	.	.	0.000	1.747	1.442	2.116	.	.	0.000
	<b>Comparison Sites</b>	88	0.947	1.939												
	CF PCMH	50	0.962	1.020												
	Unexposed	38	0.890	2.484												
<b>U10. Mean attributed practice office visits among patients with one or more attributed practice visits*</b>																
<b>2010</b>	<b>Participating Sites</b>	50	2.775	15.609												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model					Adjusted Model						
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	89	2.853	12.199												
	CF PCMH	51	2.895	14.057												
	Unexposed	38	2.705	8.872												
<b>2011</b>	<b>Participating Sites</b>	50	2.818	15.888	.	.	.	-0.087	0.042	0.037	.	.	.	0.002	0.036	0.954
	<b>Comparison Sites</b>	88	2.989	12.828												
	CF PCMH	50	3.016	14.938												
	Unexposed	38	2.881	9.345												
<b>U11. Mean non-attributed practice office visits among patients with one or more non-attributed practice physician visits</b>																
<b>2010</b>	<b>Participating Sites</b>	50	3.340	10.651												
	<b>Comparison Sites</b>	89	3.457	10.096												
	CF PCMH	51	3.389	11.037												
	Unexposed	38	3.670	8.092												
<b>2011</b>	<b>Participating Sites</b>	50	3.268	12.233	.	.	.	-0.094	0.034	0.006	.	.	.	-0.109	0.031	0.000
	<b>Comparison Sites</b>	88	3.474	11.442												
	CF PCMH	50	3.404	13.272												
	Unexposed	38	3.710	7.675												
<b>U12. Mean hospice days among patients with hospice stays (ADDED)*</b>																
<b>2010</b>	<b>Participating Sites</b>	5	56.833	52.916	.	.	.	-24.088	38.174	0.528	.	.	.	15.458	33.457	0.644
	<b>Comparison Sites</b>	3	26.333	22.143												
	CF PCMH	3	26.333	22.143												
	Unexposed	0	.	.												
<b>2011</b>	<b>Participating Sites</b>	12	42.714	72.655												
	<b>Comparison Sites</b>	5	36.333	70.038												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	4	47.500	77.728												
	Unexposed	1	14	.												
<p>* Measure is defined as a rate.</p> <p>‡ Measure has missing values in the unadjusted or adjusted outputs due to inadequate sample size or because the model failed to converge.</p>																

### Utilization Both

Year	Analysis Sites	N	Mean	SD	Unadjusted Model					Adjusted Model						
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>U01a. Proportion of patients with one or more ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.177	1.497												
	<b>Comparison Sites</b>	88	0.161	0.746												
	CF PCMH	50	0.160	0.862												
	Unexposed	38	0.162	0.569												
<b>2011</b>	<b>Participating Sites</b>	50	0.184	1.473	1.011	0.961	1.063	.	.	0.673	1.014	0.964	1.066	.	.	0.589
	<b>Comparison Sites</b>	88	0.166	0.825												
	CF PCMH	50	0.163	0.939												
	Unexposed	38	0.174	0.641												
<b>U01b Mean number of ED visits among all patients*</b>																
<b>2010</b>	<b>Participating Sites</b>	49	1.439	2.061												
	<b>Comparison Sites</b>	85	1.376	1.380												
	CF PCMH	50	1.376	1.562												
	Unexposed	35	1.378	1.091	.	.	.	.	.	.	.	.	.	.	.	.
<b>2011</b>	<b>Participating Sites</b>	49	1.469	2.175	.	.	.	0.012	0.021	0.562	.	.	.	0.004	0.020	0.862
	<b>Comparison Sites</b>	86	1.394	1.071												
	CF PCMH	49	1.384	1.221												
	Unexposed	37	1.427	0.816												
<b>U02a. Proportion of patients with Asthma, CHF, or Diabetes with one or more ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.023	0.255												
	<b>Comparison Sites</b>	85	0.020	0.170												
	CF PCMH	50	0.020	0.182												
	Unexposed	35	0.018	0.154												
<b>2011</b>	<b>Participating Sites</b>	49	0.021	0.216	1.130	0.853	1.498	.	.	0.395	1.152	0.873	1.522	.	.	0.317

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	85	0.015	0.151												
	CF PCMH	50	0.016	0.164												
	Unexposed	35	0.012	0.131												
<b>U02b. Proportion of patients with Asthma with one or more Asthma-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.041	0.330												
	<b>Comparison Sites</b>	80	0.038	0.204												
	CF PCMH	48	0.037	0.209												
	Unexposed	32	0.040	0.200												
<b>2011</b>	<b>Participating Sites</b>	49	0.037	0.265	1.217	0.881	1.681	.	.	0.233	1.198	0.873	1.645	.	.	0.263
	<b>Comparison Sites</b>	81	0.029	0.206												
	CF PCMH	49	0.029	0.204												
	Unexposed	32	0.028	0.212												
<b>U02c. Proportion of patients with CHF with one or more CHF-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	38	0.037	0.165												
	<b>Comparison Sites</b>	44	0.031	0.230												
	CF PCMH	28	0.033	0.220												
	Unexposed	16	0.024	0.255												
<b>2011</b>	<b>Participating Sites</b>	40	0.042	0.287	3.118	0.392	24.787	.	.	0.282	4.116	0.495	34.229	.	.	0.190
	<b>Comparison Sites</b>	45	0.012	0.108												
	CF PCMH	33	0.016	0.125												
	Unexposed	12	0	0												
<b>U02d. Proportion of patients with Diabetes with one or more Diabetes-related ED visits</b>																
<b>2010</b>	<b>Participating Sites</b>	48	0.001	0.032												
	<b>Comparison Sites</b>	83	0.001	0.029												
	CF PCMH	49	0.001	0.038												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	Unexposed	34	0	0												
<b>2011</b>	<b>Participating Sites</b>	48	0.000	0.015	0.422	0.056	3.188	.	.	0.403	---	---	---	.	---	---
	<b>Comparison Sites</b>	81	0.001	0.019												
	CF PCMH	47	0.001	0.025												
	Unexposed	34	0	0												
<b>U03. Proportion of patients with one or more inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.056	0.522												
	<b>Comparison Sites</b>	88	0.054	0.452												
	CF PCMH	50	0.053	0.527												
	Unexposed	38	0.057	0.332												
<b>2011</b>	<b>Participating Sites</b>	50	0.055	0.517	1.090	0.955	1.243	.	.	0.200	1.071	0.955	1.199	.	.	0.240
	<b>Comparison Sites</b>	88	0.049	0.455												
	CF PCMH	50	0.047	0.532												
	Unexposed	38	0.055	0.317												
<b>U04a. Proportion of patients with Asthma, CHF, or Diabetes with one or more inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.010	0.122	1.020	0.671	1.551	.	.	0.925	1.029	0.679	1.560	.	.	0.892
	<b>Comparison Sites</b>	85	0.008	0.081												
	CF PCMH	50	0.007	0.086												
	Unexposed	35	0.010	0.074												
<b>2011</b>	<b>Participating Sites</b>	49	0.010	0.094												
	<b>Comparison Sites</b>	85	0.007	0.152												
	CF PCMH	50	0.008	0.180												
	Unexposed	35	0.007	0.101												
<b>U04b. Proportion of patients with Asthma with one or more Asthma-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.011	0.118												
	<b>Comparison Sites</b>	80	0.007	0.088												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	CF PCMH	48	0.007	0.097												
	Unexposed	32	0.009	0.075												
<b>2011</b>	<b>Participating Sites</b>	49	0.012	0.088	0.605	0.239	1.531	.	.	0.289	0.604	0.235	1.554	.	.	0.295
	<b>Comparison Sites</b>	81	0.008	0.118												
	CF PCMH	49	0.007	0.100												
	Unexposed	32	0.009	0.143												
<b>U04c. Proportion of patients with CHF with one or more CHF-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	38	0.070	0.245												
	<b>Comparison Sites</b>	44	0.074	0.246												
	CF PCMH	28	0.066	0.253												
	Unexposed	16	0.098	0.236												
<b>2011</b>	<b>Participating Sites</b>	40	0.076	0.208	1.224	0.566	2.647	.	.	0.607	1.214	0.558	2.644	.	.	0.625
	<b>Comparison Sites</b>	45	0.061	0.236												
	CF PCMH	33	0.073	0.243												
	Unexposed	12	0.024	0.208												
<b>U04d. Proportion of patients with Diabetes with one or more Diabetes-related inpatient stays</b>																
<b>2010</b>	<b>Participating Sites</b>	48	0.004	0.075												
	<b>Comparison Sites</b>	83	0.004	0.125												
	CF PCMH	49	0.003	0.157												
	Unexposed	34	0.006	0.053												
<b>2011</b>	<b>Participating Sites</b>	48	0.003	0.058	0.640	0.256	1.603	.	.	0.341	0.621	0.255	1.508	.	.	0.292
	<b>Comparison Sites</b>	81	0.004	0.136												
	CF PCMH	47	0.004	0.176												
	Unexposed	34	0.003	0.035												
<b>U05. Mean inpatient hospital days among patients with inpatient stays*</b>																
<b>2010</b>	<b>Participating Sites</b>	49	4.210	8.105												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	82	4.527	10.536												
	CF PCMH	49	4.512	12.490												
	Unexposed	33	4.573	6.854												
<b>2011</b>	<b>Participating Sites</b>	49	4.573	11.429	.	.	.	0.384	0.352	0.275	.	.	.	0.366	0.318	0.249
	<b>Comparison Sites</b>	83	4.489	10.607												
	CF PCMH	49	4.182	6.148												
	Unexposed	34	5.347	14.531												
<b>U06a. Proportion of patients with inpatient stays with readmissions within 30 days</b>																
<b>2010</b>	<b>Participating Sites</b>	49	0.117	0.562												
	<b>Comparison Sites</b>	82	0.108	0.456												
	CF PCMH	49	0.115	0.496												
	Unexposed	33	0.085	0.384												
<b>2011</b>	<b>Participating Sites</b>	49	0.123	0.787	1.149	0.746	1.769	.	.	0.529	1.062	0.725	1.557	.	.	0.757
	<b>Comparison Sites</b>	83	0.110	0.581												
	CF PCMH	49	0.115	0.451												
	Unexposed	34	0.097	0.735												
<b>U06b. Proportion of patients with CHF-related inpatient stays with readmissions due to CHF within 30 days†</b>																
<b>2010</b>	<b>Participating Sites</b>	13	0	0												
	<b>Comparison Sites</b>	12	0	0												
	CF PCMH	8	0	0												
	Unexposed	4	0	0												
<b>2011</b>	<b>Participating Sites</b>	13	0.037	0.283	---	---	---	.	---	---	---	---	---	.	---	---
	<b>Comparison Sites</b>	8	0	0												
	CF PCMH	7	0	0												
	Unexposed	1	0	.												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
<b>U07. Mean nursing home days among patients with nursing home stays*</b>																
<b>2010</b>	<b>Participating Sites</b>	22	19.797	16.018												
	<b>Comparison Sites</b>	24	14.592	16.471												
	CF PCMH	15	14.545	18.043												
	Unexposed	9	14.688	14.499												
<b>2011</b>	<b>Participating Sites</b>	27	23.644	23.983	.	.	.	- 4.437	4.541	0.329	.	.	.	- 4.687	4.303	0.276
	<b>Comparison Sites</b>	29	22.918	19.922												
	CF PCMH	20	22.344	20.133												
	Unexposed	9	24.000	20.558												
<b>U08. Mean home health care visits among those receiving home health care*</b>																
<b>2010</b>	<b>Participating Sites</b>	42	2.813	6.088												
	<b>Comparison Sites</b>	47	3.205	12.733												
	CF PCMH	32	3.281	15.305												
	Unexposed	15	2.917	3.717												
<b>2011</b>	<b>Participating Sites</b>	40	3.161	3.456	.	.	.	0.766	0.527	0.146	.	.	.	0.685	0.529	0.196
	<b>Comparison Sites</b>	49	2.652	2.843												
	CF PCMH	32	2.438	2.586												
	Unexposed	17	3.015	3.229												
<b>U09. Proportion of patients with one or more attributed practice office visits</b>																
<b>2010</b>	<b>Participating Sites</b>	50	0.850	1.648												
	<b>Comparison Sites</b>	88	0.955	0.972												
	CF PCMH	50	0.965	0.702												
	Unexposed	38	0.921	1.119												
<b>2011</b>	<b>Participating Sites</b>	50	0.886	1.629	1.856	1.505	2.289	.	.	0.000	1.854	1.498	2.294	.	.	0.000

Year	Analysis Sites	N	Mean	SD	Unadjusted Model						Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE	P-value
	<b>Comparison Sites</b>	88	0.936	1.685												
	CF PCMH	50	0.955	0.901												
	Unexposed	38	0.873	2.123												
<b>U10. Mean attributed practice office visits among patients with one or more attributed practice visits*</b>																
<b>2010</b>	<b>Participating Sites</b>	50	2.856	14.322												
	<b>Comparison Sites</b>	88	3.032	10.499												
	CF PCMH	50	3.085	11.929												
	Unexposed	38	2.852	7.898												
<b>2011</b>	<b>Participating Sites</b>	50	2.892	13.324	.	.	.	0.000	0.038	0.994	.	.	.	0.000	0.035	0.998
	<b>Comparison Sites</b>	88	3.072	10.499												
	CF PCMH	50	3.110	11.915												
	Unexposed	38	2.936	8.166												
<b>U11. Mean non-attributed practice office visits among patients with one or more non-attributed practice physician visits*</b>																
<b>2010</b>	<b>Participating Sites</b>	50	3.382	9.784	.	.	.									
	<b>Comparison Sites</b>	88	3.522	8.984												
	CF PCMH	50	3.431	10.028												
	Unexposed	38	3.785	6.523												
<b>2011</b>	<b>Participating Sites</b>	50	3.355	11.114				-0.056	0.038	0.134	.	.	.	-0.092	0.034	0.006
	<b>Comparison Sites</b>	87	3.547	10.365												
	CF PCMH	50	3.452	11.773												
	Unexposed	37	3.822	7.197												
<b>U12. Mean hospice days among patients with hospice stays (ADDED)*‡</b>																
<b>2010</b>	<b>Participating Sites</b>	3	70.333	78.501												
	<b>Comparison Sites</b>	0	.	.												

Year	Analysis Sites	N	Mean	SD	Unadjusted Model					Adjusted Model					
					RIR	ROR LCL	ROR UCL	Estimate	SE	P-value	RIR	ROR LCL	ROR UCL	Estimate	SE
	CF PCMH	0	.	.											
	Unexposed	0	.	.											
<b>2011</b>	<b>Participating Sites</b>	10	48.083	78.630											
	<b>Comparison Sites</b>	2	10	9.798											
	CF PCMH	1	2	.											
	Unexposed	1	14	.											

\* Measure is defined as a rate.

‡ Measure has missing values in the unadjusted or adjusted outputs due to inadequate sample size or because the model failed to converge.

### Cost All

Year	Measure	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
<b>C01. Mean total payments among all patients</b>										
<b>2010</b>	<b>Participating Sites</b>	50	\$3,329.31	31,518.98						
	<b>Comparison Sites</b>	89	\$3,384.54	39,393.28						
	CF PCMH	51	\$3,309.94	33,008.40						
	Unexposed	38	\$3,642.92	46,816.99						
<b>2011</b>	<b>Participating Sites</b>	50	\$3,469.70	34,152.08	-76.28	88.88	0.391	-109.53	77.29	0.156
	<b>Comparison Sites</b>	88	\$3,599.57	34,070.95						
	CF PCMH	50	\$3,498.28	37,267.48						
	Unexposed	38	\$3,977.45	28,859.93						
<b>C02. Mean total inpatient payments among patients with an inpatient stay</b>										
<b>2010</b>	<b>Participating Sites</b>	49	\$17,249.88	26,172.07						
	<b>Comparison Sites</b>	84	\$17,803.18	31,025.95						
	CF PCMH	49	\$17,516.20	32,090.88						
	Unexposed	35	\$18,768.84	29,555.18						
<b>2011</b>	<b>Participating Sites</b>	49	\$18,650.64	44,016.63	109.71	1115.89	0.922	5.99	1060.73	0.996
	<b>Comparison Sites</b>	85	\$19,081.81	48,261.58						
	CF PCMH	49	\$18,434.44	30,993.17						
	Unexposed	36	\$21,276.04	64,484.89						
<b>C03. Mean total outpatient payments among patients with outpatient services</b>										
<b>2010</b>	<b>Participating Sites</b>	49	\$1,974.45	11,942.15						
	<b>Comparison Sites</b>	89	\$1,950.59	26,676.91						
	CF PCMH	51	\$1,932.52	9,669.18						
	Unexposed	38	\$2,011.51	39,567.50						
<b>2011</b>	<b>Participating Sites</b>	49	\$2,067.94	12,712.45	-125.44	71.05	0.078	-145.89	68.33	0.033

Year	Measure	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
	<b>Comparison Sites</b>	88	\$2,162.28	12,310.82						
	CF PCMH	50	\$2,157.73	12,056.87						
	Unexposed	38	\$2,178.74	12,798.36						
<b>C04. Mean total ED payments among patients with an ED visit</b>										
<b>2010</b>	<b>Participating Sites</b>	49	\$301.44	714.50						
	<b>Comparison Sites</b>	86	\$292.54	534.29						
	CF PCMH	50	\$286.89	546.12						
	Unexposed	36	\$311.70	500.57						
<b>2011</b>	<b>Participating Sites</b>	49	\$326.48	694.58	-9.35	6.96	0.179	-11.28	7.11	0.113
	<b>Comparison Sites</b>	86	\$326.74	623.97						
	CF PCMH	49	\$324.26	710.94						
	Unexposed	37	\$335.32	489.81						
<b>C05. Mean total attributed practice office visit payments among patients with attributed practice visits</b>										
<b>2010</b>	<b>Participating Sites</b>	50	\$257.55	2,516.39						
	<b>Comparison Sites</b>	89	\$255.99	1,651.82						
	CF PCMH	51	\$260.13	1,975.47						
	Unexposed	38	\$241.10	1,064.76						
<b>2011</b>	<b>Participating Sites</b>	50	\$269.23	2,776.57	-15.89	4.88	0.001	-8.32	5.02	0.097
	<b>Comparison Sites</b>	88	\$285.13	1,836.31						
	CF PCMH	50	\$289.85	2,070.28						
	Unexposed	38	\$266.12	1,457.94						
<b>C06. Mean total home health payments among patients with a home health services</b>										
<b>2010</b>	<b>Participating Sites</b>	45	\$972.23	1,172.79						
	<b>Comparison Sites</b>	60	\$1,100.99	1,444.67						
	CF PCMH	41	\$1,083.59	1,586.04						
	Unexposed	19	\$1,162.56	1,111.92						

Year	Measure	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
2011	Participating Sites	42	\$1,132.68	2,121.79	115.50	159.45	0.469	71.81	152.20	0.637
	Comparison Sites	51	\$1,143.51	1,403.43						
	CF PCMH	34	\$1,036.48	1,400.62						
	Unexposed	17	\$1,357.57	1,333.51						
<b>C07. Mean total nursing home payments among patients with a nursing home stay</b>										
2010	Participating Sites	27	\$7,318.91	9,058.08						
	Comparison Sites	35	\$6,398.90	7,152.93						
	CF PCMH	24	\$6,352.43	6,488.76						
	Unexposed	11	\$6,503.46	8,779.62						
2011	Participating Sites	28	\$9,143.55	9,639.61	985.88	1953.07	0.614	679.16	1797.17	0.706
	Comparison Sites	34	\$7,287.98	9,923.88						
	CF PCMH	24	\$6,431.43	9,391.48						
	Unexposed	10	\$9,643.49	10,903.78						
<b>C08. Mean total hospice payments among patients with hospice care</b>										
2010	Participating Sites	5	\$9,296.67	7,240.43	-841.62	4941.39	0.865	3013.67	5424.99	0.579
	Comparison Sites	3	\$4,590.00	3,432.17						
	CF PCMH	3	\$4,590.00	3,432.17						
	Unexposed	0	.	.						
2011	Participating Sites	12	\$9,162.62	13,195.13						
	Comparison Sites	5	\$5,129.33	6,728.76						
	CF PCMH	4	\$5,269.24	7,764.66						
	Unexposed	1	\$4,849.51	.						
<b>C09. Mean total non-attributed practice office visit payments among patients with non-attributed practice office visits (Specialty Office visit)</b>										
2010	Participating Sites	50	\$395.10	2,328.17						
	Comparison Sites	89	\$413.27	2,218.76						
	CF PCMH	51	\$403.91	1,982.74						

Year	Measure	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
	Unexposed	38	\$442.63	2,482.18						
<b>2011</b>	<b>Participating Sites</b>	50	\$395.44	2,805.51	-2.64	11.11	0.812	-5.13	11.35	0.651
	<b>Comparison Sites</b>	88	\$414.90	1,932.15						
	CF PCMH	50	\$409.59	2,288.41						
	Unexposed	38	\$432.68	1,324.07						
<b>C10. Mean total radiology payments among patients with radiology visits (ADDED)</b>										
<b>2010</b>	<b>Participating Sites</b>	50	\$481.18	2406.76						
	<b>Comparison Sites</b>	88	\$514.55	2591.11						
	CF PCMH	51	\$500.61	3094.47						
	Unexposed	37	\$557.66	1600.22						
<b>2011</b>	<b>Participating Sites</b>	50	\$438.06	2551.76	-9.77	16.96	0.564	-13.47	17.61	0.444
	<b>Comparison Sites</b>	87	\$481.48	2182.76						
	CF PCMH	50	\$471.32	2581.33						
	Unexposed	37	\$514.18	1446.34						
<b>C11. Mean total laboratory payments among patients with laboratory visits (ADDED)</b>										
<b>2010</b>	<b>Participating Sites</b>	50	\$237.59	1,926.17						
	<b>Comparison Sites</b>	89	\$237.93	1,851.42						
	CF PCMH	51	\$240.05	2,188.45						
	Unexposed	38	\$231.58	1,291.83						
<b>2011</b>	<b>Participating Sites</b>	50	\$221.13	2,076.14	-13.89	10.10	0.169	-14.23	9.51	0.135
	<b>Comparison Sites</b>	88	\$234.96	1,960.43						
	CF PCMH	50	\$240.67	2,485.62						
	Unexposed	38	\$216.15	869.71						
<b>C12. Mean total other costs among all patients</b>										
<b>2010</b>	<b>Participating Sites</b>	50	\$602.91	7107.85						
	<b>Comparison Sites</b>	89	\$640.07	5854.31						

Year	Measure	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
	CF PCMH	51	\$623.05	6563.22						
	Unexposed	38	\$699.01	4681.57						
<b>2011</b>	<b>Participating Sites</b>	50	\$635.96	7604.98	-49.95	24.27	0.040	-55.90	23.68	0.018
	<b>Comparison Sites</b>	88	\$722.63	6892.74						
	CF PCMH	50	\$698.45	7627.92						
	Unexposed	38	\$812.87	5602.48						

### Cost Both

Year	Analysis Sites	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
<b>C01. Mean total payments among all patients</b>										
2010	PCMH	50	\$3,381.33	28,943.92						
	Comparison	88	\$3,426.22	36,049.70						
	CF PCMH	50	\$3,311.53	29,328.68						
	Unexposed	38	\$3,801.19	43,323.12						
2011	PCMH	50	\$3,564.87	32,521.90	14.28	93.25	0.878	-51.33	87.62	0.558
	Comparison	88	\$3,595.48	30,060.00						
	CF PCMH	50	\$3,460.96	29,865.81						
	Unexposed	38	\$4,035.25	29,812.47						
<b>C02. Mean total inpatient payments among patients with an inpatient stay</b>										
2010	PCMH	49	\$17,198.83	29,299.49						
	Comparison	82	\$17,610.95	32,846.70						
	CF PCMH	49	\$17,362.44	31,349.19						
	Unexposed	33	\$18,361.35	35,299.74						
2011	PCMH	49	\$19,022.46	38,058.98	-338.44	1423.62	0.812	-315.79	1285.08	0.806
	Comparison	83	\$19,753.61	51,963.68						
	CF PCMH	49	\$18,998.85	32,875.93						
	Unexposed	34	\$21,858.09	71,109.61						
<b>C03. Mean total outpatient payments among patients with outpatient services</b>										
2010	PCMH	49	\$1,935.74	10,066.17						
	Comparison	88	\$1,877.12	30,914.60						
	CF PCMH	50	\$1,847.04	8,479.69						
	Unexposed	38	\$1,969.38	46,377.23						
2011	PCMH	49	\$2,105.95	12,505.59	-141.35	70.08	0.044	-156.24	69.38	0.024
	Comparison	88	\$2,180.07	11,425.14						
	CF PCMH	50	\$2,191.24	10,820.79						
	Unexposed	38	\$2,145.77	12,317.02						
<b>C04. Mean total ED payments among patients with an ED visit</b>										
2010	PCMH	49	\$299.41	634.75						
	Comparison	85	\$284.53	468.08						
	CF PCMH	50	\$281.22	514.52						
	Unexposed	35	\$295.26	392.47						

Year	Analysis Sites	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
2011	PCMH	49	\$300.93	545.12	-5.39	7.13	0.450	-8.51	7.23	0.239
	Comparison	86	\$291.73	406.62						
	CF PCMH	49	\$287.88	444.37						
	Unexposed	37	\$303.51	346.36						
<b>C05. Mean total attributed practice office visit payments among patients with attributed practice visits</b>										
2010	PCMH	50	\$263.87	2,326.17						
	Comparison	88	\$270.15	1,398.19						
	CF PCMH	50	\$275.51	1,659.90						
	Unexposed	38	\$251.80	927.96						
2011	PCMH	50	\$265.20	2,156.27	-4.85	5.42	0.371	-4.94	5.15	0.337
	Comparison	88	\$277.11	1,411.53						
	CF PCMH	50	\$283.60	1,543.41						
	Unexposed	38	\$253.93	1,183.26						
<b>C06. Mean total home health payments among patients with a home health services</b>										
2010	PCMH	42	\$1,038.46	1,237.82						
	Comparison	47	\$1,055.57	1,378.25						
	CF PCMH	32	\$1,032.84	1,546.99						
	Unexposed	15	\$1,140.81	958.44						
2011	PCMH	40	\$1,239.11	2,089.16	92.78	153.47	0.546	77.18	153.61	0.615
	Comparison	49	\$1,146.43	1,336.72						
	CF PCMH	32	\$1,110.46	1,426.65						
	Unexposed	17	\$1,207.47	1,180.08						
<b>C07. Mean total nursing home payments among patients with a nursing home stay</b>										
2010	PCMH	22	\$7,607.33	9,608.56						
	Comparison	24	\$6,468.16	6,854.87						
	CF PCMH	15	\$5,498.97	4,911.75						
	Unexposed	9	\$8,467.13	9,000.46						
2011	PCMH	27	\$9,628.81	9,779.23	-110.00	2192.25	0.960	-114.31	1968.84	0.954
	Comparison	29	\$8,628.08	8,367.83						
	CF PCMH	20	\$7,413.18	6,938.68						
	Unexposed	9	\$10,914.95	10,663.47						
<b>C08. Mean total hospice payments among patients with hospice care</b>										
2010	PCMH	3	\$11,124.33	9,999.08						
	Comparison	0	.	.						

Year	Analysis Sites	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
	CF PCMH	0	.	.						
	Unexposed	0	.	.						
<b>2011</b>	<b>PCMH</b>	10	\$8,150.75	12,323.39	.	.	.	.	.	.
	<b>Comparison</b>	2	\$4,769.81	195.23						
	CF PCMH	1	\$4,610.41	.						
	Unexposed	1	\$4,849.51	.						
<b>C09. Mean total non-attributed practice office visit payments among patients with non-attributed practice office visits (Specialty Office visit)</b>										
<b>2010</b>	<b>PCMH</b>	50	\$400.24	2,155.07						
	<b>Comparison</b>	88	\$414.98	2,271.21						
	CF PCMH	50	\$398.06	1,745.70						
	Unexposed	38	\$464.24	2,757.05						
<b>2011</b>	<b>PCMH</b>	50	\$395.41	2,562.42	-3.25	13.57	0.811	-9.42	13.23	0.476
	<b>Comparison</b>	87	\$412.88	1,764.30						
	CF PCMH	50	\$403.96	2,019.26						
	Unexposed	37	\$438.85	1,319.79						
<b>C10. Mean total radiology payments among patients with radiology visits (ADDED)</b>										
<b>2010</b>	<b>PCMH</b>	50	\$482.46	2,352.15						
	<b>Comparison</b>	86	\$510.66	2,117.66						
	CF PCMH	50	\$490.88	2,466.06						
	Unexposed	36	\$566.95	1,376.68						
<b>2011</b>	<b>PCMH</b>	50	\$436.69	2,267.88	-14.92	18.50	0.420	-20.86	19.76	0.291
	<b>Comparison</b>	85	\$480.16	1,753.77						
	CF PCMH	50	\$469.58	1,987.30						
	Unexposed	35	\$509.61	1,329.50						
<b>C11. Mean total laboratory payments among patients with laboratory visits (ADDED)</b>										
<b>2010</b>	<b>PCMH</b>	50	\$241.04	1,741.49						
	<b>Comparison</b>	88	\$233.81	1,559.86						
	CF PCMH	50	\$236.16	1,925.22						
	Unexposed	38	\$227.32	896.42						
<b>2011</b>	<b>PCMH</b>	50	\$217.86	1,634.85	-16.66	9.59	0.082	-18.47	9.29	0.047
	<b>Comparison</b>	88	\$226.95	1,724.98						
	CF PCMH	50	\$232.20	2,188.04						
	Unexposed	38	\$212.21	782.79						

Year	Analysis Sites	N	Mean	SD	Unadjusted Model			Adjusted Model		
					Estimate	SE	P-value	Estimate	SE	P-value
<b>C12. Mean total other costs among all patients</b>										
<b>2010</b>	<b>PCMH</b>	50	\$617.31	6,264.21						
	<b>Comparison</b>	88	\$679.92	5,278.20						
	CF PCMH	50	\$656.20	6,058.67						
	Unexposed	38	\$757.45	3,898.17						
<b>2011</b>	<b>PCMH</b>	50	\$641.27	6,467.03	0.17	20.94	0.993	-11.35	22.19	0.609
	<b>Comparison</b>	88	\$703.71	5,996.87						
	CF PCMH	50	\$675.35	6,616.19						
	Unexposed	38	\$796.42	4,915.32						