STATE OF MARYLAND

MARYLAND HEALTH CARE COMMISSION

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August 13, 2015

The Honorable Lawrence Hogan, Jr.
Governor
State of Maryland
Annapolis, MD 21401-1991

The Honorable Thomas V. Mike Miller, Jr.
President of the Senate
H-107 State House
Annapolis, MD 21401-1991

The Honorable Michael E. Busch
Speaker of the House
H-101 State House
Annapolis, MD 21401-1991

RE: Evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program; Final Report

Dear Governor Hogan, President Miller and Speaker Busch:

The Maryland Health Care Commission (MHCC) is pleased to submit the Evaluation of the Maryland Multi-Payor Patient Centered Medical Home (PCMH) Program (MMPP, Program). Under Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010), the MHCC established the MMPP. The MHCC launched the program in the spring of 2011 with the participation of four major payors, six Medicaid Managed Care Organizations (MCOs), and 52 primary care practices. Today about 200,000 Maryland residents are actively engaged in the Program. Experience with MMPP was the impetus for many of the 52 practices to participate in Medicare Accountable Care Organizations (ACOs) and to join other advanced primary care initiatives. The law also spawned the formation of several learning collaborative efforts, the most notable being the Maryland Learning Collaborative headquartered in the Department of Family Medicine at the University of Maryland, School of Medicine.

The law required MHCC to conduct an assessment using an independent evaluator to determine the success of the program to lower total costs, improve quality of care, increase provider and patient satisfaction, and reduce health care disparities. The evaluators' findings are positive overall and consistent with the assessment of PCMH demonstration programs across the country. The benefits to Medicaid populations are especially significant. MHCC will release an issue brief summarizing the results for the Medicaid participants later this summer. The program's success in beginning to reduce health disparities for the pilot population was particularly noteworthy. To my knowledge, no independent PCMH evaluation in the country has looked at this question.

MHCC recognizes the challenges of launching multi-payor programs. Aligning shared savings programs and quality programs among payors is difficult. Many payors prefer to build individual programs that

exactly align with their own objectives. Physicians and other non-physician primary care providers favor multi-payor programs because this standardization decreases administrative burdens of multiple programs. Aligning multiple well-intended cost and quality initiatives is extremely burdensome for many providers. The prestigious Institute of Medicine (IOM) recent report, ***Vital Signs - Core Metrics for Health and Health Care Progress***, is one of the first reports to quantify the cost to providers of reporting multiple poorly aligned quality measures. MHCC is continuing to work with providers, payors, DHMH, and other state policymakers to build consensus on more consistent quality and cost metrics.

The Maryland Health Care Commission looks forward to working with the Administration and legislative leaders in furthering the goals of the MMPP program, and other advanced delivery system models that aim to improve healthcare quality and reduce cost. Please do not hesitate to contact me at 410.764.3565 if you have any questions about the MMPP, or this Final Report.

Sincerely,

Ben Steffen
Executive Director

Enclosure

cc: The Honorable Thomas M. Middleton
The Honorable Peter A. Hammen
Van T. Mitchell, Secretary DHMH
Sarah Albert – DLS (5 Copies)

Maryland Health Care Commission

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

Final Report

July 31, 2015

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EXECUTIVE SUMMARY

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[1] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient-centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

- Achieve National Committee for Quality Assurance (NCQA) PCMH recognition Level 1 by January 2012 and submit an application for Level 2 no later than September 30, 2012;
- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices.[2] Other state and federal payors have voluntarily joined the program.

This issue brief describes the evaluation findings for the MMPP pilot. Specifically, the evaluation of the MMPP assessed the impact of the PCMH model on the following domains: 1) practice transformation; 2) provider satisfaction; 3) patient satisfaction and experience, including access to care; 4) quality, utilization and costs of care; and 5) health care disparities. Highlights of the findings include:

[1] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.

[2] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.

- MMPP practice staff felt that important factors associated with successful practice transformation into a PCMH were improved care coordination, increased communication, advancement of monitoring and reporting systems, and better standardization of policies and procedures.
- The MMPP maintained providers' high satisfaction with their job, patient care, and positive perceptions of several team-functioning measures, but program effects were mixed relative to change in non-MMPP (comparison) practices. It also features greater inclusion of medical assistants (MAs) and health educators than in other practices and extended roles for MAs to include additional activities.
- Patient surveys showed that at the end of the pilot period, more adult patients rated patient-provider communication highly than early in the pilot period. Respondents for children were highly satisfied with care. Findings showed some differences in patient experience ratings among patient subgroups, including lower scores on some measures for African Americans and the chronically ill. Other measures showed higher scores among the chronically ill and Medicaid populations.
- Chronic disease management of some ambulatory care sensitive conditions (ACSCs) improved and results indicated a reduction in emergency department visits and inpatient stays among Medicaid patients with these conditions.
- There was some evidence to suggest that the MMPP may have slowed growth of some inpatient and outpatient payments, especially among Medicaid patients.
- African Americans reported lower scores for trust in provider and providers offering advice on how to stay healthy compared to Caucasians.
- Disparities by practice location (small metro versus large metro area) were the most likely to be reduced by the MMPP.

Results

The evaluation consisted of several components, including site visits and interviews with participating practices, patient and provider surveys, and administrative data analyses. This issue brief presents selected key findings of the MMPP evaluation. Additional findings and further explanation are available in other MMPP evaluation issue briefs.[3]

Practice Transformation

A qualitative evaluation was conducted to assess the implementation of practice transformation[4] in MMPP practices through two rounds of site visits and in-depth interviews with practice managers, care managers, clinical staff, and support staff. Most practice staff members

[3] MMPP evaluation issue briefs and additional information on the MMPP may be found on the MHCC website http://mhcc.maryland.gov/.

[4] Practice transformation is the process of practices using health care teams to initiate and maintain quality improvements through evidence-based care. Embedded in practice transformation are the PCMH concepts of relationships with a care team, comprehensiveness, coordination, and access.

interviewed at nine selected practices felt that their practice transformation has been successful and remain enthusiastic about the MMPP program. They felt that important drivers of successful practice transformation to a PCMH model were improved care coordination, increased communication, advancement of monitoring and reporting systems, and better standardization of policies and procedures.

Practice characteristics can influence implementation of transformation. Especially in the early phases of implementation, smaller and medium-sized practices undergoing transformation at a single location reported success communicating transformation objectives and collaborating across roles to implement and maintain PCMH initiatives and protocols. As a result, these practices were more likely to report success in obtaining provider and staff buy-in from the onset of the pilot. Pediatric practices, which operate under a family-centered model, discussed success in engaging families in care delivery. Federally qualified health centers (FQHCs), which emphasize patient access, reported ease in adapting to access requirements, more so than other types of practices. The affiliation of practices with a hospital system positively affected their reported ability to transform, particularly in terms of staff resources and coordinating care.

Practice staff interviewees felt that the transformation's positive impact on quality of care and health outcomes has played a significant role in staff satisfaction and engagement, more so than compared to the financial outcomes associated with the program. The practices expressed eagerness in the following areas: improving current processes and developing new ones that increase efficiency; improving functionality of their EHR systems to meet the daily operations and reporting needs of the practice; and expanding quality improvement initiatives to reach new populations and further improve health outcomes. Interviewees felt that positive impact on health outcomes would play a larger role in promotion of the model to non-transformed practices than the program's financial incentives or outcomes.

Certain features separated the high performing practices from the low and moderately performing practice (see***Error! Reference source not found.)***. High performing practices reported having a strong PCMH champion who has been actively involved in engaging staff and physicians throughout the transformation process. Also, high performing practices had integrated their EHRs prior to transformation and have been proactively working with the vendor, staff, and physicians to tailor the EHR system to meet their needs.

Improved care coordination processes had a positive impact on quality of care, which the interviewees felt led to reductions in health care costs. For example, interviewees reported that care coordination led to increased patient compliance and allowed patients to become more involved in their own health care. This led to better health outcomes such as diabetic patients reducing their HbA1c levels and asthmatic patients getting a better handle on symptoms through the proper use of inhalers and other medications. Multiple practices reported a reduction in hospital admissions, especially for patients with chronic conditions, emphasizing the "*decreased utilization of the emergency room*."

Provider Satisfaction

In 2013 and 2014, provider surveys from among the following three groups of practices were conducted: (1) MMPP practices, (2) practices in another PCMH program in the state ("Other

PCMH"), and (3) practices with low exposure to PCMH. The survey questionnaire covered five domains: (1) satisfaction with care; (2) staff roles in care; (3) job satisfaction and care team functioning; (4) practice team composition; and (5) perceptions of the PCMH model.

In 2014, compared to providers in the 'Other PCMH' comparison practices, MMPP providers had higher job satisfaction, were more satisfied with the care provided to their patients, were more likely to agree that teams receive adequate training for their work, and felt little unpleasantness among team members. The MMPP providers were less likely to agree that "team members have to depend heavily on one another to get work done." While providers in the 'Other PCMH' comparison practices grew more confident that the PCMH improved interaction with family members, MMPP providers' attitudes started about the same as the 'Other PCMH' group but did not increase over time. The MMPP practices' care teams included more roles on their teams, including medical assistants and health educators, and used medical assistants for some roles covered primarily by clinicians in other practices. Effects on provider attitudes on care team functioning were mixed, with MMPP provider attitudes held constant while beliefs in the other two groups attenuated or became stronger. These findings suggest avenues for further development in MMPP practice teamwork as well as program strength in high job satisfaction that could be tapped to support program sustainability.

When the sample is limited to physicians only, the MMPP shows a program impact on providers' satisfaction with care for chronically ill patients maintaining satisfaction, while it decreased among "Other PCMH" providers and increased MMPP physicians' reporting that team members agree about expectations for behavior compared with the changes in the "Other PCMH" group. In addition, physicians in the "Other PCMH" group had greater positive changes in team member knowledge and skills compared to the MMPP physicians. Overall, the MMPP did not improve provider satisfaction with care over and above the trend observed in non-participating practices. There were no significant differences between MMPP providers and low-exposure practices. On most satisfaction with care measures, MMPP providers finished the program with higher satisfaction than the 'Other PCMH' comparisons. This was not due to growth in MMPP satisfaction, but to either declines in 'Other PCMH' satisfaction with care or simply higher satisfaction from the start among the MMPP group.

Patient Experience and Satisfaction

Medicaid and commercially insured patients from each participating practice were surveyed early in the first year of the pilot and post-pilot to evaluate patient experience for two groups of MMPP patients: adults and children. The surveys inquired about: delivery of health care, trust in provider, access to care and chronic illness management.

The patient experience surveys suggest improvements occurred over time in patient-provider communication among MMPP patients. At the end of the pilot period, more adult patients gave positive ratings to patient-provider communication compared to early in the pilot period. In 2014, chronically ill patients were more likely to rate highly the provider's attention to their mental health and giving advice on how to stay healthy than those without chronic conditions. Medicaid patients also reported higher care satisfaction scores than commercially insured patients for providers giving advice on staying healthy and discussing with patients how to engage a family member or trusted friend to help patients follow the treatment plan. In 2014, most scores

reported by African Americans and Caucasians were similar, but some satisfaction items among Caucasians increased from 2013, while the care satisfaction remained the same or decreased somewhat over time among African Americans (for both adults and children). Respondents for children overall are highly satisfied with their MMPP providers, with more than 70 percent of the responses in the most positive categories.

Some results suggest areas for future improvement among MMPP practices. With respect to access to care, lower percentages of chronically ill respondents reported getting timely appointments in 2014 compared to those without chronic conditions. Also, African Americans reported lower scores for trust in provider and providers offering advice on how to stay healthy compared to Caucasians in 2014.

Healthcare Quality, Utilization and Costs

The findings provide evidence that the adoption of the PCMH model by primary care practices in the MMPP met some of the program goals on quality, utilization and cost measures. The MMPP practices were statistically compared with the comparison practices for Medicaid and commercially insured patients (see *Exhibit 4-1: Practice Size and Patient Characteristics*). The findings of the evaluation's program impact differ by payor type (Medicaid vs. commercial insurance). Selected results are summarized in the sections below.

Quality*:* The MMPP had a positive program impact on quality among patients with Medicaid in breast cancer screening for women, diabetes management (glycated hemoglobin monitoring) among children, and asthma-related hospital admissions. The positive breast cancer screening and diabetes management effects were observed only during the first year of the pilot, while the asthma-related hospital admissions effect was not observed until the third year of the pilot. The MMPP did not perform as well as the comparison practices among Medicaid patients over time on cervical cancer screening and adolescent well-care visits. Negative program effects of the MMPP on quality were also observed, primarily among Medicaid patients. The MMPP had a negative impact on use of long-term control medications for asthma among Medicaid patients throughout all three years of the program; both MMPP and comparison practices declined in this measure over time, but the MMPP practices had a greater decline.[5] Further study is needed to understand why Medicaid patients in MMPP practices fared better than comparison practices with reducing asthma-related hospital admissions while experiencing a greater decline in long-term control medications for asthma.

Among patients with commercial insurance, the MMPP's impact was positive for the following four quality measures: asthma-related hospital admissions, diabetes management among adults, cervical cancer screening, and adolescent well-care visits. The comparison practices made gains that exceeded the MMPP practices on breast cancer screening during the second and third years of the program.

[5] Prescription drug measures were not assessed among commercially insured patients due to unavailability of prescription drug claims.

Utilization: Overall, the MMPP had a positive effect on the proportion of Medicaid patients with emergency department (ED) visits, relative to the comparison practices; the proportion of Medicaid patients with an ED visit held steady over time among MMPP practices, while the proportion increased over time in comparison practices. ED visits due either to asthma, congestive heart failure (CHF), or diabetes among Medicaid patients with any of these ACSCs also were positively affected among Medicaid patients at MMPP practices relative to patients at comparison sites; the proportion of Medicaid patients with ACSC-related ED visits declined over time in both MMPP and comparison practices, but the decline was greater in MMPP practices. Among Medicaid patients, the effect of the MMPP on inpatient utilization was positive for ACSC-related inpatient admissions, but negative for all inpatient stays. The MMPP had a negative impact on mean hospital length of stay and on 30-day readmissions among both Medicaid and commercially-insured patients. While it is uncertain if there is a correlation between ACSC-related inpatient admissions and hospital length of stay, perhaps a closer examination of the severity of an illness would provide additional insight into the role of a condition's acuity and the mean hospital length of stay.

Among commercially insured patients, the MMPP had negative impacts on ED visits in the second year of the pilot, and on ACSC-related ED visits in the third year of the pilot, relative to the comparison practices.

Costs*:* The MMPP had a positive impact on inpatient payments among Medicaid patients. Over the three years of the pilot, inpatient payments declined over time among Medicaid patients in MMPP practices, while they remained relatively stable among Medicaid patients in comparison practices. Outpatient payments[6] were positively affected (i.e., either a smaller increase or larger decline) by the MMPP in both Medicaid and commercially insured patients. However, this effect was not sustained through all three years of the pilot for commercially insured patients.

Health Care Disparities

Using commercial payor and Medicaid administrative claims data, the evaluation team assessed heath care disparities across four disparity domains: 1) Race, 2) Gender, 3) Geographic Location, (proximity to a large versus small metropolitan area); and 4) Income, as approximated by payor type - commercial insurance versus Medicaid coverage. Overall, health care disparities were reduced for 19 of 30 measures, there was no change in disparity for nine measures, and there was an increase in disparity for two measures, see *Exhibit 5-3: Summary of Findings across Disparity Measures*. The evaluation findings suggest that MMPP had greater impact on reducing disparities associated with health care quality measures compared to disparities associated with measures of utilization of health services. The analysis suggests that the MMPP program achieved a measurable degree of success in reducing health care disparities.

For quality of care disparities (three race, five location, four payor), there were improvements in eight of the measures, while there was an increase in one disparity (proportion of young persons with asthma who had an asthma-related hospital admission). Disparities in quality by location

[6] Outpatient includes both facility and medical claims and encounters. A series of codes was used to assign claims to the outpatient category.

were the most likely (4 out of 5 quality-related location disparities) to improve at the MMPP practices, while payor disparities were the least likely (2 out of 2 quality-related payor disparities) to improve. Of the three quality-related racial disparities with an average rating in 2010, two disparities improved to above average in 2013. There were 18 (one gender, three location, five race, nine payor) health care utilization disparities at the MMPP practices with average or lower ratings in 2010. By 2013, 11 of these disparities showed an improvement.

As mentioned previously, patient survey data suggested there were few differences in assessments of the experience of care between vulnerable and non-vulnerable populations. Cultural competency questions received positive ratings from between 50 and 86 percent of respondents. However, lower percentages of chronically ill respondents reported getting timely appointments in 2014 compared to those without chronic conditions. Also, African Americans reported lower satisfaction scores for trust in provider and providers offering advice on how to stay healthy compared to Caucasians in 2014.

During site interviews, practice staff expressed varying opinions on the effect of PCMH transformation on health care disparities. Many respondents felt that the program, as compared to traditional primary care delivery, better supports low-income patients and begins to address some racial disparities, primarily through tracking, follow-ups, and better care coordination. A majority of respondents thought that the program was having a positive effect on their practices' ability to support patients with complex needs, defined as those who experience mental illness, multiple chronic conditions, or substance abuse. Respondents attributed this to the care coordinator, who serves as an important link between the patient and the provider to increase patient education, engagement and compliance, and fill gaps that cannot be addressed or are not observed by medical providers.

When examining changes in quality, utilization, and cost measures over time by subgroups using the disparity change score (DCS) analysis, the disparities by race and geographic location of the practice (at or adjacent to a small metro versus large metro area) were the most likely to experience a decrease in disparity as a result of the program. Similarly, there was a reduction in racial disparities of ED utilization for patients with ambulatory care sensitive conditions.

Remarks

The findings of the evaluation provide evidence that the adoption of the PCMH model by primary care practices in the MMPP met some of the program goals. Improvements in care coordination, communication, monitoring and standardization contributed to successful practice transformation. Patient surveys indicated improvement in patient-provider communication and high satisfaction among respondents for children, but a step backward in advice on staying healthy among African Americans and potential access problems for the chronically ill. Provider surveys showed differences in tasks assigned to different roles within the practice, some positive teamwork attitudes, and others that may offer room to grow.

Chronic disease management of some ACSCs improved, which may have contributed to the observed positive program impacts on ED visits and inpatient stays among Medicaid patients with these conditions. The findings also suggest that the MMPP had success in its goal to slow the

growth of health care costs among MMPP practices for inpatient payments among Medicaid patients and outpatient payments among both Medicaid and commercially insured patients.

Overall, the MMPP did not improve provider satisfaction over and above the trend observed in non-participating practices. It also did not worsen provider satisfaction as compared to other practices, however, suggesting that the State's PCMH program had little deleterious effect on the relatively positive providers who participated. Changes were required to meet program requirements, and these are possibly reflected in the MMPP providers' acknowledgement that being a PCMH reduced their control over some important aspects of practice. Yet, in the face of difficult change, providers were no less positive than their peers in "Other PCMH" programs and those who were not participating in any PCMH program.

The programmatic impact by payor type provides an opportunity to translate the gains from payor type to others by identifying challenges or barriers affecting specific patient populations. The programmatic impact also provide an insight into the complexities that characterize implementation of broad based population health interventions such as the PCMH model. While quality may be high generally, specific populations may need to be targeted for special attention in order to eliminate disparities in care or in outcomes.

Some results suggest areas for future improvement among MMPP practices. For example, findings suggest improvements are needed in providing timely appointments for patients with chronic illnesses and in improving provider trust and offering advice on how to stay healthy for African American patients. Other areas for improvement include cervical cancer screening among Medicaid patients, adolescent well-care visits among Medicaid patients, and preventing 30-day readmissions among both Medicaid and commercially insured patients, all areas in which MMPP practices did not perform as well as comparison practices. Further, assigning new roles to different team members may ultimately yield cost savings for practices and the system as a whole. There also exist avenues for further development in MMPP practice teamwork as well as a program strength in high job satisfaction that could be tapped to support program sustainability. Areas for practice growth that may support further success, according to MMPP interviewees, include: improved care coordination, increased communication, advancement of monitoring and reporting systems, and better standardization of policies and procedures.

The findings of this evaluation are consistent with findings of PCMH pilot demonstration programs across the country that had similar population health goals of improving quality and reducing costs.[7,8] The absence of an observed pattern or consistent direction of change from

[7] Rosenthal MB, Friedberg MW, Singer SJ, Eastman BA, Li Z, Schneider EC. Effect of a Multipayer Patient-Centered Medical Home on Health Care Utilization and Quality The Rhode Island Chronic Care Sustainability Initiative Pilot Program. JAMA Intern Med. 2013;173(20):1907-1913.

[8] Friedberg MW, Schneider EC, Rosenthal MB, Volpp KG, Werner RM. Association between Participation in a Multipayer Medical Home Intervention and Changes in Quality, Utilization, and Costs of Care. *JAMA.* 2014;311(8):815-825. doi:10.1001/jama.2014.353.

year to year may be indicative of the varying impact interventions may have on different measures of a population's health. Recent systematic reviews found mixed effects of PCMHs.[9,10]

The PCMH model of care is an example of practice and systems change that represents a fundamental re-imagination and redesign of practice, replacing old patterns and processes with new ones.[11] While primary care remains the fulcrum upon which to improve population health and achieve good health outcomes, fundamental differences in patients or practice may require tailoring interventions to specific patient populations.

Implications of Findings for the MMPP

Preserving and sustaining the improvements the MMPP practices achieved becomes the next important phase for this program. Insights gained from the implementation of this program can provide a basis for expanding the adoption of this and other models of primary care delivery by a larger number of providers and health systems.

The results of the MMPP offer opportunities to gain insights into areas of care delivery where further interventions may be required in order to improve outcomes in such areas. Examples include cervical cancer screening rates and adolescent well-care visits observed among Medicaid patients. Interventions may come in the form of additional provider education or patient education. Innovative approaches may need to be deployed on these and other areas. Program implementers and MMPP providers may want to revisit the findings of the provider survey to uncover topics for quality improvement cycles within the practices as well. Some team functioning measures and perceptions of PCMH suggest room for improvement around teamwork. There is a good foundation in these findings for further improving partnerships between patients and providers in MMPP practices. Providers and program implementers may wish to investigate how to enhance patient experience by engaging patient representatives in discussions about their experiences. The MMPP has helped highlight gaps that need to be addressed.

For measures that showed a positive MMPP impact, it is imperative to identify the improvement factors, understand the specific factors that influenced the improvement, and develop approaches to strengthen and propagate them. One such improvement is being able to identify the specific factors that led to the observed positive program impact on ACSC-related emergency department visits among Medicaid patients. This has a further implication on overall costs of care if such ambulatory care sensitive conditions can be managed optimally, thereby leading to reduction in emergency department visits among a larger cohort of patients.

These findings should be interpreted with the following limitations in mind. First, the quality of the interview data obtained during the site visits depends on the knowledge of the interviewees.

[9] Peikes D, Zutshi A, Genevro JL, Parchman ML, Meyers DS. Early evaluations of the medical home: building on a promising start. Am J Manag Care.2012;18(2):105-116.

[10] Jackson GL, Powers BJ, Chatterjee R, et al. The patient-centered medical home: a systematic review. Ann Intern Med. 2013;158(3):169-178.

[11] Nutting PA, Miller WL, Crabtree BF, Jaen CF, Stewart SE, Stange KC. Initial Lessons From the First National Demonstration Project on practice transformation to a patient-centered medical home. Ann Fam Med. 2009;7:254-260.

Also, survey response rates were low, raising the possibility that findings may differ for the rest of the population had they chosen to respond. Further, some results of improvement in a group that initially scored lower, and reductions in a group that initially scored higher, may be regression to the mean, or the appearance of change when in fact scores were simply artificially high or low in one sample or at one time point. It is also the case that administrative claims data only provide information for services that were paid, and claims may have limited and unreliable diagnostic information. However, this limitation would bias results only if there were differences in information by sub-groups. Secondly, because patient data on race were not available in the commercially insured data, we were able to assess the effect of MMPP on racial disparities only among the Medicaid population. Similarly, medication measures could be evaluated only in the Medicaid population because prescription drug claims were not available for this analysis from the commercial payors.

Evaluation Approach

The evaluation approach was both quantitative and qualitative in nature and consisted of: (1) site visits and interviews to evaluate practice transformation; (2) web-based surveys to evaluate provider satisfaction; (3) telephone surveys to evaluate patient satisfaction; (4) administrative data analysis to evaluate quality, utilization, and costs and (5) multiple modes to evaluate changes in health care disparities. The provider survey and administrative data portions of the evaluation used two comparison groups. Comparison practices included a group participating in another PCMH program (referred to as 'Other PCMH') in Maryland and a group that was less exposed to the PCMH concept (referred to as 'low exposure' practices). Comparison practices were chosen to be as much like the MMPP practices as possible using a statistical matching technique. The variables used for the matching included practice characteristics, provider characteristics aggregated to the practice level, and characteristics of practice location.

Site visits were conducted on a sample of nine MMPP practices selected from varying practice sizes, geographic settings, ownership types, and specialties to ensure representation of different practice characteristics. During each round of site visits, the evaluation team conducted four to six in-depth interviews at each site with staff directly involved in or affected by transformation: practice managers, PCMH leads, care managers, clinical staff, and support staff. The qualitative analysis focused on trends over the course of the pilot, aspects that had the most influence on PCMH goals, best practices, and lessons learned. The qualitative evaluation explored respondent perception of five important themes: (1) the transformation process, (2) staff perceptions of transformation, (3) health outcomes and disparities, (4) care coordination, and (5) financial costs and savings. In addition to identifying key findings for each research theme, the evaluation team used two variables—shared savings data and NCQA recognition—to investigate which types of practices were the most successful in implementing the model and site characteristics that were associated with better performance and advancement. These data were used to generate a measure to identify high, medium, and low performers. Interviewee responses were transcribed and systematically coded for key themes and patterns. Main points and quotations from the coded data were pulled to identify the primary findings from each site visit across all respondents.

An online survey was used to collect information on provider satisfaction from physicians, physician assistants, and advanced practice nurses in MMPP practices, as well as from physicians in comparison practices. Provider survey questions assessed perceptions of practice transformation to the PCMH model, provider satisfaction with chronic illness management, and aspects of teamwork and culture in the practices.

To evaluate patient satisfaction, computer-assisted telephone surveys were conducted among a sample of patients attributed to MMPP practices. There were two patient survey instruments, one for adults (>18 years of age) and one for children (<18 years of age). The child's caregiver answered the questions about the child under his/her care. The surveys evaluated patient satisfaction and experience of care, including delivery of health care, trust in provider, and access. The instruments included items from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH Survey, CAHPS supplemental topics, and the Patient Assessment of Chronic Illness Care.

Commercial and Medicaid administrative claims data of patients meeting the evaluation criteria at the MMPP or comparison practice sites were used to construct measures of quality, utilization, and costs. Quality measures were selected from established quality measures from the PCMH Evaluator's Collaborative, the Agency for HealthCare Research and Quality, the National Quality Forum, the National Committee on Quality Assurance (NCQA), and the Healthcare Effectiveness Data and Information Set.

A difference-in-difference (DID) approach was used to estimate the impact of the MMPP on provider satisfaction and on quality, utilization, and costs. The DID approach is a robust policy analysis tool used as an alternative when randomization is not possible or practical. The DID approach compares changes in measures at the MMPP practices to changes at comparison practices; that is, it accounts for outcome changes that would have occurred over time regardless of the MMPP intervention. To further strengthen the validity of the estimates for the claims analysis, the evaluation team controlled for case-mix of participating and comparison sites using the Adjusted Clinical Group case-mix risk adjustment suite of tools (see http://www.acg.jhsph.org).

Data collected from the site visits, patient surveys, and analyses of claims data were used to evaluate whether the MMPP has an impact on health care disparities. Disparity change scores (DCS) are reported, which allow for a simple presentation of changes in disparities. A positive score indicates a "good" change in disparity, where the disparity is decreasing, while a negative score indicates that the disparity is increasing over time (see Drewette-Card RJ, Landen MG. J Public Health Management Practice, 2005, 11(6), 484–492.)

1. PRACTICE TRANSFORMATION BRIEF

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[12] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient-centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

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- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices.[13] Other state and federal payors have voluntarily joined the program.

This issue brief summarizes findings from the practice transformation[14] evaluation through a qualitative evaluation involving two rounds of MMPP site visits and in-depth interviews with practice managers, care managers, clinical staff, and support staff.[15] **Most interviewees conveyed that their practice transformation has been successful and are enthusiastic about the MMPP program. Interviewees believed that important drivers of successful practice transformation to a PCMH model were improved care coordination, increased communication,**

[12] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.

[13] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.

[14] Practice transformation is the process of practices using health care teams to initiate and maintain quality improvements through evidence-based care. Embedded in practice transformation are the PCMH concepts of relationships with a care team, comprehensiveness, coordination, and access.

[15] Selected key results of the evaluation are presented in this brief. Additional MMPP evaluation issue briefs and supplementary findings may be found in the Appendices.

advancement of monitoring and reporting systems, and better standardization of policies and procedures. Transformation's positive impact on quality of care and health outcomes has played a significant role in satisfaction and engagement, particularly and more so than compared to the financial outcomes associated with the MMPP pilot. MMPP practices expressed eagerness to improve upon current processes and develop new ones that increase efficiency, optimize their EHR systems to improve functionality to meet the daily and reporting needs of the practice, and expand quality improvement initiatives to reach new populations and further improve health outcomes.

Results

The qualitative evaluation addressed the following questions:

- Which types of practices are most likely to successfully implement the model?
- Can increased provider satisfaction and positive results be used to encourage other primary care providers to adopt the PCMH model?
- 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?
- Which aspects of the PCMH model have the most impact on improved quality and reduced costs?

Which types of practices are most likely to successfully implement the PCMH model?

Practice Size

Findings from the first and second rounds of site visits reveal that practice characteristics can influence implementation of transformation elements. Especially in the early phases of implementation, smaller and medium-sized practices undergoing transformation at a single location reported success in communicating transformation objectives and collaborating across roles to implement and maintain PCMH initiatives and protocols. As a result, these practices were more likely to report success in obtaining provider and staff buy-in from the onset of the pilot. Larger practices that managed transformation at multiple facilities experienced many obstacles to coordinating activities and communication across all partners. Disjointed communication hindered provider and staff buy-in. Over time, however, practice size seemed to play less of a role in success than standardized communication and protocols.

Practice Specialty

In addition to size, practice specialty played a role in the ability to successfully implement transformation elements and meet NCQA recognition requirements, particularly in the initial phases of transformation. For instance, staff at pediatric practices, which operate under a family-centered model, discussed success in engaging families in care delivery. Federally qualified health centers (FQHCs), which emphasize patient access, reported ease in adapting to access requirements, more so than staff at other types of practices. Over the course of the pilot, practice

specialty seemed to be less important to success than the advancement of practices to NCQA levels 2 and 3.

Ownership Type

As seen during both rounds of visits, ownership type had an effect on implementation. The affiliation of hospital-owned practices with a hospital system positively affected their reported ability to transform, particularly in terms of staff resources (which freed providers from the work of setting up the PCMH) and coordinating care. In contrast, private practices noted that their status as an independent practice drove them to remain "on top" and required them to be innovative in the way they provide and coordinate care. These practices believed that the PCMH model complemented their business objectives. Regardless of ownership type, practices that sought to develop and expand their resources reported heightened success in meeting PCMH objectives. For example, these practices often coordinated care using Chesapeake Regional Information System for our Patients (CRISP)—the state-designated health information exchange serving Maryland and the District of Columbia—and developed partnerships with nearby hospitals, specialists, and government-sponsored services.

Oversight Teams

Structured PCMH-specific oversight teams served as important elements of success. Practices that established oversight teams at the start of transformation and continued to use these teams to educate providers and staff about PCMH objectives and activities reported high cohesion in engagement and overall support and satisfaction from providers and staff. Also, not surprisingly, practices that had the ability to expand their internal resources through fixed transformation payments, shared savings, other project funds, or internal reserves, reported high levels of success in coordinating care.

Performance Findings

Certain features separated the high performers from the low and moderate performers. Exhibit 1-1 contains the framework used to differentiate high (4 practice sites), moderate (2 practice sites), and low performers (2 practice sites). All four of the high performing practices reported having a strong PCMH champion who has been actively involved in engaging staff and physicians throughout the transformation process. At all four high performing practices, the champion had been a practicing physician. Also, consistency matters—at three of the four high performing practices, the same person had led the effort, at the remaining high performing practice, the champion also served as the champion at another network facility and took over the role when the former champion retired. Champions at high performing practices clearly articulated transformation goals and worked to integrate PCMH principles into daily operations. These champions also emphasized team commitment to transformation activities. At these sites, all interviewees described the champions as keen leaders who were integral to the pilot's success.

High performing practices reported actively identifying the "right" people to fill PCMH-related roles (e.g., champion, PCMH core team members, and care coordinator). These practices strategically assigned responsibilities and continued to assess workflow gaps and opportunities to improve efficiency. In doing so, these practices also increased efforts to standardize workflows and protocols across providers and experienced improved documentation and communication.

Though all practices experienced some level of difficulty with their EHR systems, high performing practices had integrated their EHRs prior to transformation and have been proactively working with the vendor, staff, and physicians to tailor the EHR system to meet their needs. These practices have been strategic in the way that they use data to monitor patient progress, communicate with providers, and identify areas for improvement. Providers and clinical teams at high performing practices review patient health data prior to each visit to examine patient progress and identify next steps in the patient's care. High performing practices regularly share patient health data with providers and clinical staff to increase awareness of performance and pinpoint gaps. They also have been proactive in identifying patients that would benefit from care coordination or who may need special support such as home visits through the use of monitoring and tracking systems.

Can increased provider satisfaction and positive results be used to encourage other primary care providers to adopt the model?

The findings on satisfaction suggest that the program's positive impact on health outcomes plays a larger role in promotion of the model to non-transformed practices than the program's financial incentives or outcomes.

Perception of the pilot varied, but trended toward the positive over time. In the initial phases of transformation, most support staff viewed the program as "*added work*," but saw the program in a better light once the program operated more efficiently and their roles were better-defined. Roles were more clearly defined over time; as providers and staff were able to learn more effective ways to meet program requirements, they were better able to define staff roles to best suit program needs. As the role of the care coordinator became more clearly defined, staff were able to appreciate the true value of that role (e.g., increased quality of care that resulted in improved health outcomes). Some providers were resistant to the program initially but warmed up to it once they better understood the value of the care coordinator, performance data, and standardization on efficiency and outcomes.

Quality and Outcomes

Interviewees reported that the primary source of increased satisfaction over time has been improvements in patient quality of care and health outcomes. All practices noted that satisfaction has increased as staff observe the effect the program is having on health outcomes. Interviewees felt that improved care coordination has led to positive outcomes, and improvements in data collection and monitoring over the course of the pilot have allowed providers and staff to observe these changes. Interviewees pointed to a number of health indicators, such as HbA1c (a measure of diabetes control) and blood pressure levels, weight, and emergency department visits, that have improved since transforming.

Health Disparities

Interviewees expressed varying opinions on the effect of PCMH transformation on health disparities. Many interviewees felt that the program, as compared to traditional primary care delivery, better supports low-income patients and begins to address some racial disparities, primarily through tracking, follow-ups, and better care coordination. A majority of interviewees

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, or substance abuse. Interviewees attributed this to the care coordinator, who serves as a link between the patient and the provider to increase patient education and fill gaps that cannot be addressed or are not observed by medical providers.

Financial Outcomes

Most providers and staff had limited knowledge of specific financial outcomes (i.e., cost savings and shared savings). Those that did mention financial outcomes shared mixed views. Some noted positive financial returns due to the program. For example, one physician at a hospital-owned practice mentioned that the pilot has saved the system over $300,000 due to decreases in emergency department visits. Other physicians mentioned that the program is very costly. Many physicians believed that the program will not allow for cost savings at the practice level, but instead will produce savings at the insurance level.

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?

Throughout the transformation process, practices continued to develop useful strategies to facilitate achievement of PCMH goals. Useful strategies implemented by practices throughout the transformation process centered on the care coordination process and engaging and supporting staff and providers. Using additional resources available for care coordination, monitoring patients' health through EHR and CRISP, providing patient education, and effectively communicating with staff about the needs of the program were all essential aspects in successful transformation.

Innovation in Care Coordination

The evolution of care coordination roles and activities led to the development of beneficial strategies that can be replicated in other practices looking to transform. As sites' practitioners realized how valuable care coordination was to the success of the program, they sought to expand these roles and hire additional care coordinators and other staff when possible. For example, one practice expanded the role of an administrative staff member to track all referrals to specialists, follow up with specialists to receive medical charts post-visit, and expand relationships with new and current specialists. Another practice hired a quality improvement coordinator to develop practice-wide quality metrics, use the EHR to monitor and report outcomes, and initiate quality improvement activities to improve performance.

Practices continuously improved upon the care coordinator's role to increase quality of care. For example, some sites developed relationships with nearby hospitals to establish care transition and follow up procedures for patients who were discharged from the hospital. Practices took advantage of systems like CRISP that provided information on hospital admissions. Two of the practices were able to send a care coordinator to meet and introduce patients to the PCMH program as patients were admitted to the hospital. As the program progressed, one site was able to partner with the health department allowing them to team with social workers to further

support patients in need. At this site, the additional staff and resources made it possible to send nurses and social workers on home visits.

Sites that did not have hire additional staff for care coordination enhanced coordination by expanding the roles of existing staff. One site was able to provide quality care coordination through a team effort. Care coordination responsibilities fell on everyone involved in patient care at this practice. Thus, although additional resources can improve quality of care, sites without those resources were still able to find ways to provide patients with improved care coordination.

Improved Relationships with Specialists

In order to obtain data to measure and monitor patients' health over time, some practices developed systems to track and follow-up on referrals and effectively communicate with specialists. Some practices mentioned developing internal reports, which often linked to their EHRs, to track and monitor referrals. The practices used these reports to engage with specialists and record communication. To improve relationships with nearby specialists, one practice established an annual networking event designed to connect the practice with specialists interested in improving care coordination.

Use of Team-Centered Workflows

During the first round of site visits, practices shared their visions for the next year of the pilot. To improve quality and reduce the costs of care, many practices intended to work with staff to increase the efficiency of workflow and improve lines of communication. During the second round of visits, some practices had reorganized providers and non-provider staff into teams, whereby one provider was partnered with a group of staff members. Practices that implemented this team approach cited improvements in coordination, especially through daily team huddles and standardization of procedures. Another common approach to increase staff motivation and compliance was the implementation of periodic meetings to discuss any ideas or issues related to the program. Practices that included all levels of staff in these meetings reported positive results, stating that this allowed them to "ensure that there's at least one person from each department that is engaged and is learning about it, that can take it back to the people that they work beside."

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

Care Coordination

As emphasized by all practices during both rounds of visits, improved care coordination processes had a significant positive impact on quality of care, which they felt led to reductions in health care costs. For example, interviewees reported that care coordination led to increased patient compliance and allowed patients to become more involved in their own health care. This led to better health outcomes such as diabetic patients reducing their HbA1c levels and asthmatic patients getting a better handle on symptoms through the proper use of inhalers and other medications. Multiple practices reported a reduction in hospital admissions, especially for patients with chronic conditions, emphasizing the "decreased utilization of the emergency room."

Improved care coordination was primarily realized as a result of the addition of care coordinators who worked with providers and non-physician staff to conduct between-visit monitoring of high-risk patients, including those who frequent the emergency department, or those who are at risk for exacerbations of their chronic conditions. Care coordinators served as key facilitators to closing gaps in care and allowing practices to provide improved quality of care for patients.

Electronic Health Records

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, they have been instrumental in increasing coordination across facilities and within the practice. Using the EHR system to monitor aggregate and patient-level outcomes provided a platform to coordinate practice-wide activities and communicate about patient follow-up and care plans. The EHR system has also led to better communication between staff, as one interviewee noted: "EHRs are good for communicating messages. It gets to us quickly and effectively."

Patient Education and Involvement

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 instituted educational classes for patients to discuss health-related issues, but the engagement of patients in these classes was mixed across sites. A resounding theme across visits was that patient engagement and compliance can be challenging, particularly with low-income and high-risk populations. Care coordinators were seen as important contributors to increase involvement of these patients in their health care, although practices expressed a need for additional tools to encourage patient engagement and compliance. For example, one practice serving a low-income population was located in a food desert (an area where affordable and nutritious food is difficult to obtain, particularly for those without access to an automobile). Because affordable and nutritious food is hard to find, patients with chronic conditions such as diabetes are negatively impacted. Interviewees felt that having additional resources to offer these patients could help combat such disparities.

Monitoring and Reporting

Monitoring and reporting of outcomes had a significant effect on PCMH goals, especially at the high performing practices. Efficiencies in the use of EHRs have led to more sophisticated monitoring systems to track and report outcomes. In turn, this has led to heightened data transparency and enhancements in other tracking systems, such as referrals and follow-ups. The MMPP pilot has been a catalyst for rethinking how quality and costs are monitored and reported to improve health outcomes. For example, by tracking outcomes, practices were able to identify and allocate resources for areas in need of quality improvement. Transparency of data also positively affects staff satisfaction by allowing staff to see evidence verifying the positive effects of the program.

Standardization

Interviewees believed that standardization of procedures and policies, through the use of evidence-based medicine and best practices, was an important aspect of improving quality and reducing costs. In the initial stages of transformation, standardization was cited by many practices as a challenging requirement. Over time, these practices reported that it became second nature. Many interviewees believed that standardization helped to improve communication within their practice, with other facilities, and with patients. For instance, standardizing the use of patient care plans used during each patient's visit allowed providers and staff to document and monitor patient health and gave patients more knowledge about their health status and medication use.

Maryland Learning Collaborative

All practices emphasized the importance of the Maryland Learning Collaborative (MLC) in helping them to meet program objectives. The MLC serves as the "implementation leader" for advancing the MMPP PCMH model through educational activities and mentorship. Many interviewees did not feel their success would have been possible without the engagement and support of the MLC, particularly in the initial stages. The coaches provided by the MLC were instrumental in guiding the practices through NCQA requirements and helping them to establish the care coordinator role. Interviewees valued the opportunity to share challenges and successes with other practices through the MLC's meetings and networking activities. When asked what they would suggest to a practice considering transformation, interviewees emphasized the importance of collaborating with practices that have transformed. The MLC served as a key facilitator to program success.

Remarks

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. Though practices have identified areas of improvement, most believed their transformation has been successful and are enthusiastic about the program. Interviewees felt that transformation's positive impact on quality of care and health outcomes played a significant role in staff satisfaction and engagement, particularly compared to the financial outcomes associated with the program. Interviewees believed that important drivers of success have been improved care coordination, increased communication, advancement of monitoring and reporting systems, and better standardization of policies and procedures. Practices believed the program elevated their practice to the next level, allowing some to consider involvement in accountable care organizations and other CMS programs. Looking forward, the practices are eager to improve upon current processes and develop new ones that increase efficiency, improve functionality of their EHR systems to meet the daily operational and reporting needs of the practice, and expand quality improvement initiatives to reach new populations and further improve health outcomes.

These findings should be interpreted with the following limitations in mind. The quality of the interview data obtained during the site visits depends on the knowledge of the interviewees chosen. The site contacts provided by MHCC were our main recruitment contacts for all of the audiences. The evaluation team worked extensively with the site contacts to select the most appropriate interviews, but had to rely on the contacts' judgment and ability to recruit individuals

to participate in the interviews. As well, although sites were selected to represent a variety of different practice types, the small, convenience sample of nine sites limits the generalizability of findings.

This brief on practice transformation with the MMPP is just one piece of the overall evaluation, which includes analyses of health disparities, provider satisfaction, patient satisfaction, and quality, utilization, and cost presented in other briefs. Thus, other pieces of the evaluation should also be considered when assessing whether the MMPP has been successful. Overall, these findings demonstrate that successful practice transformation to a PCMH is possible under the MMPP model, and help to identify important factors of success practice transformation.

Evaluation Approach

Site Visits: A qualitative evaluation was conducted to assess the implementation of practice transformation in MMPP practices through two rounds of interviews and site visits. The first round, conducted between September 2012 and February 2013, focused on the early stages of transformation. The second round, which took place between July and September 2014 with the same practices, sought to explore how the sites evolved, which strategies continued over the duration of the pilot, and how the sites adapted to practice and program needs as the pilot progressed. The evaluation team collected qualitative data among a sample of nine MMPP practices selected from varying practice sizes, geographic settings, ownership types, and specialties to ensure representation of different practice characteristics. The team selected three practices, varying in size, from each of three geographic settings: urban, rural, and suburban. The team also evaluated a mix of privately owned and hospital owned practices with a combination of family and internal medicine, pediatrics, and geriatrics. Eight of the nine sampled practices participated in both rounds of site visits; however, one practice declined to participate in round two. A replacement site with similar characteristics to the practice that declined was recruited.

During each round of site visits, the evaluation team conducted four to six in-depth interviews at each site with staff directly involved in or affected by transformation: practice managers, PCMH leads, care managers, clinical staff and support staff. The team conducted a total of 90 interviews: 45 interviews during the first round of site visits and 45 interviews during the second round.

Analytic Approach: The evaluation team systematically coded transcripts of round one and two interviews for key themes and patterns. The team pulled main points and quotations from the coded data to identify the primary findings from each site visit across all respondents. The analysis focuses on trends over the course of the pilot, aspects that had the most influence on PCMH goals, best practices, and lessons learned.

The qualitative evaluation explored respondent perception of five important themes: (1) the transformation process, (2) staff perceptions of transformation, (3) health outcomes and disparities, (4) care coordination, and (5) financial costs and savings. These themes informed the following four research questions:

1. Which types of practices are most likely to successfully implement the model?
2. Can increased provider satisfaction and positive results be used to encourage other primary care providers to adopt the model?
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 the PCMH have the most impact on improved quality and reduced costs?

In addition to identifying key findings for each research theme, the evaluation team used two variables—shared savings data and NCQA recognition—to investigate which types of practices were the most successful in implementing the model and site characteristics that were associated with better performance and advancement. These data were used to generate a measure to identify high, medium, and low performers. Exhibit 1 provides a definition of each performance level and characteristics of practices in each category. At the time of this report, the evaluation team had access to NCQA recognitions levels for 2011, 2012, and 2013 and shared savings data from commercial insurance in 2011 and 2012 and Medicaid in 2011.

Exhibit 1-1: Measures of Performance Categories

Level of Performance	Definition	Practice Characteristics
High Performer (4 practices)	▪ Reached Level 3 NCQA recognition in 2013 **AND** ▪ Received more than $45,000 in shared savings from commercial insurance in 2011 or 2012 or Medicaid in 2011 **OR** ▪ Received shared savings from commercial insurance in 2011 and 2012 and Medicaid in 2011	***Geographic Location***: 1 rural, 1 suburban, 2 urban ***Ownership Type***: 2 hospital-owned, 2 private ***Specialty***: 2 internal medicine, 1 pediatric, 1 family medicine ***Size***: 1 small, 1 medium, 2 large
Moderate Performer (3 practices)	▪ Reached Level 2 NCQA recognition in 2013 **AND** ▪ Received between $20,000 and $45,000 in shared savings from commercial insurance or Medicaid in 2011 or 2012	***Geographic Location***: 1 rural, 1 suburban, 1 urban ***Ownership Type***: 2 hospital-owned, 1 FQHC ***Specialty***: 1 internal medicine, 2 family medicine ***Size***: 1 small, 2 medium
Low Performer (2 practices)	▪ Reached Level 2 NCQA recognition in 2013 **AND** ▪ Received less than $20,000 in shared savings from commercial insurance or Medicaid in 2011 or 2012	***Geographic Location***: 1 rural, 1 suburban ***Ownership Type***: 1 private, 1 FQHC ***Specialty***: 1 pediatric, 1 family medicine ***Size***: 1 small, 1 large

2. PROVIDER SATISFACTION BRIEF

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[16] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient-centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

- Achieve National Committee for Quality Assurance (NCQA) PCMH recognition Level 1 by January 2012 and submit an application for Level 2 no later than September 30, 2012;
- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices. [17] Other state and federal payors have voluntarily joined the program.

This issue brief describes the findings of the post-pilot provider surveys, conducted in the Summer-Fall of 2014, in comparison to the first wave of surveys conducted at the end of the first year (Spring-Summer 2013, early of the pilot).[18] Three groups of providers were surveyed: (1) MMPP practices, (2) practices in another PCMH program in the state ("Other

[16] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.

[17] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.

[18] Selected key results of the evaluation are presented in this brief. Additional MMPP evaluation issue briefs and supplementary findings may be found in the Appendices.

PCMH"), and (2) practices with low exposure to PCMH. The survey questionnaire covered five domains: (1) satisfaction with care; (2) staff roles in care; (3) job satisfaction and care team functioning; (4) practice team composition; and (5) perceptions of the PCMH model.

The MMPP program has maintained inclusion of some extender roles on care teams in the participating practices, including medical assistants and health educators, and uses medical assistants for some roles covered primarily by clinicians in other practices. Effects on provider attitudes on care team functioning are mixed, with MMPP provider attitudes held constant while beliefs in the other two groups attenuated or became stronger. In 2014, MMPP providers had higher job satisfaction, were more satisfied with the care provided to their patients, and felt little unpleasantness among team members than the "Other PCMH" providers, but were less likely than both comparison groups to agree that "team members depend heavily on one another to get work done." Providers in the "Other PCMH" also grew more confident that the PCMH improved interaction with family members while MMPP provider's attitudes remained constant. Limiting the sample to MMPP physicians reveals additional effects of the program, for example, in maintained satisfaction with care for chronically ill patients over time and increased MMPP physicians' reporting that team members agree about expectations for behavior, but less positive changes in team member knowledge and skills than in the "Other PCMH." These findings suggest avenues for further development in MMPP practice teamwork as well as program strength in high job satisfaction that could be tapped to support program sustainability.

Results

Exhibit 2-1 shows that during the 2014 survey period, 97 MMPP providers and 83 comparison providers completed the survey (response rate = 30 percent), while in the 2013 survey period 105 MMPP providers and 136 comparison providers completed the survey (response rate = 36 percent).

Practice Demographics

Exhibit 2-2 shows the characteristics of responding providers in the MMPP and comparison groups. In both years, there were no statistically significant differences[19] between the three groups in age, gender, or race; however, there were differences in practice size/type and electronic health record adoption. In 2014, all of the survey respondents in the two comparison groups had worked in their practices for more than two years, whereas only 83 percent of the MMPP respondents had worked in their practice for more than two years. Also, the MMPP group included other provider types in addition to physicians, while in the two comparison groups, there were only physician respondents (see Evaluation Approach for detail on the discrepancy). Non-physician respondents (i.e., nurse practitioner or physician assistant) comprised 22 to 26 percent of all MMPP respondents, a non-trivial portion of the total with important viewpoints to

[19] P value < 0.05; the chance that the averages for the two groups are the same is less than 5 percent based on the surveys collected.

include. The evaluation team tested results using physicians only, however, as a sensitivity analysis.

Satisfaction with Care

Although MMPP providers' satisfaction with care generally appeared to decrease over time, only the decline in satisfaction with chronic care management reached statistical significance ($p = 0.04$). Declining satisfaction also was found in the non-MMPP practices. Changes in provider satisfaction over time were similar in all three groups. This indicates that the MMPP pilot did not alter providers' satisfaction with care beyond the normal trend seen in practices that did not participate in the MMPP pilot (Exhibit 2-3). However, MMPP providers are *currently* more satisfied with the care provided to all of their patients, and also to their chronically ill patients, compared to providers from practices participating in the Other PCMH. MMPP providers also report higher satisfaction with care management for their chronically ill patients, both in overall scale scores and in 4 out of 6 individual care-process questions, as compared to providers in the "Other PCMH" in 2014. Similar differences between providers from MMPP practices and the "Other PCMH" were not significant in 2013.

When the sample is limited to physicians only, the MMPP program shows a program impact on providers' satisfaction with care for chronically ill patients maintaining satisfaction, while it dropped among "Other PCMH" providers ($p = 0.041$ among only physicians; $p = 0.158$ among all respondents).

Staff Roles in Care

MMPP practices have shifted primary responsibility for certain tasks to different job roles (Exhibit 2-4). In 2014, clinicians in MMPP practices were less likely to be cited by a majority as undertaking the main responsibility for asking patients' smoking status compared to 2013. This task has been shifted to other job roles. In both 2013 and 2014, medical assistants in MMPP practices were statistically more likely to be responsible for some tasks that are primarily performed by clinicians in the two comparison groups. These tasks include asking patients whether they smoke and obtaining immunization histories from patients. Moreover, even though clinicians have the primary role in screening patients for diseases, gathering information on screening, and gathering information on chronic disease management in all three groups, a large proportion of the MMPP respondents stated these tasks were mostly performed by medical assistants or care managers.

Job Satisfaction and Care Team Functioning

Currently, MMPP providers' job satisfaction is higher than providers from practices participating in the "Other PCMH" program (Exhibit 2-5). This was also true in the 2013 survey, suggesting that MMPP providers started and ended happier than providers from comparison practices. In care team functioning, MMPP providers' belief that teams receive adequate training for their work and that there is limited unpleasantness among team members remained constant, while these items fell in 2014 among respondents in the "Other PCMH" practices (Exhibit 2-5). However, the other two groups' ratings improved for turnover and "team members depend heavily on one another to get work

done," while MMPP practices ratings stayed about the same. In 2014, MMPP providers were significantly less likely than providers in the two comparison groups to agree that team members depend heavily on one another.

Practice Team Composition

Compared to comparison groups, the MMPP pilot has greater inclusion of some extender roles. The MMPP pilot has made significantly smaller reductions in social workers on the care team as compared to providers in the "Other PCMH" and have higher levels of social workers in 2014 than "Other PCMHs." Low exposure providers seem to have increased social worker staffing but the difference from MMPP's change over time did not reach statistical significance (Exhibit 2-6). Registered nurses or nurse case managers, on the other hand, were less likely to be included in the care teams in the MMPP practices in 2014 compared to 2013. In 2014, compared with the "Other PCMH" group, the MMPP practices were more likely to include medical assistants, health educators, and social workers in care teams. The MMPP practices were also more likely than the low exposure group to include medical assistants in their care teams.

When the MMPP sample is limited to physician respondents, the MMPP program shows a smaller reduction over time in health educators compared with the "Other PCMH" group ($p = 0.013$ among only physicians; $p = 0.155$ among all respondents).

Perception of PCMH Model

MMPP providers are more likely to believe that being a PCMH is expensive and reduces providers' control over important aspects of practice compared with low exposure providers in 2014 (Exhibit 2-7). This was also true in 2013. The "Other PCMH" providers reported higher scores on the statement that being a PCMH improves the way they interact with patients' family members, as compared to MMPP providers. While MMPP provider attitudes remained constant on interaction with family members between 2013 and 2014, providers in the "Other PCMH" beliefs grew stronger over time.

When the MMPP respondents are limited to physicians, the Other PMCH group no longer shows statistically greater improvement in the statement "being a PCMH improves the way we interact with patients' family members" ($p = 0.063$ among only physicians; $p = 0.027$ among all respondents). This may be due to reduced sample size, however.

Physician-only Analyses

Most of the results are not sensitive to whether all of the MMPP respondents or only physicians are included in the analysis. The directions of changes and significance levels are similar in the areas of work content, job satisfaction, practice atmosphere, values alignment with leaders, and communication openness and organizational learning. However, when the MMPP sample is limited to physicians only (to better match the comparison group respondents), there are five changes to the results as compared to the full analysis, four of which favor the MMPP. The MMPP program maintained providers' satisfaction with care for chronically ill patients when it dropped among "Other PCMH" providers; reduced health educators less over time than in the "Other PCMH" group; and increased MMPP physicians' reporting that team members agree about expectations for

behavior (p = 0.025 among only physicians; p = 0.166 among all respondents) (not shown) compared with the changes in the "Other PCMH" group. In addition, although the "Other PMCH" group had greater improvement in the statement "being a PCMH improves the way we interact with patients' family members," in the full sample of MMPP respondents, the finding loses significance when only physician respondents were included (p = 0.063 among only physicians; p = 0.027 among all respondents). Finally, physicians in the "Other PCMH" group had greater positive changes in team member knowledge and skills compared to the MMPP physicians (p = 0.031 for only physicians; p = 0.397 for all respondents) (not shown in the exhibits).

Remarks

Participating providers in the MMPP pilot are more satisfied with their job than their "Other PCMH" peers. This was true in both time periods, suggesting that MMPP providers started and ended the program with higher job satisfaction than those in the "Other PCMH" program. The results also suggest that MMPP providers are currently more satisfied with the care provided to their patients than "Other PCMH" providers. In addition, it appears that the MMPP practices are expanding roles of medical assistants to include some tasks that are mostly performed by clinicians in other practices. They are also more likely to include medical assistants, social workers, and health educators in their care teams compared to the "Other PCMH" group. The low exposure group, however, appears to have greatly expanded the number of social workers, health educators, and nurse practitioners, while both PCMH groups reduced or only maintained their numbers between 2013 and 2014. Although beyond the scope of this brief, assigning new roles to different team members may free up clinician time for more complicated tasks and may ultimately yield cost savings for practices and the system as a whole.

In 2014 compared to 2013, MMPP providers reported adequate training and positive team member interaction. On the other hand, providers in the "Other PCMH" program were more likely to agree that team members rely heavily on one another to get the team's work done than MMPP providers were. "Other PCMH" respondents also felt that the PCMH improves interactions with family members more than MMPP providers did.

Overall, the MMPP did not improve provider satisfaction over and above the trend observed in non-participating practices. It also did not worsen provider satisfaction as compared to other practices, however, suggesting that the State's PCMH program had little deleterious effect on the relatively positive providers who participated. Changes were required to meet program requirements, and these are possibly reflected in the MMPP providers' acknowledgement that being a PCMH reduced their control over some important aspects of practice. Yet, in the face of difficult change, providers were no less positive than their peers in "Other PCMH" programs and those who were not participating in any PCMH program.

Implications of Findings for MMPP

Structural changes in the way MMPP practices are organized may lead to both improved attention to preventive care and to cost savings, if less expensive staff can ask patients if

they smoke and take immunization histories more reliably than physicians can, given the number of other tasks on their agendas. The data suggest that the "Other PCMH" tend to use medical assistants to communicate with pharmacies and call patients to provide them with laboratory results, and these may be additional options for more MMPP practices to consider.

Program implementers and MMPP providers may want to revisit the findings of the provider survey to uncover topics for quality improvement cycles within the practices as well. Some team functioning measures and perceptions of PCMH suggest room for improvement around teamwork, including the findings that MMPP providers are less likely to agree that they rely on one another to get work done and that PCMH improves interactions with family members.

These findings should be interpreted with the following limitations in mind. Both rounds of provider surveys had fairly low response rates. Although this is not unusual among surveys of health care providers, response rates below 50 percent may be misleading if there is a bias in who chooses to respond, although it is not easy to predict the direction or implications of any bias. Moreover, a one-year timespan is often not long enough to detect changes in attitudes, behaviors and practice culture. One might see changes in practice structure as an early (or leading) indicator that something is different, but improvements in satisfaction may lag--that is, may not occur until everyone has become comfortable with the changes, or until those who do not like the new direction have left the practice.

This issue brief on the impact of the MMPP on provider satisfaction with MMPP is just one piece of the overall evaluation, which includes analyses of health disparities, patient satisfaction, practice transformation, patient experience and satisfaction, and quality, utilization, and costs presented in other issue briefs. Thus, other pieces of the evaluation should also be considered when assessing whether the MMPP has been successful.

Evaluation Approach

Selection of Comparison Groups: Comparison practices included a group participating in another PCMH program (referred to as 'Other PCMH') in Maryland and a group that was less exposed to the PCMH concept (referred to as 'low exposure' practices). Comparison practices were chosen to be as much like the MMPP practices as possible using a statistical matching technique (propensity score matching). The variables used for the matching included practice characteristics (e.g., ownership, setting, size), provider characteristics aggregated to the practice level (e.g., primary specialty of providers), and characteristics of practice location (e.g., median income of county where the practice is located).

Data Collection: The evaluation team used an online survey to collect information from physicians, physician assistants, and advanced practice nurses in MMPP practices, as well as from physicians in comparison practices. Survey questions assessed (1) satisfaction with care; (2) staff roles in care; (3) job satisfaction and care team functioning; (4) practice team composition; and (5) perception of the PCMH model.

Analytic Approach: Three questions were generally asked for the purpose of evaluation: (1) Did the MMPP program result in greater changes in provider satisfaction over time compared to changes in other practices that are not participating in the MMPP? (2) Were MMPP providers more satisfied over time? (3) Are MMPP providers currently more satisfied than their peers in non-MMPP practices? The first question tests the impact of the MMPP program by comparing changes in responses from MMPP providers between the 2013 and 2014 surveys with the changes among the non-MMPP providers. This robust program evaluation methodology is known as the difference-in-difference approach, which subtracts the change in the non-MMPP group from the change in the MMPP group. It assumes that the change in the comparison group is what would have occurred in the MMPP practices if they had not participated in the MMPP program. Thus, the difference in the changes seen in the MMPP and non-MMPP groups is considered to be *due* to the MMPP program. These are the primary results of this evaluation. For the second question, differences in the MMPP group between the responses at the early and later period of the pilot were evaluated to enhance understanding in changes in the MMPP group over time. For the third question, responses for the MMPP practitioners were compared to responses for the two groups of comparison practitioners looking only at the 2014 surveys to provide a current comparison of provider satisfaction.

To test the impact of the MMPP on provider attitudinal measures, the evaluation compared responses between 2013 and 2014 and across groups using regression (ordinal logistic for ordered outcomes and logistic for binary outcomes), ANOVA, or Chi-square tests. Multivariate regressions controlled for: age (continuous), gender (male/female), race (Caucasian/other), profession in years (<20, >=20), practice type (solo, single specialty, multi-specialty, other), EMR system (no, all electronic, partially electronic), and clustering (robust standard error).

Sensitivity analyses including only physicians were performed because the comparison groups were necessarily comprised of only physician respondents, while the MMPP group also includes nurse practitioners, advanced practice nurses, and physician assistants. Comparison group practices were selected using the Maryland Board of Physicians' Licensure database, the only statewide source of information on primary care practitioners that could be identified. Results from the sensitivity analysis are reported in this brief only if they suggest different findings from the primary analyses.

Exhibit 2-1: Provider Survey Response

	Year 2013		Year 2014	
	No. of responses	Response rate	No. of responses	Response rate
MMPP	105	42%	97	41%
Other PCMH	53	37%	35	21%
Low exposure	83	28%	48	23%

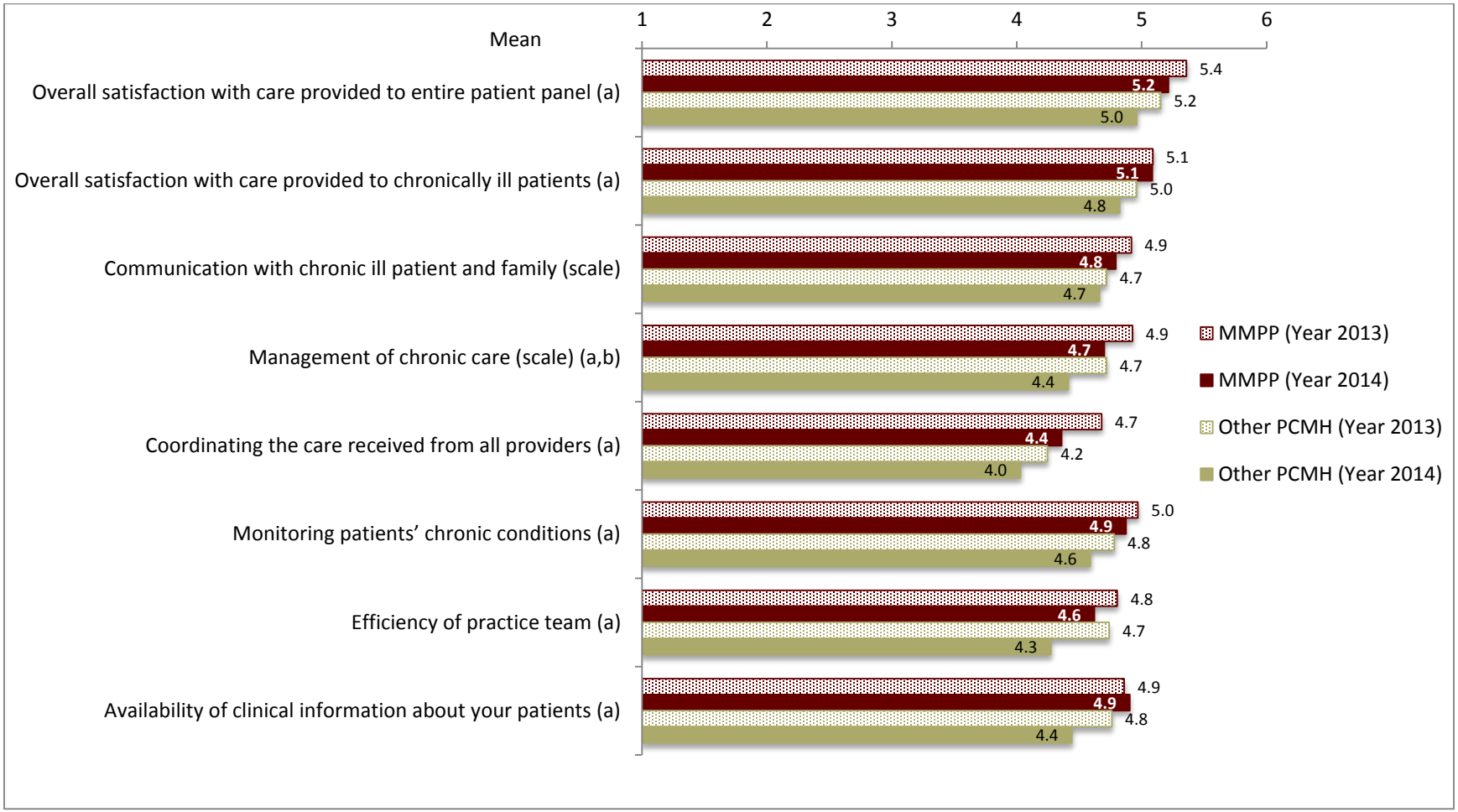
Exhibit 2-2: Characteristics of Provider Respondents by Group and Survey Wave

	MMPP				Other PCMH Match				Low Exposure Match				Differences across 3 groups*	
	Year 2013 (n = 105)		Year 2014 (n = 97)		Year 2013 (n = 53)		Year 2014 (n = 35)		Year 2013 (n = 83)		Year 2014 (n = 48)		Year 2013	Year 2014
	n	%	n	%	n	%	n	%	n	%	n	%	P value	P value
Personal characteristics														
Age, mean (SD)	50	(11)	50	(10)	50	(10)	51	(9)	49	(11)	49	(10)	0.856	0.732
Gender														
Female	46	52	54	60	26	57	16	52	29	47	22	55	0.602	0.683
Male	43	48	36	40	20	43	15	48	33	53	18	45		
Race														
Caucasian	66	74	54	61	30	67	20	61	50	82	32	82	0.629	0.087
African American	8	9	19	21	6	13	3	9	3	5	4	10		
Asian	13	15	13	15	7	16	9	27	7	11	3	8		
Other	2	2	3	3	2	4	1	3	1	2	0	0		
Professional licensing														
MD or DO	80	78	71	74	53	100	35	100	83	100	48	100	<0.001	<0.001
NP or advanced practice nurse	12	12	15	16	0	0	0	0	0	0	0	0		
Physician assistant	11	10	10	10	0	0	0	0	0	0	0	0		
Years in the current practice														
Less than 1 year	7	7	6	6	2	4	0	0	3	4	0	0	0.315	0.002
1-2 years	13	12	11	12	2	4	0	0	6	7	0	0		
More than 2 years	84	81	79	82	49	92	34	100	74	89	48	100		
Practice characteristics														
Ownership														
Private	102	97	91	94	53	100	35	100	83	100	48	100	0.322	0.122
Public	3	3	6	6	0	0	0	0	0	0	0	0		

	MMPP				Other PCMH Match				Low Exposure Match				Differences across 3 groups*	
	Year 2013 (n = 105)		Year 2014 (n = 97)		Year 2013 (n = 53)		Year 2014 (n = 35)		Year 2013 (n = 83)		Year 2014 (n = 48)		Year 2013	Year 2014
	n	%	n	%	n	%	n	%	n	%	n	%	P value	P value
Practice type														
Solo	7	7	7	7	6	11	3	9	4	5	3	6	<0.001	<0.001
Single specialty	43	41	49	51	24	45	21	60	20	24	12	25		
Multi-specialty	36	34	29	30	23	44	11	31	7	8	7	15		
Hospital/Other	19	18	12	12	0	0	0	0	52	63	26	54		
Practice has an electronic medical record system														
No	14	14	21	22	5	9	5	14	7	8	8	17	<0.001	0.017
Yes, all electronic	54	52	48	50	47	89	25	72	72	87	36	75		
Part electronic, part paper	35	34	27	28	1	2	5	14	4	5	4	8		
Exposure to the PCMH concept[a]														
Unaware of the PCMH concept					0	0	1	3	4	7	2	5	<0.001	0.002
Aware of the concept, but have no involvement					1	2	1	3	26	43	12	33		
Exploring becoming a PCMH					14	31	7	21	16	27	10	27		
Applied for a PCMH program/ Seeking PCMH recognition					6	13	6	18	6	10	6	16		
Actively involved in a PCMH program or recognized as a PCMH					24	54	18	55	8	13	7	19		

*One way ANOVA or Kruskal–Wallis one-way analysis of variance for continuous variables; Chi-squared tests or Fisher's exact tests for categorical variables
[a]Only providers in the comparison groups answered these exposure questions.

Exhibit 2-3: Satisfaction with Care in the MMPP and Other PCMH Group* (Selected Items)



* There are no significant results of program effect indicating greater changes in the MMPP group between 2013 and 2014 compared with the other two groups. **There are no differences between MMPP and low exposure group in 2014; thus, these data are not shown**.

[a]In 2014, MMPP providers reported higher scores than Other PCMH providers.

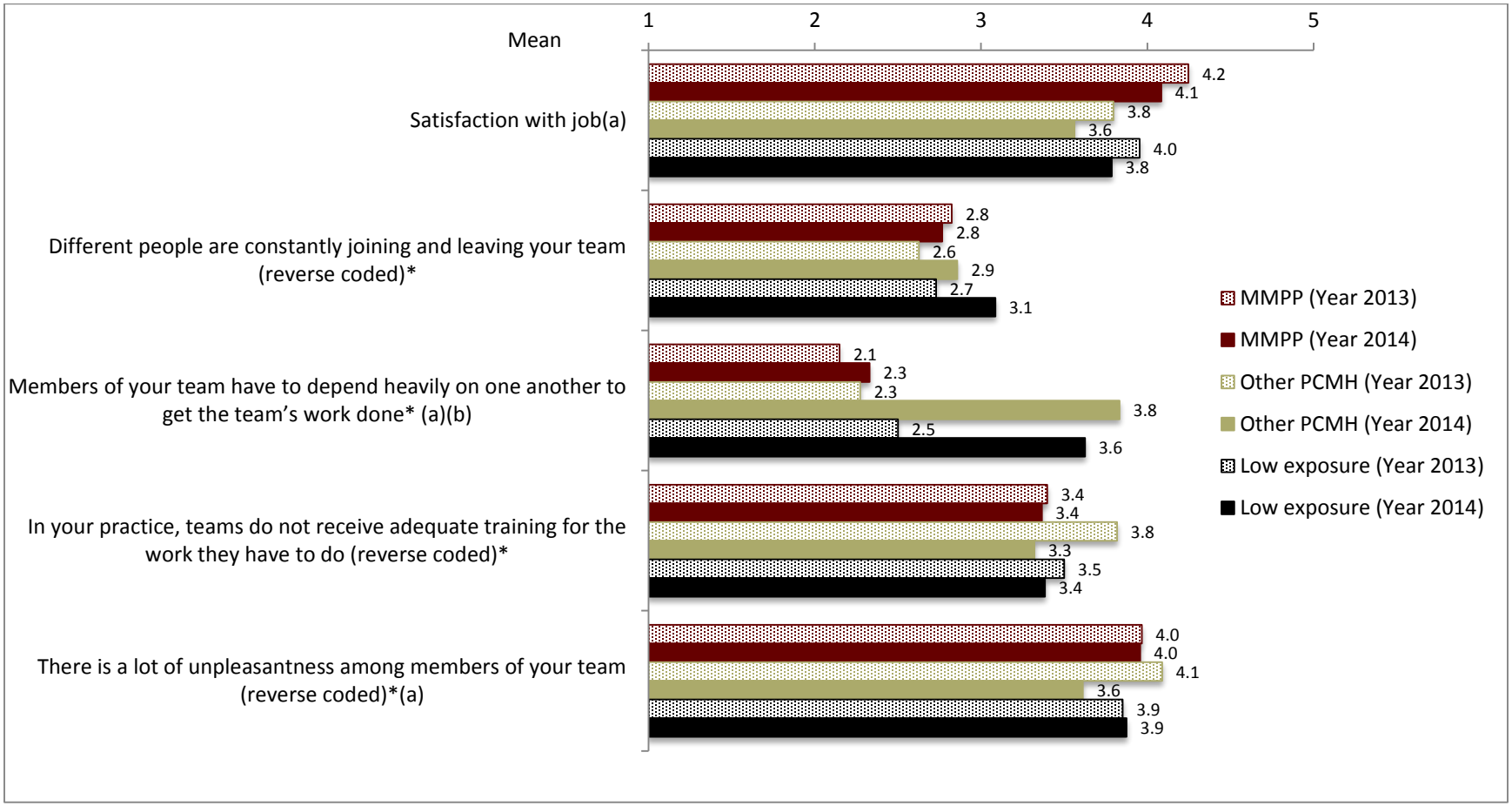
[b]Significant changes between 2013 and 2014 in the MMPP group were found.

Exhibit 2-4: Work Content in the 2014 Provider Survey (Selected Items)

	MMPP (Year 2014)		Other PCMH Match (Year 2014)		Low Exposure Match (Year 2014)		Differences across 3 groups in 2014*	Differences within MMPP group from 2013 to 2014*
	Job Role	%	Job Role	%	Job Role	%	P value	P value
Checking in and orienting patients	Administrative Staff	67	Medical Assistant	47	Administrative Staff	55	0.012	0.726
Screening patients for diseases	Clinician	60	Clinician	79	Clinician	74	0.001	0.904
Asking patients whether they smoke	Medical Assistant	58	Clinician	50	Clinician	55	0.001	0.049
Obtaining immunization histories from patients	Medical Assistant	57	Clinician	44	Clinician	58	<0.001	0.703
Gathering information on screening	Clinician	56	Clinician	76	Clinician	80	0.028	0.156
Gathering information on chronic disease management	Clinician	68	Clinician	85	Clinician	89	0.013	0.677
Obtaining medical records from other providers outside the practice	Administrative Staff	47	Administrative Staff	52	Administrative Staff	52	0.004	0.835
Communicating with pharmacies	Clinician	33	Medical Assistant	45	Clinician	35	0.412	0.224
Calling patients to provide them with laboratory results	Clinician	37	Medical Assistant	44	Clinician	61	0.074	0.876

*Chi-squared tests. P-values <0.05 (statistically significant) are noted in red.

Exhibit 2-5: Job Satisfaction and Within Care Team Functioning by Group and Time (Selected Items)



*MMPP program had an impact as indicated by the difference-in-difference analytic approach (meaning greater/less changes in the MMPP group between 2013 and 2014 compared with the other two groups were found).

[a]Significant differences between MMPP group and Other PCMH match in 2014 were found.

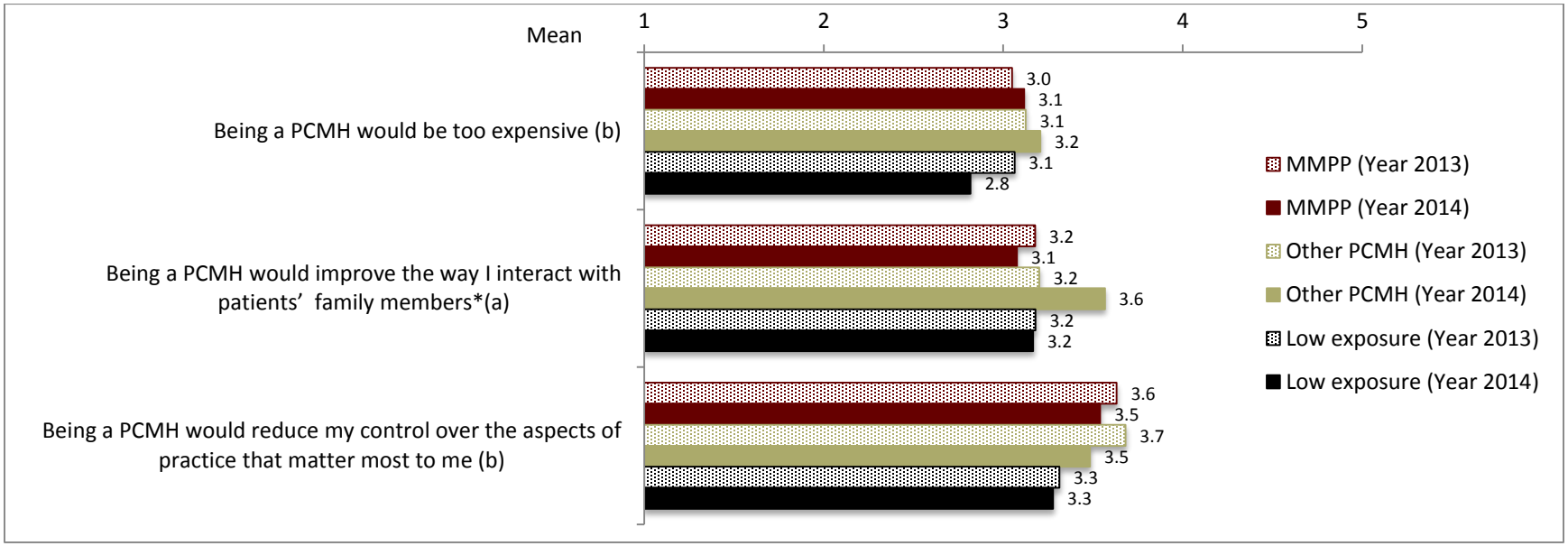
[b]Significant differences between MMPP group and low exposure match in 2014 were found.

Exhibit 2-6: Care Team Composition by Group and Time

	MMPP (n = 95)		Other PCMH Match		Low Exposure Match		MMPP impact* (Difference-in-difference analytic approach)		Differences across groups in 2014*		Changes in the MMPP group*
	Year 2013	Year 2014	Year 2013	Year 2014	Year 2013	Year 2014	Other PCMH vs. MMPP	Low exposure vs. MMPP	Other PCMH vs. MMPP	Low exposure vs. MMPP	
	Always members of team (%)						P value	P value	P value	P value	P value
Primary care physicians	93	87	93	94	77	81	0.511	0.318	0.390	0.316	0.224
Physician's assistants	56	45	33	34	20	24	0.900	0.360	0.206	0.132	0.397
Nurse practitioners	56	56	47	47	37	41	0.574	0.437	0.794	0.554	0.618
Registered nurses or nurse case managers	71	57	42	32	54	56	0.114	0.166	0.168	0.497	0.022
Licensed vocational nurses	31	26	18	11	18	23	0.909	0.337	0.250	0.876	0.215
Medical assistants	91	96	89	85	76	74	0.170	0.032	0.042	0.003	0.210
Clerks or receptionists	86	87	85	85	82	78	0.987	0.457	0.633	0.533	0.643
Health educators	26	13	13	0	3	13	0.155	0.213	0.006	0.057	0.332
Pharmacists	14	10	7	4	16	23	0.583	0.903	0.928	0.752	0.783
Social workers	18	12	16	7	22	41	0.010	0.065	0.022	0.403	0.750
Community health workers	2	1	4	0	2	10	0.771	0.128	0.260	0.516	0.644
Visiting nurses	1	0	7	3	8	5	0.384	0.703	0.409	0.634	0.773
Nutritionists or dieticians	7	1	12	4	10	10	0.614	0.917	0.534	0.585	0.422
Mental (behavioral) health professionals	9	6	11	0	13	18	0.333	0.287	0.344	0.996	0.989

*From ordinal logistic regression models that adjust for age (continuous), gender (male/female), race (Caucasian/other), profession in years (<20, >=20), practice type (solo, single specialty, multi-specialty, other), EMR system (no, all electronic, partially electronic), and clustering (robust standard error). P-values <0.05 are noted in red.

Exhibit 2-7: Perceptions Regarding Patient Centered Medical Home (PCMH) Concept by Group and Time (Selected Items)



*MMPP program had an impact as indicated by the difference-in-difference analytic approach (meaning greater/less changes in the MMPP group between 2013 and 2014 compared with the other two groups were found).

[a]Significant differences between MMPP group and Other PCMH match in 2014 were found.

[b]Significant differences between MMPP group and low exposure match in 2014 were found.

3. PATIENT EXPERIENCE AND SATISFACTION BRIEF

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[20] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient-centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

- Achieve National Committee for Quality Assurance (NCQA) PCMH recognition Level 1 by January 2012 and submit an application for Level 2 no later than September 30, 2012;
- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices.[21] Other state and federal payors have voluntarily joined the program.

This issue brief describes the findings of the post-pilot patient surveys conducted in the Fall of 2014, in comparison to the first wave of surveys collected in 2013 (the commercially-insured population reported between January and February and the

[20] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.

[21] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.

Medicaid sample reported between July and December).[22] Two surveys evaluated patient experience for two groups of MMPP patients: adults and children, respectively. The surveys inquired about: delivery of health care, trust in provider, access to care and chronic illness management. **At the end of the pilot period, more adult patients rated patient-provider communication highly compared to early in the pilot period. In 2014, chronically ill patients have higher ratings for providers giving advice on staying healthy and paying attention to patient's mental health than those without chronic conditions, but lower ratings for getting timely appointments. Medicaid patients reported higher ratings than commercially insured patients for providers giving advice on staying healthy and discussing with patients how to engage a family member or trusted friend to help patients follow the treatment plan. In 2014, most scores reported by African Americans and Caucasians were similar, but some experience items among Caucasians increased from 2013, while they remained the same or decreased somewhat over time among African Americans (for both adults and children). Respondents for children overall are highly satisfied with their MMPP providers, with more than 70 percent of responses in the most positive categories.**

Implications of these findings are that there is a good foundation for further improving partnerships between patients and providers in MMPP practices. Providers and program implementers may wish to investigate how to enhance patient experience by engaging patient representatives in discussions about their experiences.

Results

The overall response rate for the 2013 and 2014 patient surveys was 14.8 percent and 10.9 percent, respectively (Exhibit 3-1; see "Evaluation Approach" for detail on non-participation). Three hundred and eighty responses to the adult survey and 183 responses to the child survey for 2014 were compared with 397 adult responses and 238 child responses from 2013.

Characteristics of Patients Responding

Exhibits 3-2 and 3-3 describe characteristics of the adult and child samples, respectively, by year. There were no significant differences between adult respondents in 2013 and 2014. For child respondents, there were only two differences between 2013 and 2014: 1) fewer Medicaid children rated their health as excellent in 2014 compared to 2013; and 2) more caregivers of commercially insured children in 2014 were women compared to 2013. About two thirds of Medicaid and commercially insured adults reported a chronic illness requiring at least three months of health care visits or prescription medications.[23]

[22] Selected key results of the evaluation are presented in this brief. Additional MMPP evaluation issue briefs and supplementary findings may be found in the Appendices.

[23] This includes any illnesses that require 3-month or longer periods of health care visits or medicine prescription, excluding pregnancy or menopause. Common examples include hypertension and diabetes.

Roughly one third of children reported a chronic condition. The majority of patients reported seeing their MMPP provider for three years or more.

Adults: Consumer Assessment of Health Providers and Systems (CAHPS) Scales

Exhibit 3-4 summarizes the adult responses to the survey questions and scales by year. Similar to 2013, most adult patients reported high scores for their providers' *cultural competency* (58-94 percent "top box" scores, meaning respondents chose positive responses) and *access to care* (50-86 percent top box scores) in 2014. The *PCMH*-related scales generally received lower scores (35-67 percent in top boxes). Providers also received lower positive percentages on engaging family members compared to other questions (20-25 percent top box scores), except for asking for the name of a family member or trusted friend (79 percent).

Generally, larger percentages of adult patients reported top scores in 2014 compared to 2013. Among 13 CAHPS questions or scales, only one changed significantly: provider communication with patients was rated significantly higher in 2014 ($p < 0.05$). Three other items or scales (i.e., providers are polite and considerate; providers discuss medication decisions; and provider's office asks for the name and contact information of a family member or trusted friend) also trended higher in 2014, although these did not quite reach statistical significance.

Chronic illness. The evaluation did not find that the MMPP had a significantly different impact over time on chronically ill patients versus patients without chronic conditions, after adjusting for other characteristics of patients and practices (Exhibit 3-5). Looking only at the current scores for 2014, those with chronic illnesses are more likely to report that providers give advice on staying healthy and that providers pay attention to their mental health than those without a chronic illness; however, they reported lower scores in getting timely appointments and information.

Race. The evaluation also tested for response differences between African Americans and Caucasians. In 2013, African Americans had generally higher scores than Caucasians, although most of the differences were not statistically significant.[24] In 2014, most items or scales show statistically similar scores reported by African Americans and Caucasians. The gap between African Americans and Caucasians generally decreased as Caucasians' scores rose but African Americans' scores generally did not (Exhibit 3-6). In 2014, more Caucasians reported having trust in their providers than African Americans did ($p < 0.05$). For Caucasians, the MMPP improved the item, "providers give advice on staying healthy" ($p < 0.05$), but the same item declined among African Americans in 2014 compared to 2013.

Insurance status. The MMPP did not have a significantly different impact over time on Medicaid patients compared to commercially insured patients (Exhibit 3-7). In 2014, Medicaid patients rated two items higher than commercially insured adults: 1) providers

[24] P value < 0.05; the chance that the averages for each group are the same is less than 5 percent based on the surveys collected.

give advice on staying healthy; and 2) provider discusses with you how you might engage a family member or trusted friend to help you in following your treatment plan.

Child Survey: Consumer Assessment of Health Providers and Systems (CAHPS) Scales
Respondents for children reported similar scores in 2014 as in 2013 (Exhibit 3-8). 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 (top boxes) for these scales. By contrast, only about half of the children or less reported always receiving timely access to care and information and support from their providers in self-care.

Chronic illness. The MMPP did not have a different impact over time on chronically ill children compared to those children not reporting a chronic condition (Exhibit 3-9). We also did not find any significant differences in 2014 scores between chronically ill children and children without chronic problems.

Race. Similar to adults, responses for two child survey questions (i.e., providers give advice on staying healthy and providers support you in taking care of your own health) showed increased scores among Caucasian children and reduced scores among African American children (Exhibit 3-10).

Insurance status. In 2014, respondents for Medicaid children reported higher scores in providers' support of self-care compared to those for commercially insured children (Exhibit 3-11).

Patient Assessment of Chronic Illness Care (PACIC)
The PACIC included questions in five areas: 1) patient activation; 2) delivery system design/decision support; 3) goal setting; 4) problem solving/contextual counseling; and 5) follow-up/coordination. Adults and children identified as having a chronic condition reported the highest scores in the patient activation, delivery system design/decision support, and problem solving/contextual counseling scales, as they did in 2013. The scale with the lowest scores is follow-up/coordination (Exhibits 3-12 and 3-13). There were no significant changes over time in the PACIC scales. There also were no significant differences in the PACIC scales between Medicaid patients and commercially insured patients.

Remarks

The 2014 patient experience surveys, relative to 2013, suggest growth in the group responding positively for patient-provider communication, but no other statistical changes in the overall group. The finding that communication between patients and providers improved holds great promise for improvements in other ratings over time.

Subgroups showed more change. There were some differences between subgroups in 2014 and over-time changes among subgroups: for chronically ill patients, larger portions reported the highest scores for providers giving advice on staying healthy and providers

paying attention to their mental health, compared with those not having chronic conditions. Caucasian patients' assessments of providers generally improved in 2014 compared to 2013. Also, more Medicaid adult patients compared to commercially insured patients reported the highest scores in providers giving advice on staying healthy and discussing the engagement of a family member or trusted friend to help follow the treatment plan; and respondents for Medicaid children rated providers' support for self-care higher than commercially insured children. Respondents for children gave high ratings on overall performance of the provider, trust in the provider, provider communication, and advice on staying healthy.

On the other hand, some 2014 results suggest areas for future improvement among MMPP practices. Very low percentages of adults rate providers positively on engaging family members in care, paying attention to mental/emotional health and supporting patients in taking care of their own health. Also, lower percentages of chronically ill respondents reported getting timely appointments in 2014 compared to those without chronic conditions, pointing out a potential access to care problem. Also, African Americans (both adults and children) reported lower scores for trust in provider and providers offering advice on how to stay healthy in 2014 while scores from Caucasians increased over time.

Implications of Findings for MMPP

In general, the finding that more patients felt positive about patient-provider communication in 2014 than in the previous year suggests that providers are doing a better job listening to patients and responding to what patients are telling them. Improvement in this measure bodes well for further improvement in patient experience since good communication is a key to building trust and forging a fruitful partnership to improve care delivery and patient adherence to recommendations.

Since most patient satisfaction and experience measures did not change over time, program implementers and providers may want to consider what specific areas of patient satisfaction and experience they most want to improve, and may also consider engaging patient representatives in a conversation around how to address any issues that patients identify. In particular, timely appointments for the chronically ill are critical to appropriate care for this complex and costly group of patients, especially since timely care may prevent emergency room and hospital use (for ambulatory care sensitive conditions). In addition, lack of trust of providers among African-American patients is of great concern because it can interfere with communication and may ultimately lead to disparities in outcomes of care.

These findings should be interpreted with the following limitations in mind. The response rates are low, raising the possibility that findings may differ for the rest of the population that did not respond. The number of respondents reporting and response rates in 2014 were lower than in 2013; however, the respondent groups have similar characteristics in the two survey periods. Some results of improvement in a group that initially scored

lower, and reductions in a group that initially scored higher, may be “regression to the mean,” or the appearance of change when in fact scores were simply artificially high or low in one sample (that is, an anomaly). Another limitation of this brief is that a one-year timespan may not be long enough for patients to perceive changes in the care their providers deliver.

This issue brief on the impact of MMPP on patient experience and satisfaction is just one piece of the overall evaluation, which includes analyses of health disparities, provider satisfaction, practice transformation, and quality, utilization, and cost presented in other issue briefs. Thus, other pieces of the evaluation should also be considered when assessing whether the MMPP has been successful.

Evaluation Approach

The target analysis sample size was 500 patients in this second wave of surveys in 2014. With the same sampling design as in 2013, the evaluation team sampled Medicaid and commercially insured patients from each participating practice. To achieve reasonable participation of children, African Americans, and chronically ill patients, the design oversampled in practices with pediatricians, those located in areas with high concentrations of African Americans, and those with larger numbers of Maryland Health Insurance Plan (MHIP) enrollees. Oversampling led to 1,830 Medicaid patients and 3,345 commercially insured patients (provided to IMPAQ by MHCC and Hilltop Institute, University of Maryland Baltimore County) who were invited to participate. There are two survey instruments, one for adults (≥18 years of age) and one for children (<18 years of age). The child's caregiver answered the questions about the child under his/her care.

The instruments include items from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH Survey, CAHPS supplemental topics, and the Patient Assessment of Chronic Illness Care (PACIC).

The overall response rate for the 2014 patient surveys was 10.9 percent (Exhibit 3-1). The greatest portion of non-response was due to bad telephone numbers (38.2 percent). Patient refusal to participate in the survey accounted for only 7.8 percent of the patients called. Sixty-four adult responses and 18 child responses were dropped because respondents indicated they did not use an MMPP practice.

For the items and scales from the CAHPS Survey, this report displays the "top box" score, referring to the percentage responding in the most positive response categories, indicating excellent performance. The American Institutes for Research recommend this reporting method as easy to understand and interpret. For scales from the PACIC, the average and standard deviation are reported.

To test the impact of the MMPP on patient satisfaction, the evaluation compared patients' responses between 2013 and 2014 using regression (ordinal logistic for ordered outcomes and logistic for binary outcomes). Outcomes from the adult survey are adjusted for respondent age, gender, education level, whether the respondent lives with others, self-rated overall health, self-rated mental health, duration of experience with the provider, Medicaid or commercial insurance status, and practice type. For measures in the child survey, results account for the child's age, gender, guardian-rated overall health, duration of experience with the provider, Medicaid or commercial insurance status, practice type, and also characteristics of the respondent or guardian (i.e., age, gender, education level, and relationship to the child).

The evaluation team also examined whether the MMPP has had a greater impact on vulnerable populations, including chronically ill patients, African Americans, and Medicaid patients, and whether vulnerable patients are more satisfied in 2014 than respondents from other groups. This is determined by comparing the difference in the change over time in responses for the vulnerable group to the non-vulnerable group.

Due to stratification and oversampling, patients in the sample had different chances of selection. The analyses were therefore weighted in order to reflect the full population from which cases were sampled.

Exhibit 3-1: Patient Survey Response by Insurance and Survey

	2013		2014	
	No. of responses	Response rate	No. of responses	Response rate
Commercially insured sample	**409**	**16.6%**	**372**	**11.1%**
Adult survey	297	15.7%	274	10.7%
Child survey	112	19.9%	98	12.7%
Medicaid sample	**226**	**12.3%**	**191**	**10.4%**
Adult survey	100	10.7%	106	9.3%
Child survey	126	14.1%	85	12.2%

Exhibit 3-2: Characteristics of Adult Respondents by Insurance Type and Survey

	Commercially insured patients		Medicaid patients		Differences between 2013 and 2014	
	2013 %	2014 %	2013 %	2014 %	Commercial p value*	Medicaid p value*
Demographics						
Age						
Under 35	16.3	9.9	48.5	38.6	0.157	0.255
35 - 44	20.8	20.6	17.7	24.3		
45 - 54	31.4	24.9	22.1	23.5		
55 - 64	18.7	23.4	6.6	13.1		
65 or older	12.8	21.2	5.1	0.4		
Gender						
Male	35.4	35.4	25.1	16.5	0.996	0.349
Female	64.6	64.6	74.9	83.5		
Race						
Caucasian	66.9	57.6	28.6	24.9	0.285	0.896
African American	21.5	27.3	59.7	63.8		
Other	11.6	15.2	11.8	11.3		
Education						
Some high school, but did not graduate	2.5	2.6	18.7	14.8	0.410	0.500
High school graduate or GED	20.1	17.8	45.5	39.4		
Some college or 2-year degree	36.9	27.5	21.9	38.8		
4-year college graduate	16.4	19.9	6.6	4.7		
More than 4-year college degree	24.1	32.3	7.4	2.3		
Household member						
Live alone	17.4	12.9	34.2	20.9	0.256	0.147

	Commercially insured patients		Medicaid patients		Differences between 2013 and 2014	
	2013 %	2014 %	2013 %	2014 %	Commercial p value*	Medicaid p value*
Live with spouse, partner, relative, or others	82.6	87.1	65.8	79.1		
Health Conditions						
Self-rated overall health						
Poor	0.9	2.0	16.8	4.1	0.375	0.222
Fair	9.3	9.5	15.8	26.3		
Good	38.9	29.7	35.0	36.8		
Very good	34.9	36.6	19.3	23.5		
Excellent	16.0	22.2	13.1	9.3		
Self-rated mental or emotional health						
Poor	0.8	0.5	5.4	1.2	0.322	0.526
Fair	3.6	4.2	19.0	24.9		
Good	21.1	27.8	28.7	18.7		
Very good	40.2	30.6	19.9	27.6		
Excellent	34.2	37.0	27.0	27.6		
The respondent has chronic condition or problem						
No	32.9	35.4	29.7	35.3	0.673	0.574
Yes	67.1	64.7	70.3	64.7		
Relationship with the rated provider						
The rated provider is the respondent's usual source of care						
No	4.7	6.5	6.2	1.6	0.489	0.129
Yes	95.3	93.5	93.8	98.5		
Length of experience with the rated provider						
Less than 1 year	14.0	8.3	11.7	20.5	0.271	0.542
At least 1 year, less than 3 years	17.1	16.5	25.0	16.7		
At least 3 year, less than 5 years	17.0	14.0	24.6	18.3		
5 years or more	52.0	61.2	38.7	44.5		

*From Pearson's chi-squared tests.

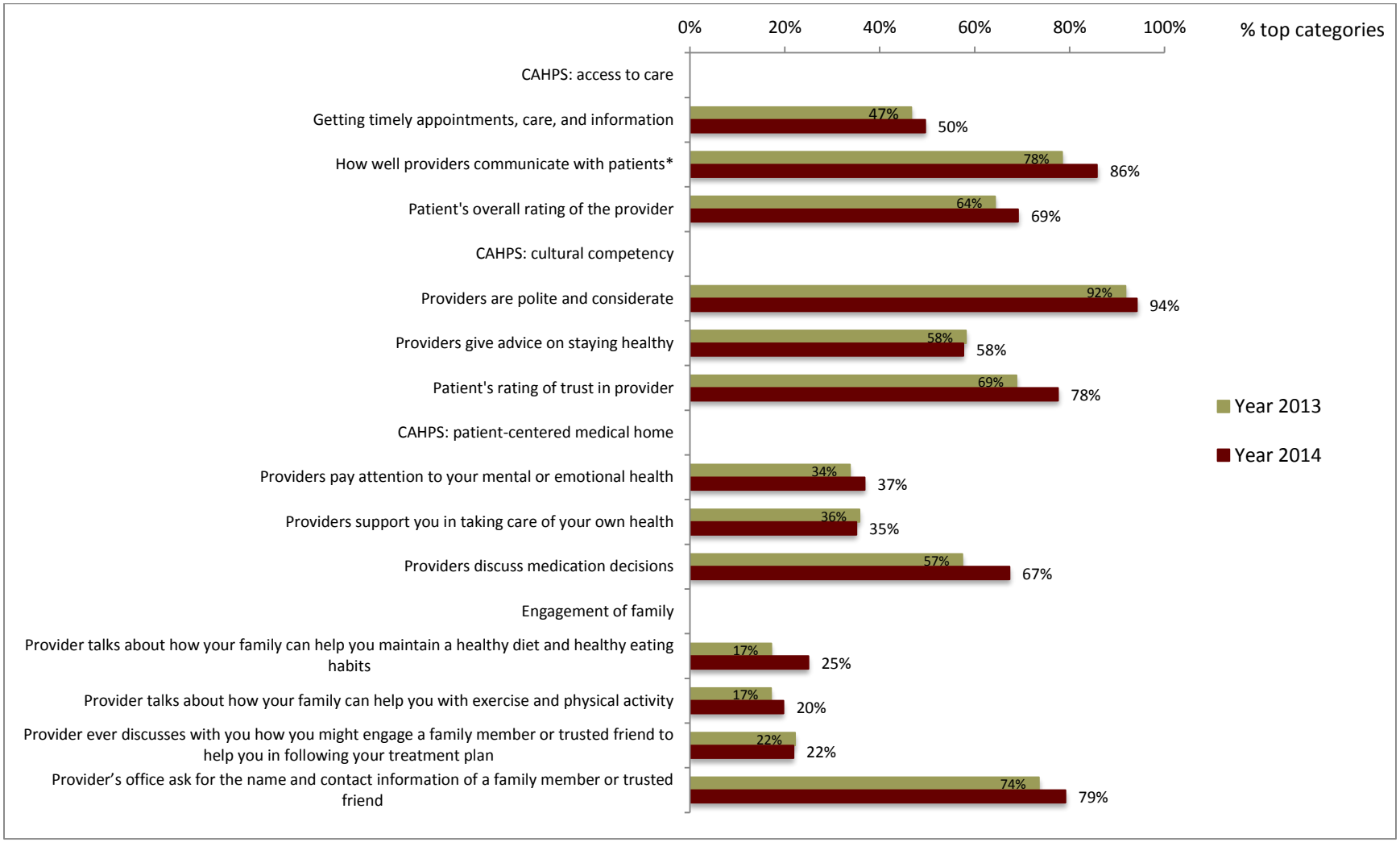
Exhibit 3-3: Characteristics of Child Respondents by Insurance Type and Survey

	Commercially insured patients		Medicaid patients		Differences between Year 1 and Year 2	
	Year 1 %	Year 2 %	Year 1 %	Year 2 %	Commercial p value*	Medicaid p value*
Demographics						
Age						
0-4	16.1	14.8	21.7	21.9	0.763	0.874
5-9	37.4	32.4	31.3	37.9		
10-14	32.3	31.4	29.4	25.0		
15-17	14.2	21.4	17.7	15.2		
Gender						
Male	53.2	56.7	52.2	57.0	0.715	0.625
Female	46.8	43.3	47.8	43.0		
Race						
Caucasian	56.2	60.9	27.3	32.6	0.879	0.487
African American	30.4	27.2	58.6	47.2		
Other	13.3	11.9	14.0	20.1		
Health Conditions						
Self-rated overall health						
Poor	0.0	0.0	0.0	1.0	0.586	0.011
Fair	0.8	0.9	4.4	0.0		
Good	8.0	8.5	9.3	16.7		
Very good	35.6	25.1	15.9	34.7		
Excellent	55.7	65.6	70.5	47.7		
Self-rated mental or emotional health						
Poor	1.4	0.0	1.1	6.9	0.850	0.482
Fair	1.3	1.5	9.5	6.6		
Good	11.6	16.1	15.3	12.0		
Very good	22.2	24.0	21.1	24.7		
Excellent	63.5	58.3	53.0	49.9		
The child has chronic condition or problem						
No	78.0	73.6	64.9	62.6	0.494	0.807
Yes	22.0	26.4	35.1	37.5		
Relationship with the rated provider						
The rated provider is the respondent's usual source of care						
No	3.8	4.8	2.4	5.4	0.778	0.248
Yes	96.2	95.2	97.6	94.6		

	Commercially insured patients		Medicaid patients		Differences between Year 1 and Year 2	
	Year 1 %	Year 2 %	Year 1 %	Year 2 %	Commercial p value*	Medicaid p value*
Length of experience with the rated provider						
Less than 1 year	6.1	1.6	7.6	10.1	0.081	0.397
At least 1 year, less than 3 years	19.8	10.3	20.3	9.4		
At least 3 year, less than 5 years	21.0	15.1	17.0	21.8		
5 years or more	53.1	73.1	55.0	58.7		
Characteristics of Surrogate Respondents						
Age						
Under 35	23.3	11.6	37.2	41.0	0.057	0.307
35 - 44	37.0	55.2	40.2	23.1		
45 - 54	36.5	27.8	17.4	28.7		
55 or older	3.3	5.3	5.2	7.2		
Gender						
Male	36.0	14.1	8.1	13.6	0.003	0.354
Female	64.0	85.9	91.9	86.4		
Education						
Some high school, but did not graduate	0.7	0.8	13.3	11.9	0.994	0.388
High school graduate or GED	12.7	13.4	44.0	31.3		
Some college or 2-year degree	22.4	24.8	33.3	47.4		
4-year college graduate	30.2	30.4	8.4	5.7		
More than 4-year college degree	34.1	30.7	1.0	3.7		
Relationship with the child						
Mother or father	97.7	98.9	90.2	79.1	0.429	0.200
Other	2.3	1.1	9.8	20.9		

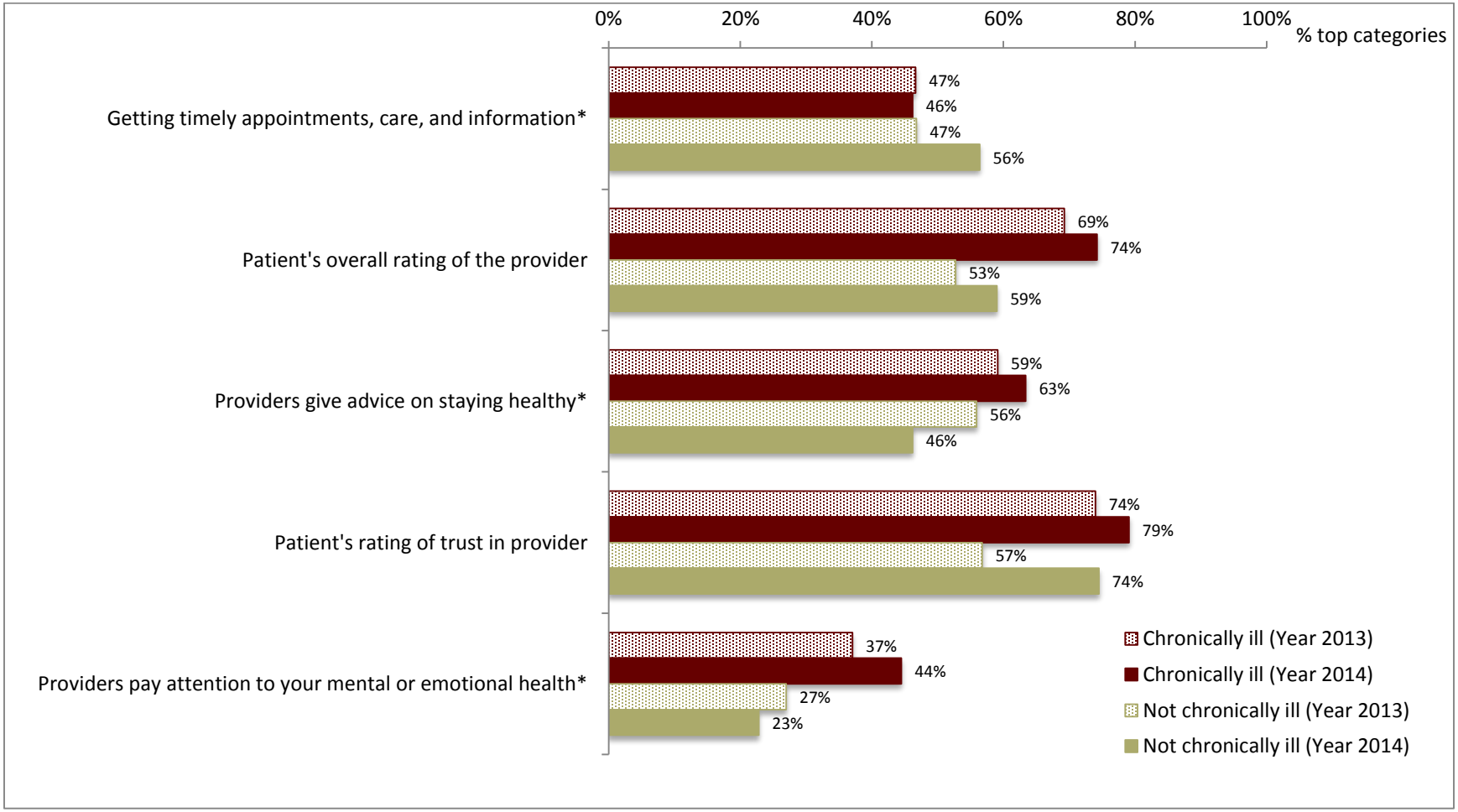
*From Pearson's chi-squared tests.

Exhibit 3-4: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year: Adult Survey



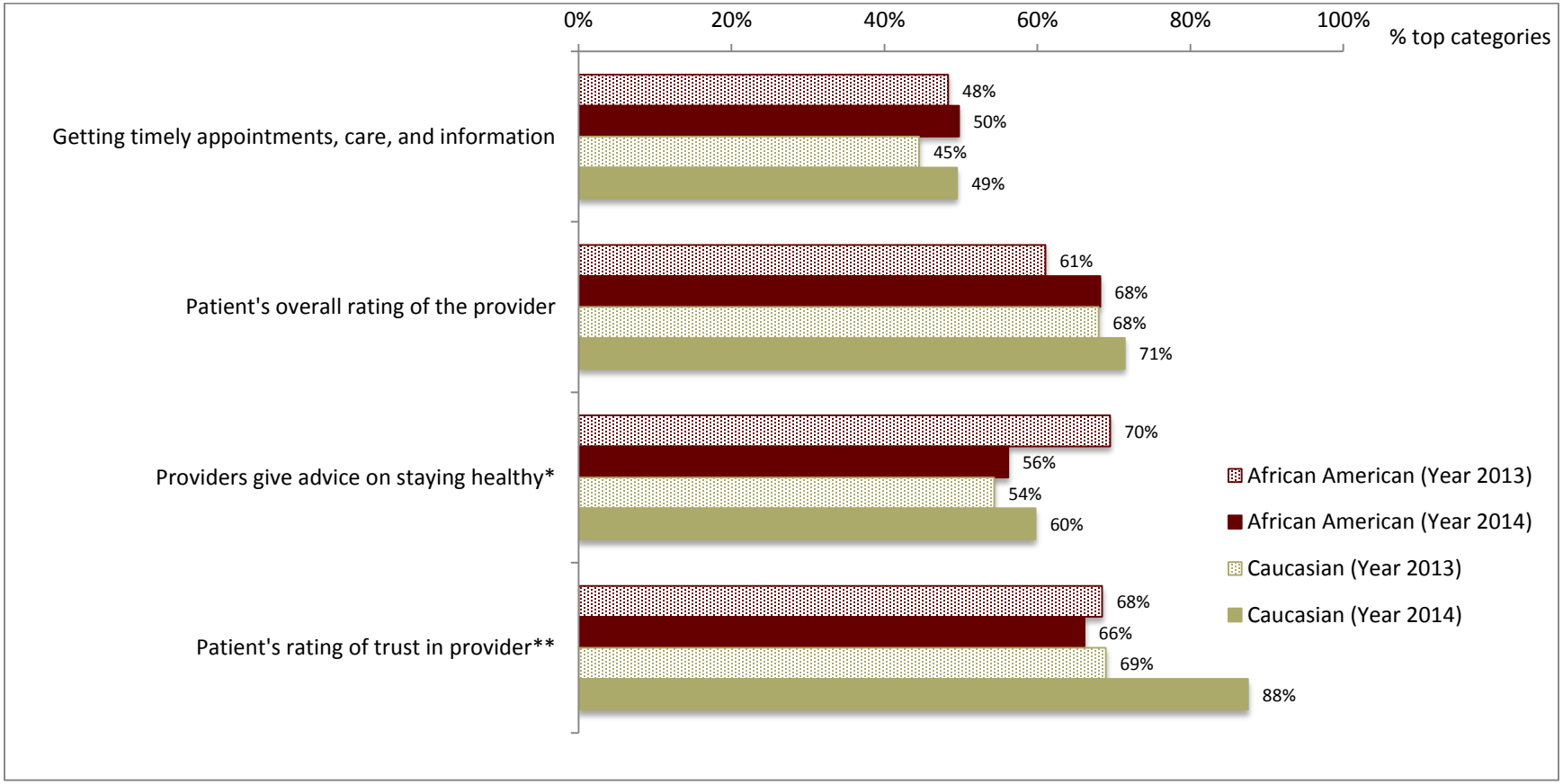
*Statistically significant changes between 2013 and 2014

Exhibit 3-5: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Chronic Condition Status: Adult Survey (Selected Items)



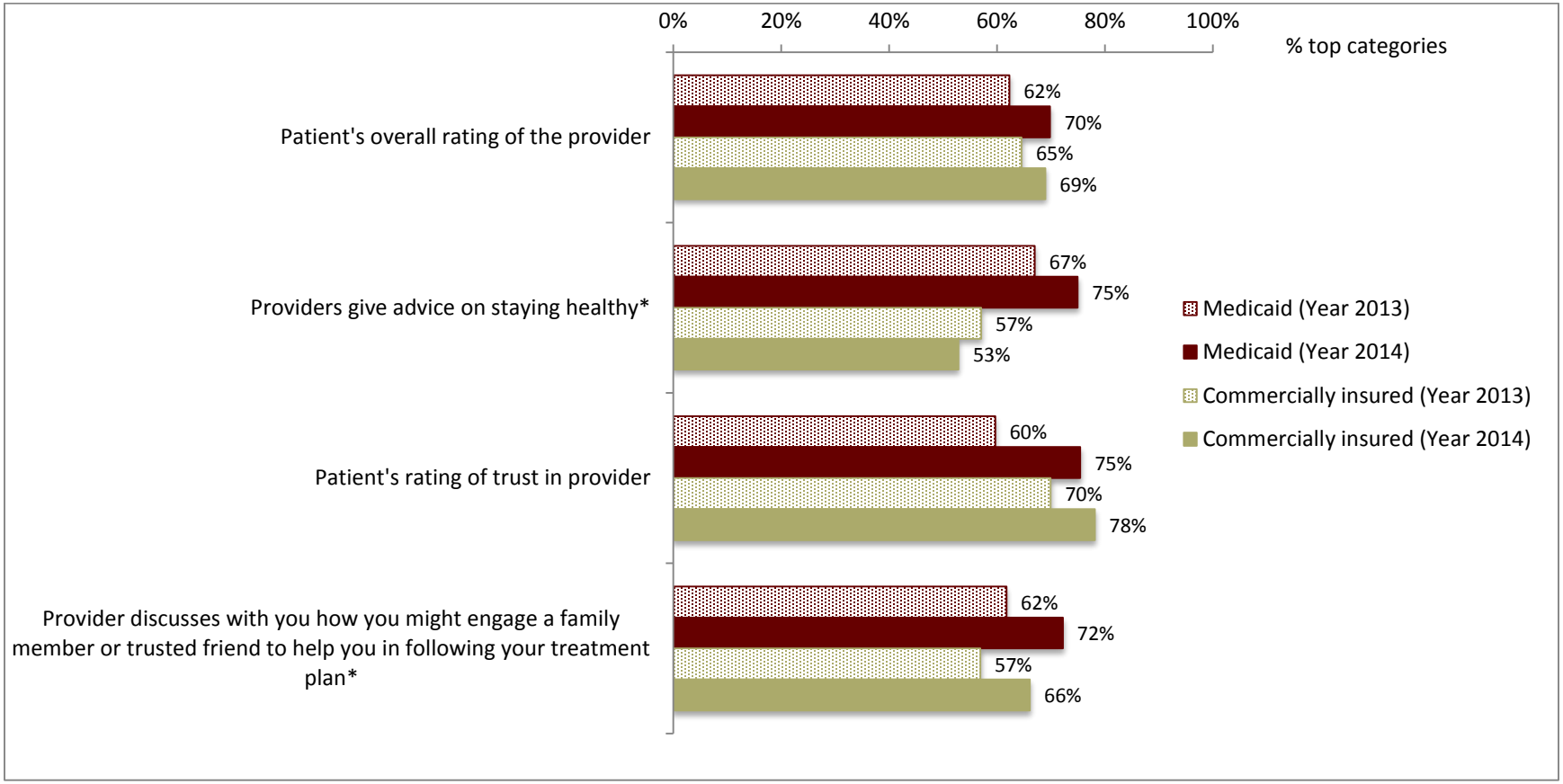
*Statistically significant differences between chronically ill patients and those without chronic conditions in 2014; difference-in-difference results were non-significant.

Exhibit 3-6: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Race: Adult Survey (Selected Items)



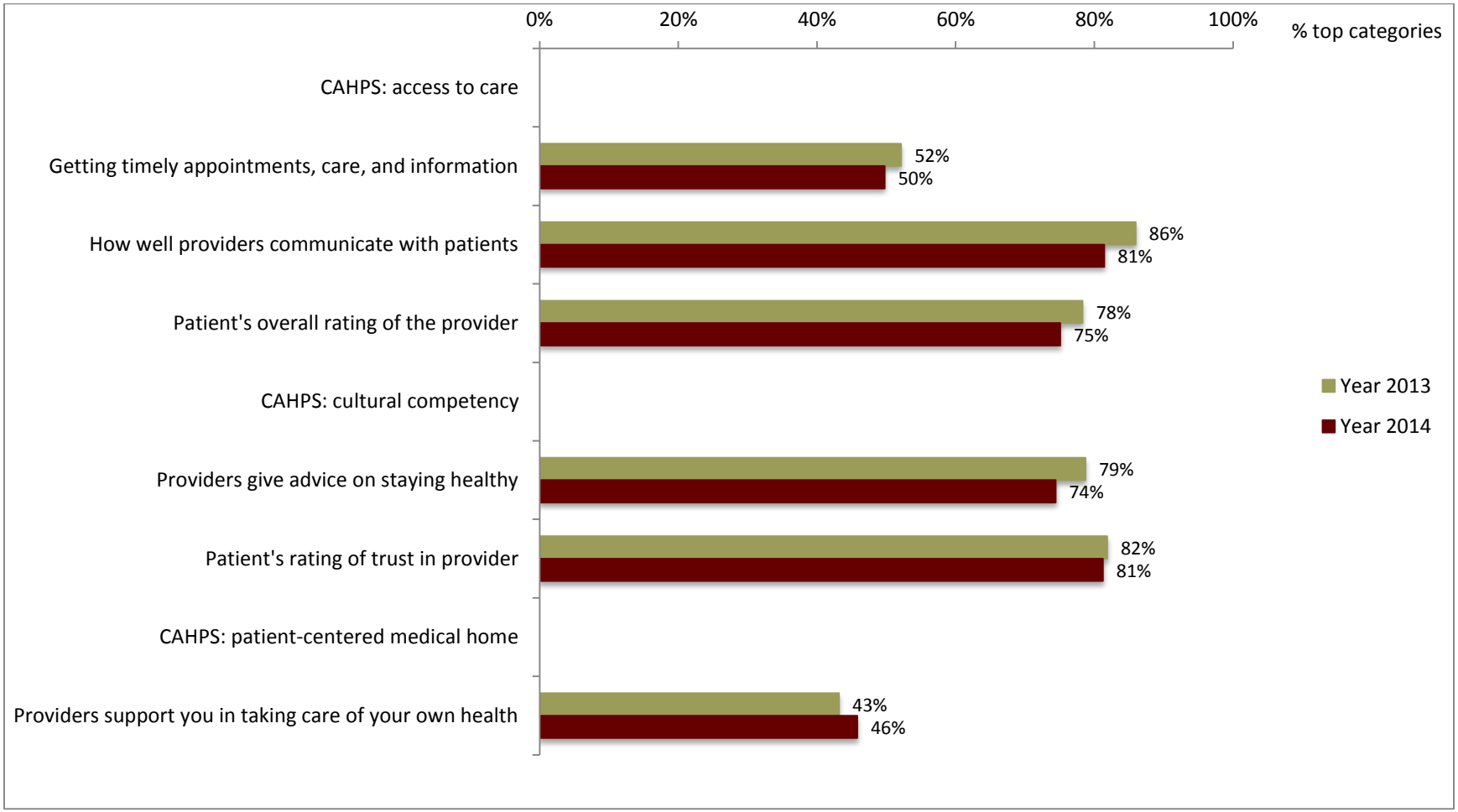
*The difference in the change over time by race is statistically significant.
**Statistically significant differences between African Americans and Caucasians in 2014.

Exhibit 3-7: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Insurance Type: Adult Survey (Selected Items)



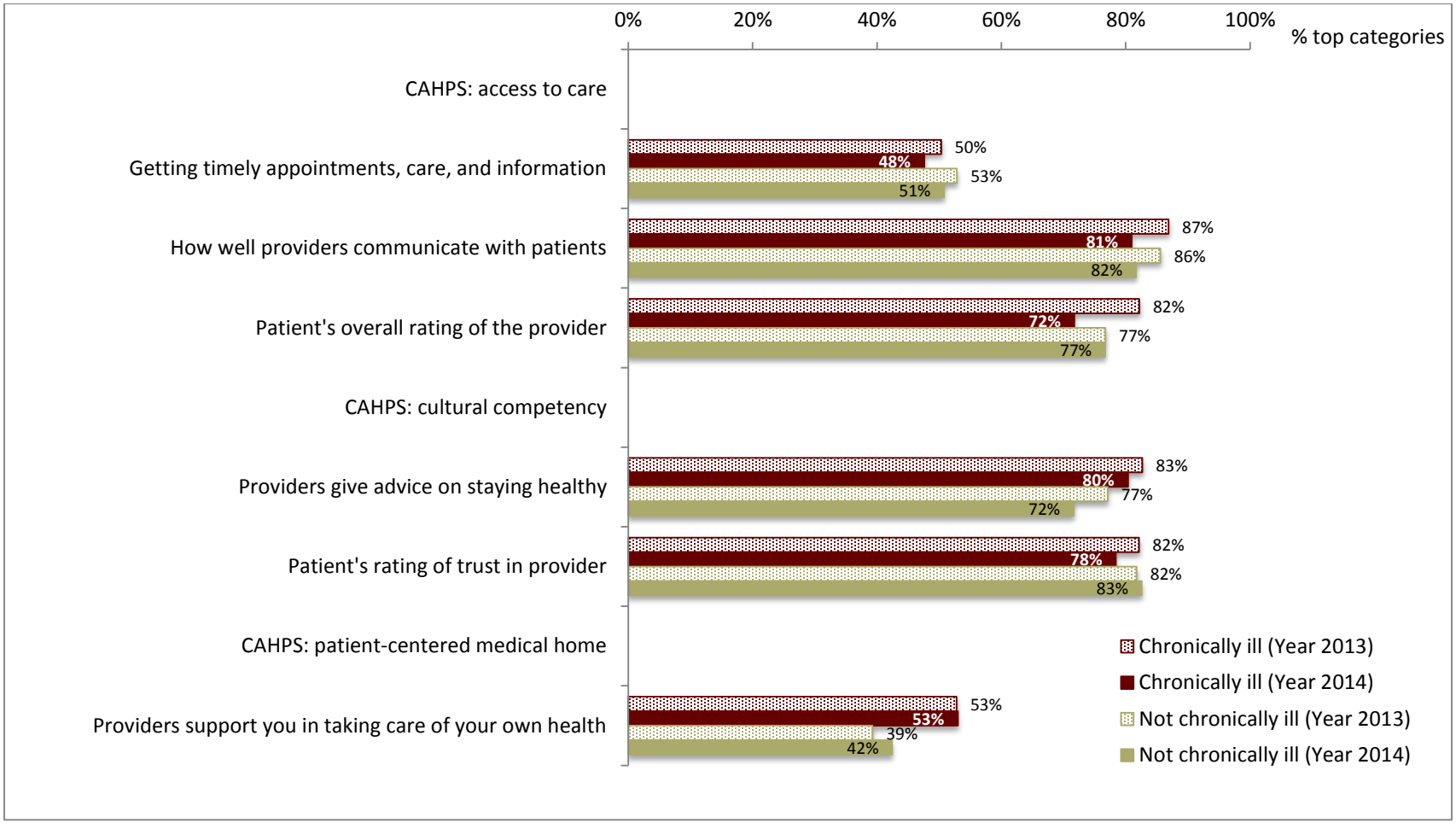
*Statistically significant differences between Medicaid patients and commercially insured patients in 2014.

Exhibit 3-8: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year: Child Survey*



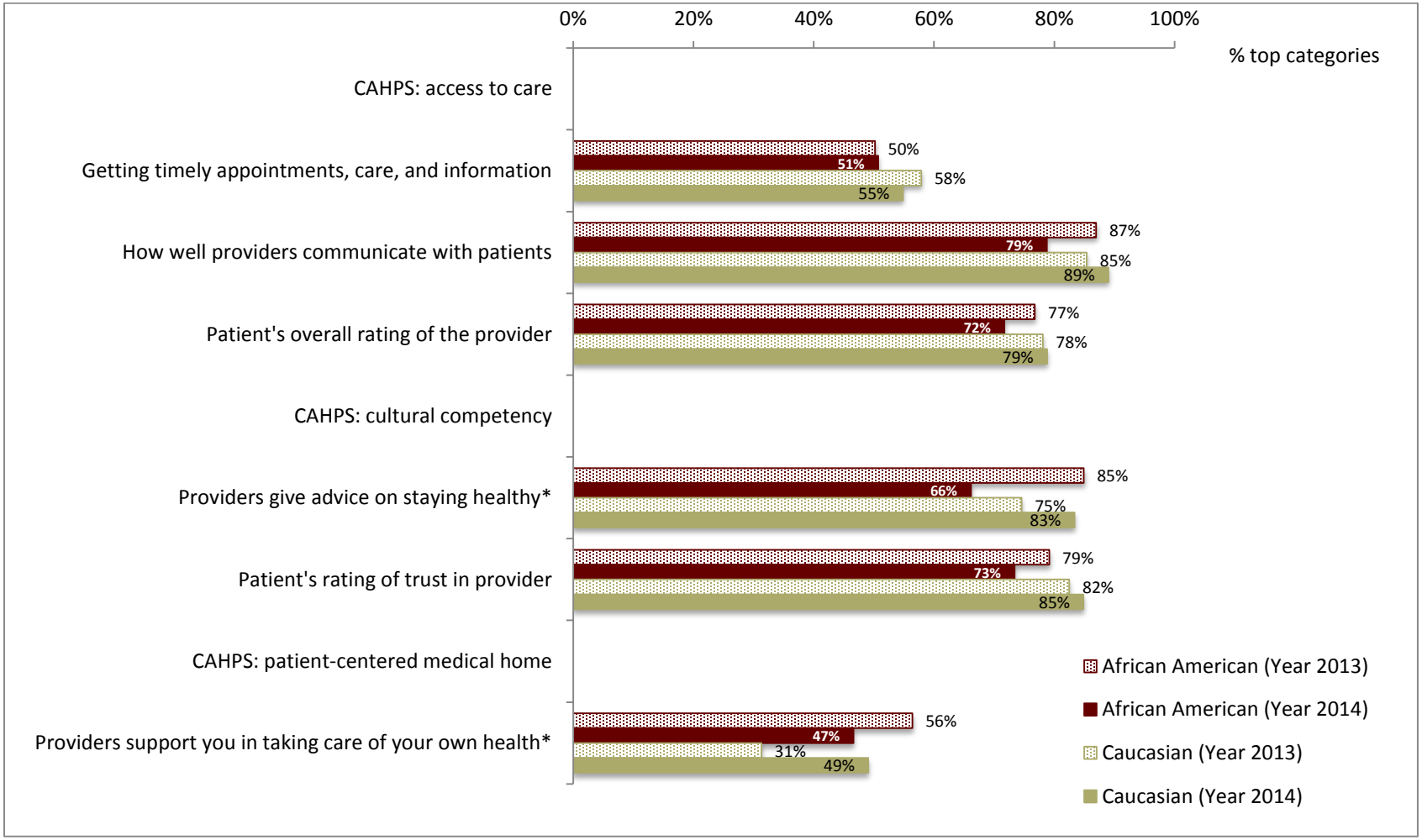
*Differences between 2013 and 2014 are not statistically significant.

Exhibit 3-9: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Chronic Condition Status: Child Survey*



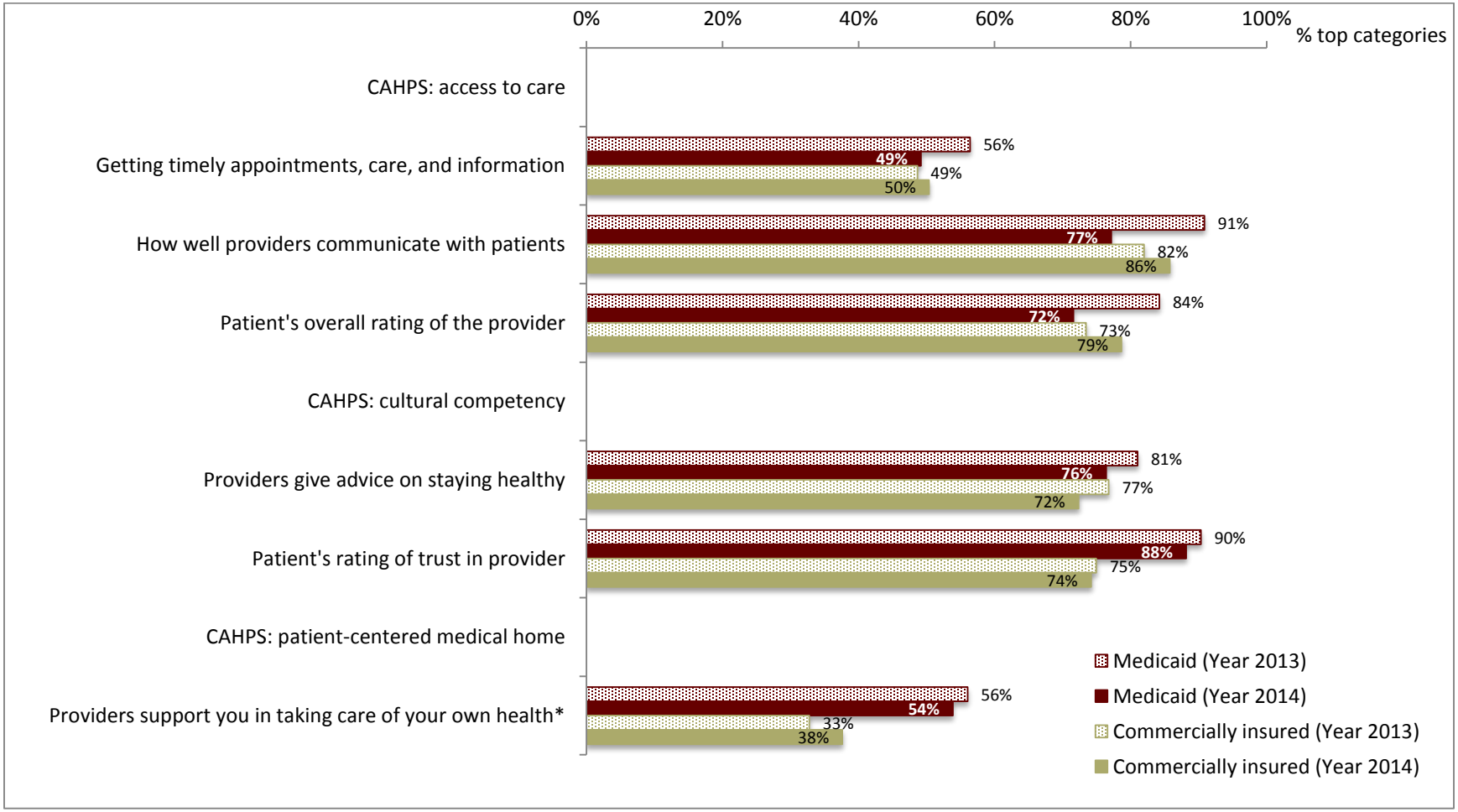
*No statistically significant differences between year 2013 and 2014 or between chronically ill children and not chronically ill children

Exhibit 3-10: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Race: Child Survey



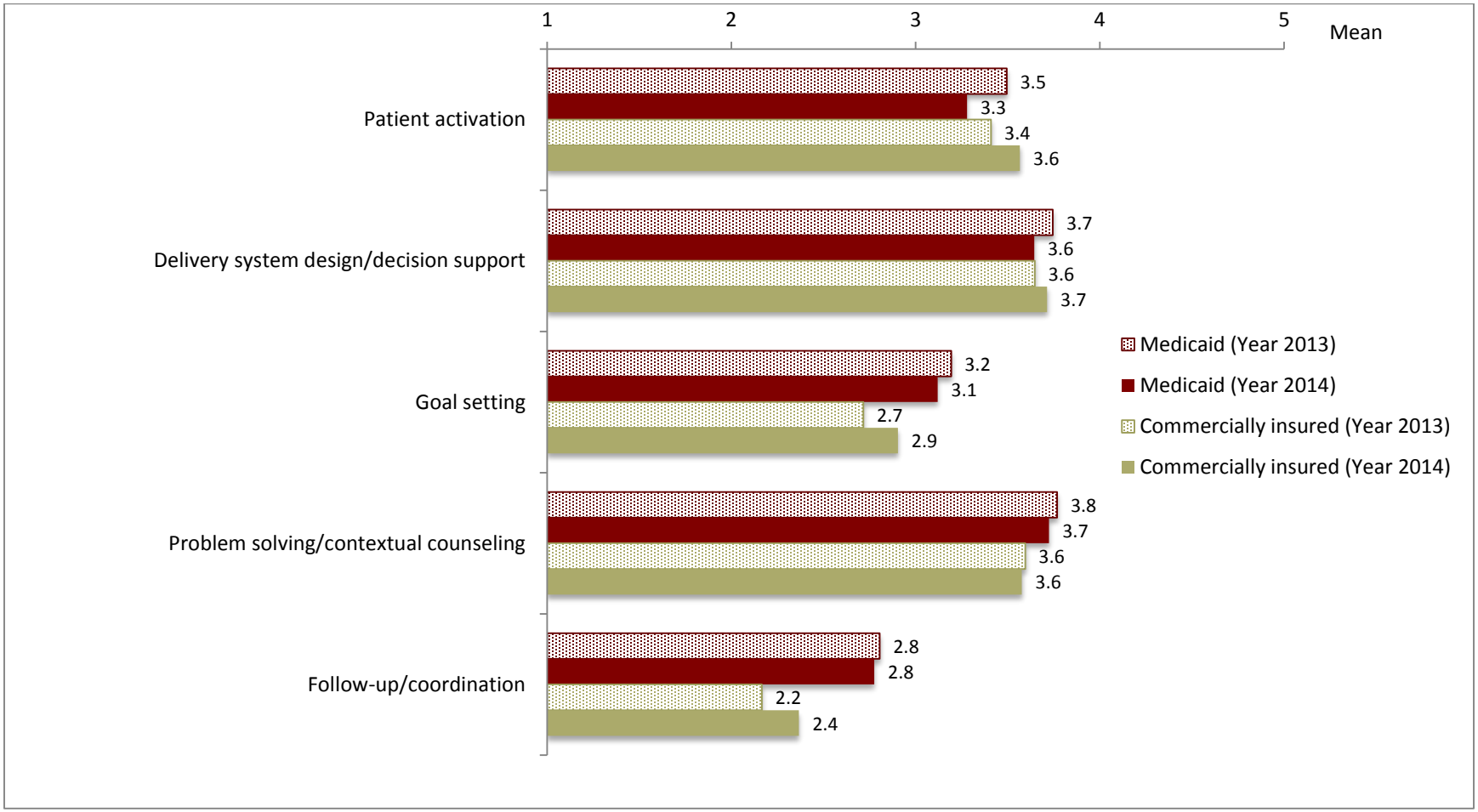
*The MMPP has a statistically significant impact on this item (i.e., the difference in difference is statistically significant).

Exhibit 3-11: Consumer Assessment of Health Providers and Systems (CAHPS) Scales by Year and Patients' Insurance Type: Child Survey



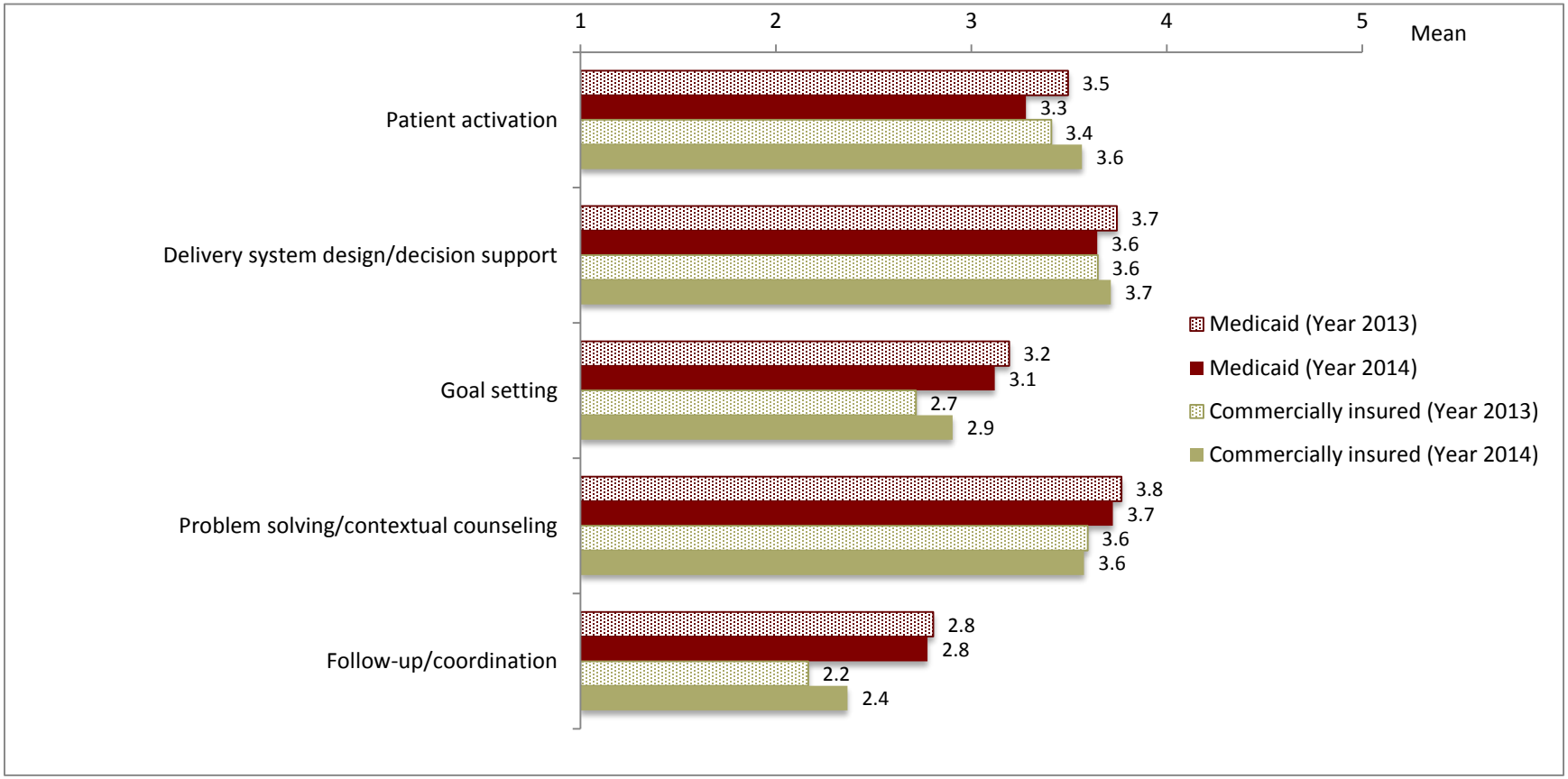
*Statistically significant differences between Medicaid patients and commercially insured patients in 2014.

Exhibit 3-12: Patient Assessment of Chronic Illness Care (PACIC) by Year and Insurance Type: Adult Survey



No statistically significant differences between year 2013 and 2014 or between Medicaid and commercially insured patients

Exhibit 3-13: Patient Assessment of Chronic Illness Care (PACIC) by Year and Insurance Type: Child Survey



No statistically significant differences between year 2013 and 2014 or between Medicaid and commercially insured patients

4. HEALTHCARE QUALITY, UTILIZATION AND COSTS BRIEF

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[25] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

- Achieve National Committee for Quality Assurance (NCQA) PCMH recognition Level 1 by January 2012 and submit an application for Level 2 no later than September 30, 2012;
- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices. [26] Other state and federal payors have voluntarily joined the program.

This issue brief describes the evaluation findings of the MMPP pilot on quality of care, utilization of services, and costs of care assessed from administrative claims.[27] **Chronic disease management of some ambulatory care sensitive conditions improved and results**

[25] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.
[26] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.
[27] Selected key results of the evaluation are presented in this brief. Additional MMPP evaluation issue briefs and supplementary findings may be found in the Appendices.

indicated a reduction in emergency department visits and inpatient stays among Medicaid patients with these conditions. There was some evidence to suggest that the MMPP may have slowed growth of health care costs. Program impacts were variable across patient payor type, indicating the complexities that characterize implementation of broad based population health interventions such as the PCMH model. Preserving and sustaining improvements becomes the next important phase for this program. Insights gained from the implementation of this program can provide a basis for expanding the adoption of this and other models of primary care delivery by a larger number of providers and health systems.

Results

The evaluation found a differential effect by payor type (Medicaid vs. commercial insurance); therefore results are presented separately for commercially insured and Medicaid patients.

Exhibit 4-1 provides a summary of the practice-level descriptive statistics for patients meeting the inclusion criteria in either the baseline year (2010) or Year 1 (2011) of the MMPP implementation. Overall, Medicaid patients were younger and more likely to be female than commercially insured patients. The MMPP sites were statistically compared with the comparison sites on the following variables: number of providers, number of patients, patient age, and proportion of female patients. Among sites with Medicaid patients, MMPP sites had more providers and younger patients than the comparison sites. MMPP sites with commercially insured patients also had more providers than matched comparison sites; they also had more patients per site and a higher proportion of commercially insured female patients than comparison sites.

Program impact results are presented in Exhibits 4-2, 4-3 and 4-4. Results are based on the difference-in-difference coefficient.[28] A green cell indicates the coefficient was consistent with a positive program impact (favoring MMPP) as compared to the baseline year (2010). A red cell indicates the coefficient was consistent with a negative program impact (favoring comparison practices) as compared to the baseline year (2010).[29] Mean values and regression estimates for selected measures are included in Exhibit 4-5. Selected results are summarized in the sections below.

[28] The difference-in-difference approach is a robust program evaluation methodology, which subtracts the change in the non-MMPP group from the change in the MMPP group. It assumes that the change in the comparison group is what would have occurred in the MMPP practices, if they had not participated in the MMPP program. Thus, the difference in the changes seen in the MMPP and non-MMPP groups is considered to be due to the MMPP program.

[29] A positive MMPP impact (or effect) means that among the MMPP practices, the measure had, relative to the comparison practices: a) a larger increase or smaller decline for measures where 'higher is better,' such as cancer screening, diabetes monitoring, or well-care visits; or b) a smaller increase or larger decline for measures where 'lower is better,' such as emergency department visits, hospital admissions, or payments.

Program Effects on Quality

The MMPP had a positive program impact on quality among patients with Medicaid in breast cancer screening for women, diabetes management (glycated hemoglobin monitoring) among children, and asthma-related hospital admissions. The positive breast cancer screening and diabetes management effects were observed only during the first year of the pilot, while the asthma-related hospital admissions effect was not observed until the third year of the pilot. Among patients with commercial insurance, the MMPP's impact was positive for four quality measures, including: asthma-related hospital admissions, diabetes management among adults, cervical cancer screening, and adolescent well-care visits.

Negative program effects of the MMPP on quality were also observed, primarily among Medicaid patients. For example, while the MMPP had a positive effect on cervical cancer screening and adolescent well-care visits among commercially insured patients, the MMPP had a negative effect on these measures among Medicaid patients. In addition, while the program initially had a positive impact on breast cancer screening during the first year among Medicaid women, the comparison practices made gains that exceeded the MMPP practices on this measure during the second and third years of the program. The MMPP also had a negative impact on use of long-term control medications for asthma among Medicaid patients throughout all three years of the program; both MMPP and comparison practices declined in this measure over time, but the MMPP practices had a greater decline.[30]

Program Effects on Healthcare Utilization

Overall, the MMPP had a positive effect on the proportion of Medicaid patients with emergency department (ED) visits; the proportion of Medicaid patients with ED visits held steady over time in MMPP practices, while the proportion increased in comparison practices. ED visits due either to asthma, congestive heart failure (CHF), or diabetes among Medicaid patients with any of these ambulatory care sensitive conditions (ACSCs) also were positively affected among Medicaid patients at MMPP practices relative to patients at comparison sites; the proportion of Medicaid patients with ACSC-related ED visits declined over time in both MMPP and comparison practices, but the decline was greater in MMPP practices. Among commercially insured patients, the MMPP had negative impacts on ED visits in the second year of the pilot, and on ACSC-related ED visits in the third year of the pilot.

The effect of MMPP on inpatient utilization was positive for ACSC-related inpatient admissions, but negative for all inpatient stays; these effects were observed among Medicaid patients only. The MMPP had a negative impact on mean hospital length of stay and on 30-day readmissions among both Medicaid and commercially insured patients.

[30] Prescription drug measures were not assessed among commercially insured patients due to unavailability of prescription drug claims.

Program Effects on Healthcare Costs

The MMPP had a positive impact on costs in both Medicaid and commercially insured patients. There was a positive effect on inpatient payments among Medicaid patients. Over the three years of the pilot, inpatient payments declined over time among Medicaid patients in MMPP practices, while they remained relatively stable among Medicaid patients in comparison practices. Outpatient payments were positively affected (i.e., either a smaller increase or larger decline) by MMPP in both patient groups; however, this effect was not sustained through all three years of the pilot for commercially insured patients.

Remarks

The findings provide evidence that the adoption of the PCMH model by primary care practices in the MMPP met some of the program goals on quality, utilization, and cost measures. Chronic disease management of some ambulatory care sensitive conditions improved and emergency department visits and inpatient stays declined among Medicaid patients with these conditions. There was some evidence to suggest that the MMPP may have slowed growth of health care costs.

The differential effect by payor type provides an opportunity to translate the gains from one payor type to the other by identifying challenges or barriers affecting specific patient populations. The differential effect also provides an insight into the complexities that characterize implementation of broad based population health interventions such as the PCMH model.

Differential program effects between Medicaid versus commercially insured patients are not surprising, given the differences in patient characteristics. For example, the average patient age within practices ranged from 15.4 to 24.4 years in the Medicaid population, compared with 35.5 to 40.6 years in the commercially insured population. Similarly, the average proportion of female Medicaid patients ranged from 61 to 65 percent, compared with 54 to 59 percent of female commercially insured patients. However, the observed differential program impact on breast and cervical cancer screening rates in the Medicaid population versus the commercially insured population does raise questions as to why the MMPP implementation would have a negative impact on a fundamental population health practice. Routine breast cancer screening recommendations changed in 2009 as routine mammography screening for breast cancer was recommended only for women ages 50-74 biennially.[31] Routine cervical cancer screening recommendations changed in 2012 for women age 21 and older; the new recommendation changed the frequency of routine pap smears from one test every year to one test every 3 years.[32] These changes may have

[31] U.S. Preventive Services Task Force. (2009, November). *Breast Cancer Screeing: U.S. Preventive Services Task Force*. Retrieved from U.S. Preventive Services Task Force Web site: http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/breast-cancer-screening?ds=1&s=breast%20cancer%20screening

[32] U.S. Preventive Services Task Force. (2012, March). *Cervical Cancer Screening: U.S. Preventive Services Task Force*. Retrieved from U.S. Preventive Services Task Forc Web site:

resulted in decreased cancer screening rates among all women; however, they do not fully account for the negative program impact when comparing MMPP and comparison practices on these measures, or for differential program impact (i.e., Medicaid versus commercially insured patients) for cervical cancer screening.

The findings of this evaluation are not at variance with findings of PCMH pilot demonstration programs across the country that had similar population health goals of improving quality and reducing costs.[33,34] The absence of an observed pattern or consistent direction of change in all the quality, cost, and utilization indicators from year to year may be indicative of the varying impact interventions may have on different measures of a population's health. Recent systematic reviews[35,36] concluded that the effect of patient centered medical homes was mixed. Furthermore, an evaluation of the National Patient-Centered Medical Home Demonstration Project, which included small independent practices, found modest quality of care improvements after two years but no evidence of improvements in patient-reported outcomes.[37]

The PCMH model of care is an example of practice and systems change that represents a fundamental re-imagination and redesign of practice, replacing old patterns and processes with new ones.[38] While primary care remains the fulcrum upon which to improve population health and achieve good health outcomes, fundamental differences in patients or practice may require tailoring interventions to specific patient populations. Studies[39,40] that examined the effect on utilization and quality of the patient centered medical home in small practices found little to no improvement in utilization and cost and only modest quality improvements. Larger improvements in health indicators have been reported by

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http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/cervical-cancer-screening?ds=1&s=cervical%20cancer

[33] Rosenthal MB, Friedberg MW, Singer SJ, Eastman BA, Li Z, Schneider EC. Effect of a multipayer patient-centered medical home on health care utilization and quality: The Rhode Island Chronic Care Sustainability Initiative Pilot Program. JAMA Intern Med. 2013;173(20):1907-1913.

[34] Friedberg MW, Schneider EC, Rosenthal MB, Volpp KG, Werner RM. Association between Participation in a Multipayer Medical Home Intervention and Changes in Quality, Utilization, and Costs of Care. *JAMA.* 2014;311(8):815-825. doi:10.1001/jama.2014.353.

[35] Peikes D, Zutshi A, Genevro JL, Parchman ML, Meyers DS. Early evaluations of the medical home: building on a promising start. Am J Manag Care.2012;18(2):105-116.

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some PCMH pilot demonstrations; however, these have been associated with demonstrations implemented by large integrated health systems such as the Geisinger Health System and Group Health Cooperative.

Implications of Findings for MMPP

Preserving and sustaining the improvements that MMPP practices achieved becomes the next important phase for this program. Insights gained from the implementation of this program can provide a basis for expanding the adoption of this and other models of primary care delivery by a larger number of providers and health systems.

The results of the MMPP offer opportunities to gain insights into areas of care delivery where further interventions may be required in order to improve outcomes in such areas. Examples include the negative program impact on breast and cervical cancer screening rates as well as adolescent well-care visits observed among Medicaid patients. Interventions may come in the form of additional provider education or patient education. Innovative approaches may need to be deployed on these and other areas in which the MMPP had a negative impact. Irrespective of which approach is adopted to improve breast cancer screening, the MMPP has helped highlight gaps that need to be addressed.

For measures that showed a positive MMPP impact, it is also imperative to identify the improvement factors, understand the specific factors that influenced the improvement, and develop approaches to strengthen and propagate them. One such improvement is being able to identify the specific factors that led to the observed positive program impact on ACSC-specific emergency department visits among Medicaid patients. This has a further implication on overall cost of care if such ambulatory care sensitive conditions can be managed optimally thereby leading to reduction in emergency department visits among a larger cohort of patients.

These findings should be interpreted with the following limitations in mind. First, administrative claims data are not specifically designed for research; they are derived from reimbursement information. Claims data only provide information for services that were paid and may have limited and unreliable diagnostic information. Second, using zip codes for practice attribution 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. 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.[41] Thus, there may be no uniformly best attribution rule; the preferred rule depends on the purpose, context, and stakeholder perspective.

[41] Mehrotra, A, Adams, JL., Thomas, JW, & McGlynn, EA. (2010). The impact of different attribution rules on individual physician cost profiles. Annals of Internal Medicine, 152(10): 649-654.

Several factors limited the statistical power for comparing the quality, utilization, and cost measures between MMPP and comparison sites. The number of patients eligible for some measures was either zero or too small. Hence, the statistical models failed to converge.

This brief on the impact of MMPP on quality, health care utilization, and costs is just one piece of the overall evaluation, which includes analyses of health disparities, provider satisfaction, patient satisfaction, and practice transformation presented in other briefs. Thus, other pieces of the evaluation should also be considered when assessing whether the MMPP has been successful.

Evaluation Approach

The approach consisted of pairing each of the 52 participating practices with comparison practices. Comparison practices included a group participating in another PCMH program (referred to as 'Other PCMH') in Maryland and a group that was less exposed to the PCMH concept (referred to as 'low exposure' practices). Comparison practices were chosen to be as much like the MMPP practices as possible using a statistical matching technique. The variables used for the matching included practice characteristics (e.g., ownership, setting, size), provider characteristics aggregated to the practice level (e.g., primary specialty of providers), and characteristics of practice location (e.g., median income of county where practice is located).

Commercial and Medicaid administrative claims data of patients meeting the evaluation criteria at the MMPP or comparison practice sites were used to construct measures of quality, utilization, and costs. Quality measures were selected from 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 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.

The availability of prescription drug claims for Medicaid recipients allowed for inclusion of measures related to medications for the Medicaid population. Prescription drug claims, and thus prescription drug measures, were not available for commercially insured patients.

Measures were calculated annually for the baseline year before MMPP implementation (2010) and each subsequent year of the MMPP pilot (2011, 2012, and 2013). Comparisons in the practices' measure performance were made between the baseline and each of the subsequent years of the pilot. Patients were included in the analysis if they were continuously enrolled in a health plan in the baseline year (2010) or the subsequent year (2011, 2012 or 2013, depending on the years being compared), 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.

A difference-in-differences (DID) approach was used to estimate the impact of the MMPP on quality, utilization, and costs. The DID approach is a robust quasi-experimental policy analysis tool used as an alternative when randomization is not possible or practical. The DID approach compares the change in the non-MMPP group to the change in the MMPP group. It assumes that the change in the comparison group is what would have occurred in the MMPP practices if they had not participated in the MMPP program; that is, it accounts for outcome changes that would have occurred over time regardless of the MMPP intervention. To further strengthen the validity of the estimates, the evaluation team controlled for case-mix of participating and comparison sites.

Exhibit 4-1: Practice Size and Patient Characteristics for Patients Meeting Study Inclusion Criteria in the 2010 (Baseline Year) or 2011 (Year 1), by Insurance

	Medicaid				Commercially Insured			
	MMPP Sites	All Comparison Sites	Other PCMH Comparison Sites	Low exposure PCMH Comparison Sites	MMPP Sites	All Comparison Sites	Other PCMH Comparison Sites	Low exposure PCMH Comparison Sites
Characteristic	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Number of Providers	7.19 (5.43)	4.41* (7.53)	4.07‡ (3.63)	4.96 (11.47)	6.74 (5.21)	3.07‡ (2.90)	3.61‡ (3.26)	2.34‡ (2.15)
Number of Patients	735 (1,030)	464 (1,012)	503 (1,132)	401 (790)	1,477 (1,986)	575‡ (664)	778* (758)	301‡ (372)
Patient Age (years)	15.4 (13.9)	21.0‡ (15.7)	19.3‡ (15.2)	24.4‡ (16.2)	36.4 (17.9)	36.6‡ (19.1)	35.5‡ (19.6)	40.6‡ (16.6)
Proportion of Female Patients	0.61 (0.11)	0.64 (0.16)	0.63 (0.16)	0.65 (0.15)	0.59 (0.11)	0.54‡ (0.10)	0.54* (0.09)	0.54* (0.11)

Note: *p<0.05 compared to MMPP sites
‡p<0.01 compared to MMPP sites
MMPP = Maryland Multi-Payor Patient Centered Medical Home
PCMH = Patient Centered Medical Home
SD = standard deviation

Exhibit 4-2: Impact of the Maryland Multi-Payor Patient Centered Medical Home Program on Quality, 2011-2013, by Insurance

Health Care Quality Measures	Medicaid			Commercially Insured		
	2011	2012	2013	2011	2012	2013
Proportion of young persons (≤40 years) with asthma with one or more asthma-related hospital admissions within the year	NS	NS	POS†	POS†	DNC	DNC
Proportion of people with hypertension (HTN) with one or more HTN-related hospital admissions within the year	NEG†	DNC	DNC	DNC	DNC	DNC
Proportion of diabetics (18-64 years old) with one or more HBA1c management tests within the year	DNC	NS	NS	NS	POS†	POS*
Proportion of pediatric diabetics (0–17 years) with one or more HbA1c tests within the year	POS*	NS	NS	NS	DNC	NS
Proportion of women (40–64 years) with one or more breast cancer screenings within the year	POS*	NEG†	NEG†	NS	NS	NEG*
Proportion of women (21–64 years) with one or more cervical cancer screenings within the year	NS	NEG†	NEG†	NS	POS†	POS†
Proportion of women who had live births receiving post-partum care within the year	NS	NS	NS	NS	NS	NEG†
Well-child visits (3–6 years), with any practice	NS	DNC	NEG†	NS	NS	NS
Well-child visits (3–6 years), within attributed practice	NS	DNC	NS	NS	NS	NS
Adolescent well-care visits (12–21 years), any practice	NEG*	NEG†	NEG†	POS†	NS	POS†
Adolescent well-care visits (12–21 years), within attributed practice	NS	NS	NS	POS†	POS*	POS†
Proportion of adults (18 and older) with LVSD or HF who were prescribed ACE-inhibitor or ARB therapy	NEG†	NS	NS	NOT AVAILABLE		
Proportion of adults (18 and older) with LVSD or HF who were persistent with ACE-inhibitor or ARB therapy	NS	NS	NS			
Proportion of adults (18 and older) with diabetes who were persistent with ACE-inhibitor or ARB therapy	NS	NS	NEG†			
Proportion of adults (18 and older) who were persistent with beta blocker therapy following incident AMI discharge	DNC	DNC	DNC			
Proportion of persistent asthmatics aged 5 to 40 years with one or more prescriptions for long-term asthma drug therapy	NEG†	NEG†	NEG†			

*p<0.10, †p<0.05

Notes: POS means a statistically significant positive program impact (favoring MMPP) as compared to baseline year (2010). NEG means a statistically significant negative program impact (favoring comparison practices) as compared to baseline year (2010). DNC means that model did not converge, and NS means no statistically significant difference between MMPP and comparison practices in subsequent years as compared to baseline year. Positive findings are coded as GREEN while negative findings are coded as RED. Results are based on the difference-in-difference coefficients, and are adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), practice use of electronic medical records, proportion of white practitioners in the practice and patient case-mix. Prescription drug measures are not available for commercially insured practices.

Exhibit 4-3: Impact of the Maryland Multi-Payor Patient Centered Medical Home Program on Utilization, 2011-2013, by Insurance

Health Care Utilization Measures	Medicaid			Commercial		
	2011	2012	2013	2011	2012	2013
Proportion of patients with one or more ED visits	NS	POS*	POS*	NS	NEG*	NS
Mean number of ED visits among all patients	NS	NEG*	NS	NS	NS	NS
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related ED visits	POS†	NS	POS†	NS	NS	NEG†
Proportion of patients with asthma with one or more asthma-related ED visits	POS†	NS	POS†	NS	NS	NEG†
Proportion of patients w/ CHF with one or more CHF-related ED visits	NS	NS	NS	NS	NS	NS
Proportion of patients w/ diabetes with one or more diabetes-related ED visits	NS	NS	NS	DNC	NS	NS
Proportion of patients with one or more inpatient stays	NEG†	NEG†	NEG†	NS	NS	NS
Proportion of patients w/ asthma, CHF, or diabetes with one or more condition-related inpatient stays	NS	NS	POS†	NS	NS	NS
Proportion of patients w/ asthma with one or more asthma-related inpatient stays	NS	NS	POS†	NS	NS	NS
Proportion of patients with CHF with one or more CHF-related inpatient stays	POS*	NS	NS	NS	NS	NS
Proportion of patients w/ diabetes with one or more diabetes-related inpatient stays	NS	NEG†	NS	NS	NS	NS
Mean inpatient hospital days among patients with inpatient stays	NS	NEG†	NS	NS	NS	NEG†
Proportion of patients with inpatient stays with readmissions within 30 days	NS	NEG†	NEG†	NS	NS	NEG*
Proportion of patients with CHF-related inpatient stays with readmissions due to CHF within 30 days	DNC	DNC	DNC	DNC	DNC	DNC
Mean nursing home days among patients with nursing home stays (more is worse)	NS	NEG†	NEG†	NS	NS	NS
Mean home health care visits among those receiving home health care	NS	NS	NS	NS	NS	NS
Proportion of patients with one or more attributed practice office visits (more is better)	NS	NEG†	NS	POS†	POS†	NS
Mean attributed practice office visits among patients with one or more attributed practice visits	NS	NS	NS	NS	POS*	NS
Mean non-attributed practice office visits among patients with one or more non-attributed practice physician visits (specialty visits) (more is worse)	NS	NS	NS	POS†	NS	NS
Average number of prescriptions within the practice, among patients with at least one	NEG†	NS	NS	NOT AVAILABLE		

*p<0.10, †p<0.05

Notes: POS means a statistically significant positive program impact (favoring MMPP) as compared to baseline year (2010). NEG means a statistically significant negative program impact (favoring comparison practices) as compared to baseline year (2010). DNC means that model did not converge, and NS means no statistically significant difference between MMPP and comparison practices in subsequent years as compared to baseline year. Positive findings are coded as GREEN while negative findings are coded as RED. Results are based on the difference-in-difference coefficients, and are adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), practice use of electronic medical records, proportion of white practitioners in the practice and patient case-mix. Prescription drug measures are not available for commercially insured practices.

Exhibit 4-4: Impact of the Maryland Multi-Payor Patient Centered Medical Home Program on Health Care Costs, 2011-2013, by Insurance

Health Care Cost Measures	Medicaid			Commercial		
	2011	2012	2013	2011	2012	2013
Mean total payments among all patients	POS†	NS	NS	NS	NS	NS
Mean total inpatient payments among patients with an inpatient stay	POS†	POS†	POS†	NS	NS	NS
Mean total outpatient payments among patients with outpatient services	POS†	POS†	POS†	POS†	NS	NS
Mean total ED payments among patients with an ED visit	NS	NS	NS	NS	NS	NS
Mean total attributed practice office visit payments among patients with attributed practice visits	NS	NS	DNC	POS†	NS	POS*
Mean total home health payments among patients with a home health services	NS	NS	NS	NS	NS	NEG*
Mean total nursing home payments among patients with a nursing home stay	NS	NEG†	NS	NS	NS	NS
Mean total hospice payments among patients with hospice care	DNC	DNC	DNC	NS	NS	NS
Mean total non-attributed practice office visit payments among patients with one or more non-attributed practice office visits (specialty office visits)	NS	NS	NS	NS	NS	NS
Mean total radiology payments among patients with radiology visits	NEG*	NS	NS	NS	NS	NS
Mean total laboratory payments among patients with laboratory visits	NS	NS	NS	NS	POS*	NS
Mean total other costs among all patients	POS†	NS	NS	POS†	NS	NS
Average total prescription drug payments, among those with at least one prescription fill	NS	NS	NS	NOT AVAILABLE		

*p<0.10, †p<0.05

Notes: POS means a statistically significant positive program impact (favoring MMPP) as compared to baseline year (2010). NEG means a statistically significant negative program impact (favoring comparison practices) as compared to baseline year (2010). DNC means that model did not converge, and NS means no statistically significant difference between MMPP and comparison practices in subsequent years as compared to baseline year. Positive findings are coded as GREEN while negative findings are coded as RED. Results are based on the difference-in-difference coefficients, and are adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), practice use of electronic medical records, proportion of white practitioners in the practice and patient case-mix. Prescription drug measures are not available for commercially insured practices.

Exhibit 4-5: Unadjusted Means and Adjusted Difference-in-Difference Estimates for Selected

Measure	Patient Group Insurance Status	MMPP or Comparison Practices	Unadjusted Means				Adjusted Difference-in-Difference: MMPP vs. Comp Ratio of ORs (CI) or Estimate (SE)		
			Baseline (2010)	Year 1 (2011)	Year 2 (2012)	Year 3 (2013)	Year 1 vs. Baseline	Year 2 vs. Baseline	Year 3 vs. Baseline
QUALITY									
Proportion Of Women Age 40-64 Years With One Or More Breast Cancer Screening Within The Year	Medicaid	MMPP	0.25	0.29	0.28	0.28	1.13 (1.01,1.26)*	0.72 (0.62, 0.85)†	0.78 (0.68, 0.90)†
		Comparison	0.25	0.26	0.29	0.28			
Proportion Of Young Persons Age 0-40 Years With Asthma With One Or More Asthma-Related Hospital Admissions Within The Year	Medicaid	MMPP	0.024	0.017	0.016	0.015	1.28 (0.95, 1.73)	0.77 (0.53, 1.14)	0.49 (0.30, 0.82)†
		Comparison	0.029	0.019	0.023	0.030			
Number Of Adolescent (Age 12-21 Years) Well-Care Visits, Any Practice	Medicaid	MMPP	0.44	0.45	0.40	0.42	-0.034 (0.019)*	-0.084 (0.025)†	-0.089 (0.025)†
		Comparison	0.40	0.43	0.43	0.46			
Proportion Of Women Age 21-64 Years With One Or More Cervical Cancer Screening Within The Year	Medicaid	MMPP	0.38	0.37	0.35	0.31	0.91 (0.81, 1.03)	0.67 (0.57, 0.80)†	0.76 (0.65, 0.88)†
		Comparison	0.39	0.39	0.40	0.35			
Proportion Of Persistent Asthmatics Age 5 To 40 Years With One Or More Prescriptions For Long-Term Asthma Drug Therapy	Medicaid	MMPP	0.76	0.63	0.54	0.44	0.81 (0.74, 0.87)†	0.56 (0.41, 0.76)†	0.60 (0.50, 0.71)†
		Comparison	0.68	0.58	0.57	0.47			
Proportion Of Women Age 40-64 Years With One Or More Breast Cancer Screening Within The Year	Commercial	MMPP	0.45	0.46	0.46	0.47	0.97 (0.92, 1.02)	0.95 (0.89, 1.02)	0.92 (0.84, 1.00)*
		Comparison	0.47	0.48	0.48	0.49			
Number Of Adolescent (Age 12-21 Years) Well-Care Visits, Any Practice	Commercial	MMPP	0.46	0.45	0.45	0.50	0.033 (0.013)†	0.023 (0.015)	0.051 (0.024)†
		Comparison	0.57	0.53	0.53	0.54			

Measure	Patient Group Insurance Status	MMPP or Comparison Practices	Unadjusted Means				Adjusted Difference-in-Difference: MMPP vs. Comp Ratio of ORs (CI) or Estimate (SE)		
			Baseline (2010)	Year 1 (2011)	Year 2 (2012)	Year 3 (2013)	Year 1 vs. Baseline	Year 2 vs. Baseline	Year 3 vs. Baseline
Number Of Adolescent (Age 12-21 Years) Well-Care Visits, Within Attributed Practice	Commercial	MMPP	0.37	0.38	0.37	0.44	0.057 (0.013)†	0.029 (0.017)*	0.090 (0.029)†
		Comparison	0.51	0.48	0.46	0.47			
Proportion Of Diabetics Age 18-75 Years With One Or More HbA1C Management Tests Within The Year	Commercial	MMPP	0.71	0.68	0.80	0.82	0.96 (0.85, 1.09)	1.41 (1.23, 1.62)†	1.21 (1.02, 1.44)*
		Comparison	0.74	0.71	0.78	0.82			
Proportion Of Women Age 21-64 Years With One Or More Cervical Cancer Screening Within The Year	Commercial	MMPP	0.42	0.39	0.43	0.39	1.04 (1.00, 1.09)	1.08 (1.03, 1.13)†	1.08 (1.02, 1.16)†
		Comparison	0.43	0.38	0.42	0.38			

UTLIIZATION

Proportion Of Patients With One or More Emergency Department Visits	Medicaid	MMPP	0.40	0.41	0.42	0.40	1.04 (0.95, 1.14)	0.92 (0.85, 1.00)*	0.91 (0.84, 0.99)*
		Comparison	0.56	0.57	0.60	0.58			
Proportion Of Patients W/ Asthma, CHF, or Diabetes With One Or More Condition-Related Emergency Department Visits	Medicaid	MMPP	0.11	0.10	0.08	0.08	0.89 (0.82, 0.96)†	0.86 (0.72, 1.04)	0.81 (0.70, 0.94)†
		Comparison	0.11	0.11	0.10	0.10			
Proportion Of Patients With One or More Inpatient Stays	Medicaid	MMPP	0.08	0.08	0.10	0.09	1.16 (1.03, 1.30)†	1.38 (1.17, 1.61)†	1.34 (1.17, 1.55)†
		Comparison	0.17	0.14	0.16	0.14			
Proportion of patients w/ asthma, CHF, or diabetes with one or more condition-related inpatient stays	Medicaid	MMPP	0.028	0.023	0.023	0.021	1.04 (0.93, 1.15)	1.02 (0.84, 1.24)	0.68 (0.52, 0.88)†
		Comparison	0.038	0.030	0.030	0.035			
Mean Inpatient Hospital Days Among Patients with Inpatient Stays	Medicaid	MMPP	5.59	5.79	6.34	6.43	0.34 (0.31)	0.92 (0.40)†	0.25 (0.37)
		Comparison	6.80	6.57	6.71	7.32			

Measure	Patient Group Insurance Status	MMPP or Comparison Practices	Unadjusted Means				Adjusted Difference-in-Difference: MMPP vs. Comp Ratio of ORs (CI) or Estimate (SE)		
			Baseline (2010)	Year 1 (2011)	Year 2 (2012)	Year 3 (2013)	Year 1 vs. Baseline	Year 2 vs. Baseline	Year 3 vs. Baseline
Proportion of Patients with Inpatient Stays with Readmissions Within 30 Days	Medicaid	MMPP	0.23	0.21	0.21	0.22	0.93 (0.78, 1.12)	1.51 (1.22, 1.86)†	1.51 (1.17, 1.95)†
		Comparison	0.30	0.28	0.23	0.22			
Proportion Of Patients With One or More Emergency Department Visits	Commercial	MMPP	0.18	0.18	0.18	0.17	0.99 (0.96, 1.03)	1.07 (1.00, 1.15)*	1.03 (0.94, 1.13)
		Comparison	0.16	0.17	0.16	0.16			
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related ED visits	Commercial	MMPP	0.023	0.023	0.022	0.025	1.17 (0.90, 1.50)	0.98 (0.70, 1.35)	1.51 (1.09, 2.10)†
		Comparison	0.021	0.016	0.019	0.017			
Proportion Of Patients With One or More Attributed Practice Office Visits	Commercial	MMPP	0.86	0.90	0.85	0.91	1.75 (1.44, 2.12)†	1.41 (1.13, 1.76)†	1.03 (0.71, 1.49)
		Comparison	0.96	0.95	0.94	0.96			
Mean Inpatient Hospital Days Among Patients with Inpatient Stays	Commercial	MMPP	4.28	4.65	4.41	4.96	0.24 (0.28)	-0.03 (0.29)	0.71 (0.29)†
		Comparison	4.55	4.63	4.60	4.44			
Proportion of Patients with Inpatient Stays with Readmissions Within 30 Days	Commercial	MMPP	0.12	0.12	0.11	0.14	1.12 (0.79, 1.58)	0.96 (0.71, 1.31)	1.30 (1.01, 1.68)*
		Comparison	0.12	0.11	0.11	0.12			
COSTS									
Mean Total Inpatient Payments, Among Patients With An Inpatient Stay	Medicaid	MMPP	21,178	12,962	14,670	15,616	-6,242 (2,577)†	-5,873 (2,315)†	-6,447 (2,423)†
		Comparison	15,334	13,228	14,419	15,735			

Measure	Patient Group Insurance Status	MMPP or Comparison Practices	Unadjusted Means				Adjusted Difference-in-Difference: MMPP vs. Comp Ratio of ORs (CI) or Estimate (SE)		
			Baseline (2010)	Year 1 (2011)	Year 2 (2012)	Year 3 (2013)	Year 1 vs. Baseline	Year 2 vs. Baseline	Year 3 vs. Baseline
Mean Total Outpatient Payments Among Patients With Outpatient Services	Medicaid	MMPP	2,694	1,800	2,325	2,450	-701 (2623)†	-789 (271)†	-737 (273)†
		Comparison	2,291	2,103	2,372	2,382			
Mean Total Outpatient Payments Among Patients With Outpatient Services	Commercial	MMPP	1,974	2,068	2,377	2,557	-146 (68)†	-41 (80)	33 (105)
		Comparison	1,951	2,162	2,338	2,490			

*p<0.10 †p<0.05

Notes: Results are based on the difference-in-difference coefficients, and are adjusted for practice location (proximity to large/small metropolitan area), practice type (solo vs. other), practice use of electronic medical records, proportion of white practitioners in the practice and patient case-mix.
MMPP=Maryland Multi-Payor Patient Centered Medical Home Program; OR=Odds Ratio; CI=Confidence Interval; SE=Standard Error

5. HEALTH CARE DISPARITIES BRIEF

Overview

The Maryland Health Care Commission (MHCC) has contracted with IMPAQ, International, LLC and its partners[42] to conduct an independent evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program (MMPP) pilot. The MMPP pilot is a three-year program testing the effectiveness of the patient centered medical home (PCMH) model of primary care in 52 Maryland practices. A patient centered medical home is defined in Maryland law as a primary care practice organized to provide a first, coordinated, ongoing, and comprehensive source of care to patients to: foster a partnership with a qualifying individual; coordinate health care services for a qualifying individual; and exchange medical information with carriers, other providers, and qualifying individuals. The MMPP includes practice requirements to catalyze the PCMH transformation process in Maryland. In order to remain in the MMPP, practices must:

- Achieve National Committee for Quality Assurance (NCQA) PCMH recognition Level 1 by January 2012 and submit an application for Level 2 no later than September 30, 2012;
- Hire care managers to support high-needs, complex patients;
- Participate in a shared savings program in which they can receive a portion of the savings they generate through better patient outcomes;
- Report quality measures by extracting data from their own electronic health record (EHR) systems; and
- Participate with the Maryland Learning Collaborative that provides support, tools, and updated information.

A unique feature of the MMPP pilot as compared to many other PCMH programs nationally is that Maryland's PCMH law requires the five largest State-regulated health insurance carriers to financially support the program by providing up-front and incentive payments to qualifying MMPP practices.[43] Other state and federal payors have voluntarily joined the program.

This issue brief describes the evaluation findings of the MMPP pilot on health care disparities as part of the broader evaluation of the impact of the MMPP. Using commercial payor and Medicaid administrative claims data, the evaluation team assessed heath care disparities across four disparity domains: *1) Race, 2) Gender, 3) Geographic Location,*

[42] The IMPAQ team includes researchers from IMPAQ International, LLC, the Johns Hopkins Bloomberg School of Public Health, Healthcare Resolution Services and the University of Maryland School of Pharmacy.
[43] Maryland Annotated Code, Health-General. § 19-1A-02, enacted as Senate Bill 855, House Bill 929 (2010). Carriers with over $90 million in written premiums for health benefit plans in the State in the most recent reporting year are classified as large carriers.

(proximity to a large versus small metropolitan area); and 4) *Income*, as approximated by payor type - commercial insurance versus Medicaid coverage.

At the end of the evaluation timeframe, the findings suggest that the greatest impact of the MMPP was a reduction in baseline disparities by race and geographic location of the practice (at or adjacent to a small metro versus large metro area). The MMPP had greater impact on reducing disparities associated with health care quality measures compared to disparities associated with measures of utilization of health services. Overall, health care disparities were reduced for 19 of 30 measures, there was no change in disparity for 9 measures, and there was an increase in disparity for 2 measures. The analysis suggests that the MMPP program achieved a measurable degree of success in reducing health care disparities. Program impact was variable across measures and across disparity domains, highlighting the complex nature of health care disparities.

Results

This brief presents the Disparity Change Score (DCS), which measures changes in disparity between 2010 (baseline) and 2013 (the end of Year 3). For each disparity that existed in 2010, a positive DCS means the disparity decreased over time; a negative DCS means the disparity increased over time**.** If the DCS equals zero, then there was no change in the relative disparity over time.[44]

To aid interpretation of the findings, each measure was assigned a disparity grade of A through F (Grade A is the highest, or best, and Grade F is the lowest, or worst, disparity grade) in 2010 and in 2013. A change to a higher disparity grade in 2013 compared to 2010 represents a decrease, or improvement, in disparity. Similar approaches have been used in disparity analyses and reporting in other state-level disparities evaluations.[45,46] For the purposes of this brief, only disparities at the MMPP that had a disparity grade of B through F in the baseline period (30 disparities) are presented. Exhibits 5-1 and 5-2 provide summary results from the assessment of the DCS. Exhibit 5-3 displays a tabular summary of disparity changes from the DCS at the MPPP practices.

[44] The rate ratio is calculated using the sub-group with the lowest rate in the baseline year as the reference group. See Drewette-Card RJ, Landen MG. The Disparity Change Score: A New Methodology to Examine Health Disparities in New Mexico *J Public Health Management Practice*, 2005, 11(6), 484–492. Also, the *Evaluation Approach* in this document has additional details on the DCS.

[45] New Mexico Department of Health. "Racial and Ethnic Health Disparities Report Card." 7th Edition, September, 2012 http://nmhealth.org/publication/view/report/437/

[46] Racial and Ethnic Health Disparities in North Carolina: Report Card 2010 http://www.schs.state.nc.us/SCHS/pdf/MinRptCard_WEB_062210.pdf

Program Effects on Disparities in Quality

At the MMPP practices, there were 12 quality of care disparities (three race, five location, four payor) with a Grade B or lower in 2010 (Exhibit 5-1). There were improvements in eight of these disparities, while there was a worsening in one disparity (proportion of young persons with asthma who had an asthma-related hospital admission) (Exhibit 5-3).

Disparities in quality by location were the most likely (4 out of 5 quality-related location disparities) to improve at the MMPP practices, while payor disparities were the least likely (2 out of 2 quality-related payor disparities) to improve (Exhibit 5-3). The greatest positive impact of the MMPP was on the disparity by practice location when assessed for 2 well-child office visits in the first 15 months to the patient's attributed practice (DCS=1.77, Exhibit 5-1). Office visits rates at practices in large metro areas declined over time, while they remained relatively stable in practices located in small metro areas, thus narrowing the gap, but not due to a beneficial effect among patients in small metro areas. The payor disparity in the rates of young asthmatics (<40 years old) with one or more asthma related hospitalizations increased over time (DCS=-23.75, Exhibit 5-1), with a Grade F in both 2010 and 2013. While the rates decreased in both payor sub-groups, there was a greater decline among commercially insured patients, which widened the gap between Medicaid and commercially insured patients.[47]

Program Effects on Disparities in Health Care Utilization

There were 18 (one gender, three location, five race, nine payor) health care utilization disparities at the MMPP practices with Grade B or lower in 2010 (Exhibit 5-2). By 2013, 11 of these disparities showed an improvement. Only one utilization disparity worsened (asthma-related inpatient stays for practices in small versus large metro areas) with a change in grade from D to F.

The largest reduction in disparity at MMPP practices was observed in the reduction in mean nursing home days by location of practice. The DCS showed a decrease (DCS=3.99, Exhibit 5-2) in this disparity among patients attributed to MMPP practices. Over time, the mean number of nursing home days increased among patients attributed to MMPP practices at or adjacent to a large metro area, while it decreased among patients attributed to MMPP practices at or adjacent to a small metro area.

There also was considerable program impact on disparities related to patients with ambulatory care sensitive conditions (ACSCs) at the MMPP practices. One example is the reduction in disparities of ACSC-related inpatient stays among patients with asthma, CHF, or diabetes, with improvements in disparity grades for payor (DCS=0.58, Exhibit 5-2), location (DCS=0.51, Exhibit 5-2) and race (DCS=0.28, Exhibit 5-2) disparity domains.

[47] It should be noted that although the payer disparity rate ratios for this measure are quite large in 2010 and 2013, the absolute sub-group rates of asthma related hospitalizations were small. See the sub-group rates and disparity rate ratios in Exhibit 1.

Similarly, a decrease in payor disparity for diabetes-related emergency department (ED) visits among patients with diabetes was observed at the MMPP practices (DCS=3.70, Exhibit 5-2). Although Medicaid patients had higher rates in 2010 and 2013 than commercially insured patients, Medicaid ED visit rates decreased over time while commercially insured ED visit rates remained constant, thus narrowing the gap.

Remarks

This evaluation is designed to assess the effectiveness of a PCMH model on reducing health care disparities. Therefore, it is important to establish a context within which this evaluation analysis is conducted. The Maryland Health Improvement and Disparities Reduction Act of 2012 identified areas of health care disparity reduction priorities for the state based on the existence of racial, gender, geographic and income disparities. This evaluation of the impact of the MMPP on health care disparities contributes to Maryland's efforts to understand how to effectively address health care disparities.

The MMPP demonstrated an improvement in disparities of practice location (small versus large metro areas), suggesting that the disparities observed at baseline can be improved upon by adopting a PCMH model. Similarly, there was a reduction in racial disparities of ED utilization for patients with ambulatory care sensitive conditions. In contrast, findings from the patient experience surveys suggest that racial disparities of patient trust occurred over time. By 2014, Patient Experience and Satisfaction scores reported by African Americans and Caucasians were similar, however, some satisfaction scores among Caucasians increased from 2013, while care satisfaction scores remained the same or decreased somewhat over time among African Americans.[48]

Implications of Findings for MMPP

As highlighted in the Institute of Medicine's 2002 report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care,*[49] there is an ethical imperative to address disparities that may exist in delivery of care and utilization of services. Furthermore, the existence of disparities come at a huge cost to society. As reported in the Joint Center for Political and Economic Studies in 2009,[50] the direct and indirect health care costs of ethnic/racial disparities between 2003 and 2006 in the United States was estimated at $1.24 trillion. Beyond ethnic/racial disparities, social and societal factors also have been shown to have an effect on health care delivery, which further increase the societal costs of disparities.

This evaluation, therefore, offers an opportunity to understand how practice

[48] *See* Evaluation of the Maryland Multi-Payer Patient Centered Medical Home Program Issue Brief: Patient Experience and Satisfaction, 2015.

[49] https://www.iom.edu/Reports/2002/Unequal-Treatment-Confronting-Racial-and-Ethnic-Disparities-in-Health-Care.aspx

[50] The Economic Burden Of Health Inequalities In The United States http://www.unnaturalcauses.org/assets/uploads/file/BurdenOfHealth.pdf

transformation models or initiatives such as the MMPP can play a role in reducing health care disparities. Practice level factors may have been responsible for the disparities of geographic location observed at baseline. These factors may be attributable to factors such as the inability of remotely located practices to hire and retain skilled staff or a lack of resources to adopt electronic management systems for patient records and coordination. Other factors may be patient factors that limit access to care. Rural communities are usually widely dispersed, hence a lack of proximity to a doctor's office or health facility may result in a lack of consistent follow-up. There exists an opportunity for policy makers to explore these findings to institute initiatives that would help bridge the disparity gap between urban and rural communities.

Furthermore, an assessment of the impact of the MMPP on disparities has implications for providers and practices. It highlights the need for individual and institutional providers to consciously monitor for the inadvertent existence of disparities in care delivery as well as obvious disparities in outcomes in their patient populations at the practice level. MMPP practice staff, during the practice site visit interviews, expressed varying opinions on the effect of PCMH transformation on health care disparities which may need to be further evaluated to identify relevant factors that would further enhance impact. Components of the PCMH model identified by practice staff that differentiate this model from traditional primary care delivery include better support for low-income patients which helps to address disparities, primarily through tracking, follow-up, and better care coordination. The majority of respondents thought that the program had a positive effect on their practices' ability to support patients with complex needs, defined as those who experience mental illness, multiple chronic conditions, or substance abuse.[51]

Policy makers also should consider how best to identify successful practice level interventions and create initiatives around them that would further drive reduction in disparities. In addition, these evaluation findings help provide program planners and implementers additional evidence upon which to make informed decisions vis-à-vis program expansion and development of strategic interventions. Further understanding of the disparities that did not improve or worsened would be needed in order to inform program modification or redesign in the event of an expansion of the MMPP pilot. Practice level interventions may be required to target disparities found to be driven by practice factors. Disparities of practice location can be further studied to identify factors that would reduce or eliminate such disparities. Statewide policies that enable remotely located practices to hire skilled health care professionals to meet practice and population needs can contribute to further reducing geographic location disparities.

The findings should be interpreted with the following limitations in mind. First, administrative claims data are not specifically designed for research; they are derived from reimbursement information. Claims data only provide information for services that were

[51] *See* Evaluation of the Maryland Multi-Payer Patient Centered Medical Home Program Issue Brief: Practice Transformation, 2015.

paid and may have limited and unreliable diagnostic information. However, this limitation would bias results only if there were differences in information by sub-groups. Secondly, because patient data on race were not available in the commercially insured data, we were able to assess the effect of MMPP on racial disparities only among the Medicaid population. Similarly, medication measures could be evaluated only in the Medicaid population because prescription drug claims were not available for this analysis from the commercial payors.

This brief on the impact of MMPP on health care disparities is just one piece of the overall evaluation, which includes analyses of provider satisfaction, patient satisfaction, practice transformation and quality, utilization, and costs presented in other briefs. Thus, other pieces of the evaluation should also be considered when assessing whether the MMPP has been successful.

Evaluation Approach

Commercial and Medicaid administrative claims data were used to construct annual outcome measures of quality, utilization, and costs. The evaluation team then used these outcome measures to quantitatively measure disparities. Four dimensions of health care disparity were included in the evaluation. For each disparity dimension, the evaluation team identified the following sub-groups:

- Patient gender: female, male
- Patient race for Medicaid enrollees: non-white, white
- Practice geographic location: located in or adjacent to a small metropolitan area, located in or adjacent to a large metropolitan area
- Payor type: Medicaid, commercial insurance.

Each outcome measure was tested for disparities among patients attributed to MMPP sites in the baseline year (2010). Measures with a statistically significant finding ($p < 0.1$) in the baseline year were included in the disparities analysis. This issue brief focuses on changes in disparities from the baseline (2010) period to the third year (2013) of the program.

Data collected from claims data were used to evaluate whether the MMPP had an impact on health care disparities. Disparity change scores (DCS) are reported. Using this methodology, incidence rates were calculated for the health outcome of interest (e.g., readmissions). Ratios between the two sub-groups groups in the disparity (i.e., the rate ratio or relative disparity) were then determined. To measure whether the health care disparities are changing across time, the ratios were differenced in the baseline year from those in the pilot period. Differences that are greater than zero (positive score) indicate that the health care disparity is decreasing; differences that are less than zero (negative score) indicate that the health care disparity is increasing.

The evaluation team compared the DCS of all measures, and their corresponding rates, to determine the measures with the greatest disparity. To aid interpretation of the findings, relative disparities were assigned a disparity grade of A through F (Grade A is the highest, or best, and Grade F is the lowest, or worst, disparity grade). The following grading scale was used in assigning disparity grades:

Disparity Grade	Disparity rate ratio	Interpretation
A	1.0-1.4	Little or no disparity
B	1.5-1.9	A disparity exists and should be monitored and may require intervention
C	2.0-2.4	The disparity requires intervention
D	2.5-2.9	Major interventions are needed
F	≥3.0	Urgent interventions are needed

The disparity grading scale was adapted from New Mexico Department of Health. "Racial and Ethnic Health Disparities Report Card." 7th Edition, September, 2012. See http://nmhealth.org/publication/view/report/437/

A change to a higher disparity grade in 2013 compared to 2010 represents a decrease, or improvement, in disparity. The team identified measures with the greatest differences (at least a disparity grade of B or worse) in the pre-implementation period (2010).

Exhibit 5-1: MMPP Practices: Health Care Disparities in Quality, 2010 versus 2013

Disparities by Payor

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity Rate Ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of young persons (0–40) with asthma with one or more asthma-related hospital admissions within the year	Medicaid	0.024	12.00	F	0.01	35.75	F	-23.75
	Commercial insurance	0.002			0.0004			
Proportion of pediatric diabetics (0–17 years old) with one or more HbA1c tests within the year	Medicaid	0.62	1.53	B	0.65	1.01	A	0.51
	Commercial insurance	0.41			0.64			
Proportion of women (40–64 years old) with one or more breast cancer screenings within the year	Medicaid	0.25	1.82	B	0.27	1.72	B	0.10
	Commercial insurance	0.45			0.47			
Two well-child visit(s) for first 15 months, to attributed practice	Medicaid	0.15	1.67	B	0.07	1.35	A	0.32
	Commercial insurance	0.24			0.10			

Disparities by Geographic location

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity Rate Ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of young persons (0–40) with asthma with one or more asthma-related hospital admissions within the year	Small metro	0.01	2.29	C	0.002	4.38	F	-2.10
	Large metro	0.02			0.01			
One Well-child visit(s) for first 15 months, to any practice	Small metro	0.11	2.30	C	0.12	0.42	A	0.71
	Large metro	0.26			0.05			

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity Rate Ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Two Well-child visit(s) for first 15 months, to attributed practice	Small metro	0.05	4.06	F	0.04	2.29	C	1.77
	Large metro	0.20			0.09			
Two well-child visit(s) for first 15 months to any practice	Small metro	0.07	3.72	F	0.03	2.33	C	1.38
	Large metro	0.25			0.08			
One well-child visit(s) for first 15 months, to attributed practice	Small metro	0.08	2.62	D	0.10	0.83	A	1.45
	Large metro	0.21			0.08			

Disparities by Race

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of young persons (0–40) with asthma with one or more asthma-related hospital admissions within the year	Non-white	0.03	1.80	B	0.02	1.62	B	0.18
	White	0.02			0.01			
Well child visits (3–6 years old), to any practice	Non-white	0.61	1.69	B	0.61	1.28	A	0.41
	White	0.36			0.47			
Adolescence well-care visits (12–21 years old), to any practice	Non-white	0.52	1.83	B	0.47	1.39	A	0.44
	White	0.29			0.34			

Exhibit 5-2: MMPP Practice: Health Care Disparities in Utilization, 201 versus 2013

Disparities by Gender

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Mean hospice days among patients with hospice stays	Female	91.00	4.01	F	33.71	1.19	A	2.83
	Male	22.67			28.43			

Disparities by Payor

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of patients with one or more ED visits	Medicaid	0.40	2.27	C	0.40	2.35	C	-0.07
	Commercial insurance	0.18			0.17			
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related ED visits	Medicaid	0.11	4.70	F	0.08	2.98	F	1.71
	Commercial insurance	0.02			0.03			
Proportion of patients with asthma with one or more asthma-related ED visits	Medicaid	0.12	2.83	D	0.09	2.00	C	0.83
	Commercial insurance	0.04			0.04			
Proportion of patients with diabetes with one or more diabetes-related ED visits	Medicaid	0.01	10.00	F	0.0063	6.30	F	3.70
	Commercial insurance	0.001			0.001			
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related inpatient stays	Commercial insurance	0.03	2.55	D	0.02	1.97	C	0.58
	Medicaid	0.01			0.01			

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of patients with asthma with one or more asthma-related inpatient stays	Medicaid	0.02	2.18	C	0.01	1.51	B	0.68
	Commercial insurance	0.01			0.01			
Patients with inpatient stays with readmissions within 30 days (count	Medicaid	0.24	1.91	B	0.22	1.59	B	0.32
	Commercial insurance	0.12			0.14			
Mean nursing home days among patients with nursing home stays	Medicaid	36.37	1.97	C	35.52	1.50	B	0.47
	Commercial insurance	18.48			23.63			
Mean home health care visits among those receiving home health care	Medicaid	9.50	3.36	F	14.23	3.65	F	-0.28
	Commercial insurance	2.82			3.90			

Disparities by Geographic location

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related inpatient stays	Small metro	0.01	3.00	F	0.01	2.49	D	0.51
	Large metro	0.02			0.01			
Proportion of patients with asthma with one or more asthma-related inpatient stays	Small metro	0.01	2.57	D	0.003	3.91	F	-1.34
	Large metro	0.02			0.01			
Mean nursing home days among patients with nursing home stays	Small metro	132.25	5.63	F	48.58	1.64	B	3.99
	Large metro	23.47			29.63			

Disparities by Race

Measure	Disparity sub-group	Sub-group rate (2010)	Disparity rate ratio (2010)	Disparity grade (2010)	Sub-group rate (2013)	Disparity rate ratio (2013)	Disparity grade (2013)	DCS
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related ED visits	Non-white	0.13	2.07	C	0.09	1.82	B	0.25
	White	0.06			0.05			
Proportion of patients with asthma with one or more asthma-related ED visits	Non-white	0.14	2.15	C	0.10	1.89	B	0.27
	White	0.07			0.05			
Proportion of patients with asthma, CHF, or diabetes with one or more condition-related inpatient stays	Non-white	0.03	1.63	B	0.02	1.35	A	0.28
	White	0.02			0.02			
Proportion of patients with asthma with one or more asthma-related inpatient stays	Non-white	0.03	1.80	B	0.02	1.48	B	0.32
	White	0.02			0.01			
Patients with CHF-related inpatient stays with readmissions due to CHF within 30 days	Non-white	0.29	2.27	C	0.32	1.27	A	1.00
	White	0.67			0.40			

Exhibit 5-3: Summary of Findings across Disparity Measures at MMPP Practices (N=30 Disparities)

Increase or Decrease in Disparity from 2010 to 2013 *	Number of Disparities		
	Quality	Utilization	All measures
Gender			
Increase	0	0	0
Decrease	0	1	1
No change	0	0	0
Payor			
Increase	0	0	0
Decrease	2	4	6
No change	2	5	7
Geographic Location			
Increase	1	1	2
Decrease	4	2	6
No change	0	0	0
Race			
Increase	0	0	0
Decrease	2	4	6
No change	1	1	2
All Disparities			
Increase	1	1	2
Decrease	8	11	19
No change	3	6	9

***** A change to a lower disparity grade (e.g., C to D) in 2013 compared to 2010 represents an increase, or worsening, in disparity. Conversely, a change to a higher disparity grade (e.g., D to A) represents a decrease, or improvement, in disparity. Only disparities at the MMPP that had a disparity grade of B through F in the baseline period (2010) are presented.

6. EVALUATION METHODOLOGY

Summary

The evaluation approach was both quantitative and qualitative in nature and consisted of: (1) site visits and interviews to evaluate practice transformation; (2) web-based surveys to evaluate provider satisfaction; (3) telephone surveys to evaluate patient satisfaction; (4) administrative data analysis to evaluate quality, utilization and costs and (5) multiple modes to evaluate changes in health care disparities. This document provides the detailed methodology for each of these evaluation components.

Site visits were conducted on a sample of nine MMPP practices selected from varying practice sizes, geographic settings, ownership types, and specialties to ensure representation of different practice characteristics. During each round of site visits, the evaluation team conducted four to six in-depth interviews at each site with staff directly involved in or affected by transformation: practice managers, PCMH leads, care managers, clinical staff and support staff. The qualitative analysis focused on trends over the course of the demonstration, aspects that had the most influence on PCMH goals, best practices, and lessons learned. The qualitative evaluation explored respondent perception of five important themes: (1) the transformation process; (2) staff perceptions of transformation; (3) health outcomes and disparities; (4) care coordination; and (5) financial costs and savings. In addition to identifying key findings for each research theme, the evaluation team used two variables—shared savings data and NCQA recognition—to investigate which types of practices were the most successful in implementing the model and site characteristics that were associated with better performance and advancement. These data were used to generate a measure to identify high, medium, and low performers. Interviewee responses were transcribed and systematically coded for key themes and patterns. Main points and quotations from the coded data were pulled to identify the primary findings from each site visit across all respondents.

To evaluate patient satisfaction, *computer-assisted telephone surveys* were conducted among a sample of patients attributed to MMPP practices. There were two patient survey instruments, one for adults (≥18 years of age) and one for children (<18 years of age). The child's caregiver answered the questions about the child under his/her care. The surveys evaluated patient satisfaction and experience of care, including delivery of health care, trust in provider, and access. The instruments included items from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH Survey, CAHPS supplemental topics, and the Patient Assessment of Chronic Illness Care.

An *online survey* was used to collect information on provider satisfaction from physicians, physician assistants and advanced nurses in MMPP practices, as well as from physicians in comparison practices. Provider survey questions assessed perceptions of practice transformation to the PCMH model, provider satisfaction with chronic illness management, and aspects of teamwork and culture in the practices.

Commercial and Medicaid *administrative claims data* of patients meeting the evaluation criteria at the MMPP or comparison practice sites were used to construct measures of quality, utilization and costs. Quality measures were selected from established quality measures from the PCMH Evaluator's Collaborative, the Agency for HealthCare Research and Quality, the National Quality Forum, the National Committee on Quality Assurance (NCQA), and the Healthcare Effectiveness Data and Information Set. A difference-in-difference (DID) approach was used to estimate the impact of the MMPP on provider satisfaction and on quality, utilization, and costs. The DID approach is a robust policy analysis tool used as an alternative when randomization is not possible or practical. The DID approach compares changes in measures at the MMPP practices to changes at comparison practices; that is, it accounts for outcome changes that would have occurred over time regardless of the MMPP intervention. To further strengthen the validity of the estimates for the claims analysis, the evaluation team controlled for case-mix of participating and comparison sites using the Adjusted Clinical Group case-mix risk adjustment suite of tools.

Data collected from the site visits, patient surveys, and analyses of claims data were used to evaluate whether the MMPP has an impact on health care disparities. Disparity change scores (DCS) are reported, which allow for a simple presentation of changes in disparities

The provider survey and administrative data portions of the evaluation used two comparison groups. Comparison practices included a group participating in another PCMH program in Maryland and a group that was less exposed to the PCMH concept. Comparison practices were chosen to be as much like the MMPP practices as possible using a statistical matching technique. The variables used for the matching included practice characteristics, provider characteristics aggregated to the practice level, and characteristics of practice location. Details about the matching technique are included in Appendix A.

1. Practice Transformation

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 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.

The qualitative evaluation is based on two rounds of site visits: one in the early stages of transformation 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 addressed similar topics, the first round centered on understanding each practice's unique approaches to and experiences with transformation. The second round captured the practices' experiences with the more mature program and focused more heavily on the lessons learned from the implementation and transformation processes. This analysis sheds light on how the sites evolved and which strategies continued over the duration of the transformation process.

1.1 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.

In preparation for the second round of site visits, the team reconvened to update the interview guides for the follow-up effort based on round one data and the visits' emphasis on changes and lessons learned. Few alterations were made to the guides; instead, the interviewer tailored the questions during the semi-structured interviews to probe for information that addressed how transformation progressed over time. Therefore, the analysis of the data, particularly the comparison of round one and round two data, served as the main tool to uncover and explain modifications, advancements, and lessons learned.

Illustrative questions from the guides are shown in Exhibit 6-1. The complete rounds one and two interview guides can be found in Appendix B.

Exhibit 6-1: Research Domains and Illustrative Questions

Research Domain	Illustrative Question
Transformation process	Tell me about the first efforts applied to transform. What strategies did you employ? What activities were generated?*
	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?
	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?

*Question was asked in Round 1 only.

1.2 Site Selection

Nine practices participated in the transformation evaluation. 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.

Of the nine practices originally selected, 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.

Of the nine practices that participated in the first round of site visits, eight agreed to participate in the second round. A replacement site with similar characteristics to the practice that declined was recruited.

Exhibit 6-2 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.

Exhibit 6-2: Selected Practices*

Practice	Practice Location	Practice Setting	Selected Characteristics	2011 NCQA Recognition	2013 NCQA Recognition
1 (Round 1)	Rural	Private	Family; Internal; High Volume; High Medicare; Nurse Practitioner	Level II	Level III
1** (Round 2)	Rural	Private	Internal, High Medicare, CRNP	Level III	Level III
2	Suburban	Hospital-owned	Geriatric; High Medicare	Level I	Level II
3	Suburban	Private	Pediatric; High Volume	Level I	Level II
4	Suburban	Private	Pediatric; High Medicaid	Level I	Level III
5	Urban	FQHC	Pediatric; Family ; High Medicaid;	Level I	Level II
6	Rural	Hospital-owned	Family; Internal; Nurse Practitioner	Level II	Level II
7	Rural	FQHC	Family; Nurse Practitioner, Physician Assistant	Level II	Level II
8	Urban	Private	Family	Level I	Level III
9	Urban	Hospital-owned	Internal	Level III	Level III

*Practice location, practice setting, and selected characteristics were obtained in February 2012.
**Round two replacement practice for round one practice 1. Round one practice 1 declined to participate in round two.

1.3 Site Visits Logistics

The evaluation team conducted nine first-round site visits between September 2012 and February 2013 and second-round site visits between July and September 2014 (Exhibit 6-3). At each site and during each site visit, 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 6-3: PCMH Site Visits

Practice	Round 1 Site Visit	Round 2 Site Visit
1	Sept. 11, 2012	Aug. 18, 2014
2	Sept. 19–20, 2012	Aug. 21-22, 2014
3	Oct. 9, 2012	Aug. 6, 2014
4	Oct. 17, 2012	July 29, 2014
5	Nov. 11, 2012	Aug. 13, 2014
6	Nov. 27, 2012	Aug. 25, 2014
7	Dec. 12–13, 2012	Aug, 28-29, 2014
8	Feb. 7, 2013	Aug. 5, 2014
9	Feb. 12, 2013	Sept. 3, 2014

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. Whenever possible, the team interviewed the same interviewees in round one and two. The team conducted a total of 45 interviews in the first round of site visits and a total of 44 interviews in the second round to gather information from people directly involved with the design, implementation, and ongoing management of key components of the PCMH transformation. Exhibits 6-4 and 6-5 show the number of interviews at each site by type of interviewee for rounds one and two.

Exhibit 6-4: Round 1 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
Total	**9**	**5**	**6**	**14**	**5**	**6**

* 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.

Exhibit 6-5: Round 2 Interviewees

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

* 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.

1.4 Analysis Methodology

To analyze the site visit data, the evaluation team systematically coded transcripts of round one and two interviews for key themes and patterns using NVivo. To confirm consensus on the coding scheme and definitions, the evaluation team used measurements of inter-rater reliability. This was done by double coding three transcripts individually, so that neither team member was aware of the codes assigned by the other, then comparing the results. The team calculated percent agreement and Cohen's kappa statistic consecutively for three transcripts. The first transcript had a percent agreement of 96.60 percent and a kappa coefficient of 0.74. Coefficients of agreement increased with each consecutive transcript that was double coded and compared. The third transcript had a percent agreement of 99.49 percent and a kappa coefficient of 0.83, indicating that inter-rater reliability was exceptionally high.

Once the coding was complete, the evaluation team pulled main points and quotations from the coded data to identify the primary findings from each site visit across all respondents. To ensure that every practice was represented in the analysis, we examined similarities and differences between the experiences and perceptions of respondents at each of the sites. We focused the analysis on trends over the course of the demonstration, aspects that had the most influence on PCMH goals, best practices, and lessons learned to answer the four research questions. This comparative analysis yielded our findings, which we describe in the results section. Although the data are analyzed at the site level, we incorporate respondent-level findings to emphasize a particular point or draw attention to an outlier.

In addition to identifying key findings for each research theme, the evaluation team used two variables, (1) shared savings data and (2) NCQA recognition, to investigate which types of practices were the most successful in implementing the model and site characteristics that were

associated with better performance and advancement.[52] Using the data provided by the MHCC, the team generated a measure to identify high, medium, and low performers. Exhibit 6-6 provides a description and the number of practices that correspond to each category.

Exhibit 6-6: Measure of Performance Categories

Level of Performance	Definition	Practice Characteristics
High Performer (4 practices)	▪ Reached Level 3 NCQA recognition in 2013 **AND** ▪ Received more than $45,000 in shared savings from commercial insurance in 2011 or 2011 or Medicaid in 2011 **OR** ▪ Received shared savings from commercial insurance in 2011 and 2012 and Medicaid in 2011	***Geographic Location***: 1 rural, 1 suburban, 2 urban ***Ownership Type***: 2 hospital-owned, 2 private ***Specialty***: 2 internal medicine, 1 pediatric, 1 family medicine ***Size***: 1 small, 1 medium, 2 large
Moderate Performer (3 practices)	▪ Reached Level 2 NCQA recognition in 2013 **AND** ▪ Received between $20,000 and $45,000 in shared savings from commercial insurance or Medicaid in 2011 or 2012	***Geographic Location***: 1 rural, 1 suburban, 1 urban ***Ownership Type***: 2 hospital-owned, 1 FQHC ***Specialty***: 1 internal medicine, 2 family medicine ***Size***: 1 small, 2 medium
Low Performer (2 practices)	▪ Reached Level 2 NCQA recognition in 2013 **AND** ▪ Received less than $20,000 in shared savings from commercial insurance or Medicaid in 2011 or 2012	***Geographic Location***: 1 rural, 1 suburban ***Ownership Type***: 1 private, 1 FQHC ***Specialty***: 1 pediatric, 1 family medicine ***Size***: 1 small, 1 large

1.5 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. Program Satisfaction

To complement the implementation evaluation and the outcomes evaluation, IMPAQ conducted surveys to examine satisfaction among patients and providers. This section reports the approach and methodology of the two planned collections of survey data. The first round of survey data was collected during 2013 and the second round, during 2014. The design of the surveys aimed to offer insight into the patient and provider perspective on the following five research questions specified by the MHCC:

[52] At the time of this report, the evaluation team had access to NCQA recognitions levels for 2011, 2012, and 2013 and shared savings data from commercial insurance in 2011 and 2012 and Medicaid in 2011.

Does 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 care disparities?

Are patients more satisfied in a PCMH?

Are physicians and other clinical staff more satisfied in a PCMH?

2.1 Patient Satisfaction

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 round (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 round occurred between August and November 2014.

2.1.1 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.

2.1.2 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.

2.1.3 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[53] 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.

2.1.4 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.

[53] IMPAQ received patient telephone numbers from MHCC for Medicaid patients and commercial patients.

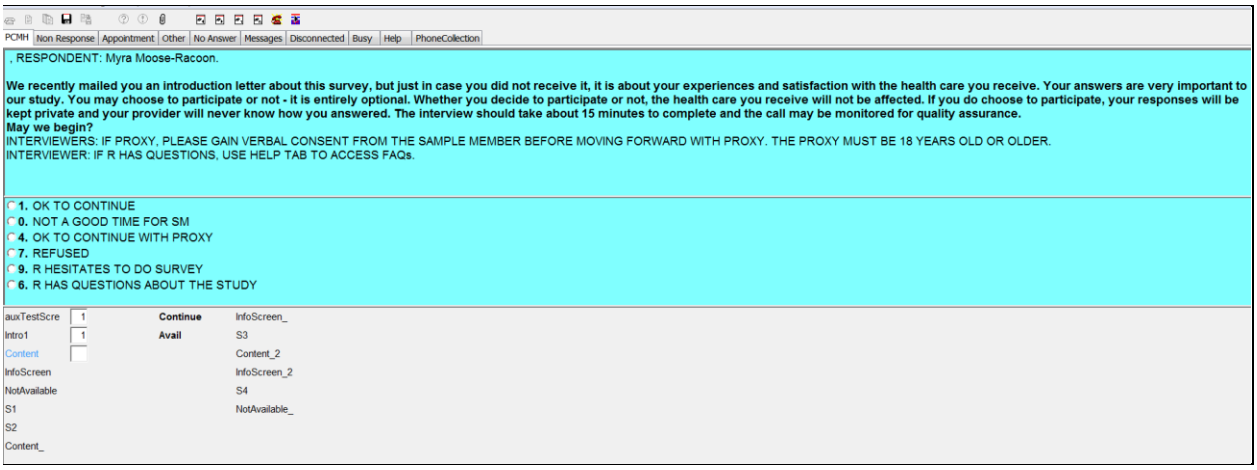
For round 1, the Interviewers were initially trained on January 9, 2013 for the execution of the survey with the commercially insured sample. The commercially insured sample recruitment was initiated on January 10, 2013 and continued through February 28, 2013. The Medicaid samples were delayed, and therefore 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.

For round 2, the Interviewers were trained on August 7, 2014 for the execution of the survey with the commercially insured sample. The commercially insured sample recruitment was initiated on August 11, 2014 and continued through November 30, 2014. The Medicaid samples were delayed. The Medicaid sample recruitment was initiated on November 3, 2014 and completed on November 30, 2014.

2.1.5 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 refusals, and maximizing response rates. For round 1, 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). For round 2, the survey took an average of 12.8 minutes to complete (an average of 13.6 minutes for the Adult Survey and 11.0 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 6-7.

Exhibit 6-7: Consent Screen for Adult Patients



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."

2.1.6 Advance Letters

IMPAQ mailed advance letters (see Appendix **E**) to each of the patients selected to participate in the telephone survey. 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 6-8 details the timing and size of the seven waves of mailed advance letters.

Exhibit 6-8: Round 1 Patient Survey Summary of Waves (Replicates)

Wave Number	Count	Mailing Date	Wave Starts in CATI System
Commercial Sample			
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	8/26/3013
Medicaid Sample*			
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
Total letters	**4,290**		

* 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 include: moved with no forwarding address, attempted -not known, not deliverable as addressed, no mail receptacle, insufficient address, and forwarding time expired.

During the round 2 field effort, 5,175 advance letters were mailed to patients from participating practices. Exhibit 6-9 details the timing and size of the waves of mailed advance letters.

Exhibit 6-9: Round 2 Patient Survey Summary of Waves (Replicates)

Wave Number	Count	Mailing Date	Wave Starts in CATI System
Commercial Sample			
Wave 1	1,060	8/7/2014	8/11/2014
Wave 2	1,043	8/18-8/19/2014	8/21/2014
Wave 3	518	8/29/2014	9/2/2014
Wave 4	504	9/10/2014	9/12/2014
Medicaid Sample*			
Wave 1	2,050	10/31/2014	11/3/2014
Total letters	**5,175**		

* 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.

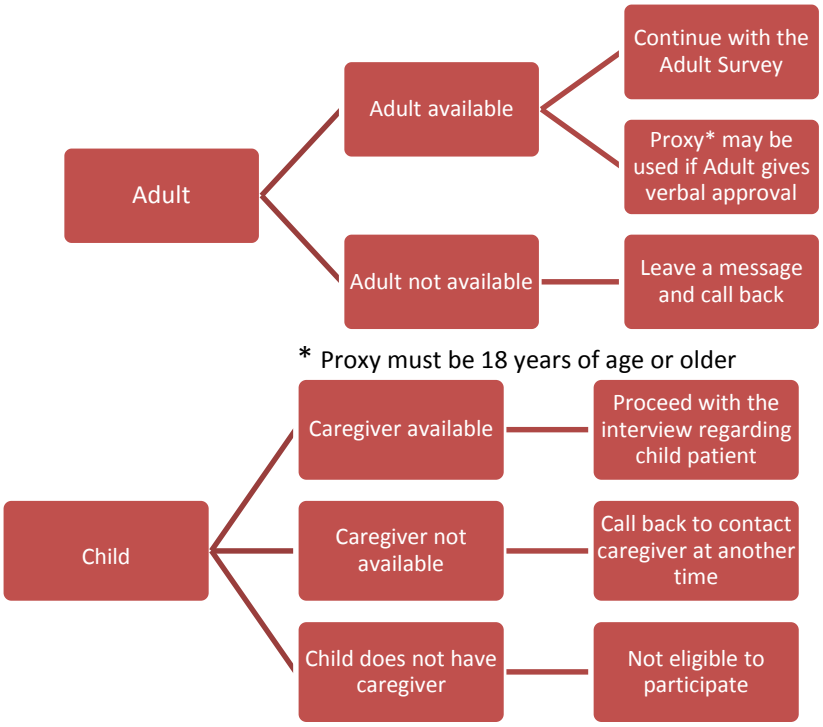
During round 2, the post office was unable to deliver 408 (7.8 percent) of the 5,175 advance letters mailed during the waves of round 2 mailings. The reasons include: moved with no

forwarding address, attempted -not known, not deliverable as addressed, no mail receptacle, insufficient address, and forwarding time expired.

2.1.7 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 purposed only. Exhibit 6-10 illustrates the decision process that was followed by the CATI interviewers when initiating the surveys with patients or their proxies.

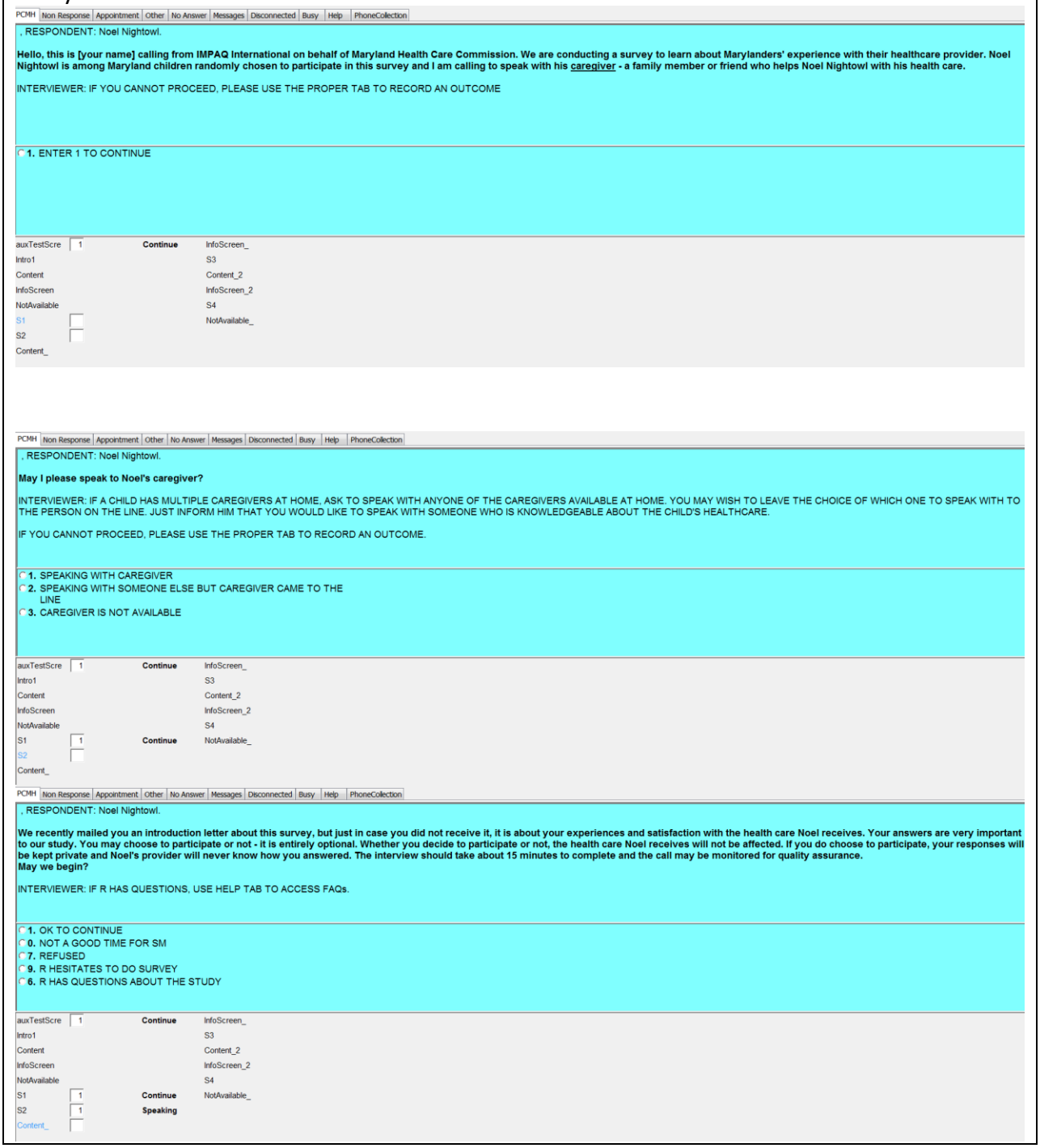
Exhibit 6-10: Decision Tree for Surveys



The screens for the identification of the proxy and verbal consent are shown in Exhibit 6-11.

Exhibit 6-11: Consent Screen for Proxy for a Child Patient or Adult Proxy

Proxy Screens:



2.1.8 Patient Survey Analysis Methodology

IMPAQ began 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. Frequencies and percentages were reported to describe respondent characteristics.

IMPAQ also reported 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.[54] 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, insurance type (commercially insured vs. Medicaid), and by race.

To test the impact of the MMPP program on patient satisfaction, the questions of interest are: 1) whether patients are more satisfied over time; and 2) whether the MMPP program has resulted in greater changes in patient satisfaction among more vulnerable populations (i.e., African-

[54] 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.

American, Medicaid, and patients with chronic conditions) compared to their counterparts; and 3) whether vulnerable patients are currently more satisfied than their counterparts.

We constructed ordinal logistic regression models for ordinal outcomes and logistic regression models for binary outcomes. A variable of survey wave in the model indicates whether responses statistically differ between the first and second wave of survey. For outcome measures in the Adult Survey, we 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, we 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 (i.e., age, gender, education level, and relationship to the child). We added interaction terms of survey wave and specific respondent characteristic in the models to examine whether the MMPP program has had a greater impact on vulnerable subpopulations, including chronically ill patients, Medicaid patients, and African Americans. We also accessed whether vulnerable patients are currently more satisfied using only the responses in 2014. All the analyses were weighted in order to remove any bias that may have resulted from the sampling (i.e., stratification and oversampling). Using Stata survey procedures (Stata v. 12.1), we took the design strata (practice and commercially insured vs. Medicaid) to reflect the population from which responses were collected.

2.1.9 Data Collection

2.1.9.1 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 patients and the estimate of a 50 percent response rate, IMPAQ designed a survey sample of 1,000 patients for the first round of surveys. 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.[55] 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.[56] 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 Americans would increase its selection probability by a factor of 5. The result of this sample allocation is shown in Exhibit 6-12 and 6-13.

Exhibit 6-12: Round 1 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

[55] 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.

[56] 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.

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
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 Physicians at Water's Edge	16	15	31	Y	N	27
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

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

Exhibit 6-13: Round 2 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	6	9	N	N	27
AGHS Townsend Medical Center	3	3	6	N	N	54
Andrew S. Dobin, M.D., P.A.	0	81	81	N	Y	19
Bay Crossing Family Medicine (Ramona Seidel)	3	2	5	N	N	2
Calvert Convenient Care	6	3	9	N	N	1
Calvert Family Care	3	6	9	N	N	5
Calvert Internal Medicine Group, P.A. (Prince Frederick)	7	42	49	N	N	111
Calvert Internal Medicine Group, P.A. (Dunkirk)	1	30	31	N	N	22
Calvert Internal Medicine Group, P.A. (Solomons)	0	11	11	N	N	17
Cambridge Pediatrics, LLC	130	77	207	All	Y	14
Children's Medical Group, P.A.	32	20	52	All	N	13
Comprehensive Women's Health	0	24	24	N	N	24
Family Health Centers of Baltimore	119	9	128	Y	Y	0
Family Medical Associates, LLC (Manchester)	3	8	11	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)	3	2	5	N	N	0
Family Care of Easton	3	5	8	Y	N	26
Gerald Family Care, P.C.	4	8	12	N	N	2
Green Spring Internal Medicine, LLC	0	6	6	N	N	32
Hahn & Nelson Family Medicine	3	4	7	N	N	12
Johns Hopkins at Montgomery County	3	37	40	N	N	58
Johns Hopkins Community Physicians at Canton Crossing	17	82	99	Y	Y	20
Johns Hopkins Community Physicians at Hagerstown	3	16	19	N	N	23

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
Johns Hopkins Community Physicians at Water's Edge	5	24	29	Y	N	27
Johns Hopkins Community Physicians at Wyman Park	49	103	152	N	Y	42
Johnston Family Medicine	0	18	18	N	N	21
Joseph K. Weidner, Jr., MD dba Stone Run Family Medicine	4	14	18	N	N	8
MedPeds LLC	37	230	267	Y	N	73
MedStar Health Physicians. Franklin Square Family Health Center	199	71	270	Y	Y	54
Mountain Laurel Medical Center	5	6	11	N	N	22
Parkview Medical Group (Myersville)	0	9	9	N	N	109
Parkview Medical Group (Mt. Airy)	0	31	31	N	N	109
Parkview Medical Group (Frederick)	5	117	122	N	N	109
Patient First–Waldorf	3	29	32	N	Y	38
Potomac Physicians Annapolis Regional Medical Center	24	25	49	Y	N	31
Potomac Physicians, Frederick Medical Center	67	81	148	Y	N	31
Potomac Physicians, Security Health Center	15	31	46	Y	N	20
Primary & Alternative Medical Center	4	3	7	N	N	4
Shah Associates., Calvert (Prince Frederick)	3	9	12	N	N	21
Shah Associates, Hollywood	53	109	162	Y	N	42
Shah Associates, Waldorf	10	125	135	N	Y	58
The Pediatric Group, LLP at Crofton	49	109	158	All	N	15
The Pediatric Group, LLP at Davidsonville	62	150	212	All	N	41
The Pediatric Group, LLP at Severna	7	7	14	All	N	1
Twin Beaches Community Health Center	3	4	7	N	N	4
Ulmer Family Medicine, PC	0	4	4	N	N	8
Union Primary Care	7	17	24	N	N	27
University of Maryland Family Medical Associates, P.A.	181	202	383	N	Y	55

Practice	Medicaid Sample	Commercial Insurance Sample	Total Sample	Pediatrician on Staff	High % African-American	Number of MHIP enrollees
University of Maryland Pediatric Associates, P.A.	99	10	109	Y	Y	0
University Care at Edmondson Village	151	40	191	N	Y	4
Vanessa Allen, M.D.	3	39	42	N	Y	10

2.1.9.2 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 in the first round of patient surveys. 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 for round 1 grew to 4,290 patients, of which one was a duplicate. A total of 4,289 patients were therefore loaded into the CATI system. Based on the response rates in the first round of surveys, we sampled 3,500 patients from the universe of potential patient participants.

Of the 4,289 patients (first round) and 5,175 patients (second round) who were called from the survey sample, the CATI interviewers interviewed 635 and 563 patients during the first and second field period respectively. Exhibit 6-14 and Exhibit 6-15 illustrate the results of all call attempts for the commercially insured and Medicaid sample by outcome category for round 1. The overall response rate for the first round of surveys was 14.8 percent (16.6 percent for commercially insured patients and 12.3 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 6-14: Round 1 Outcome of Call Attempts to Commercially Insured Sample

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Interviewed and completed	401	16%	290	15%	111	20%
Interviewed and partially completed	8	0%	7	0%	1	0%
Non-response (no answer, busy, un-locatable, 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%

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
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%
Total	**2,458**	**100%**	**1,895**	**100%**	**563**	**100%**

Exhibit 6-15: Round 1 Outcome of Call Attempts to Medicaid Sample

Outcome	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Interviewed and completed	219	12%	96	10%	123	14%
Interviewed and partially completed	7	0%	4	0%	3	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%
Total	**1,831**	100%	**936**	100%	**895**	100%

* 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.

Exhibit 6-16 and Exhibit 6-17 illustrate the results of all call attempts for the commercially insured and Medicaid sample by outcome category for round 2. For the second round of surveys, the overall response rate was 10.9 percent (11.1 percent for commercially insured patients and 10.4

percent for Medicaid patients). The greatest contributors to the low response rate were non-responses due to bad telephone numbers (38.4 percent) and reaching the maximum number of eight call attempts (21.2 percent).

Exhibit 6-16: Round 2 Outcome of Call Attempts to Commercially Insured Sample

	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Interviewed and completed	367	11.0%	272	10.6%	95	12.3%
Interviewed and partially completed	5	0%	2	0%	3	0%
Non-response (no answer, busy, un-locatable, connection issue, wrong number, disconnected number, number not working, etc.)	1284	38.4%	999	39%	285	37%
Respondent deceased	6	0%	5	0%	1	0%
Mental/physical Inability	4	0%	4	0%	0	0%
No caregiver and less than 18 years old	1	0%	0	0%	1	0%
Refusal	355	11%	271	11%	84	11%
Language barrier	7	0%	5	0%	2	0%
Voice mail or privacy managers, left message household member	239	7%	202	8%	37	5%
Other	10	0%	9	0%	1	0%
Reached 8 calls	709	21.2%	509	20%	200	26%
Cases on hold- completed practice cell	358	11%	294	11%	64	8%
Total	**3,345**	**100%**	**2,572**	**100%**	**773**	**100%**

Exhibit 6-17: Round 2 Outcome of Call Attempts to Medicaid Sample

	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Interviewed and completed	190	10.4%	105	9.3%	85	12.2%
Interviewed and partially completed	1	0%	1	0%	0	0%
Non-response (no answer, busy, un-locatable, connection issue, wrong number, disconnected number, number not working, etc.)	695	38.0%	450	40%	245	35%
Respondent deceased	0	0%	0	0%	0	0%
Mental/physical Inability	6	0%	6	1%	0	0%
No caregiver and less than 18 years old	0	0%	0	0%	0	0%

	Complete Sample		Adult		Child	
	Total	% of Total	Total	% of Total	Total	% of Total
Refusal	51	3%	40	4%	11	2%
Language barrier	2	0%	0	0%	2	0%
Voice mail or privacy managers, left message household member	2	0%	1	0%	1	0%
Other	2	0%	2	0%	0	0%
Reached 8 calls	113	6%	82	7%	31	4%
Cases on hold- completed practice cell	768	42%	448	39%	320	46%
Total	**1,830**	**100%**	**1,135**	**100%**	**695**	**100%**

In the first round of surveys, IMPAQ collected 397 responses to the Adult Survey and 238 responses to the Child Survey. In the second round of surveys, IMPAQ collected 380 responses to the Adult Survey and 183 responses to the Child Survey. The analysis sample excludes 143 responses (11.9% of collected responses) if the respondents indicated that they did not receive care from the MMPP practice sites, did not know whether they went to the practice site for care, or refused to answer the question.

As a result, IMPAQ analyzed 357 responses to the Adult Survey and 217 responses to the Child Survey for the first round and 316 responses to the Adult Survey and 165 responses to the Child survey for the second round. However, not all respondents completed the entire questionnaire or answered all the questions. The item-level response rate ranged from 86.5 percent to 100 percent.

Exhibit 6-18 compares the number of available patients, the target analysis sample size, and the resulting analysis sample size for each practice by insurance type for round 1.

Exhibit 6-18: Round 1 Completed Surveys by Practice

		Commercial Insurance			Medicaid		
REGNUM	Practice	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

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
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
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

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
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
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

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
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
	Total Completes			**374**			**188**

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

Exhibit 6-19 compares the number of available patients, the target analysis sample size, and the resulting analysis sample size for each practice by insurance type for round 2.

Exhibit 6-19: Round 2 Completed Surveys by Practice

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
1012	Johns Hopkins Community Physicians at Water's Edge	1657	4	5	368	4	0
1027	Family Medical Associates, LLC (Manchester)	577	2	2	226	2	0
1038	University of Maryland Family Medicine Associates, P.A.	2600	33	35	2634	33	23
1061	Calvert Family Care	381	1	1	421	1	2
1067	Green Spring Internal Medicine, LLC	499	1	2	0	1	0
1069	Potomac Physicians Annapolis Regional Medical Center	1980	4	4	1896	4	4
1107	Potomac Physicians Frederick Medical Center	1430	14	15	814	14	8

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
1112	Potomac Physicians Security Health Center	2445	5	5	832	5	3
1121	Andrew S, Dobbin, M.D., P.A.	1039	14	14	0	14	0
1122	The Pediatric Group, LLP at Davidsonville	2905	25	26	752	25	8
1130	Children's Medical Group, P.A.	1697	4	4	1363	4	4
1150	Johnston Family Medicine	1319	3	1	0	3	0
1155	Cambridge Pediatrics, LLC	1202	13	13	1316	13	20
1161	Vanessa Allen, M.D. (Natural Family Wellness)	574	7	8	0	7	0
1202	Johns Hopkins Community Physicians at Hagerstown	1169	3	3	242	3	0
1212	The Pediatric Group, LLP at Crofton	2128	18	18	583	18	7
1224	MedPeds, LLC	4405	38	39	674	38	5
1225	Family Care of Easton	400	1	1	221	1	2
1239	Calvert Internal Medicine Group, P.A. (Prince of Frederick)	2990	7	7	676	7	1
1241	Calvert Internal Medicine Group, P.A. (Dunkirk)	2268	5	4	0	5	0
1242	Calvert Internal Medicine Group, P.A. (Solomons)	720	2	4	0	2	0
1247	Hahn & Nelson Family Medicine	327	1	0	0	1	0
1248	MedStar Health Physicians; Franklin Square Family Health Center	1033	12	12	2228	12	24
1249	Johns Hopkins Community Physicians at Wyman Park	1526	17	17	1341	17	7
1264	Johns Hopkins at Montgomery County	2701	6	6	293	6	0
1266	Ulmer Family Medicine, PC	310	1	1	187	1	0
1290	The Pediatric Group, LLP at Severna Park	503	2	3	375	2	3
1305	Shah Associates, Hollywood	1806	18	18	976	18	7

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
1306	Union Primary Care	1246	3	3	435	3	1
1310	AGHS Berlin Primary Care	414	1	1	237	1	1
1317	Family Medical Associates, LLC (Eldersburg)	116	1	1	85	1	1
1318	AGHS Townsend Medical Center	207	1	1	150	1	1
1319	Family Medical Associates, LLC (Finksburg)	168	1	1	153	1	1
1328	Family Medical Associates, LLC (Reisterstown/Mt Airy)	112	1	1	25	1	1
1336	Shah Associates, Calvert (Prince Frederick)	597	2	2	92	2	1
1342	Shah Associates, Waldorf	1908	21	21	167	21	1
1354	Family Health Centers of Baltimore	113	2	2	1443	2	15
1369	Primary and Alternative Medical Center	197	1	2	384	1	0
1373	Johns Hopkins Community Physicians at Canton Crossing	1291	14	16	273	14	3
1376	University Care at Edmondson Village	609	7	8	1889	7	18
1384	University of Maryland Pediatric Associates. P.A.	109	2	2	649	2	12
1385	Joseph L. Weidner, Jr. MD LLC (dba Stone Run Family Medicine)	954	3	3	224	3	2
1396	Gerald Family Care, PC	454	2	2	330	2	1
1397	Mountain Laurel Medical Center	445	1	1	219	1	1
1398	Calvert Conventional Care	206	1	1	49	1	0
1399	Twin Beaches Community Health Center	232	1	1	52	1	1
1414	Bay Crossing Family Medicine (Ramona Seidel)	143	1	1	11	1	0

		Commercial Insurance			Medicaid		
REGNUM	Practice	Available	Needed	Completed**	Available	Needed	Completed**
1435	Comprehensive Women's Health	1590	4	4	0	4	0
1441	Parkview Medical Group (Frederick)	8471	19	19	219	19	2
1461	Patient First—Waldorf	478	5	5	0	5	0
1464	Parkview Medical Group (Mt. Airy)	2432	5	5	0	5	0
1465*	Parkview Medical Group (Myersville)	584	2	1	0	2	0
Total Completes					**372**		**191**

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

2.1.9.3 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 6-20 and Exhibit 6-21 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 6-20: Percent of Commercially Insured Respondents with Chronic Conditions

	Total Completes*	Commercially Insured Sample with Chronic Condition(s)	Percent
Wave 1			
Adult	273	188	68.9%
Child	104	27	26.0%
Total	377	215	57.0%
Wave 2			
Adult	224	141	63.0%
Child	87	22	25.3%
Total	311	163	52.4%

* Number of respondents who completed chronic illness related question items (#43-#46 in Adult Survey and #28-#37 in Child Survey)

Exhibit 6-21: Percent of Medicaid Respondents with Chronic Conditions

	Total Completes	Medicaid Sample with Chronic Condition(s)	Percent
Wave 1			
Adult	80	48	60.0%
Child	111	42	37.8%
Total	186	86	46.2%
Wave 2			
Adult	90	52	57.8%
Child	76	28	36.8%
Total	166	80	48.2%

* Number of respondents who completed chronic illness related question items (#43-#46 in Adult Survey and #28-#37 in Child Survey)

2.1.9.4 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.

2.2 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.

2.2.1 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.

2.2.2 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 (web version) and Appendix I (paper version), and the comparison provider survey in Appendix J (web version).

2.2.3 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 round was conducted during 2013 (baseline), and the second round was conducted during 2014.

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).

2.2.4 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.[57] 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).

[57] 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.

2.2.5 Round 1 and Round 2 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 K).
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 (Appendix L)
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 M)
4. Sending the target respondent an email with a link to the web-based survey (see Appendices N and O)
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 P)
6. Opening the web-based instrument and sending five reminders to providers during fielding (Appendix Q). As part of the advance letters, IMPAQ provided a telephone number and an email address (PCMH@impaqint.com) for any general inquiries or email address updates.

For round 1, 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 (see Appendix **I**) 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 round 1 web survey is shown in Exhibit 6-22.

Exhibit 6-22: Round 1 Provider Satisfaction Survey Timeline

Task	Date of Completion
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

Task	Date of Completion
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

For round 2, IMPAQ sent the advance letters to the MMPP and comparison providers on July 21 and July 22, 2014, and opened the surveys on July 24, 2014. The surveys were available for online completion for three months. During this submission period IMPAQ tracked survey participation using the online system. Starting approximately one week 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 (see Appendix I) 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. 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 May 21, 2014 MLC meeting and provided a modified version of the paper survey for providers to fill out at that time (Appendix S). The MHCC sent a participation encouragement email on July 16 and 17, 2014, requesting participation in the survey. The timeline for the fielding of the round 1 web survey is shown in Exhibit 6-23.

Exhibit 6-23: Round 2 Provider Satisfaction Survey Timeline

Task	Date of Completion
Email sent by the MHCC to MMPP providers	7/16-7/17/2014
Letter sent by IMPAQ to MMPP providers	7/21-7/22/2014
Email sent by IMPAQ to Practice Champions	7/8/2014
Email sent by IMPAQ to MMPP providers	7/24/2014
Email sent by IMPAQ to Comparison Group Providers	7/24/2014
MMPP provider survey goes live	7/24/2014
Comparison provider survey goes live	7/24/2014
First reminder emails	7/31/2014
Second reminder emails	8/7/2014
Mail survey to MMPP providers without email addresses	8/27/2014
Third reminder emails	8/14/2014

Task	Date of Completion
Fourth reminder emails	8/21/2014
Last reminder email	8/29/2014
Email from MHCC to MMPP providers	9/3/2014
Official end	10/1/2014
Surveys closed	10/1/2014

2.2.6 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, a group participating in another PCMH program (referred to as 'other PCMH') in Maryland and a group that was less exposed to the PCMH concept (referred to as 'low exposure' practices). Comparison practices were chosen to be as much like the MMPP practices as possible using a statistical matching technique. The variables used for the matching included practice characteristics (e.g., ownership, setting, size), provider characteristics aggregated to the practice level (e.g., primary specialty of providers), and characteristics of practice location (e.g., median income of county where practice is located) (see 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:

- Satisfaction with care
- Job satisfaction
- Work content
- Care team composition
- Within-care-team functioning
- Values alignment with leaders
- Communication openness and organizational learning
- 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. For the purpose of evaluation, three questions were generally asked: (1) Did the MMPP program has result in greater changes in provider satisfaction compared to other practices that are not participating in the MMPP? (2) Were MMPP providers more satisfied over time? (3) Are MMPP providers currently more satisfied than their peers in non-MMPP practices? The first question tests the impact of the MMPP program by comparing changes in responses from MMPP providers between the 2013 and 2014 surveys with the changes among the non-MMPP providers.[58] For the second question, differences in the MMPP group between the responses at the early and later period of pilot were evaluated to enhance understanding in changes in the MMPP group over time. For the third question, responses for the MMPP practitioners were compared to responses for the two groups of comparison practitioners looking only at the 2014 surveys to provide a current comparison of provider satisfaction.

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. Sensitivity analysis including only physicians were performed because the comparison groups were necessarily comprised of only physician respondents,[59] while the MMPP group also includes nurse practitioners, advanced practice nurses, and physician assistants.

2.2.7 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 matching 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 in 2013, 105 completed the survey; of the sample of 416 comparison providers, 136 completed the survey (53 CF PCMH and 83 unexposed providers). Exhibit 6-24 illustrates the eligibility of the providers in each sample in round 1. Exhibit 6-25 illustrates the completed surveys by provider group for round 2.

[58] This robust program evaluation methodology is known as the difference-in-difference approach, which subtracts the change in the non-MMPP group from the change in the MMPP group. It assumes that the change in the comparison group is what would have occurred in the MMPP practices, if they had not participated in the MMPP program. Thus, the difference in the changes seen in the MMPP and non-MMPP groups is considered to be due to the MMPP program.

[59] We selected comparison group practices using the Maryland Board of Physicians Licensure database, the only statewide source of information on primary care practitioners that we could identify.

Exhibit 6-24: Eligibility of Providers in Each Sample for Round 1

	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 6-25: Completed Surveys by Provider Group for Round 1

	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.

Of the sample of 237 MMPP providers in 2014, 97 completed the survey; of the sample of 372 comparison providers, 83 completed the survey (35 CF PCMH and 48 unexposed providers). Exhibit 6-26 illustrates the eligibility of the providers in each sample in round 2. Exhibit 6-27 illustrates the completed surveys by provider group for round 2.

Exhibit 6-26: Eligibility of Providers in Each Sample for Round 2

	Comparison Providers			MMPP Providers
	Unexposed Comparison Practices	CF PCMH Comparison Practices	Total	
Eligible (with email address)	206	166	372	231
Eligible (no email address)	0	0	0	6
Inactive (Includes Duplicates and non-eligible providers)	30	32	62	179

Total	236	198	434	416

Exhibit 6-27: Completed Surveys by Provider Group for Round 2

	Total Sample	Total Eligible Sample*	Completed†	% Complete
MMPP Practices	416	237	97	41%
Unexposed Comparison Practices	236	206	48	23%
CF PCMH Comparison Practices	198	166	35	21%

*Includes providers with a valid email address and all providers who completed a paper survey.

† Includes 23 surveys completed using the paper version and then entered into the online web survey.

2.2.8 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.

3. Quality, Utilization and Costs

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 payor 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.

The following sections describe the methodology for the commercial data and the Medicaid data separately. It includes the following sub-sections: data sources, data, practice attribution, patient inclusion criteria, practice sites excluded, outcome measures, construction of measures, analysis methodology, descriptive statistics, and program impact analysis. The two data sources were processed as similarly as could be completed, provided the different file layouts and data sources.

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, four calendar years of claims data were processed—baseline (2010), year one (2011), year two (2012) and year three (2013) of the program. The baseline year was compared individually to each of the follow up years. The

purpose of this section of the report is to describe the approach and results from the evaluation of outcomes measures for the three years post-implementation.60

3.1 Commercially insured

3.1.1 Data

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-payor 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.

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.

3.1.2 Practice Attribution

Patient attribution to the MMPP and comparison practices was done by SSS using federal Taxpayor Identification Numbers (TINs) associated with patients' medical claims. The algorithm used a two-year look back period: if a patient did not have any Evaluation & Management (E&M) visits during the current year, then the prior year of data was queried for E&M visits. Attribution to MMPP sites included a second filter using National Provider Identifiers (NPIs), which are unique identifiers for health care professionals, for the particular health care professionals working at each MMPP site. Participating practices provided a list of the NPIs for the professionals at each participating site and annually updated their lists. The NPI filter was employed to differentiate participating practice sites from non-participating practice sites associated with the same TIN.

The assignment for the comparison group patients was initially done by SSS using only the TIN. Since one TIN may be used by multiple sites that are in the same practice group, NPIs were used to refine the patient attribution to comparison sites. Because the comparison practices did not

[60] 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.

provide the NPIs for their practice sites, 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, using 2010 and 2011 as the example. The same algorithm was implemented for 2012 and 2013 data.

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

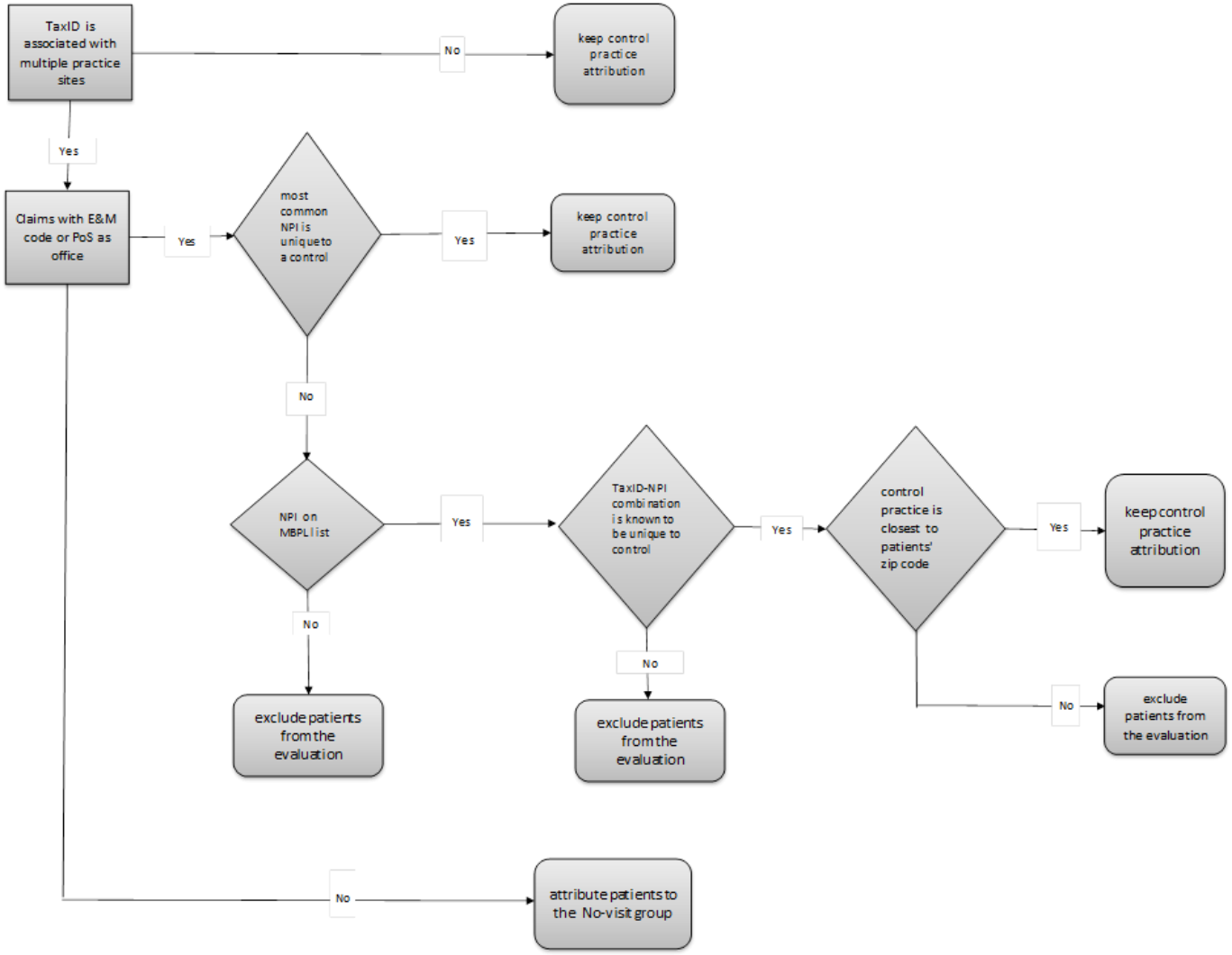
If the most common NPI was not found in the MBP database, then IMPAQ selected the most common NPI that *was* found in the MBP database.

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 6-28.

Exhibit 6-28: 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.

3.1.3 Patient Inclusion Criteria

Patients were included in the analysis if they were continuously enrolled in a participating commercial health plan in 2010, 2011, 2012 or 2013 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.

IMPAQ assessed the 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 6-29 provides details about how many patients were retained at each step of the inclusion criteria by study period and site type. Less than 81 percent of the patients were retained in each year–site type combination.

Exhibit 6-29: Patients by Inclusion Criteria

Criteria	MMPP				Comparison Sites			
	2010	2011	2012	2013	2010	2011	2012	2013
Total number of patients received	95,945	107,188	80,130	84,319	118,216	126,809	119,141	125,804
Aged 64 years or younger	86,768	96,409	71,289	74,114	101,054	107,371	94,879	97,408
With 11+ months of coverage	73,842 (77.0%)	84,786 (79.1%)	63,064 (78.7%)	64,032 (75.9%)	86,617 (73.3%)	96,996 (76.5%)	79,636 (66.8%)	80,467 (64.0%)

As described above, the 86,617, 96,996, 79,636, and 80,467 comparison site patients in 2010, 2011, 2012 and 2013, 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 6-30. Following this attribution refinement, the patient-level analysis files contained 51,133 comparison patients in 2010, 55,405 in 2011, 44,786 in 2012 and 47,764 in 2013.

Exhibit 6-30: Distribution of Comparison Practice Patients by Refinement Algorithm

Attribution Algorithm Criteria	2010 N=86,617	2011 N=96,996	2012 N=79,636	2013 N=80,467	Included in Evaluation
Assigned practice has a unique Taxpayor Identification Number (TIN)	23,755	25,927	19,166	19,259	YES
Assigned practice has multiple sites per TIN but has unique NPI	22,175	23,980	21,212	23,408	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	4,408	5,097	YES
Most common NPI is in the MBP list, and the assigned practice is **not** the closest to the patient's home address by zip code	5,223	5,576	3,714	3,781	NO
Assigned practice has multiple sites per TIN, and NPI is not on the MBP list	21,942	25,601	19,002	20,594	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	3,730	4,040	NO
No claims with E&M codes indicating an office visit	4,078	5,724	8,404	4,288	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). In 2012, IMPAQ included a total of 107,850 patients (63,064 at MMPP sites and 44,786 patients at the comparison sites). In 2013, IMPAQ included a total of 111,796 patients (64,032 at MMPP sites and 47,764 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, 35.4 percent were assigned to the same practice site in both 2010 and 2012, and 32.2 percent were assigned to the same practice site in both 2010 and 2013. Exhibit 6-31 provides further details.

Exhibit 6-31: Number of All Patients Meeting Inclusion Criteria Who Were in the Same Practice in Both 2010 and 2011, 2012 or 2013

Site	Number of ALL patients meeting inclusion criteria in 2010	Number of patients in BOTH 2010 and 2011	Number of patients in BOTH 2010 and 2012	Number of patients in BOTH 2010 and 2013
MMPP sites	**73,842**	**60,437**	**27,078**	**24,853**
All comparison sites	**51,133**	**34,185**	**17,186**	**15,368**
CF PCMH	39,677	26,178	13,962	12,518
Unexposed	11,456	8,007	3,224	2,850

3.1.4 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, 2011, 2012 and 2013. In 2010, 14 comparison sites were dropped (6 CF PCMH and 8 unexposed). In 2011, 15 comparison sites (7 CF PCMH and 8 unexposed). In 2012, 18 comparison sites were dropped (4 CF PCMH and 14 unexposed). In 2013, 19 comparison sited were dropped (4 CF PCMH and 15 unexposed). Therefore, each comparison between the baseline and follow up years had fewer practices that originally selected. The excluded sites are shown in Exhibit 6-32.

Exhibit 6-32: 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, 2046, 2054, 2066, 2070	2001, 2038, 2039, 2040, 2053, 2067, 2072, 2084
2012	1254	2005, 2016, 2046, 2054	2001, 2008, 2031, 2036, 2039, 2040, 2049, 2051, 2053, 2067, 2087, 2088, 2090, 2
2013	1254	2005, 2016, 2046, 2054	2001, 2008, 2031, 2036, 2039, 2040, 2049, 2051, 2052, 2053, 2067, 2087, 2088, 2090, 2102

3.1.5 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 T 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.

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.[61] IMPAQ used these practice-level files for the practice-level evaluation analysis.

3.1.6 Analysis Methodology

3.1.6.1 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).

3.1.6.2 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 three years of exposure to the PCMH by year (2010 compared to 2011, 2010 compared to 2012 and 2010 compared to 2013) that were

[61] see http://www.acg.jhsph.org

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:

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

The notation $\Delta\overline{MMPP}$ and $\Delta\overline{COMPARISON}$ are the changes between 2010 and the follow up year (2011, 2012 or 2013) 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:

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

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 the follow up year (2011, 2012, or 2013) 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 β_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 a follow up year (2011, 2012 or 2013).

The notation $P_i * T_t$ only equals one if the measure is for an MMPP site in the follow up year (2011, 2012 or 2013). Therefore, the estimate of β_3 captures the effect of the MMPP on the outcome of interest in the follow up year.

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 permitted IMPAQ to compare morbidity patterns by taking into account differences such as the gender, age, and prevalence of chronic conditions in patients at the practice sites. The relationships between these covariates and the outcome variable are measured by the estimates of β_4.

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

The parameter of interest is β_3, as it estimates the effect of the MMPP on the outcome of interest. If β_3 is statistically significant (p<0.10), then the null hypothesis that the MMPP had no

effect on the outcome/measure is rejected.[62] 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 models. 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 linear regression model. In both types of models, IMPAQ accounted for the repeated measures over time. IMPAQ reported the ratio of odds ratios (ROR) 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 dependent variable's unit of measurement for the continuous measures (e.g., total inpatient costs).

The effect estimates from the DID cost regression models also are reported as a marginal effect.[63] The marginal effect on the indicator for an MMPP site (Equation 3) defined the incremental costs associated with MMPP, accounting for cost differences between the follow-up year and the baseline year:

$$\begin{aligned} ME_{MMPP} &= Y_{P=1} - Y_{P=0} \\ &= (\beta_0 + \beta_1 T_t + \beta_2 P_i + \beta_3 T_t * P_i + \beta_4 X_{it}) - (\beta_0 + \beta_1 T_t + \beta_4 X_{it}) \\ &= \beta_2 P_i + \beta_3 T_t * P_i \end{aligned} \quad (3)$$

In order to investigate changes over time, IMPAQ reported the ME separately for each follow up year (i.e., where T=1) and for the referent year (i.e., where T=0). For example, the ME of MMPP in the referent year (i.e., 2010) and in the 2011 comparison year were calculated as follows:

$$\begin{aligned} ME_{MMPP|2010} &= \beta_2 P_i \\ ME_{MMPP|2011} &= \beta_2 P_i + \beta_3 T_t * P_i \end{aligned} \quad (4)$$

We calculated the ME as the average marginal effect (AME) in each year. The AME represents the average of the individual ME estimates across the sample observations. We provided confidence intervals on the AME using Fieller's theorem and 1,000 resamples of the dataset.

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 the follow up year (2011, 2012 or 2013) in a single practice site). By including only this population, IMPAQ limited the subgroup analysis to patients attributed to

[62] Although most research uses the 5% significance level, we used the 10% level in this analysis due to the small sample size (n=140).

[63] Onukwugha E, Bergtold J, Jain R. A primer on marginal effects--Part I: Theory and formulae. Pharmacoeconomics. 2015 Jan;33(1):25-30. doi: 10.1007/s40273-014-0210-6.

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.

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

3.2 Medicaid insured

3.2.1 Data

The administrative claims data used for this analysis of Medicaid-insured patients were processed by the Hilltop Institute (Hilltop), with input from the six[64] participating Maryland managed care organizations (MCOs). Under a separate contract, the University of Maryland, Baltimore used the raw data to develop person-level analytic files with the necessary information to construct each outcome measure. There was one person-level file per calendar year; 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, race), 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.

An additional data source was the Maryland Board of Physicians (MBP) licensure database, which contains a roster of physicians by practice site. This database was used to characterize practice sites.

3.2.2 Practice Attribution

Eligible Medicaid participants enroll in an MCO of their choice (or are assigned to an MCO by Medicaid) and may select (or are assigned by the MCO) a primary care provider to oversee their medical care. The six MCOs attributed patients to practices according to the patients' officially assigned primary care provider using federal tax identification numbers (TINs). In addition, for MMPP practices with multiple sites using the same TIN, the MCOs used National Provider Identifiers (NPIs) to attribute patients to specific site locations. In the first year of data processing for 2010 and 2011, the Medicaid managed care organizations (MCO) provided a list of Medicaid enrollees and the practice and physician they were assigned. In the second year for 2012 and 2013 data, the link to regnum was provided for the participating sites, but not the comparison.

[64] AMERIGROUP Community Care, Maryland Physicians Care, Priority Partners, United Healthcare, Coventry Cares, and MedStar Family Choice.

Therefore, UMB had to match the people to practices using federal tax identifier, practice name and practice address.

3.2.3 Patient Inclusion Criteria

Patients were eligible for the outcomes evaluation if they were enrolled continuously in one of the six participating MCOs in 2010 and 2011, 2012 or 2013, for 11 or more months in each calendar year. Because Medicare is not participating in the MMPP, patients aged 65 years or older were excluded. These inclusion and exclusion criteria were applied to patients attributed to both the MMPP and to the comparison practices.

The data received from Hilltop contained 152,735 Medicaid patients attributed to a unique practice site (i.e., a unique regnum): 77,453 patients in 2010, 75,282 patients in 2011, 71,732 in 2012, and 76,753 in 2013. These patients were assessed for the inclusion criteria in the following sequence: (1) aged 64 years and younger and (2) 11 or more months of insurance coverage during the year. Exhibit 6-33 provides details about how many patients were retained at each step of the inclusion criteria by study period and site type.

Exhibit 6-33: Patients by Inclusion Criteria

	MMPP sites				Comparison sites			
	2010	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
Patients attributed to a unique practice site (regnum)	36,055	38,756	33,947	34,997	41,398	36,526	37,785	41,756
Age ≤ 64 years	36,055	38,740	33,823	349,46	41,338	36,461	37,674	41,669
With ≥11 months of insurance coverage	30,853	35,517	27,609	28,733	32,031	29,678	30,643	34,557

Following this assessment, IMPAQ included a total of 62,884 patients in 2010, 65,195 patients in 2011, 58,252 patients in 2012, and 63,290 patients in 2013. Of the patients who met the inclusion criteria for the evaluation in 2010, 64.5 percent were assigned to the same practice site in both 2010 and 2011. 27.3 percent in both 2010 and 2012, and 26.3 percent in both 2010 and 2013. The CareFirst Blue Cross/Blue Shield Patient Centered Medical Home (CF PCMH) is an active PCMH program in Maryland. The comparison sites are therefore further grouped as either CF PCMH or Unexposed. Exhibit 6-34 provides further details on the number of patients included in the analysis.

Exhibit 6-34: Number of Patients Meeting the Inclusion Criteria Who were in the Same Practice in both 2010 and 2011, 2012 or 2013

Site	Number of ALL patients meeting inclusion criteria in 2010	Number of patients in BOTH 2010 and 2011	Number of patients in BOTH 2010 and 2012	Number of patients in BOTH 2010 and 2013
MMPP	**30,853**	**24,995**	**8,285**	**7,138**
All comparison sites	**32,031**	**15,567**	**8,905**	**9,404**
CareFirst PCMH	21,612	10,724	6,320	7,216
Unexposed	10,419	4,843	2,585	2,188

3.2.4 Practice Sites Excluded

As a result of including only patients attributed to a unique regnum, fewer practice sites than initially selected were included in the analysis. In 2010 and in 2011, eight MMPP practice sites were dropped due to a lack of eligible patients, and in 2012 and 2013, nine MMPP practice sites were dropped due to a lack of eligible patients. This is compared with 33 comparison sites (13 CF PCMH and 20 unexposed) dropped in 2010, 30 comparison sites dropped (11 CF PCMH and 19 unexposed) in 2011, 35 comparison sites (6 CF PCMH and 29 unexposed) dropped in 2012, and 33 comparison sites (4 CF PCMH and 29 unexposed) dropped in 2013.

3.2.5 Measures

The outcome measures fall within four domains: quality, utilization, costs, and medications. 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 (ED) visits, preventing potentially avoidable hospitalizations, optimizing utilization of primary care and prevention services, and reducing total direct health care costs. Appendix T in the Year 1 Report 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—percentage of women who delivered and received a prenatal care visit in the first trimester—was dropped; it could not be operationalized because gestational age cannot be measured in claims data.

The availability of prescription drug claims for Medicaid recipients allowed us to include outcome measures related to medications in the outcome evaluation for the Medicaid population. These measures were not available for commercially insured patients because we did not have prescription drug claims for them. These measures are included in Appendix U.

Because the MHCC requested that the analysis be performed on the practice level, the person-level files 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., ED 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, ED, 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 from the patient-level files.

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, cost and medication 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.[65] IMPAQ used these practice-level files for the practice-level evaluation analysis.

3.2.6 Analysis Methodology

The methodology use for the analysis of Medicaid-insured patients is similar to the methodology utilized for the analysis of commercially-insured patients in Section 3.1.6.

4. Health Care Disparities

4.1 Data

The data used in this analysis were obtained from the Maryland Medical Care Database (MCDB) and Maryland Medicaid. These databases contain institutional and outpatient medical services claims for services received in 2010, 2011, 2012 and 2013 by insured patients in Maryland. Contractors other than IMPAQ transformed these data to person-level files for each calendar year, with an attribution assignment to an MMPP or comparison practice site. These files contained unique patient identifiers, patient characteristics (age, date of birth, gender), annual health care expenditures, and indicators of certain service utilizations and quality of care outcomes. Because prescription event files were not provided for patients with commercial insurance, indicators for quality measures on medication management and analyses of these measures were restricted to Medicaid patients.

An additional data source was the Maryland Board of Physicians (MBP) licensure database. Records from physicians' applications for licensure were aggregated into practices using practice

[65] see http://www.acg.jhsph.org

name, address, and identification number. This database was used to characterize the patients' attributed comparison practice location.[66]

4.2 Eligibility Criteria

Patients meeting the inclusion criteria for the outcomes evaluation (see *Patient Inclusion Criteria* in Section 1.1.3 of this report and Section 4 of the *Evaluation of the Maryland Multi-Payor Patient Centered Medical Home Program First Annual Report*[67]) were included in the health care disparities analyses. Patients with missing information on any factors considered in the model (i.e., age, gender, race [for Medicaid data only], and practice location identifiers) were excluded from the health care disparities analyses.

4.3 Measures

For each disparity, IMPAQ identified the following categories:

- Patient gender: female, male
- Patient race for Medicaid enrollees: non-white, white
- Practice geographic location: located in/adjacent to a small metropolitan area, located in/adjacent to a large metropolitan area
- Payor type: Medicaid, commercial insurance.

For patient race, non-white includes black, Asian, Native American, Pacific Islander/Alaskan native, Hispanic, and unknown race. These were collapsed into one group due to small sample sizes for some racial groups. Our data source did not provide ethnicity (Hispanic or non-Hispanic) separately from race; thus, we did not explore Hispanic ethnicity disparities. Because race information was not available for commercially insured patients, the evaluation of outcome measures for disparities by race was assessed only in patients with Medicaid as the payor.

Health care utilization and outcomes often differ by income status. Thus, we wanted to explore whether MMPP has an impact on income disparities in health. However, we did not have data on patient income and, therefore used payor type as a proxy. Payor type was defined as either Medicaid or commercial insurance.

To determine whether urban/rural disparities were reduced by MMPP, we considered the location of patients' attributed practices. They were categorized by their proximity to a metropolitan area: located in/adjacent to a small metropolitan area or located in/adjacent to a large metropolitan area.

[66] For the MHCC practice characteristics, we used the practice attributes spreadsheet provided by MHCC, which contained information submitted by practices to MHCC when they applied for the program.

[67] Maryland Health Care Commission. Evaluation of the Maryland Multi-Payer Patient Centered Medical Home Program First Annual Report. December 16, 2013. Available at http://mhcc.dhmh.maryland.gov/Documents/mhcc_news/Evaluation_MMPP_Annual_Report.pdf?Mobile=1

To further strengthen the validity of our estimates, the IMPAQ team controlled for potential confounders, including age (0 to 18, 19 to 40, or 41 to 64 years) and case-mix of MMPP and comparison sites, by using the Adjusted Clinical Group (ACG) Case-Mix risk adjustment suite of tools developed by a member of the IMPAQ team.[68] The ACG method is a well-established software tool that categorizes all International Classification of Diseases (ICD) codes and National Drug Codes (NDC) found in claims databases to assign health status/risk/diagnostic labels to consumers/patients based on their contacts with the health care system (including primary and specialty ambulatory care, outpatient and inpatient care, and pharmacy). The case-mix adjustment was scored using the ACG, which provides categories for persons based on different epidemiological patterns of morbidity. To obtain fewer categories, these groups were further combined into six resource utilization bands (RUBs), in which patients with the same band are expected to require similar levels of health care resources.[69] Because of the small sample size and difficulty with model convergence, the IMPAQ team modified these further to two RUBs, as shown in Exhibit 6-35.

Exhibit 6-35: Description of the Modified Resource Utility Bands (RUBs), Using ACG Values

ACG RUB	ACG RUB description	Modified RUB	Modified RUB description
0	No or Only Invalid Diagnosis	1	Low
1	Healthy Users		
2	Low		
3	Moderate	2	High
4	High		
5	Very High		

4.4 Selection of Measures

To determine which of our claims-based outcome measures to include in the disparities analysis, we tested each measure for disparities in the baseline year (2010) among patients attributed to MMPP sites in the baseline year (2010). This allows the analysis to focus on measures that had disparities that the MMPP may help to reduce.

Using a regression approach, we estimated the effect of race, gender, geographic location, and payor type on each measure, while controlling for age and health status using modified ACG RUB:

$$y_{i,MMPP,2010} = \beta_0 + \beta_1 race_i + \beta_2 gender_i + \beta_3 location_{i,2010} + \beta_4 payer_{i,2010} + \beta_5 age_{i,2010} + \beta_6 RUB_{i,2010} + \varepsilon \quad (5)$$

The dependent variable $y_{i,MMPP,2010}$ is the quality, utilization, cost, or medication measure of interest for MMPP patient *i* in 2010. The parameters of interest are $\beta_1, \beta_2, \beta_3$ and β_4 and

[68] see http://www.acg.jhsph.org

[69] The Johns Hopkins University Bloomberg School of Public Health. The Johns Hopkins ACG® System: *Technical Reference Guide Version 9.0 December 2009*. Baltimore, MD: Johns Hopkins University; 2009.

represent the disparities associated with race, gender, geographic location, and payor, respectively, on the outcome measure of interest, while controlling for age and health status. If the coefficient of interest was statistically significant ($P < 0.10$), then the null hypothesis that the health care disparity had no effect on the outcome measure was rejected, and the outcome measure was included in the disparities analysis for the relevant disparity.

As mentioned previously, racial disparities were assessed only in Medicaid insured patients, as race was not available for commercially insured patients. The income proxy, payor type, was not included in the regressions when examining racial disparities or medication measures because, as mentioned earlier, these characteristics were available only for the Medicaid patients.

To calculate the preceding regression, we applied a generalized linear regression model for the three types of outcomes: dichotomous, count, and continuous. The dichotomous outcomes used a logit distribution and natural log link. The count models used a Poisson distribution and natural log link. The continuous measures used a normal distribution and identity link. We applied regression methods for clustered data, to account for the correlation between patients in the same practice.

4.5 Analytic Approach

The IMPAQ team used two approaches to estimate whether the Maryland Program has an impact on any of our health care disparities measures. The two methods estimate the program effect on health care disparities from two different perspectives. The first approach, difference-in-differences (DID), provides estimates of the differential program impact of the MMPP on the subgroups. The DID regression models provide estimates of the differential program impact in the unit of the measure of interest. By providing estimates in terms of their actual units, we are able to easily compare the estimates to the original values of the measure. However, because the unit of measure is retained, it is difficult to compare the change in disparities across measures that are captured in different units (e.g., percentage points of admission rates versus number of visits).

Our second approach is a calculation of disparity change scores (DCSs). This approach allows for a simple presentation of changes in disparities. Higher absolute values in the disparity change score signify greater changes in the health care disparities between the two time periods.

The estimates of DCSs do not have a unit. The advantage of this is that it allows easy comparison of the change in disparities across measures. For example, using these estimates, one could compare whether the disparities in hospital admission rates have decreased at a faster rate than the disparities in number of office visits by comparing each of their differences to zero (the value that indicates that there is no change in disparities over time). However, these values do not naturally relate back to the actual values of the measures of interest.

Details for each of the analytic approaches are described below.

4.5.1 Difference-in-Differences Regression Analysis

For each outcome measure y_{it} for patient *i* in year *t* (2010, 2011, 2012 or 2013), we fitted the following DID regression model:

$$\begin{aligned} y_{it} = \beta_0 + \beta_1 MMPP_i + \beta_2 POST_t + \beta_3 MMPP_i * POST_t + \beta_4 age_{it} + \beta_5 RUB_{it} \\ + \beta_6 race_i + \beta_7 MMPP_i * race_i + \beta_8 POST_t * race_i + \beta_9 MMPP_i \\ * POST_t * race_i + \beta_{10} gender_i + \beta_{11} MMPP_i * gender_i \\ + \beta_{12} POST_t * gender_i + \beta_{13} MMPP_i * POST_t * gender_i \\ + \beta_{14} location_i + \beta_{15} MMPP_i * location_i + \beta_{16} POST_t * location_i \\ + \beta_{17} MMPP_i * POST_t * location_i + \beta_{18} payer_{it} + \beta_{19} MMPP_i \\ * payer_{it} + \beta_{20} POST_t * payer_{it} + \beta_{21} MMPP_i * POST_t * payer_{it} \\ + \varepsilon \end{aligned} \quad (6)$$

In this model, $MMPP_i$ equals 1 if patient *i* is (eventually) attributed to an MMPP site, and zero for the patients of the comparison sites. Thus, β_1 estimates the average of any pre-MMPP differences in the outcome measure between the MMPP and comparison site patients. The variable $POST_t$ indicates whether the observation occurred before or after the implementation of the MMPP (0 = before 2010, 1 = after 2011, 2012 or 2013); β_2 estimates the changes in the outcome variable that would have occurred with time, regardless of the implementation of the MMPP. The notation $MMPP_i * POST_t$ equals 1 for patients of MMPP sites in the post period (2011, 2012 or 2013) and represents the program-wide (regardless of group) effect of the MMPP on the outcome variable.

The variables of interest for determining whether the MMPP had a differential impact on the subgroups of interest are listed in Exhibit 6-36.

Exhibit 6-36: Coefficients of Interest for the DID Regression Analysis

Disparity	Coefficient of Interest*
Race	β_9
Gender	β_{13}
Geographic location	β_{17}
Insurance status	β_{21}

*Coefficients are based on Equation 6

The variable $race_i$ (1 = non-white, 0 = white) indicates the race category of patient *i.* The coefficient $\beta_9$indicates whether MMPP had a differential effect on non-whites versus whites. For outcome measures for which an increase is a positive effect (such as the utilization of preventive care), finding a significantly positive estimate for this coefficient would indicate that the MMPP had a larger positive effect on non-whites than on whites. For outcome measures for which a reduction is desirable (such as ED visits), a significantly positive β_9 would indicate that the reduction in the outcome measure due to the MMPP is smaller for the non-whites than for the whites. The opposite is true for a statistically significant negative coefficient β_9. Similarly,

$gender_i$ denotes whether patient *i* is male (gender = 0) or female (gender = 1); the coefficient β_{13} estimates the differential effect of the MMPP on the outcome measure in the two gender subgroups in the follow up year (2011, 2012 or 2013).

The variable $location_i$ accounts for the size of the exact or adjacent metropolitan area (1 = small, 0 = large) of the attributed practice belonging to patient *i.* In the follow-up year (2011, 2012 or 2013), for an MMPP patient whose practice site is in or close to a large metropolitan area, the following notation would equal 1: $MMPP_i * POST_t * location_i$. Therefore, the differential effect of MMPP on the outcome variable according to the geographic location is given by the coefficient β_{17}.

To account for the patient's insurance type (Medicaid or private payor), the variable $payer_{it}$ was included; the notation $MMPP_i * POST_t * payer_{it}$ equals 1 if the observation occurs in the follow up year (2011, 2012 or 2013) and patient *i* is attributed to an MMPP site and had Medicaid insurance. Because we are using insurance payor as a proxy for income, the coefficient β_{21} gives an estimate of how MMPP has changed the outcome measures in different income groups.

The models also included variables to adjust for age and case-mix (RUB). Variations due to unobserved effects are accounted for by the error term ε in the model.

To calculate the regression in Equation 4 we applied a generalized linear regression model for continuous variables and the grouped logistic regression models for binary outcomes, accounting for the repeated measures over time. If the coefficient of interest was statistically significant (*P* < 0.10), then the null hypothesis that the MMPP had no differential effect on the subgroups was rejected.

4.5.2 Disparity Change Score (DCS) Analysis

Using the DCS methodology, IMPAQ calculated adjusted incidence rates for the outcome measures of interest and created ratios of these measures between the disadvantaged population and another population (i.e., the rate ratio or relative disparity). The building block of the DCS is the rate ratio, as provided in Equation 5 (*j* indicates the MMPP or comparison group of practices). The denominator of the DCS for all periods will be the value for the group (e.g., male or female) that has the lower mean for the outcome measure in the first time period (2010). A rate ratio of 1 indicates no disparity between the two groups.

$$RR_{j,t} = \frac{\bar{y}_{j,t,0}}{\bar{y}_{j,t,1}} \quad (7)$$

To measure whether the health care disparities changed across time, IMPAQ calculated the DCS. The DCS for site *j* is:

$$DCS_j = \left|RR_{j,2010} - 1\right| - \left|RR_{j,2011} - 1\right| \quad (8)$$

Differences that are greater than 0 indicate that the health care disparity is decreasing; differences that are less than 0 indicate that the health care disparity is increasing.

It is possible that DCS_{MMPP} reflects a general trend in health care disparities within the state of Maryland and not a change due to MMPP. Thus, we compare the DCS for MMPP practice sites to the DCS for comparison practice sites, under the assumption that DCS_{CP} captures the expected trend in health care disparities within the state of Maryland without MMPP.

The value of the outcome measure may differ between two groups in a disparity analysis owing to observable explanations; for example, when assessing gender disparities, the male and female prevalence of various patient-level factors that influence the likelihood of hospitalizations may differ. To allow for comparison, IMPAQ first estimated adjusted values for the outcome measures of interest to account for differences in these factors. We adjusted for age and case-mix using the RUB variable, as well as the other disparity measures that were available (i.e., we could not adjust for race in the gender disparities models because race is available only in Medicaid data). The DCS for each identified measure was calculated from these adjusted values.

7. APPENDICES

Appendix A:
Matching Technique Used to Select Comparison Practices

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)

Characteristic	Data Source
Number of CF attributed patients (normalized by physicians' hours in patient care)	MHCC file (7/11/12)

Appendix B:
Site Visit Interview Guides

PCMH LEADS

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-payor 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)?
    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

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?
    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?

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?
    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?

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?

CARE COORDINATORS/MANAGERS

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-payor 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.

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Do you have any questions before I begin?

General Understanding and Background

37. When did you become a PCMH? What motivated you or your practice to apply?

38. What do you perceive to be the importance of the program? Which aspects do you feel are the most significant?

39. 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

40. Tell me about the first efforts applied to transform. What strategies did you employ? What activities were generated? Who has been involved?

41. Which requirements have been the easiest to achieve? Tell me more about why that is?

42. 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?

43. 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?

44. 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)

45. 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?

46. 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

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

48. 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?

49. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?

50. Have you seen or experienced resistance from staff or providers? In what ways? What has it been regarding? How are you overcoming that?

51. 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

52. How do you monitor outcomes and achievements of transforming? How are you measuring for success? What is the burden of monitoring compliance?

53. Tell me about the patient care coordination process. How has it changed? What are those changes? How are you tracking progress?

54. 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

55. 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?
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Specific Activities

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60. Have providers' relationships with specialists changed at all as a result of the medical home demonstration project?
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    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?

61. 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?

62. 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

63. Have there been cost savings? In which areas? Do you anticipate further cost savings?

64. 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?

65. 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?

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

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

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PROVIDERS

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6. Which requirements were most difficult to achieve? Tell me about why that is?
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    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?
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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?
    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?

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?

27. 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?

28. How have financial costs hindered transformation, if at all? What aspects have been affected?

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

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-payor 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 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?
    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. 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

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

11. 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?

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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    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?

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    a. Patient population and characteristics (Medicare, Medicaid, youth, etc.)
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11. Have you observed changes in work satisfaction among providers/staff? Tell me more about that, why do you think that is?

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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?
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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?

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Recommendations and Lessons Learned

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

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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

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

[1] ☐ YES
[2] ☐ 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?

[1] ☐ YES
[2] ☐ NO

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

[1] ☐ Less than 6 months,
[2] ☐ At least 6 months but less than 1 year,
[3] ☐ At least 1 year but less than 3 years,
[4] ☐ At least 3 years but less than 5 years, or
[5] ☐ 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]

0☐ None → [IF NONE, GO TO CORE QUESTION #41]
1☐ 1 time,
2☐ 2,
3☐ 3,
4☐ 4,
5☐ 5 to 9, or
6☐ 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**?

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ 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]

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ 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]

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

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

1☐ YES
2☐ 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]

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ 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]

1☐ Yes, definitely
2☐ Yes, somewhat
3☐ 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]

1☐ Yes, definitely
2☐ Yes, somewhat
3☐ 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]

1☐ Yes, definitely
2☐ Yes, somewhat
3☐ 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]

1☐ Yes, definitely
2☐ Yes, somewhat
3☐ 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]

1☐ Not at all
2☐ A little
3☐ Some
4☐ 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]

1☐ Not at all
2☐ A little
3☐ Some
4☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

[1]☐ Yes
[2]☐ No

The next questions are about you

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

Would you say… [READ LIST]

[1]☐ Excellent,
[2]☐ Very good,
[3]☐ Good,
[4]☐ Fair, or
[5]☐ Poor

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

Would you say… [READ LIST]

[1]☐ Excellent,
[2]☐ Very good,
[3]☐ Good,
[4]☐ Fair, or
[5]☐ Poor?

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

[1] ☐ YES
[2] ☐ 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.

[1] ☐ YES →[IF YES, GO TO QUESTION #47]
[2] ☐ NO

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

[1] ☐ YES
[2] ☐ 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.

[1] ☐ YES → [IF YES, GO TO QUESTION #47]
[2] ☐ 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 this condition, …
47. Were you asked for your ideas when making your treatment plan?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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]

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

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

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

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]

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

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

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]

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

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

1☐ Male, or
2☐ Female?

69. 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?

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

1☐ YES, HISPANIC OR LATINO
2☐ 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☐	2☐
[B.] Are you Black or African American?	1☐	2☐
[C.] Are you Asian?	1☐	2☐
[D.] Are you Native Hawaiian or Other Pacific Islander?	1☐	2☐
[E.] Are you American Indian or Alaska Native?	1☐	2☐
[F.] Are you another race?	1☐	2☐

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☐	2☐
[B.] An adult child?	1☐	2☐
[C.] An adult grandchild?	1☐	2☐
[D.] An adult sibling?	1☐	2☐
[E.] Other adult relative (Grandparent, In-law, Aunt, Cousin, Nephew, Niece, etc.)?	1☐	2☐
[G.] A nursing assistant or primary care home visitor?	1☐	2☐
[H.] Other adult nonrelative?	1☐	2☐

[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]

1☐ An opposite-sex spouse/partner
2☐ A same-sex spouse/partner
3☐ Other
[IF RESPONSE IS "OTHER"] Please specify _____

74. What do you consider yourself to be?

Is it… [READ LIST]

1☐ Straight or heterosexual
2☐ Gay or lesbian
3☐ Bisexual
4☐ 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]

1☐ Male
2☐ Female
3☐ Transgender, male to female
4☐ Transgender, female to male

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

Appendix D:
Child Patient Survey Questions

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

1☐ YES

2☐ 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?

1☐ YES
2☐ NO

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

Is it…[READ LIST]

1☐ Less than 6 months,
2☐ At least 6 months but less than 1 year,
3☐ At least 1 year but less than 3 years,
4☐ At least 3 years but less than 5 years, or
5☐ 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]

0☐ None →[IF NONE, GO TO CORE QUESTION #26]
1☐ 1 time
2☐ 2
3☐ 3
4☐ 4
5☐ 5 to 9
6☐ 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**?

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

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

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

1☐ YES
2☐ 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]

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ 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]

1☐ Never
2☐ Sometimes
3☐ Usually
4☐ 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]

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 give you easy to understand information about these health questions or concerns?

Would you say … [READ LIST]

[1] ☐ Never
[2] ☐ Sometimes
[3] ☐ Usually
[4] ☐ 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]

[1] ☐ Never
[2] ☐ Sometimes
[3] ☐ Usually
[4] ☐ 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]

[1] ☐ Never
[2] ☐ Sometimes
[3] ☐ Usually
[4] ☐ Always

19. In the last 12 months, how often did this provider spend enough time with <PARTICIPANT>?

Would you say … [READ LIST]

[1] ☐ Never
[2] ☐ Sometimes
[3] ☐ Usually
[4] ☐ 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?

- [1] ☐ YES
- [2] ☐ 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?

- [1] ☐ YES
- [2] ☐ NO

23. In the last 12 months, did anyone in this provider's office talk with you about specific goals for <PARTICIPANT'S> health?

- [1] ☐ YES
- [2] ☐ 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?

- [1] ☐ YES
- [2] ☐ 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?

1☐ YES
2☐ NO → [IF NO, GO TO QUESTION #30]

29. Is this medicine for a condition that is expected to last for at least 12 months?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ 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?

1☐ YES
2☐ NO → [IF NO, GO TO QUESTION #34]

33. Is this because of a condition that is expected to last for at least 12 months?

1☐ YES
2☐ NO

34. Does <PARTICIPANT> need or get special therapy, such as physical, occupational, or speech therapy?

1☐ YES

2☐ NO → [IF NO, GO TO QUESTION #36]

35. Is this therapy for a condition that is expected to last for at least 12 months?

1☐ YES
2☐ NO

36. Does <PARTICIPANT> have any kind of emotional, developmental, or behavioral problem for which he or she needs or gets treatment or counseling?

1☐ YES
2☐ 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?

1☐ YES→ [IF YES, GO TO QUESTION #38]
2☐ 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 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]

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

39. Was s/he or a caregiver given choices about treatment to think about?

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

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]

1☐ None of the time
2☐ A little of the time
3☐ Some of the time
4☐ Most of the time
5☐ 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]

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

42. Was s/he or a caregiver satisfied that his/her care was well organized?

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

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]

1☐ None of the time
2☐ A little of the time
3☐ Some of the time
4☐ Most of the time
5☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ Always

46. Was s/he or a caregiver given a copy of his/her treatment plan?

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

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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ Always

52. Was s/he or a caregiver asked how this condition(s) affect his/her 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

53. Was s/he or a caregiver 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
6☐ 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]

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

55. Was s/he or a caregiver 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

56. Was s/he or a caregiver told how his/her visits with **<u>other types of doctors</u>**, 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]

[1] ☐ None of the time
[2] ☐ A little of the time
[3] ☐ Some of the time
[4] ☐ Most of the time
[5] ☐ Always

57. Was s/he or a caregiver asked how his/her 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 < PARTICIPANT> and you.

58. What is < PARTICIPANT'S> age?

Is it… [READ LIST]

[1] ☐ Less than 1 year old

[2] _____ YEARS OLD [WRITE IN IF OLDER THAN ONE YEAR]

59. What was < PARTICIPANT'S > sex assigned at birth?

Was it… [READ LIST]

[1] ☐ Male
[2] ☐ Female

60. Is < PARTICIPANT> of Hispanic or Latino origin or descent?

[1] ☐ Yes, Hispanic or Latino
[2] ☐ 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?	[1] ☐	[2] ☐
[B.] Black or African American?	[1] ☐	[2] ☐
[C.] Asian?	[1] ☐	[2] ☐
[D.] Native Hawaiian or Other Pacific Islander?	[1] ☐	[2] ☐
[E.] American Indian or Alaska Native?	[1] ☐	[2] ☐
[F.] Another race?	[1] ☐	[2] ☐

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

[0] ☐ Under 18,
[1] ☐ 18 to 24,
[2] ☐ 25 to 34,
[3] ☐ 35 to 44,
[4] ☐ 45 to 54,
[5] ☐ 55 to 64,
[6] ☐ 65 to 74, or
[7] ☐ 75 or older?

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

[1] ☐ Male
[2] ☐ 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☐	2☐
[B.] An adult child?	1☐	2☐
[C.] An adult grandchild?	1☐	2☐
[D.] An adult sibling?	1☐	2☐
[E.] Other adult relative (Grandparent, In-law, Aunt, Cousin, Nephew, Niece, etc.)?	1☐	2☐
[F.] A nursing assistant or primary care home visitor who helps you with caring for {PARTICIPANT}	1☐	2☐
[G.] Other adult nonrelative?	1☐	2☐

[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]

1☐ An opposite-sex spouse or partner
2☐ A same-sex spouse or partner
3☐ 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

MARYLAND HEALTH CARE COMMISSION

4160 PATTERSON AVENUE – BALTIMORE, MARYLAND 21215
TELEPHONE: 410-764-3460 FAX: 410-358-1236

<Date>

{title} {firstname} {lastname}
{Address}
{city}, {state} {zip}

Dear {title} {firstname} {lastname}:

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 on 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 behalf of MHCC.

We would like to interview you by phone; the interview takes about 15 minutes to complete. 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 your child's healthcare treatments.

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 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 study. 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 study.

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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 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, please contact <IMPAQ contact> from IMPAQ at <telephone>, PCMH@impaqint.com or <MHCC contact> from MHCC at <telephone>, <email>. If you would like more information about our Patient Centered Medical Home program, please see: http://mhcc.maryland.gov/pcmh. Thank you for your participation!

Sincerely,

Ben Steffen
Executive Director
Maryland Health Care Commission

Appendix F:
Frequently Asked Questions (FAQs)

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 vwooding@mhcc.state.md.us.

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.

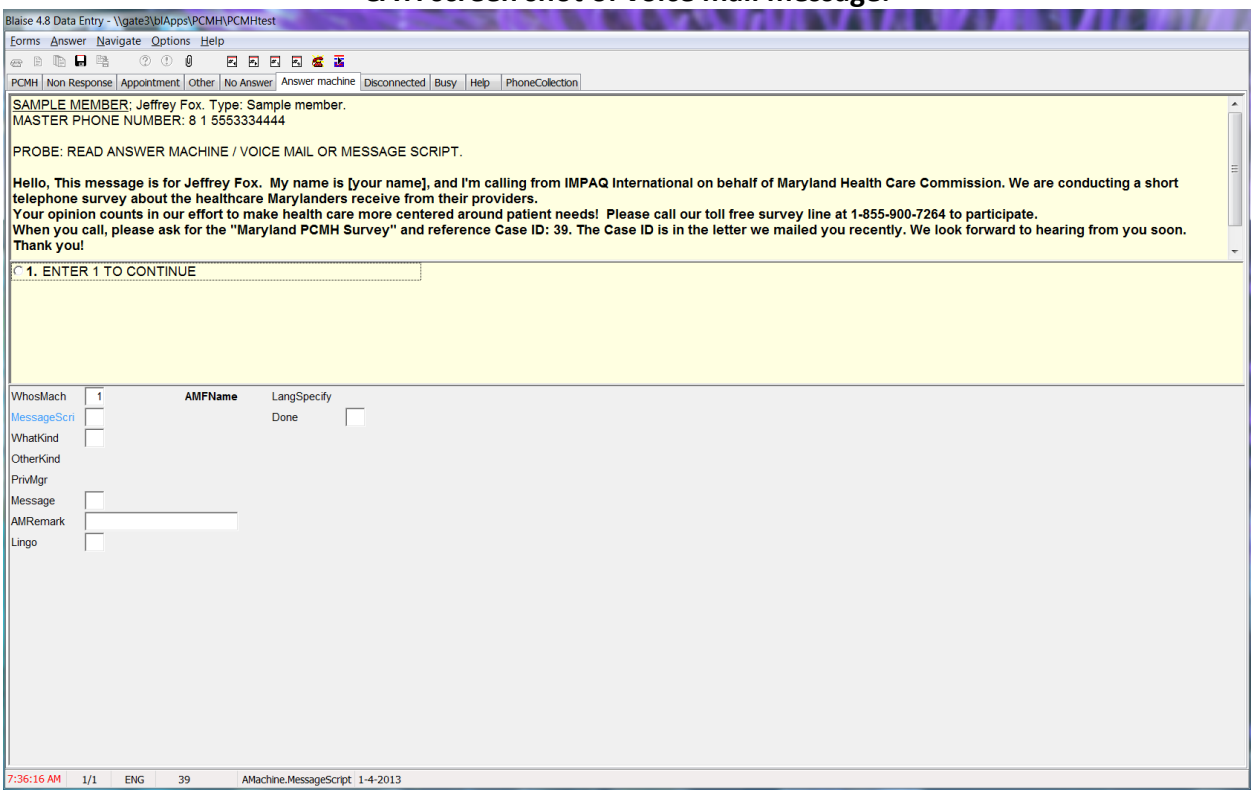
33. What does "gender identity" mean?

Gender identity is how an individual understands one's own gender.

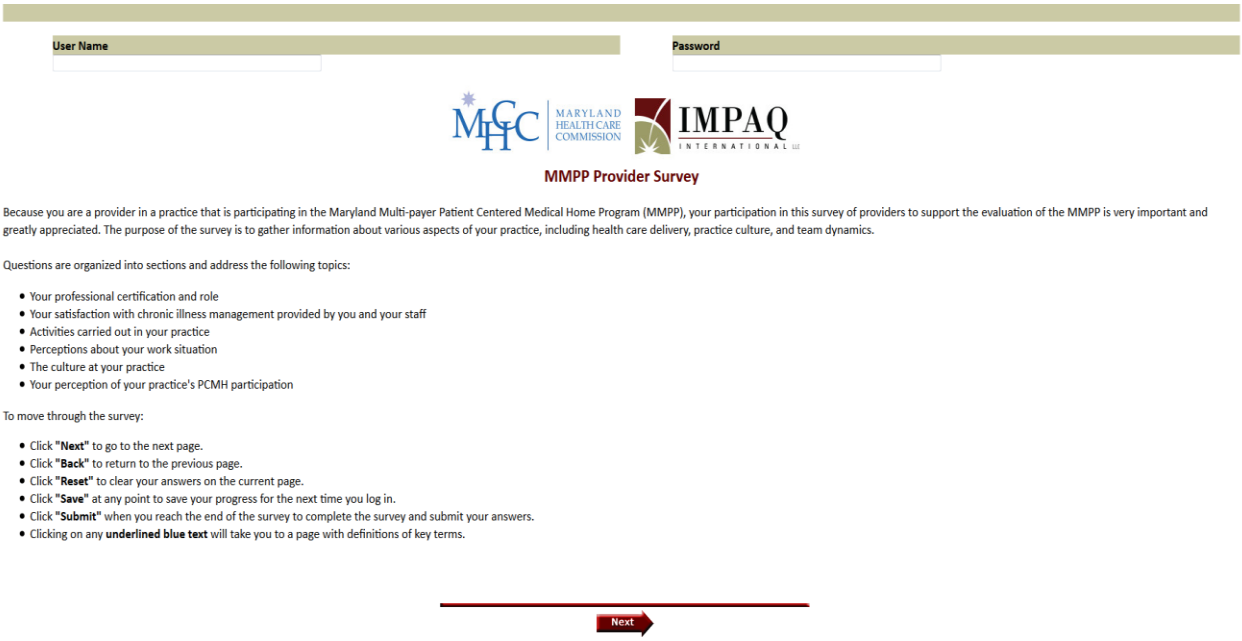
Appendix G:
Voicemail Message for Patient Surveys

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:



Appendix H:
MMPP Provider Survey Questions: Web Version



User Name

Password

MARYLAND HEALTH CARE COMMISSION

IMPAQ INTERNATIONAL

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:*

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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	○	○	○	○	○	○
b. Your chronically ill patients	○	○	○	○	○	○

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*	*Disatisfied*	*Very dissatisfied*
a. Communicating with patients	○	○	○	○	○	○
b. Communicating with family caregivers	○	○	○	○	○	○
c. Educating family caregivers	○	○	○	○	○	○
d. Motivating patients to participate in maximizing their health	○	○	○	○	○	○
e. Coordinating the care received from all providers	○	○	○	○	○	○
f. Monitoring patients' chronic conditions	○	○	○	○	○	○
g. Referrals to community resources	○	○	○	○	○	○
h. Efficiency of office visits	○	○	○	○	○	○
i. Access to evidence-based guidelines for chronic conditions	○	○	○	○	○	○
j. Efficiency of practice team	○	○	○	○	○	○
k. Availability of clinical information about your patients	○	○	○	○	○	○

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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	○	○	○	○	○	○	
b. Taking vital signs	○	○	○	○	○	○	
c. Screening patients for diseases (example: a depression screen)	○	○	○	○	○	○	
d. Asking patients whether they smoke	○	○	○	○	○	○	
e. Obtaining immunization histories from patients	○	○	○	○	○	○	
f. Gathering information on screening (example: date of last mammogram)	○	○	○	○	○	○	
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	○	○	○	○	○	○	
h. Deciding how soon patients who call for an appointment will be seen	○	○	○	○	○	○	

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6. **(Continued) 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**
i. Obtaining medical records from other providers outside the practice	○	○	○	○	○	○	
j. Communicating with insurance companies (example: obtaining prior authorizations)	○	○	○	○	○	○	
k. Communicating with pharmacies (example: medication refills)	○	○	○	○	○	○	
l. Calling patients who are due for a visit	○	○	○	○	○	○	
m. Calling patients to provide them laboratory results	○	○	○	○	○	○	
n. Answering phone calls from patients	○	○	○	○	○	○	
o. Advising patients on how to care for their health conditions	○	○	○	○	○	○	
p. Evaluating patients and making treatment decisions	○	○	○	○	○	○	
q. Completing different kinds of forms upon patients' arrival at the facility	○	○	○	○	○	○	

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Work Perceptions

7.

	Strongly agree	*Agree*	*Neither agree nor disagree*	*Disagree*	*Strongly disgree*
Please indicate how much you agree or disagree with the following statement: Overall, I am satisfied with my current job.	○	○	○	○	○

8.

	None	*Slight*	*Moderate*	*Likely*	*Definitely*
What is the likelihood that you will leave your current practice within TWO YEARS?	○	○	○	○	○

9.

	1 Calm	*2*	*3 Busy, but reasonable*	*4*	*5 Hectic, chaotic*
Which best describes the atmosphere in your practice?	○	○	○	○	○

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10. **Culture: Valued Alignment with Leaders**

To what degree do the following statements reflect the conditions in your practice?

	1 Not at all	*2*	*3*	*4 To a great extent*
a. There is broad involvement of clinicians in most financial decisions.	○	○	○	○
b. Our physician compensation formula is well aligned with our practice's goals.	○	○	○	○
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	○	○	○	○
d. Our compensation plan rewards those who work hard for our practice.	○	○	○	○
e. Our clinician compensation formula is well understood by our clinicians.	○	○	○	○
f. Our administrative decision-making process can accurately be described as consensus building.	○	○	○	○
g. The business office and administration are considered to be very important parts of our group practice.	○	○	○	○
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs.	○	○	○	○

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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?**

	Never *members of your team*	***Sometimes*** *members of your team*	***Always*** *members of your team*
a. Primary care physicians	○	○	○
b. Physician's assistants	○	○	○
c. Nurse practitioners	○	○	○
d. Registered nurses or nurse case managers	○	○	○
e. Licensed vocational nurses (LVNs or LPNs)	○	○	○
f. Medical assistants	○	○	○
g. Clerks or receptionists	○	○	○
h. Health educators	○	○	○
i. Pharmacists	○	○	○
j. Social workers	○	○	○
k. Community health workers	○	○	○
l. Visiting nurses	○	○	○
m. Nutritionists or dieticians	○	○	○
n. Mental (behavioral) health professionals	○	○	○
o. Other 1:	○	○	○
p. Other 2:	○	○	○
q. Other 3:	○	○	○

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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*	*Do not know*
a. Team membership is clear - everybody knows exactly who is and isn't on your team.	○	○	○	○	○	○	○
b. Different people are constantly joining and leaving your team.	○	○	○	○	○	○	○
c. Members of your team have their own individual jobs to do, with little need to work together.	○	○	○	○	○	○	○
d. Members of your team have to depend heavily on one another to get the team's work done.	○	○	○	○	○	○	○
e. Your team is larger than it needs to be.	○	○	○	○	○	○	○
f. Your team has too few members for what it has to accomplish.	○	○	○	○	○	○	○
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	○	○	○	○	○	○	○
h. It is clear what is - and what is not - acceptable member behavior in your team.	○	○	○	○	○	○	○

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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.	○	○	○	○	○	○	○
j. Your practice recognizes and rewards teams that perform well.	○	○	○	○	○	○	○
k. Team members can easily obtain training or technical advice when they need it.	○	○	○	○	○	○	○
l. In your practice, teams do not receive adequate training for the work they have to do.	○	○	○	○	○	○	○
m. Everyone on your team is motivated to have the team succeed.	○	○	○	○	○	○	○
n. Some members of your team do not carry their fair share of the overall workload.	○	○	○	○	○	○	○
o. Members of your team actively share their special knowledge and expertise with one another.	○	○	○	○	○	○	○
p. There is a lot of unpleasantness among members of your team.	○	○	○	○	○	○	○
q. Working together energizes and uplifts members of your team.	○	○	○	○	○	○	○

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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.	○	○	○	○	○	○	○
b. Staff are encouraged to express alternative viewpoints in the practice.	○	○	○	○	○	○	○
c. Staff are afraid to ask questions when something does not seem right.	○	○	○	○	○	○	○
d. It is difficult to voice disagreement in this practice.	○	○	○	○	○	○	○
e. When there is a problem in the practice, we see if we need to change the way we do things.	○	○	○	○	○	○	○
f. The practice is good at changing care processes to make sure the same problems don't happen again.	○	○	○	○	○	○	○
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	○	○	○	○	○	○	○

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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*
Being involved in the PCMH demonstration project has... a. Required a fundamental transformation in how we operate.	○	○	○	○	○	○
b. Helped my practice take better care of patients.	○	○	○	○	○	○
c. Taken up more time.	○	○	○	○	○	○
d. Been too expensive.	○	○	○	○	○	○
e. Generated new revenue.	○	○	○	○	○	○
f. Required the use of financial resources beyond the fixed transformation payments (FTPs).	○	○	○	○	○	○
g. Led to improved care coordination with specialists.	○	○	○	○	○	○
h. Improved the way I interact with patient's family members.	○	○	○	○	○	○
i. Enhanced care due to the role of the care manager/coordinator.	○	○	○	○	○	○
j. Improved patient health outcomes.	○	○	○	○	○	○
k. Reduced my control over the aspects of practice that matter most to me.	○	○	○	○	○	○

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.	○	○	○	○	○	○

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Progress

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!

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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:
MMPP Provider Survey Questions: Paper Version

User ID: 4334

PARTICIPATING 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.

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	☐	☐	☐	☐	☐	☐
b. Your chronically ill patients	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐
b. Communicating with family caregivers	☐	☐	☐	☐	☐	☐
c. Educating family caregivers	☐	☐	☐	☐	☐	☐
d. Motivating patients to participate in maximizing their health	☐	☐	☐	☐	☐	☐

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
e. Coordinating the care received from all providers	☐	☐	☐	☐	☐	☐
f. Monitoring patients' chronic conditions	☐	☐	☐	☐	☐	☐
g. Referrals to community resources	☐	☐	☐	☐	☐	☐
h. Efficiency of office visits	☐	☐	☐	☐	☐	☐
i. Access to evidence-based guidelines for chronic conditions	☐	☐	☐	☐	☐	☐
j. Efficiency of practice team	☐	☐	☐	☐	☐	☐
k. Availability of clinical information about your patients	☐	☐	☐	☐	☐	☐

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 *(Please specify)*
a. Checking in and orienting patients	☐	☐	☐	☐	☐	☐ _____
b. Taking vital signs	☐	☐	☐	☐	☐	☐ _____
c. Screening patients for diseases (example: a depression screen)	☐	☐	☐	☐	☐	☐ _____
d. Asking patients whether they smoke	☐	☐	☐	☐	☐	☐ _____
e. Obtaining immunization histories from patients	☐	☐	☐	☐	☐	☐ _____
f. Gathering information on screening (example: date of last mammogram)	☐	☐	☐	☐	☐	☐ _____
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	☐	☐	☐	☐	☐	☐ _____
h. Deciding how soon patients who call for an appointment will be seen	☐	☐	☐	☐	☐	☐ _____
i. Obtaining medical records from other providers outside the practice	☐	☐	☐	☐	☐	☐ _____
j. Communicating with insurance companies (example: obtaining prior authorizations)	☐	☐	☐	☐	☐	☐ _____
k. Communicating with pharmacies (example: medication refills)	☐	☐	☐	☐	☐	☐ _____
l. Calling patients who are due for a visit	☐	☐	☐	☐	☐	☐ _____
m. Calling patients to provide them laboratory results	☐	☐	☐	☐	☐	☐ _____
n. Answering phone calls from patients	☐	☐	☐	☐	☐	☐ _____

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 *(Please specify)*
o. Advising patients on how to care for their health conditions	☐	☐	☐	☐	☐	☐ _____
p. Evaluating patients and making treatment decisions	☐	☐	☐	☐	☐	☐ _____
q. Completing different kinds of forms upon patients' arrival at the facility	☐	☐	☐	☐	☐	☐ _____

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.	☐	☐	☐	☐	☐

8. What is the likelihood that you will leave your current practice within TWO YEARS?	None	Slight	Moderate	Likely	Definitely
	☐	☐	☐	☐	☐

9. Which best describes the atmosphere in your practice?	Calm ◄——►		Busy, but reasonable	◄——►	Hectic, chaotic
	☐	☐	☐	☐	☐

CULTURE: VALUES ALIGNMENT WITH LEADERS

10. To what degree do the following statements reflect the conditions in your practice?	Not at all ◄——►			To a great extent
a. There is broad involvement of clinicians in most financial decisions.	☐	☐	☐	☐
b. Our physician compensation formula is well aligned with our practice's goals.	☐	☐	☐	☐
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	☐	☐	☐	☐
d. Our compensation plan rewards those who work hard for our practice.	☐	☐	☐	☐
e. Our clinician compensation formula is well understood by our clinicians.	☐	☐	☐	☐
f. Our administrative decision-making process can accurately be described as consensus building.	☐	☐	☐	☐
g. The business office and administration are considered to be very important parts of our group practice.	☐	☐	☐	☐
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs	☐	☐	☐	☐

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	☐	☐	☐
b. Physician's assistants	☐	☐	☐
c. Nurse practitioners	☐	☐	☐
d. Registered nurses or nurse case managers	☐	☐	☐
e. Licensed vocational nurses (LVNs or LPNs)	☐	☐	☐
f. Medical assistants	☐	☐	☐
g. Clerks or receptionists	☐	☐	☐
h. Health educators	☐	☐	☐
i. Pharmacists	☐	☐	☐
j. Social workers	☐	☐	☐
k. Community health workers	☐	☐	☐
l. Visiting nurses	☐	☐	☐
m. Nutritionists or dieticians	☐	☐	☐
n. Mental (behavioral) health professionals	☐	☐	☐
o. Other (*Please Specify*) _____	☐	☐	☐
p. Other (*Please Specify*) _____	☐	☐	☐
q. Other (*Please Specify*) _____	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐	☐
b. Different people are constantly joining and leaving your team.	☐	☐	☐	☐	☐	☐	☐
c. Members of your team have their own individual jobs to do, with little need to work together.	☐	☐	☐	☐	☐	☐	☐
d. Members of your team have to depend heavily on one another to get the team's work done.	☐	☐	☐	☐	☐	☐	☐
e. Your team is larger than it needs to be.	☐	☐	☐	☐	☐	☐	☐
f. Your team has too few members for what it has to accomplish.	☐	☐	☐	☐	☐	☐	☐
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	☐	☐	☐	☐	☐	☐	☐
h. It is clear what is—and what is not—acceptable member behavior in your team.	☐	☐	☐	☐	☐	☐	☐
i. Members of your team agree about how members are expected to behave.	☐	☐	☐	☐	☐	☐	☐
j. Your practice recognizes and rewards teams that perform well.	☐	☐	☐	☐	☐	☐	☐
k. Team members can easily obtain training or technical advice when they need it.	☐	☐	☐	☐	☐	☐	☐
l. In your practice, teams do not receive adequate training for the work they have to do.	☐	☐	☐	☐	☐	☐	☐
m. Everyone on your team is motivated to have the team succeed.	☐	☐	☐	☐	☐	☐	☐
n. Some members of your team do not carry their fair share of the overall workload.	☐	☐	☐	☐	☐	☐	☐
o. Members of your team actively share their special knowledge and expertise with one another.	☐	☐	☐	☐	☐	☐	☐
p. There is a lot of unpleasantness among members of your team.	☐	☐	☐	☐	☐	☐	☐
q. Working together energizes and uplifts members of your team.	☐	☐	☐	☐	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐	☐
b. Staff are encouraged to express alternative viewpoints in the practice.	☐	☐	☐	☐	☐	☐	☐
c. Staff are afraid to ask questions when something does not seem right.	☐	☐	☐	☐	☐	☐	☐
d. It is difficult to voice disagreement in this practice.	☐	☐	☐	☐	☐	☐	☐
e. When there is a problem in the practice, we see if we need to change the way we do things.	☐	☐	☐	☐	☐	☐	☐
f. The practice is good at changing care processes to make sure the same problems don't happen again.	☐	☐	☐	☐	☐	☐	☐
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	☐	☐	☐	☐	☐	☐	☐

PERCEPTIONS OF PCMH PARTICIPATION

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

Being involved in the PCMH demonstration project has...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
a. Required a fundamental transformation in how we do operate.	☐	☐	☐	☐	☐	☐
b. Helped my practice take better care of patients.	☐	☐	☐	☐	☐	☐
c. Taken up more time.	☐	☐	☐	☐	☐	☐
d. Been too expensive.	☐	☐	☐	☐	☐	☐
e. Generated new revenue.	☐	☐	☐	☐	☐	☐
f. Required the use of financial resources beyond the fixed transformation payments (FTPs).	☐	☐	☐	☐	☐	☐
g. Led to improved care coordination with specialists.	☐	☐	☐	☐	☐	☐

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

Being involved in the PCMH demonstration project has...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
h. Improved the way I interact with patient's family members.	☐	☐	☐	☐	☐	☐
i. Enhanced care due to the role of the care manager/coordinator.	☐	☐	☐	☐	☐	☐
j. Improved patient health outcomes.	☐	☐	☐	☐	☐	☐
k. Reduced my control over the aspects of practice that matter most to me.	☐	☐	☐	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐

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)

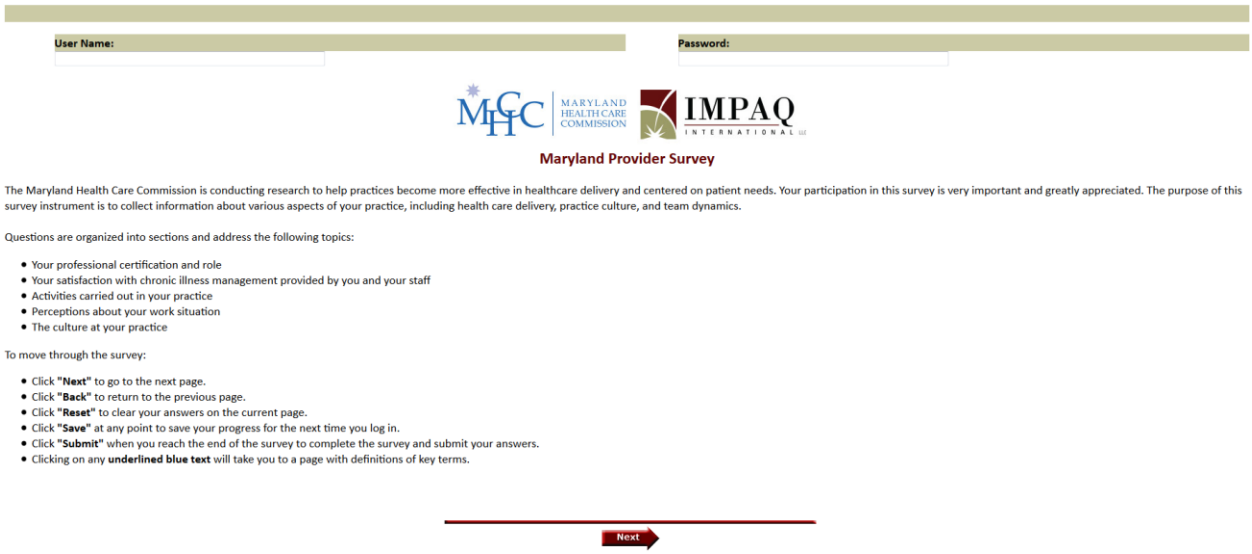
☐ Black or African American ☐ American Indian or Alaska Native ☐ Native Hawaiian or Other Pacific Islander

☐ Asian ☐ White (European, Middle Eastern, other) ☐ Other *(Please specify)* _____

THANK YOU VERY MUCH FOR TAKING YOUR TIME TO COMPLETE THE SURVEY!

Please place the completed survey in the postage paid envelope and place it in the mail.

Appendix J:
Comparison Provider Survey Questions: Web Version



User Name:

Password:

MHCC MARYLAND HEALTH CARE COMMISSION IMPAQ INTERNATIONAL

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.

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:*

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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	○	○	○	○	○	○
b. Your chronically ill patients	○	○	○	○	○	○

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*	*Disatisfied*	*Very dissatisfied*
a. Communicating with patients	○	○	○	○	○	○
b. Communicating with family caregivers	○	○	○	○	○	○
c. Educating family caregivers	○	○	○	○	○	○
d. Motivating patients to participate in maximizing their health	○	○	○	○	○	○
e. Coordinating the care received from all providers	○	○	○	○	○	○
f. Monitoring patients' chronic conditions	○	○	○	○	○	○
g. Referrals to community resources	○	○	○	○	○	○
h. Efficiency of office visits	○	○	○	○	○	○
i. Access to evidence-based guidelines for chronic conditions	○	○	○	○	○	○
j. Efficiency of practice team	○	○	○	○	○	○
k. Availability of clinical information about your patients	○	○	○	○	○	○

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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	○	○	○	○	○	○	
b. Taking vital signs	○	○	○	○	○	○	
c. Screening patients for diseases (example: a depression screen)	○	○	○	○	○	○	
d. Asking patients whether they smoke	○	○	○	○	○	○	
e. Obtaining immunization histories from patients	○	○	○	○	○	○	
f. Gathering information on screening (example: date of last mammogram)	○	○	○	○	○	○	
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	○	○	○	○	○	○	
h. Deciding how soon patients who call for an appointment will be seen	○	○	○	○	○	○	

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6. **(Continued) 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**
i. Obtaining medical records from other providers outside the practice	○	○	○	○	○	○	
j. Communicating with insurance companies (example: obtaining prior authorizations)	○	○	○	○	○	○	
k. Communicating with pharmacies (example: medication refills)	○	○	○	○	○	○	
l. Calling patients who are due for a visit	○	○	○	○	○	○	
m. Calling patients to provide them laboratory results	○	○	○	○	○	○	
n. Answering phone calls from patients	○	○	○	○	○	○	
o. Advising patients on how to care for their health conditions	○	○	○	○	○	○	
p. Evaluating patients and making treatment decisions	○	○	○	○	○	○	
q. Completing different kinds of forms upon patients' arrival at the facility	○	○	○	○	○	○	

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Work Perceptions

7.

	Strongly agree	*Agree*	*Neither agree nor disagree*	*Disagree*	*Strongly disgree*
Please indicate how much you agree or disagree with the following statement: Overall, I am satisfied with my current job.	○	○	○	○	○

8.

	None	*Slight*	*Moderate*	*Likely*	*Definitely*
What is the likelihood that you will leave your current practice within TWO YEARS?	○	○	○	○	○

9.

	1 Calm	*2*	*3 Busy, but reasonable*	*4*	*5 Hectic, chaotic*
Which best describes the atmosphere in your practice?	○	○	○	○	○

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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 Not at all	*2*	*3*	*4 To a great extent*
a. There is broad involvement of clinicians in most financial decisions.	○	○	○	○
b. Our physician compensation formula is well aligned with our practice's goals.	○	○	○	○
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	○	○	○	○
d. Our compensation plan rewards those who work hard for our practice.	○	○	○	○
e. Our clinician compensation formula is well understood by our clinicians.	○	○	○	○
f. Our administrative decision-making process can accurately be described as consensus building.	○	○	○	○
g. The business office and administration are considered to be very important parts of our group practice.	○	○	○	○
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs.	○	○	○	○

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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?**

	Never *members of your team*	***Sometimes*** *members of your team*	***Always*** *members of your team*
a. Primary care physicians	○	○	○
b. Physician's assistants	○	○	○
c. Nurse practitioners	○	○	○
d. Registered nurses or nurse case managers	○	○	○
e. Licensed vocational nurses (LVNs or LPNs)	○	○	○
f. Medical assistants	○	○	○
g. Clerks or receptionists	○	○	○
h. Health educators	○	○	○
i. Pharmacists	○	○	○
j. Social workers	○	○	○
k. Community health workers	○	○	○
l. Visiting nurses	○	○	○
m. Nutritionists or dieticians	○	○	○
n. Mental (behavioral) health professionals	○	○	○
o. Other 1:	○	○	○
p. Other 2:	○	○	○
q. Other 3:	○	○	○

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Progress

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*	*Do not know*
a. Team membership is clear - everybody knows exactly who is and isn't on your team.	○	○	○	○	○	○	○
b. Different people are constantly joining and leaving your team.	○	○	○	○	○	○	○
c. Members of your team have their own individual jobs to do, with little need to work together.	○	○	○	○	○	○	○
d. Members of your team have to depend heavily on one another to get the team's work done.	○	○	○	○	○	○	○
e. Your team is larger than it needs to be.	○	○	○	○	○	○	○
f. Your team has too few members for what it has to accomplish.	○	○	○	○	○	○	○
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	○	○	○	○	○	○	○
h. It is clear what is - and what is not - acceptable member behavior in your team.	○	○	○	○	○	○	○

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Progress

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.	○	○	○	○	○	○	○
j. Your practice recognizes and rewards teams that perform well.	○	○	○	○	○	○	○
k. Team members can easily obtain training or technical advice when they need it.	○	○	○	○	○	○	○
l. In your practice, teams do not receive adequate training for the work they have to do.	○	○	○	○	○	○	○
m. Everyone on your team is motivated to have the team succeed.	○	○	○	○	○	○	○
n. Some members of your team do not carry their fair share of the overall workload.	○	○	○	○	○	○	○
o. Members of your team actively share their special knowledge and expertise with one another.	○	○	○	○	○	○	○
p. There is a lot of unpleasantness among members of your team.	○	○	○	○	○	○	○
q. Working together energizes and uplifts members of your team.	○	○	○	○	○	○	○

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Progress

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.	○	○	○	○	○	○	○
b. Staff are encouraged to express alternative viewpoints in the practice.	○	○	○	○	○	○	○
c. Staff are afraid to ask questions when something does not seem right.	○	○	○	○	○	○	○
d. It is difficult to voice disagreement in this practice.	○	○	○	○	○	○	○
e. When there is a problem in the practice, we see if we need to change the way we do things.	○	○	○	○	○	○	○
f. The practice is good at changing care processes to make sure the same problems don't happen again.	○	○	○	○	○	○	○
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	○	○	○	○	○	○	○

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:	○	○	○	○	○

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Progress

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*
Being a PCMH would...						
a. require a fundamental transformation in how we operate.	○	○	○	○	○	○
b. help my practice take better care of patients.	○	○	○	○	○	○
c. take up more time.	○	○	○	○	○	○
d. be too expensive.	○	○	○	○	○	○
e. generate new revenue.	○	○	○	○	○	○
f. lead to improved care coordination with specialists.	○	○	○	○	○	○
g. improve the way I interact with patients' family members.	○	○	○	○	○	○
h. enhance care due to the role of a care manager/coordinator.	○	○	○	○	○	○
i. improve patient health outcomes.	○	○	○	○	○	○
j. reduce my control over the aspects of practice that matter most to me.	○	○	○	○	○	○

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.	○	○	○	○	○	○

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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!

Back Reset Save Submit

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 K:
Introductory Email to MMPP Providers and Attachment Letter from MHCC Executive Director

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

STATE OF MARYLAND

Ben Steffen
EXECUTIVE DIRECTOR

MARYLAND HEALTH CARE COMMISSION

4160 PATTERSON AVENUE – BALTIMORE, MARYLAND 21215
TELEPHONE: 410-764-3460 FAX: 410-358-1236

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@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 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

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

July 11, 2014

Dear MMPP Physician,

On behalf of the Maryland Health Care Commission (MHCC), IMPAQ International, LLC (IMPAQ), a private research company that specializes in research on health care services, will be requesting your participation in a survey of Maryland providers who are participating in the Maryland Multi-payor Patient Centered Medical Home Program (MMPP). This survey is part of an evaluation sponsored by MHCC regarding the Patient Centered Medical Home (PCMH) model.

The purpose of the survey is to gather information from MMPP participating providers to assess your experiences and satisfaction with MMPP and its PCMH principles. The survey will take about 15 minutes and will be completed online. **In approximately one week, IMPAQ will send a link to the web-based survey via e-mail to you at this email address.**

Your input is critical to the success of the evaluation and to our understanding of how to improve health care services for Marylanders. If you have questions about this evaluation, please contact Donna Perlmutter from IMPAQ at 443-283-2233, PCMH@impaqint.com or Melanie Cavaliere from MHCC at 410-764-3282, melanie.cavaliere@maryland.gov. Thank you for your participation!

Sincerely,

Ben Steffen
Executive Director
Maryland Health Care Commission

TOLL FREE
1-877-245-1762

TDD FOR DISABLED
MARYLAND RELAY SERVICE
1-800-735-2258

Appendix L:
IMPAQ Email to Champions

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-payor 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 <date> 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 <IMPAQ Project Director> from IMPAQ at <email>.

If you have questions about this research, please contact me at <IMPAQ Project Director email> or <telephone>. If you have concerns or complaints about this research study or would like to obtain information about the research or provide input, please contact <MHCC contact> from MHCC at <telephone> or <email>.

Thank you in advance for your assistance!

Sincerely,
<name>
Project Director

Appendix M:
MMPP Provider Survey Advance Letter

IMPAQ INTERNATIONAL

{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}.[1] 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. 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.

Thank you for your participation!

Sincerely,

Donald G. Nichols, Ph.D.

Donald Nichols, PhD
Principal Research Associate
Health Care Financing Practice Area Lead
IMPAQ International, LLC

Jill A. Marsteller

Jill A. Marsteller, PhD, MPP
Associate Professor
Johns Hopkins School of Public Health

[1] If this is not your current e-mail address, please contact IMPAQ at 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.

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.impaqint.com

{Date}

{FirstName}{LastName}
{Practice}
{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. You may have participated last year; this is a follow up survey.

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. Next week IMPAQ will send you a link to the web-based survey via e-mail at {e-mail address}.[1] Please look out for this email and complete the survey between July 23, 2014 and August 31, 2014. 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. 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 Melanie Cavaliere at 410-764-3282 or Melanie.Cavaliere@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,

Ilene Zuckerman, PharmD, PhD
Principal Research Scientist and Managing Director
IMPAQ International, LLC

Jill A. Marsteller, PhD, MPP
Associate Professor
Johns Hopkins School of Public Health

[1] If this is not your current e-mail address, please contact IMPAQ at 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.

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.impaqint.com

Appendix N:
MMPP Provider Email with Login Information

Subject: Maryland Health Care Commission requests your feedback
Email Body:

Dear <Provider Name>,

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-payor 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: <provider email>
Your password: <password>

If you have any questions or have any technical difficulties while accessing the survey, please email us at PCMH@impaqint.com.

If you have questions about this research or face any injury due to your participation in this research, please contact <IMPAQ contact> from IMPAQ at <telephone> or 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 <MHCC contact> at <telephone> or <email>.

Thank you very much for your participation.

Appendix O:
Comparison Providers Email with Login Information

Subject: Maryland Health Care Commission requests your Feedback

Dear Provider Name,

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: <provider email>
Your password: <password>

If you have any questions or have any technical difficulties while accessing the survey, please email us at MD_primary_care@impaqint.com.

If you have questions about this research or face any injury due to your participation in this research, please contact <IMPAQ contact> from IMPAQ at <telephone> 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 <MHCC contact> at <telephone> or <email>.

Thank you very much for your participation

Appendix P:
Provider Letter with Web Link and Login information for those Providers without Email Addresses

IMPAQ INTERNATIONAL

{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@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.

Thank you for your participation!

Sincerely,

Donald G. Nichols, Ph.D.

Donald Nichols, PhD
Principal Research Associate
Health Care Financing Practice Area Lead
IMPAQ International, LLC

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.impaqint.com

Appendix Q:
Reminder Emails

MMPP: Reminder Email from IMPAQ

Subject line: Reminder to Complete the Maryland Provider Survey

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-payor 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
<date>, 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 <IMPAQ contact name> from IMPAQ at <telephone> 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 <MHCC contact name> at <MHCC contact telephone> or <MHCC contact email>.

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

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-payor 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 <date>, for your voice to be heard.

The link is:
http://www.snapsurveys.com/swh/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 <IMPAQ contact name> from IMPAQ at <telephone> or 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 <MHCC contact name> at <telephone> or <MHCC contact email>.

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

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-payor 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 <date>, for your voice to be heard.

The link is: http://www.snapsurveys.com/swh/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 <IMPAQ contact name> from IMPAQ at <telephone> or 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 <MHCC contact name> at <telephone> or <MHCC email>.

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

Comparison: Reminder Email from IMPAQ
Subject line: Reminder to Complete the Maryland Provider Survey

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 <date>, 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 <IMPAQ contact name> from IMPAQ at <telephone> 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 <MHCC contact name> at <telephone> or <MHCC email>..

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

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 <date>, 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 <IMPAQ contact name> from IMPAQ at <telephone> 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 <MHCC contact name> at <telephone> or <MHCC email>.

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

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 <date>, 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 <IMPAQ contact name> from IMPAQ at <telephone> 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 <MHCC contact name> at <telephone> or <MHCC email>.

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,

<signature>
<IMPAQ Project Director>
<Title>

<signature>
<JHU Principal Investigator>
<title>

Appendix R:
MMPP Mail Survey Reminder Postcard

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.

Appendix S:
MMPP Provider Survey Questions: Paper Version for Maryland Learning Collaborative Meeting

PARTICIPATING 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.

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.

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.

PCMH Participating Provider Survey IMPAQ International, LLC.

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	☐	☐	☐	☐	☐	☐
b. Your chronically ill patients	☐	☐	☐	☐	☐	☐

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	☐	☐	☐	☐	☐	☐
b. Communicating with family caregivers	☐	☐	☐	☐	☐	☐
c. Educating family caregivers	☐	☐	☐	☐	☐	☐
d. Motivating patients to participate in maximizing their health	☐	☐	☐	☐	☐	☐

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
e. Coordinating the care received from all providers	☐	☐	☐	☐	☐	☐
f. Monitoring patients' chronic conditions	☐	☐	☐	☐	☐	☐
g. Referrals to community resources	☐	☐	☐	☐	☐	☐
h. Efficiency of office visits	☐	☐	☐	☐	☐	☐
i. Access to evidence-based guidelines for chronic conditions	☐	☐	☐	☐	☐	☐
j. Efficiency of practice team	☐	☐	☐	☐	☐	☐
k. Availability of clinical information about your patients	☐	☐	☐	☐	☐	☐

WORK CONTENT

6. In a typical day at the practice, what job role performs the following activities most often? *(Please choose only **one answer** per question.)*

	Clinician	Nurse	Care Manager	Medical Assistant	Administrative Staff	Other *(Please specify)*
a. Checking in and orienting patients	☐	☐	☐	☐	☐	☐ _____
b. Taking vital signs	☐	☐	☐	☐	☐	☐ _____
c. Screening patients for diseases (example: a depression screen)	☐	☐	☐	☐	☐	☐ _____
d. Asking patients whether they smoke	☐	☐	☐	☐	☐	☐ _____
e. Obtaining immunization histories from patients	☐	☐	☐	☐	☐	☐ _____
f. Gathering information on screening (example: date of last mammogram)	☐	☐	☐	☐	☐	☐ _____
g. Gathering information on chronic disease management (example: hemoglobin A1c levels for diabetics)	☐	☐	☐	☐	☐	☐ _____
h. Deciding how soon patients who call for an appointment will be seen	☐	☐	☐	☐	☐	☐ _____
i. Obtaining medical records from other providers outside the practice	☐	☐	☐	☐	☐	☐ _____
j. Communicating with insurance companies (example: obtaining prior authorizations)	☐	☐	☐	☐	☐	☐ _____
k. Communicating with pharmacies (example: medication refills)	☐	☐	☐	☐	☐	☐ _____
l. Calling patients who are due for a visit	☐	☐	☐	☐	☐	☐ _____
m. Calling patients to provide them laboratory results	☐	☐	☐	☐	☐	☐ _____

6. In a typical day at the practice, what job role performs the following activities most often? *(Please choose only **one answer** per question.)*

	Clinician	Nurse	Care Manager	Medical Assistant	Administrative Staff	Other *(Please specify)*
n. Answering phone calls from patients	☐	☐	☐	☐	☐	☐ _____
o. Advising patients on how to care for their health conditions	☐	☐	☐	☐	☐	☐ _____
p. Evaluating patients and making treatment decisions	☐	☐	☐	☐	☐	☐ _____
q. Completing different kinds of forms upon patients' arrival at the facility	☐	☐	☐	☐	☐	☐ _____

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.	☐	☐	☐	☐	☐

8. What is the likelihood that you will leave your current practice within TWO YEARS?	None	Slight	Moderate	Likely	Definitely
	☐	☐	☐	☐	☐

9. Which best describes the atmosphere in your practice?	Calm ⟷		Busy, but reasonable	⟷	Hectic, chaotic
	☐	☐	☐	☐	☐

Culture: Values Alignment with Leaders

10. To what degree do the following statements reflect the conditions in your practice?	Not at all ⟷			To a great extent
a. There is broad involvement of clinicians in most financial decisions.	☐	☐	☐	☐
b. Our physician compensation formula is well aligned with our practice's goals.	☐	☐	☐	☐
c. Our administrators obtain and provide us with information that helps us improve the cost effectiveness of our patient care.	☐	☐	☐	☐
d. Our compensation plan rewards those who work hard for our practice.	☐	☐	☐	☐
e. Our clinician compensation formula is well understood by our clinicians.	☐	☐	☐	☐
f. Our administrative decision-making process can accurately be described as consensus building.	☐	☐	☐	☐
g. The business office and administration are considered to be very important parts of our group practice.	☐	☐	☐	☐
h. There is rapid change in clinical practice among our physicians when studies indicate that we can improve quality/reduce costs	☐	☐	☐	☐

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	☐	☐	☐
b. Physician's assistants	☐	☐	☐
c. Nurse practitioners	☐	☐	☐
d. Registered nurses or nurse case managers	☐	☐	☐
e. Licensed vocational nurses (LVNs or LPNs)	☐	☐	☐
f. Medical assistants	☐	☐	☐
g. Clerks or receptionists	☐	☐	☐
h. Health educators	☐	☐	☐
i. Pharmacists	☐	☐	☐
j. Social workers	☐	☐	☐
k. Community health workers	☐	☐	☐
l. Visiting nurses	☐	☐	☐
m. Nutritionists or dieticians	☐	☐	☐
n. Mental (behavioral) health professionals	☐	☐	☐
o. Other (*Please Specify*) _____	☐	☐	☐
p. Other (*Please Specify*) _____	☐	☐	☐
q. Other (*Please Specify*) _____	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐	☐
b. Different people are constantly joining and leaving your team.	☐	☐	☐	☐	☐	☐	☐
c. Members of your team have their own individual jobs to do, with little need to work together.	☐	☐	☐	☐	☐	☐	☐
d. Members of your team have to depend heavily on one another to get the team's work done.	☐	☐	☐	☐	☐	☐	☐
e. Your team is larger than it needs to be.	☐	☐	☐	☐	☐	☐	☐
f. Your team has too few members for what it has to accomplish.	☐	☐	☐	☐	☐	☐	☐
g. Some members of your team lack the knowledge and skills that they need to do their parts of the team's work.	☐	☐	☐	☐	☐	☐	☐
h. It is clear what is—and what is not—acceptable member behavior in your team.	☐	☐	☐	☐	☐	☐	☐
i. Members of your team agree about how members are expected to behave.	☐	☐	☐	☐	☐	☐	☐
j. Your practice recognizes and rewards teams that perform well.	☐	☐	☐	☐	☐	☐	☐
k. Team members can easily obtain training or technical advice when they need it.	☐	☐	☐	☐	☐	☐	☐
l. In your practice, teams do not receive adequate training for the work they have to do.	☐	☐	☐	☐	☐	☐	☐
m. Everyone on your team is motivated to have the team succeed.	☐	☐	☐	☐	☐	☐	☐
n. Some members of your team do not carry their fair share of the overall workload.	☐	☐	☐	☐	☐	☐	☐
o. Members of your team actively share their special knowledge and expertise with one another.	☐	☐	☐	☐	☐	☐	☐
p. There is a lot of unpleasantness among members of your team.	☐	☐	☐	☐	☐	☐	☐
q. Working together energizes and uplifts members of your team.	☐	☐	☐	☐	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐	☐
b. Staff are encouraged to express alternative viewpoints in the practice.	☐	☐	☐	☐	☐	☐	☐
c. Staff are afraid to ask questions when something does not seem right.	☐	☐	☐	☐	☐	☐	☐
d. It is difficult to voice disagreement in this practice.	☐	☐	☐	☐	☐	☐	☐
e. When there is a problem in the practice, we see if we need to change the way we do things.	☐	☐	☐	☐	☐	☐	☐
f. The practice is good at changing care processes to make sure the same problems don't happen again.	☐	☐	☐	☐	☐	☐	☐
g. After the practice makes changes to improve the patient care process, we check to see if the changes worked.	☐	☐	☐	☐	☐	☐	☐

PERCEPTIONS OF PCMH PARTICIPATION

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

Being involved in the PCMH demonstration project has...	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
a. Required a fundamental transformation in how we do operate.	☐	☐	☐	☐	☐	☐
b. Helped my practice take better care of patients.	☐	☐	☐	☐	☐	☐
c. Taken up more time.	☐	☐	☐	☐	☐	☐
d. Been too expensive.	☐	☐	☐	☐	☐	☐
e. Generated new revenue.	☐	☐	☐	☐	☐	☐
f. Required the use of financial resources beyond the fixed transformation payments (FTPs).	☐	☐	☐	☐	☐	☐
g. Led to improved care coordination with specialists.	☐	☐	☐	☐	☐	☐

14. Please indicate how much you agree or disagree with the following statements about your practice's PCMH transformation.

Being involved in the PCMH demonstration project has…	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know
h. Improved the way I interact with patient's family members.	☐	☐	☐	☐	☐	☐
i. Enhanced care due to the role of the care manager/coordinator.	☐	☐	☐	☐	☐	☐
j. Improved patient health outcomes.	☐	☐	☐	☐	☐	☐
k. Reduced my control over the aspects of practice that matter most to me.	☐	☐	☐	☐	☐	☐

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.	☐	☐	☐	☐	☐	☐

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!

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. 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 Melanie Cavaliere at 410-764-3282 or Melanie.Cavaliere@maryland.gov.

Appendix T:
Outcome Measure Specifications

Quality Measures

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
Q01	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
Q02	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
Q03	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
Q04	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

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
Q05	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
Q06	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
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

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
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
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

Assignment in Results	Measure – Short Name	Description	Numerator	Denominator
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 Measures

Assignment in Results	Measure	Description	Numerator	Denominator
U01a, U01b	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
U02a, U02b, U02c, U02d	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
U03	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
U04a, U04b, U04c, U04d	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
U05	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
U06a, U06b	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

Cost Measures

Assignment in Results	Measure	Description	Numerator	Denominator
C01	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
C02	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
C03	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
C04	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
C07	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
C06	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
C05	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
C09	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 U:
Medication-Related Outcome Measures – Applied to Medicaid Data Only

Measure	Description	Reported by Pediatric/Adult Practices	MHIP Condition	Measure #	Developer
Angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy for left ventricular systolic dysfunction (LVSD)	Percentage of patients aged 18 years and older with a diagnosis of heart failure and LVSD who were prescribed ACE inhibitor or ARB therapy.	Adult	Congestive heart failure	NQF 0081 – modified	AMA – modified for claims
Persistence of ACE-I and ARB therapy for LVSD	Percentage of adult patients with persistence of ACE and ARB therapy among those with LVSD	Adult	Congestive heart failure		MD PCMH Evaluator Team
Persistence of beta-blocker treatment after a heart attack	Percentage of patients 18 years and older during the measurement year who were hospitalized and discharged alive with a diagnosis of acute myocardial infarction (AMI) during the measurement year whose days' supply of beta blockers dispensed is ≥ 135 days in the 180 days	Adult	Coronary artery disease		NCQA (HEDIS 2004)

Measure	Description	Reported by Pediatric/Adult Practices	MHIP Condition	Measure #	Developer
	following discharge				
Persistence of ACE and ARB therapy among adult diabetics	Percentage of adult patients with persistence of ACE and ARB therapy among those with diabetes	Adult	Diabetes		MD PCMH Evaluator Team
Asthma pharmacologic therapy	Percentage of patients aged 5 through 40 years with a diagnosis of mild, moderate, or severe persistent asthma who were prescribed either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment	Pediatric/adult		NQF 0047	AMA
Prescriptions	Average number of prescriptions within the practice, among	Pediatric/adult			MD PCMH Evaluator Team

Measure	Description	Reported by Pediatric/Adult Practices	MHIP Condition	Measure #	Developer
	those patients with at least one				
Prescription drug payments	Average total prescription drug payments, among those with at least one prescription fill	Pediatric/adult			MD PCMH Evaluator Team