INROADS TO HEALTH EQUITY

The Effect of PCMH on Quality, Costs, and Health Disparities

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Overview

In healthcare, quality and cost are vitally important. So too is the equitable distribution of health services to all patient groups, including communities of color, low-income populations, and others. Many strategies exist for addressing the intersecting challenges of quality, cost, and equity. An increasing volume of literature supports the assertion that the Patient Centered Medical Home (PCMH) is an important provider-level and system-level strategy for improving all three. In health care reform the focus is on addressing the Triple Aim of lowering health care costs, improving population health outcomes, and making more engaging the healthcare experiences of patients and their families.[1] The PCMH model, an approach that prioritizes the coordination of high-quality services, bears especially important implications for addressing the healthcare needs of vulnerable populations that face well-known inequities in health status and health care.

The PCMH model represents a substantially different approach to healthcare delivery, requiring providers to coordinate an array of both clinical and non-clinical services, and manage the overall delivery of evidence-based care.

National, state, and local commitments to improving quality, managing costs, and reducing disparities place healthcare providers in a unique position within the healthcare delivery system. The PCMH model represents a substantially different approach to healthcare delivery, requiring providers to coordinate an array of both clinical and non-clinical services, and manage the overall delivery of evidence-based care. This paper discusses the evolving concept of PCMH; what we know about its effect on quality and cost; what we have learned thus far about the role of PCMH in promoting health equity; and what new directions should be followed in order to maximize the promise of PCMH for improving health care delivery for all.

Introduction

Patient-Centered Medical Home (PCMH) Defined

Many in the past have confused "patient-centered medical home," which is an *idea*, with "nursing home," which is an actual healthcare *facility*. The Patient-Centered Medical Home, or PCMH, is a concept. It is not a building, office, or other physical location. According to the American College of Physicians (ACP), the objective of the PCMH model "is to have a centralized setting that facilitates partnerships between individual patients, and their personal physicians, and when appropriate, the patient's family. Care is facilitated by registries, information technology, health information exchange and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner."[2]

PCMH is recognized by major healthcare agencies and institutions, including the Health Resources and Services Administration (HRSA), Veteran's Administration (VA), National Institutes of Health (NIH), and Centers for Medicare and Medicaid Services (CMS). The Joint Commission (JC), which is the accrediting body for healthcare organizations, including hospitals, office-based surgery practices, and nursing homes, uses the term Primary Care Medical Home which denotes the same quality-oriented concept as the Patient-Centered Medical Home.

PCMH History

(Photo by Dominique Detilleux Sia, 2007)

Dr. Calvin Sia

The PCMH model[3] has been a part of the national discourse on healthcare quality since at least the 1980s, when the Health Services and Resources Administration (HRSA) began funding projects that focused on medical homes. However, the model dates back to 1967 when Dr. Calvin Sia, a Honolulu pediatrician, presented the concept of centralized care as it pertained to children with special needs[4].

The American Academy of Pediatrics (AAP) introduced the "medical home" concept that same year. In 1992, AAP defined the medical home concept as an approach that provides comprehensive, coordinated care for special needs children. In 2002, the AAP expanded the medical home concept to include such attributes as accessibility, continuity, family-centeredness, compassion, and cultural effectiveness.

In February 2007, the medical home model gained widespread adaptation when four major physician groups – the American Academy of Family Physicians (AAFP), the American Academy of Pediatrics (AAP), the American College of Physicians (ACP), and the American Osteopathic Association (AOA) – together released the *Joint Principles of the Patient-Centered Medical Home*, a document that serves as an important policy landmark in the current PCMH era.[5]

PCMH Milestones	
1967	Pediatrician Calvin Sias presents centralized care approach
1967	AAP introduces "medical home" concept
1992	AAP defines "medical home" as comprehensive, coordinated care for special needs children
2002	AAP significantly expands the medical home concept
2007	AFP, AAP, ACP, and AOA release landmark statement on PCMH

An Evidence-Based Approach

Research has long established the benefits of PCMH. When patients are confident about their physician or medical center – i.e., their medical home – the *quality* of care increases.[6]

The centralization and coordination of care provided by the PCMH model has been shown to increase immunization rates, decrease lab tests and the duplication of care, reduce ER visits and hospitalizations, and increase patient satisfaction.[7] In 2008, researchers reported that children with special needs showed improvements in health-related outcomes when care was provided with the PCMH model. Studies suggest that the PCMH concept can be beneficial in addressing chronic care issues particularly for vulnerable populations.[8] Together, research has shown that the PCMH model offers an evidence-based approach for improving both quality of care and health outcomes.

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Key Principles and Model Requirements

PCMH programs require documentation and certification, which is overseen by the National Committee for Quality Assurance (NCQA), the Joint Commission (JC), and the Accreditation Association for Ambulatory Health Care, Inc. (AAAHC). These certification processes are designed to ensure that PCMH programs meet established standards for improving the quality and coordination of care. The standards are fairly uniform, regardless of the certifying agency or association. Typical requirements include:

- published and kept hours of operations (including emergency contacts for after hours)

- patient access to timely appointments
- access to lab and imaging results
- prompt follow-up on labs such as biopsy and HbA1C in diabetes
- access to office-based EKGs
- use of electronic medical records and secure patient access to those records

Table I provides a more detailed outline of the overarching criteria for NCQA PCMH certification in 2011.[9]

PCMH Recognition: National, State, and Local

National and State

There are a number of programs that recognize medical practices that focus on the development of a Patient-Centered Medical Home. The major primary care specialty associations (AAP, ACP, AAFP and others) that established the Joint

Table I. NCQA Certification Requirements

ELEMENT 1A—Access and communication processes

The practice has written processes for scheduling appointments and communicating with patients.

ELEMENT 1B—Access and communication results

The practice has data showing that it meets the standards in element 1A for scheduling and communicating with patients.

ELEMENT 2D—Organizing clinical data

The practice uses electronic or paper-based charting tools to organize and document clinical information.

ELEMENT 2E—Identifying important conditions

The practice uses an electronic or paper-based system to identify the following in the practice's patient population:

- Most frequently seen diagnoses
- Most important risk factors
- Three clinically important conditions

ELEMENT 3A—Guidelines for important conditions

The practice must implement evidence-based guidelines for the three identified clinically important conditions.

ELEMENT 4B—Self management support

The practice works to facilitate self-management of care for patients with one of the three clinically important conditions.

ELEMENT 6A—Test tracking and follow-up

The practice works to improve effectiveness of care by managing the timely receipt of information on all tests and results.

ELEMENT 7A—Referral tracking

The practice seeks to improve effectiveness, timeliness and coordination of care by following through on critical consultations with other practitioners.

ELEMENT 8A—Measures of performance

The practice measures or receives performance data by physician or across the practice regarding:

- Clinical process
- Clinical outcomes
- Service data
- Patient safety

ELEMENT 8C—Reporting to physicians

The practice reports on its performance on the factors in Elements 8A.

Principles of the Patient-Centered Medical Home in 2007 have established guidelines for recognition. Recognition guidelines are also set by health insurers that operate PCMH programs. These insurers include, but are not limited to, CareFirst, United Health Care, and Aetna. Most PCMH programs have a recognition process. However, most certification flows through the NCQA, JC, and AAAHC.

There is no national or state requirement for primary care practices to comply with PCMH guidelines, though primary care providers widely recognize that the quality improvements can be achieved through a medical home model. Some insurers give the added incentive of a percentage increase in the payment rate.

It is important to note that adopting a certified and recognized PCMH practice requires that the provider participate in several hours of meetings and produce and maintain the required paperwork to meet the oversight requirements. Most practices are advised that it could take 6-24 months before qualifying for certification[10]. The efforts required for implementation and program maintenance over time pose additional operational demands. Many private practice physicians, particularly those with limited staff and other operational constraints, are disinclined to seek the voluntary certification.

The operational cost of the PCMH model can also pose a prohibitive challenge. For example, CareFirst has established PCMH physician panels and nurse coordinators (NCs) who are tasked with following-up with patients to ensure that they understand and carry out their doctor's instructions. The patients are selected from a list of "high utilizers" (i.e. patients with high utilization of services and therefore high costs). The NCs visit with the patients and inform the primary care doctor of the patient's outcomes and of areas where more service is needed, such as a referral for a colonoscopy, mammogram, lipid-level check,

behavioral therapy/counseling, or other healthcare needs. Most doctors are unable to absorb the cost of this follow-up regimen, but insurers are able to pay the cost using dollars saved from the improved quality and coordination of care.

Without a funding mechanism for PCMH, adoption and certification can sometimes be difficult or unachievable. Funding mechanisms create a win-win situation for the patient, the physician and the health care system. Nonetheless, increased levels of model adaptation and certification will likely depend significantly on the presence of incentivizing funds. It is unclear whether healthcare reform savings from programs like PCMH and Accountable Care Organizations (ACO) formation will be enough to sustain the PCMH model over time.

Local: Counties in Maryland

Exploring the PCMH model at the local level is instructive. An online review of NCQA-certified PCMHs in Prince George's County shows that since 2011 there were only 585 certified centers and physicians in Maryland. Most of these PCMH sites are in Fort Meade, Laurel and Camp Springs. While these areas are likely to gain the benefits of the PCMH model, including improved quality and managed cost, it is noteworthy that these areas are not considered highly vulnerable areas in terms of health disparities or physician availability (see Fig. 1 page 6 and Table II, page 7). Paradoxically, high vulnerability areas – like Hyattsville and Capitol

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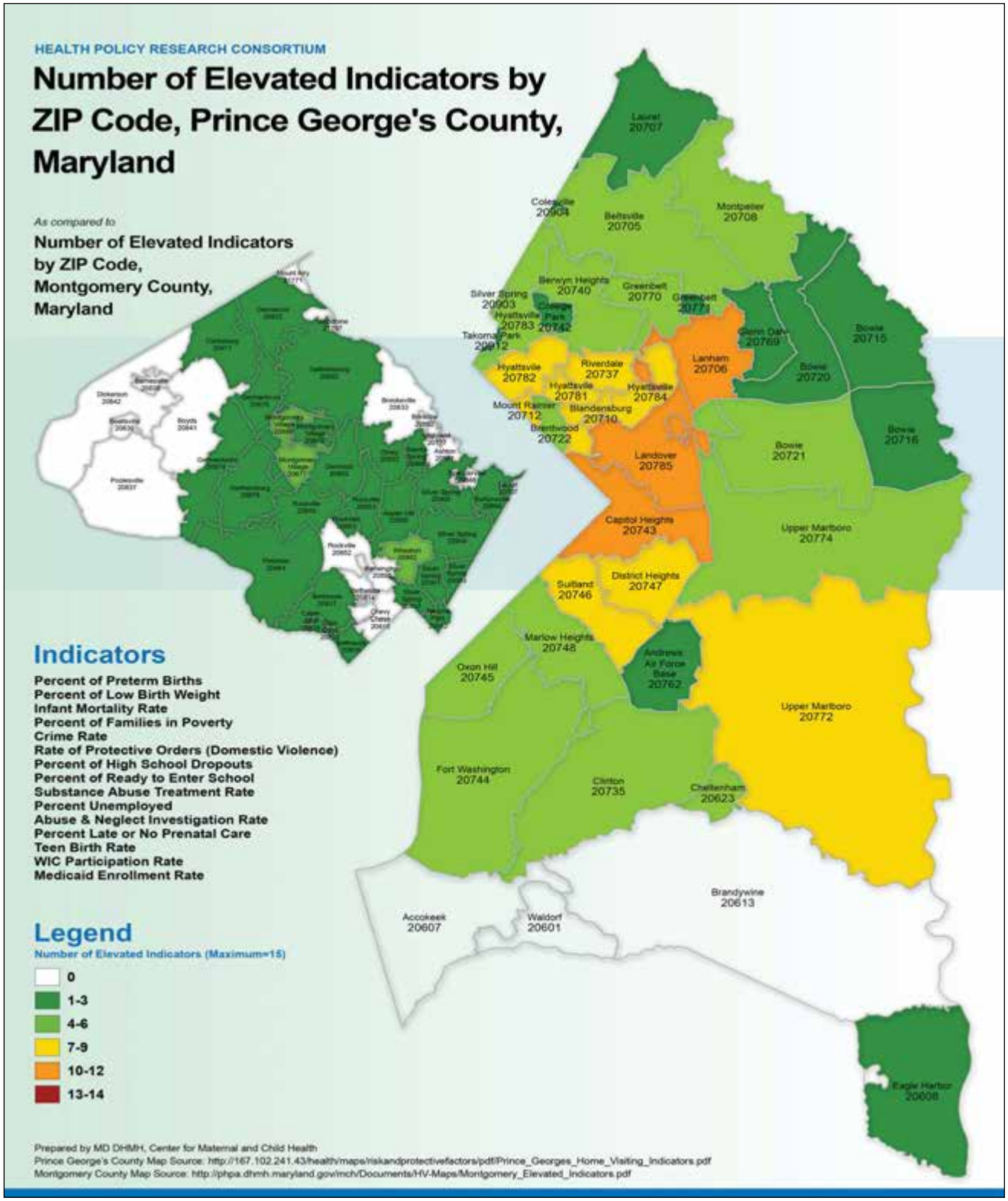

Figure 1: Number of Elevated Health Indicators by ZIP Code, Prince George's County, Maryland

Heights – have significantly fewer medical homes. In Marlow Heights and Andrews AFB, which both show strong health status indicators, there are 22 medical homes (see Table II), compared to very few medical homes in areas with low health indicators (which are coded yellow and orange on the map in Figure 1).

In Table II, column 3 shows the number of NCQA PCMH certifications in each of the listed Prince George's County municipalities. The map color coding indicates the elevated health indicators for each municipality (see Figure 1): dark green being better than green, green better than yellow, and orange being the worst. White denotes no elevated health indicators.

Montgomery County has the highest health indicators (see Figure 2 below). Interestingly, a review of PCMH certification in areas with a white color code reveals low participation in the NCQA PCMH certification program (see Table III, page 8). Additionally, in the two areas where there are (a total of 22) PCMH-certified facilities (i.e., in Chevy Chase and Kensington) there is

Table II
NCQA-CERTIFIED PRACTICES
IN *PRINCE GEORGE'S COUNTY*

Municipality	Color Code	# of NCQA PCMH	Zip Codes
Andrews AFB	Dark Green	8	20762
Bladensburg	Yellow	0	20710
Brentwood	Green	5	20722
Capitol Heights	Orange	0	20743
College Park	Dark Green	0	20742
District Heights	Yellow	0	20747
Greenbelt	Green	0	20770
Greenbelt	Green	0	20771
Hyattsville	Yellow	0	20781
Hyattsville	Yellow	0	20782
Hyattsville	Yellow	0	20784
Landover	Orange	0	20785
Lanham	Orange	4	20706
Marlow Heights	Green	14	20748
Mount Rainier	Yellow	0	20712
Riverdale	Yellow	0	20737
Suitland	Yellow	0	20746
Upper Marlboro	Yellow	0	20772

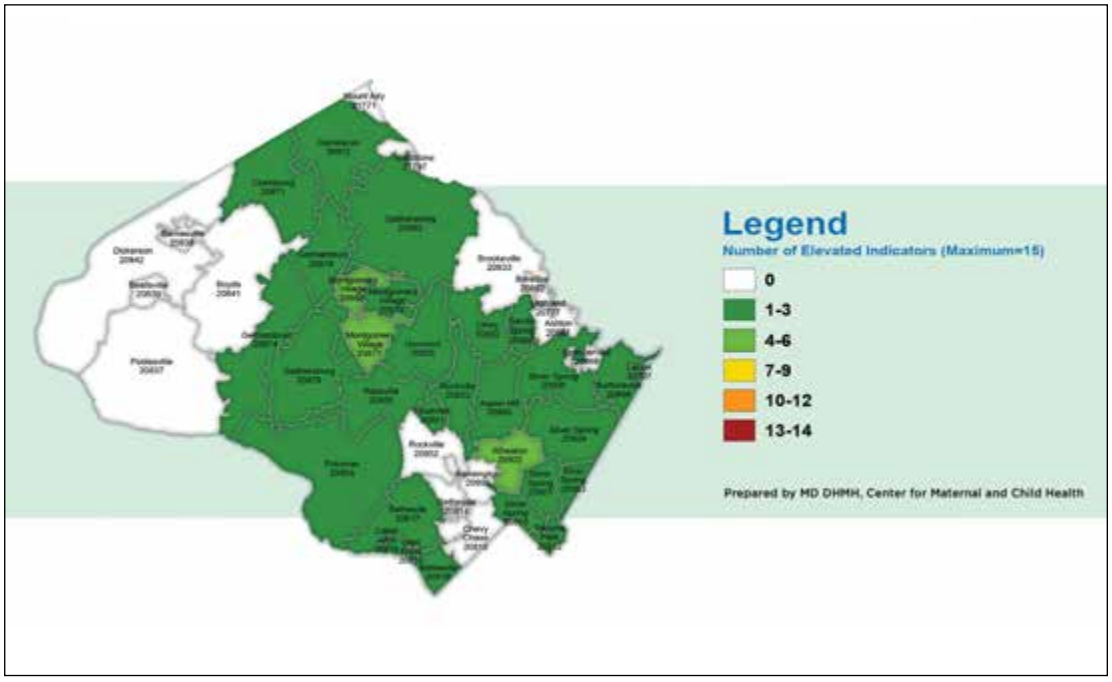

Figure 2: Number of Elevated Health Indicators by ZIP Code, Montgomery County, Maryland

Table III NCQA-CERTIFIED PRACTICES IN *MONTGOMERY COUNTY*			
Municipality	**Color Code**	**# of PCMH**	**Zip Codes**
Bethesda	Dark Green	0	20814
Boyds	Yellow	0	20841
Brinklow	Green	0	20862
Brookeville	Orange	0	20833
Chevy Chase	Dark Green	4	20815
Highland	Yellow	0	20777
Kensington	Green	18	20895
Rockville	Green	0	20852
Spencerville	Yellow	0	20868
Silver Spring	Yellow	0	20904
Montgomery Village	Yellow	0	20817

also a relatively large group of medical centers (MedStar Health Center and Mid-Atlantic Permanente Medical group), in contrast to individual PCMH medical offices.

An important lesson learned at the local level is that NCQA PCMH certification is not the only measurement for assessing healthcare quality in the era of Health Care Reform.

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PCMH Provider/Insurer Experiences: CareFirst, Blue Cross Blue Shield, and United Healthcare

CareFirst, in the DC tristate area (DC, MD, and VA) has operated PCMH programs since 2011 with its commercial market. In 2013 it was awarded funds from the Center for Medicare and Medicaid Innovation (CMMI) to bring its commercial achievements to the Medicare sector. To date, this effort has been fruitful. Indeed, stemming from their PCMH success in the commercial market, CareFirst was the only Maryland-area health insurer to receive the CMMI grant award and the 3rd largest entity, including hospital systems and other large health care providers.

In Northeast Baltimore, Maryland, a CareFirst PCMH panel comprising 10 private practicing primary care physicians saw a 66% reduction in costs and a 60% quality improvement in the services provided in 2014. Physician panel members were more cognizant of opportunities to refer patients to lower cost specialists (not in expensive hospital settings) and urgent care centers (not Emergency Rooms). Physicians proactively ensured that patients received preventive care, including eye exams, colonoscopy, mammograms, urological exams, and other procedures.

CareFirst projected a 7.5% rise in health care costs between 2010 through 2016 and beyond, as this has been a steady trend for years in the U.S. health care system. However, with the advent of the PCMH program, which brings nurse coordinators, physicians, and system analysts together to better address individual patient's needs, this trend has been in decline. Carefirst data show that over the past 3-4 years, health care costs for CareFirst PCMH programs has not followed national trends but has actually declined from 7.5% to 3.5%.

In Pennsylvania, Independence Blue Cross Blue Shield (BCBS) PCMH Practices reported greater reductions in cost and improved utilization. Between 2008-2012, the BCBS group showed that among high risk patients there was a 7.9-11.2% cost savings per member per month (PMPM) and an 8.6-16.6% reduction in inpatient admissions.[11] The BCBS PCMH also showed improved utilization among chronic illness patients that transitioned to medical homes. There was a 5-8% reduction in Emergency Room (ER) use, a 9.5-12% decrease in ER use by patients with diabetes, and a 3.5-9.6% reduction in avoidable ER use. In the PCMH group, nurse coordinators helped to direct patients and ensure effective utilization of services, which undoubtedly contributed to improved utilization and better outcomes.[12]

Similarly, the United Healthcare Patient-Centered Medical Home Program demonstrated cost reductions and improved service utilization. In a 2009-2012 review of 13 PCMH programs operated in 10 states, United Healthcare showed that by the third year, there was a 7.4% average gross savings of medical costs compared with a non-PCMH control group.[13]

Patient centered medical home success stories have indeed transformed the delivery of health care, as seen in the stories available from Horizon Blue Cross Blue Shield of New Jersey[14]. To decrease avoidable Emergency Room (ER) visits a solo practitioner using the PCMH model was able to ensure 24/7 access between his patients and the practice. With better access to patients, the practice was able to guide patient care more efficiently after "office hours" and weekends. It cut costs and built a stronger relationship between the patient and the practice and improved the patient's engagement with the health care system.

In another success story the focus was on decreasing frequent ER visits and hospitalizations for a patient that was on an estimated fourteen medications. By bringing together the physician and the assigned care coordinator (CC) a care plan was developed by the patient and her assigned coordinator. The CC also engaged the family to better utilize that support system. With this PCMH model interaction the patient's ER visits and hospital stays decreased and medications were able to be reduced. This decreased the expenditure for care but most importantly it improved the relationship between the patient and the practice and improved the quality of life for the patient and family.

Using a resource directory developed by the PCMH care team of a multi-site practice, providers were able to improve access to behavior health services to improve patient access to quality care. There was a need for a list of providers within a 5 mile catchment area who treated, counseled and provide services for alcohol and substance abuse, depression and family counseling. The care team researched and contacted providers in the vicinity, developed the resource directory and distributed it for community access and referrals. Its impact was seen in a patient who because of substance abuse was not compliant with her medical care plans. Assisted by the resource directory, she was able to be treated within her community with inpatient care and eventually an intense outpatient program. With the behavior issue under control medical care management became more effective and productive for her and her family. Without the work of the care team associated with the PCMH even a very large multi-site practice would not have the resources or ability to compile such a directory that could have such a significant impact on the care of individuals and the community.

In the area of quality care improvements, the PCMH model enabled another care team to increase the number of women (ages 40-70) getting breast cancer screening mammograms. Over a 3-month period target women were made aware of the clinical guidelines and asked about the date of their last mammography. Those that responded that they did not have a current mammogram, were referred and or assisted in making appointments for screening. With this gentle inquiry, incentives of a raffled gift basket of pink-themed items, and assistance from the care team, the practice improved its quality of care in this area greatly. And it reduced the health care gap in mammography for their patient population.

This last success story from Horizon BCBS of NJ, demonstrates the quality improvement effectiveness of using evidence-based clinical guidelines, with the assistance of a care coordination Team in a highly productive PCMH model. In order to improve the mammography rate of patients that received such exams with other providers, this practice set out to ensure that their female patients received proper information. They placed flags in

Using a resource directory developed by the PCMH care team of a multi-site practice, providers were able to improve access to behavior health services to improve patient access to quality care.

the charts for patients that needed mammograms, used the 72 hour pre-visit calls and prescription refill requests as windows of opportunity to query patients; and even during "sick" visits providers reminded patients of the need to have a routine mammogram. A pre-printed mammogram prescription was sent to patients via the patient portal. This resulted in a 25% increase in the mammography rate for eligible patients. It also resulted in improving the practice's quality percentile in the areas of hypertension control, colorectal cancer screening and other quality process and outcome measures over 9 months.

Does PCMH Improve Quality, Lower Costs, and Reduce Disparities?

It is recognized that the motivation with PCMH models has been to lower the escalating cost of health care by insurers.

As noted in an Institute of Medicine discussion paper[15], health disparities (among racial and ethnic minorities, mentally ill, the elderly and low income populations) continue to exist in the current health care system. PCMH models have the potential to play a major role in closing the gap in care as it reaches out to communities to address their needs beyond the walls of a clinic or doctor's office. Developing directories of community resources, working with families to address issues of mental health and or addressing the need for safe areas for daily exercise are all key aspects of the PCMH model that can assist in reducing disparities and creating health equity. It is recognized that the motivation with PCMH models has been to lower the escalating cost of health care by insurers. At the same time, an investment in prevention and wellness, especially in the more vulnerable populations, lends itself to healthier people, better and equitable outcomes and an anticipated slowing in the rate of health care expenditures.

An informative study of PCMH and health disparities has been ongoing in Maryland since 2010[16]. The effort was designed to assess the impact that PCMH has on eliminating disparities in health care outcomes while assessing what it takes to transform traditional practices into fully functioning Patient Centered Medical Homes. The pilot program, Maryland's Multi-payer PCMH Program (MMPP), utilized some 52 sites (see Table V in the appendix). The program comprises a mix of practice sizes, geographic locations and settings (private practices, hospital groups and/or medical centers) as well as a mix in the race/ethnicity of the primary care physicians.

The MMPP project showed that several of the NCQA PCMH guidelines lend themselves particularly well to addressing health care disparities in minority communities. For example:

- PCMH Standard 1, Enhance Access and Continuity, calls for use of the CLAS standards in meeting the cultural and linguistic needs of patients and families by assessing the racial and ethnic diversity of the practice's patient population and language needs, and by providing printed material and interpretation services to meet these needs. Standard 1 also requires that the care team be trained in effective patient communication tailored to the patient population, which may include a focus on health literacy as part of the approach to meeting communication needs.

- PCMH Standard 2, Identify and Manage Patient Populations, requires most practices to use an EHR that captures patient information such as race, ethnicity and preferred language. Armed with this information it is easier to measure the impact that improved outcomes has on closing the gap in health disparities and creating health equity. Standard 2 also requires practices to use data for capturing and assessing chronic disease management, which, while not directly focused on health disparities, supports data collection tasks that strengthen the health disparities effort.

- PCMH Standard 3, Plan and Manage Care, requires practices to identify high risk patients and implement care plans. This effort directly lends itself to the practice aim of targeting and improving the outcomes of high risk patients, which tend to disproportionately comprise health disparity populations.

In addition to its vital question of how does PCMH impact health disparities, this Maryland pilot project required five of the state's largest health insurance carriers to financially support the program with up-front and incentive payments disbursed to the qualifying practices. Of note, other state and federal payers voluntarily joined the program. As the program continues, final reports indicate clear quality improvements, increased patient and provider satisfaction and a need for ongoing assessment of the program, particularly as it potentially impacts health equity.

In the January 2015 Patient-Centered Primary Care Collaborative (PCPCC) paper, *The Patient-Centered Medical Home's Impact on Cost and Quality*[17], the findings overwhelmingly indicate that access, quality, and cost can be improved utilizing the PCMH model. In its systematic review of 28 PCMH-focused publications between September 2013 and November 2014, there was a clear demonstration of improvement in the cost and quality of primary care services. This is evident in PCMH models used within populations using Medicaid, Medicare, commercial insurers (e.g. United Health Care and BCBS) and receiving care in both small and large primary care settings. There is much to be gained in PCMH models that are able to use a mix of insurers to fortify the programs. This is particularly important in communities where their coverage might transition from commercial coverage to Medicare and or Medicaid. Having a program that utilizes all insurers to support the PCMH model, assures the health care system that once patients are incorporated in the program they won't have to drop out because of aging out or any change in health care coverage.

Medicaid (MA) successful programs:

With state budgets being overwhelmed across the country it is no wonder that the use of PCMH models that actually cut costs, improve quality and effectively engage patients in their health care are viewed admirably. Many states have been utilizing the PCMH model accreditation standards issued by agencies like NCQA, the Joint Commission and the Accreditation Association for Ambulatory Health Care (AAAHC). Others have issued their own standards, as well. The Affordable Care Act (ACA) in 2010 further incentivized states to use PCMH models for their vulnerable MA populations. The ACA supported implementation of the medical home model, new payment policies and Medicaid demonstrations. There was a 90 percent federal match for 2 years for states' PCMH programs that served Medicaid beneficiaries with chronic illnesses.

Several states have demonstrated achievement in the Triple Aim (reducing costs, increasing quality and improving patients' and their families' engagement in their health care outcomes) among Medicaid beneficiaries. Alabama, Minnesota, Montana and Oklahoma[18] demonstrated that the Triple Aim can be achieved with Medicaid funding for PCMH models. Interestingly enough, the emphasis with this PCMH model was not on specific chronic disease, but rather on in-person contact with patients via community health teams (Care Coordinators) who integrated the use of community resources and primary care providers.

These states (along with others that used mix payer funding) specifically did not rely on telephonic communication for specific chronic disease management, like some more traditional disease management strategies. In keeping with the PCMH model, their core features included:

- multidisciplinary care teams (of nursing, behavioral health, pharmacy, care coordinators, caregivers and providers) encourage self management, help with medications

It is noted that the more mixed the payer groups are the more incentivized the primary care practices are to take on the challenge of transforming their practices and focus on improving patient outcomes.

- face-to-face patient contact and establishment of ongoing relationship between patients and the team staff
- holistic approach with patients identified as high risk and high costs
- a routine means of communicating patient information to care teams and medical practices
- emphasis on the transition of care, particularly between hospital and home
- patients are connected to patient-specific, community-based resources by the team members
- enhanced payment to primary care practices involved with Team care.

If PCMH is used as part of the quality measures, one will have to look at all the possible paths toward PCMH recognition.

In 2010, Medicaid-funded PCMH models were initiated, early on, in Community Health Centers (CHC), where almost 75% of communities served had incomes at or below 100 percent of the federal poverty level ($22,050 for a family of four). While CHC's in 2010 covered health care for some 20 million lives, it is very clear that other primary care settings (small and large private practices) must be involved in providing quality care for other populations in the USA in need of results afforded by the PCMH model. Thus, use of the PCMH model has expanded over time to include these primary care settings, as well as health departments, hospital clinics and other Federally Qualified Health Centers (FQHCs).

Medicare and mixed insurance successful programs:

It is noted that the more mixed the payer groups are the more incentivized the primary care practices are to take on the challenge of transforming their practices and focus on improving patient outcomes. As seen in Table IV (in the Appendix) there is a good mix of payers across several listed states[19]. And while the available data on the success of PCMH programs in various states is also mixed, overall the sense is that the Triple Aim is being achieved in varying degrees and percentages.

Key Challenges and Limitations of PCMH

PCMH Certification as Yardstick vs. Tool

As mentioned previously, PCMH certification and recognition are voluntary. Therefore, one should not use NCQA certification as the "yardstick" in assessing the quality of care given by a provider or medical group, as there are multiple ways a practice can demonstrate their focus on quality.

Fortunately, due to the Affordable Care Act's push for technology in private practices and hospital practices, most providers are moving toward the use of electronic health records (EHRs). This in itself may assist physicians in strengthening the monitoring of preventive care such as immunization rates and routine screenings like mammograms, eye exams, and blood pressure follow-up – all of which are a part of the PCMH guidelines for achieving quality health care.

Other healthcare delivery principles (for hospitals this might be the number of admissions/1000 members or readmissions within 30 days of discharge) recognized by medical specialty organizations bring the same focus on quality.

However, those medical practices will not necessarily be listed in NCQA's directory of certified PCMHs. The same situation applies to providers who are participating in an insurance company's PCMH program (CareFirst, Aetna or

Cigna, for example). These providers are meeting (or possibly exceeding) the quality standards of the PCMH model and receiving recognition in the form of a percentage boost in their payment rates from the insurer – but are only listed in the insurer's PCMH directory (not the NCQA directory). This has important implications for ensuring that healthcare consumers understand both the value and the limitations of PCMH directories.

If insurers work strategically with the Centers for Medicare and Medicaid (CMS) to provide the same PCMH group assistance it brings to direct insurance clients, with nurse practitioners working with physician-led medical practices, then PCMH guidelines would bring a wider benefit to a much larger patient population, including a larger portion of highly vulnerable populations that face health disparities. CareFirst has demonstrated that PCMH can drive down costs and bring up quality and was therefore able to extend its model to Medicare patients. Nationally, other healthcare programs serving Medicaid populations have demonstrated that the PCMH model improves healthcare quality and access and decreases costs for this vulnerable population. This holds important promise for extending quality care to all people.

Implications for Future Research, Policy, and Practice

A large and growing body of research shows that health disparities are found in many areas of health: there is a cultural competency and diversity gap among health care providers; there is a gap in the quality of care rendered to different populations; and, ultimately, there is a gap in health status and healthcare outcomes. Gaps in healthcare quality and healthcare outcomes are two areas that the PCMH can potentially impact.

Maximizing the impact of PCMH on health disparities and improving quality in general requires the support of additional research. For example, some studies have shown that when providers use care coordinators to focus on diseases such as asthma and diabetes, the patient population experience improves. There were less ER visits for acute asthma therapy and improved blood sugar control for people with diabetes. A closer examination of the impact of the PCMH model on specific areas of disease management, where health disparity is most evident, such as cardiovascular disease, stroke, renal failure and HIV should be encouraged.

Patient compliance is another important direction for research. The important role of patient compliance in improving personal health and engaging the healthcare delivery process poses important questions regarding the patient's role within the PCMH model. More knowledge is needed about the barriers patients face in attending scheduled appointments and supporting other key aspects of the PCMH model, which relies heavily on its capacity to coordinate multiple layers of service delivery, including both clinical and social services. More understanding is also needed regarding patient incentives to support the behavioral components of diabetes control, healthy eating, medication adherence, stress management, and other areas of personal accountability that influence the effectiveness of the PCMH model.

The important role of patient compliance in improving personal health and engaging the healthcare delivery process poses important questions regarding the patient's role within the PCMH model.

The current PCMH era also has important implications for policy. The adoption of the PCMH model should be accompanied by a clear policy statement that puts forth the goals of the model for improving quality, managing cost, and reducing health disparities. All three goals are vital and intersecting. To achieve synergy between model and policy, the adopting medical practices will need to ensure that related policies in support of other operational aspects are also included within the PCMH policy statement, including policies pertaining to diversity, cultural competence, health disparities awareness, PCMH data collection, and PCMH training and orientation for all affected staff members. For example, Federally-Qualified Health Care Facilities (FQHC) are already required to use the Culturally and Linguistically Appropriate Standards (CLAS) in their daily work. Medical practices that adopt the PCMH model must ensure that the latest version of the federal CLAS standards are routinely integrated into both policy and practice.

New Directions

The Patient-Centered Medical Home model has evolved substantially since its early development in the 1960s. Today, the evidence increasingly shows that the PCMH model can significantly improve quality, lower cost, and reduce health disparities. The recommendations below are designed to strengthen the capacity of the model for improving health care delivery to all populations, especially those who are underserved.

- Organizational policies that mandate the PCMH model must be sure to address the role of PCMH in reducing disparities for highly vulnerable patients.
- Federally facilities should proactively strive to ensure that they meet federal CLAS standards, incorporate these standards into PCMH policy, and recruit a panel of PCMH care coordinators and physicians that reflect the community in which they serve.
- The private sector (insurers and private medical practices) and the public sector (CMS and CMMI) must strategically collaborate to ensure that a viable and sustainable funding mechanism is in place to financially incentivize the adoption of the PCMH model by practices for whom the model would otherwise be unsustainable.

Endnotes

1 Patient Centered Primary Care Collaborative. (2015) The Patient-Centered Medical Home's Impact of Cost and Quality: Annual Review of Evidence 2013-2014. Retrieved from http://www.milbank.org/uploads/documents/reports/PCPCC_2015_Evidence_Report.pdf

2 American Colleges of Physicians (2014). *What is the Patient Centered Medical Home?* Retrieved from http:// www.acponline.org/running_practice/delivery_and_ payment models/pcmh/understanding/what.htm

3 The Patient-Centered Medical Home History, Seven Core Features. Retrieved from www.aoa.org/documents/.../Patient-Centered-Medical-Home-History.pdf

4 Sia C. Tonniges TF, Osterhus E, Taba S. History of the medical home concept. *Pediatrics*. 2004;113(5 Suppl);1478-8.

5 American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, American Osteopathic Association. Joint principles of the patient-centered medical home. 2007. Retrieved from www.medical-homeinfo.org/Joint%20Statement.pdf

6 Beal A, Hernandez S, Doty M. (2009) *J Gen Intern Med*, 24 Suppl 3:514-20. Doi:10.1007/s11606-009-1119-1.

7 Beal A, Hernandez S, Doty M. (2009) *J Gen Intern Med*, 24 Suppl 3:514-20. Doi:10.1007/s11606-009-1119-1.

8 Wagner EH, Austin BT, Von Korff M. Organizing Care for Patients with Chronic Illness. (1996) *Milbank Q.* 74(4)511-44.

9 NCQA PCMH 2011 Standards, Elements and Factors. Retrieved from https://www.ncqa.org/Portals/O/.../ PCMH_2011)_Data Sources_6.6.12.pdf

10 National Committee for Quality Assurance. Physician Centered Medical Home Companion Guide. Retrieved from http://www.amsa.org/AMSA/Libraries/Committee_ Docs/What_Qualifies_as_a_Patient_Centered_ Medical_Home.sflb.ashx

11 Higgins, S., Chawla, R., Colombo, C., Snyder, S., & Nigam, S. (2014). Medical homes and cost and utilization among high-risk patients. American Journal of Managed Care. 20(3), 61-71.

12 David, G., Gunnarsson, C., Saynisch, P.A., Chawla, R., & Nigam, S. (2014). Do patient-centered medical homes reduce emergency department visits? *Health Services Research,* doi: 10.1111/1475-6773.12218

13 UnitedHealth Group. (2014). Advancing Primary Care Delivery: Practical, Proven, and Scalable Solutions. Retrieved from http://www.unitedhealthgroup.com/~/ media/UHG/PDF/2014/UNH-Primary-Care-Report- Advancing-Primary-Care-Delivery.ashx

14 Horizon Blue Cross Blue Shield, Patient-Centered Medical Home Success Stories; Transforming and improving the delivery of healthcare. Retrieved at http://www.horizonblue.com/sites/default/files/pdf/PCMHSuccessStories_final.pdf

15 Wong, W.,I. Dankwa-Mullan, M. A. Simon, and W.A. Vega. 2012. *The patient-centered medical home: A path toward health equity?* Discussion Paper, Institute of Medicine, Washington, DC. http://iom.edu/Global/Perspectives/2012/PatientCentered MedicalHome.aspx

16 Maryland Health Care Commission. The Feasibility of Including Reductions in Disparities As a Performance Factor in Maryland's Multi-payer PCMH Program. December 2012. Retrieved from http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/PCMH_MMPP_Disparities%20Rpt_Gen_Assembly_20121201.pdf

17 Patient Centered Primary Care Collaborative. (2015) The Patient-Centered Medical Home's Impact of Cost and Quality: Annual Review of Evidence 2013-2014. Retrieved from http://www.milbank.org/uploads/documents/reports/PCPCC_2015_Evidence_Report.pdf

18 Takach M, Buxbaum J. Care Management for Medicaid Enrollees Through Community Health Teams. The Commonwealth Fund. May 2013.

19 Patient Centered Primary Care Collaborative. (2015) The Patient-Centered Medical Home's Impact of Cost and Quality: Annual Review of Evidence 2013-2014. Retrieved from http://www.milbank.org/uploads/documents/reports/PCPCC_2015_Evidence_Report.pdf

Appendix

TABLE IV. INDUSTRY REPORTS: Primary Care/PCMH Interventions That Assessed Cost or Utilization, Selected Outcomes by Location, 2013-2014

Table IV Results:

Table IV includes reports from private payer and not-for-profit organizations that predominately evaluate cost and utilization metrics. Six of the seven evaluations reported reductions in at least one utilization metric and four reported reductions in one or more cost metric.

Three of the industry reports also included outcomes data regarding improvements in quality of care (population health/ preventive services) and one published data on increased access to primary care services. The California Academy of Family Physicians' report is the only industry report to include data on patient satisfaction; none of the private payer reports included data on patient or provider experience.

Location/Initiative	Cost & Utilization	Population Health & Preventive Services	Access to Primary Care Services	Patient or Clinician Satisfaction
Multi-state				
UnitedHealth care Patient-Centered Medical Home Program ***Published:*** *United Healthcare Industry Report*, Sept. 2014 ***Data Review:*** 2009-2012	• Average gross savings of 7.4% of medical costs in third year compared with control group • Every dollar invested in care coordination produced savings of $6 in the third year (ROI* of 6 to 1) • On average, programs saved 6.2% of medical costs (including cost of intervention) • Larger annual reductions in cost growth for individuals enrolled throughout the entire study period (ROI* of 7 to 1)			

Source: This table appeared in The Patient-Centered Medical Home's Impact on Cost and Quality, Annual Review of Evidence 2013-2014, published January 2015 by the Patient-Centered Primary Care Collaborative (PCPCC). The table's contents were culled from the sources indicated in each table section. The report is available here: http://www.milbank.org/ uploads/documents/reports/PCPCC_2015_Evidence_Report.pdf

Location/Initiative	Cost & Utilization	Population Health & Preventive Services	Access to Primary Care Services	Patient or Clinician Satisfaction
California				
California Academy of Family Physicians and Community Medical Providers PCMH Initiative ***Published:*** *California Academy of Family Physicians Report*, Feb. 2014 ***Data Review:*** 2012-2013	• 16% reduction in cost for high-risk patients • 9% reduction in cost of total claims (gross savings of $972,000) • 3.1% reduction in ER visits • 21.6% reduction in inpatient admissions	• 50% increase in the number of patients with diabetes with controlled blood sugar • 7% increase in medication adherence among high-risk employees • Increase in breast cancer screening and body mass index counseling across entire patient population • Significant increase in BP* and LDL* control among patients with diabetes and artery disease		• Overall patient satisfaction improved
Maryland				
CareFirst Patient-Centered Medical Home Program ***Published:*** *Blue Cross Blue Shield Press Release*, July 2014 ***Data Review:*** 2011-2013 claims data	• $130 million in savings (3.5%) in 2013 compared with projected spending under standard FFS • Slowed rate of medical care spending from average of 7.5% per year in 2011 to 3.5% in 2013 • 6.4% fewer hospital admissions • 11.1% fewer days in hospital • 8.1% fewer hospital readmissions for all causes • 11.3% fewer outpatient health facility visits			
Michigan				
Blue Cross Blue Shield of Michigan Patient-Centered Medical Home Designation Program ***Published:*** *Blue Cross Blue Shield Press Release*, July 2014 ***Data Review:*** 2013-2014 claims data	• 11.8% lower rate of adult primary care sensitive ER visits • 9.9% lower rate of adult ER visits • 14.9% lower rate of ER visits overall (for pediatric patients) • 8.7% lower rate of adult high-tech radiology use • 27.5% lower rate of hospital stays for certain conditions		• 21.3% lower rate of ER visits "expressly due to pediatric patients receiving appropriate and timely in-office care"	

Location/Initiative	Cost & Utilization	Population Health & Preventive Services	Access to Primary Care Services	Patient or Clinician Satisfaction
New Jersey				
Horizon Blue Cross Blue Shield New Jersey Patient-Centered Programs ***Published:*** *Horizon Blue Cross Blue Shield Press Release*, July 2014 ***Data Review:*** 2013 claims data	• ~$4.5 million in savings (due to avoidance of 1,200 ER visits and 260 inpatient hospital admissions) • 4% lower cost for patients with diabetes • 4% lower total cost of care • 4% lower rate of ER visits • 2% lower rate of hospital admissions	• BCBSNJ's Patient-Centered Medical Home Program enrollees had: • 8% higher rate in breast cancer screening • 6% higher rate in colorectal screening • 14% higher rate in improved control of diabetes • 12% higher rate in cholesterol management		
New York				
Aetna PCMH Program: WestMed Medical Group ***Published:*** *Aetna Press Release*, July 2014 ***Data Review:*** 2013 claims data	• WESTMED physicians earned over $300,000 in incentive payments in the first year • 35% reduction in hospital admissions • Reduction in ER visits • Reduction in readmissions	• WESTMED physicians met or exceeded 9 of 10 targeted goals on: • cancer screenings • diabetes management and screening • heart disease management and screening		
Pennsylvania				

Highmark Patient- Centered Medical Home Program
 	
Published: *Highmark Press Release*, Oct. 2014
 	
Data Review:
2013 claims data
	when compared to the market, program members had:
	• Lower ER use:
	  • 16% (adult care)
	  • 14% (Medicare Advantage)
	  • 13% (pediatric care)
	• 1% lower readmission rate for commercial members
	• 2% lower readmission rate for Medicare Advantage members
	• 12% lower inpatient surgical utilization (adult care)
	• 9% lower inpatient surgical utilization (Medicare Advantage)
	• 25% lower inpatient medical utilization (Medicare Advantage)			

Below, summarizes the NCQA Level 1, Level 2, or Level 3 recognition status of the MMPP participating practices as of October 2012.

Table V. NCQA PCMH Recognition Level as of October 2012		
NCQA Level 3 = 20 practice sites Highest level of NCQA Achievement	NCQA Level 2 = 14 Practice sites	NCQA level 113 = practice sites Lowest level of NCQA Achievement
Calvert Internal Medicine: • Dunkirk • Solomons • Prince Frederick	Bay Crossing Family Medicine, Arnold	Atlantic General • Townsend • Berlin
Cambridge Pediatrics, Waldorf	Children's Medical Group, Cumberland	Comprehensive Women's Health, Silver Spring
Dobin & Hoeck, Sliver Spring	Family Care of Easton	Family Health Center of Baltimore
Greenspring Internal Medicine, Towson	Family Medical Associates (Carroll Hospital Center) • Eldersburg • Finksburg	Family Medical Associates (Carroll Hospital Center) • Manchester • Reisterstown
Johns Hopkins Community Physicians • Canton Crossing • Hagerstown • Montgomery • Water's Edge • Wyman Park	Gerald Family Care, Cheverly	Parkview Medical Group • Myersville • RoseHill • Mt. Airy
MEDPEDS, Laurel	Hahn & Nelson Family Medicine, Hancock	The Pediatric Group • Crofton • Severna Park • Davldsonville
Med Star Franklin Square Family Health Center), Baltimore	Johnston Family Medicine, Westminster	Primary & Alternative Medicine, Silver Spring
Potomac Physicians • Frederick Medical Center • Security Health Center, Baltimore • Annapolis Regional Medical	Natural Family Wellness, Glenn Dale	
Stone Run Family Medicine, Rising Sun	Patient First, Waldorf	
Ulmer Family Medicine, Annapolis	Shah Associates • Hollywood • Prince Frederick • Waldorf	
University of Maryland Family & Community Medicine, Baltimore	University of Maryland Pediatrics at the Harbor, Baltimore	
University Care at Edmonson Village, Baltimore		

Source: Maryland Health Care Commission, October 2012

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