A Fundamental Asset in Health Care: Valuing Family Physicians

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Family physicians are invaluable assets in the health care system. Focused on the whole patient (as compared to subspecialists who typically focus on a single organ system), family physicians and other primary care physicians are the main clinicians who manage and coordinate care throughout their patients' lifetime and often provide the initial pathway for patients to enter the health care system. Family physicians, and the primary care they offer, provide the continuity of care associated with positive health outcomes and better ratings of health care quality.[1,2] They are often the only source of routine care in historically underserved populations.[3] The continual care and communication they provide are key components to increased patient satisfaction, which drives patients to continue preventive health care measures.[4,5]

Access to the services of family physicians leads to improvement in health care quality and patient quality of life, while alleviating the high costs associated with chronic conditions, especially in a medical home setting.[6,7] Studies of care delivered in a medical home have shown increased composite scores for quality of care and preventive measures delivered,[8,9] including a 14% higher rate of diabetic control, a 12% higher rate of effective cholesterol management, an 8% higher rate of breast cancer screening, and a 6% higher rate of colorectal cancer screenings.[7] In addition, patients' satisfaction with health care access and quality of care received also increase in a medical home setting.[10,11] Meanwhile, access to family medicine and primary care has been associated with increases in preventive screening tests and decreases in additional health care consumption, such as pharmaceuticals, emergency department (ED) visits, and imaging tests.[12]

Investment in the medical home model magnifies the impact of family physicians and primary care services on cost reductions throughout the entire health care system. The following examples highlight family physicians' impact.

- Kelley showed a reduction in ED visits and hospital admissions within Horizon Blue Cross Blue Shield's Patient-Centered Medical Home (PCMH) program that represented approximately $4.5 million in cost savings.[7]
- van Hasselt et al found that PCMHs receiving the National Committee for Quality Assurance recognition were associated with lower health care utilization and lower total annual Medicare payments. Overall, total annual Medicare payments were reduced by $265 per patient, with most of the reduction (62%) due to declines in acute care hospital payments.[13]
- Filmore et al showed that the integration of systemic care management into Community Care of North Carolina PCMH program achieved significant cost avoidance, and associated savings, ranging from $63.74 per-member-per-month (PMPM) to $190.91 PMPM, and an overall cost savings of $184,064,611 during 4.75 years.[14]
- Paustian et al demonstrated a reduction of $26.37 PMPM for practices participating in the Blue Cross Blue Shield of Michigan Physician Group Incentive Program.[9]

Studies that do not find an overall decrease in costs do, however, point to cost savings in some patient segments. For example, Higgins et al did not find a decrease in overall costs, but did find an 8 to 11% reduction in payments for the impairments in the 90th percentile for morbidity risk.[15]

The importance of family physicians to the health care system is clear. They provide the main entry point into the health care system, manage care across all health conditions, and provide the coordinated care that keeps patients satisfied and involved in preventive care. In return, their services lead to a reduction in health care utilization and overall costs. When family physicians have a central leadership role within value-based payment systems, health care quality will improve and costs will decrease.

The Danger in a Family Physician Shortage

Although the value of family physicians is clear, the ongoing ability for patients to access family physicians is not so clear. Although results show that family physicians are sought most often by patients in online searches, there are an increasing number of searches that end unfilled.[16] More importantly, access to family physicians is projected to worsen. Only 30% of physicians are currently offering primary care services, and only 25% of medical school graduates enter primary care residencies.[17] These figures move us away from the goal identified by the Counsel on Graduation Medical Education of a recommended target of 40% of physicians providing primary care services.[17] Petterson et al calculated shortages by subtracting the number of physicians projected to retire from the number of physicians produced to project that the United States will fall 33,000 primary care physicians short of the additional 44,000 needed to fill demand by 2035.[18] They estimate that the number of medical school graduates entering primary care residencies needs to increase by 21%.[18]

As alarming as the total physician shortage appears, these numbers may still underrepresent the true severity of the shortage, as physicians are not evenly distributed across the nation. Rural areas and poorer communities currently have a disproportionately larger shortage of physicians and are projected to have their shortages increase even further.[18] Regions already categorized as health professional shortage areas experienced a 2.4% decrease in practicing physicians from 2008 to 2013.[19] Even if the decline in physician numbers reverses, it may not happen in a manner that benefits the most underserved areas.

There have been alternatives that might alleviate some of the shortage, but these alternatives involve services that fall short of the full benefit of continual care from a family physician. One alternative is nurse practitioner (NP) or physician assistant (PA)

clinics. Patients, especially younger adults, are increasingly more likely to seek NP and PA services.[16,20] While this may be adequate for common conditions and ailments, NPs and PAs are not as prepared to diagnose and manage more complex, undifferentiated, and/or chronic conditions. Other alternatives are physicians who serve as hospitalists in the inpatient setting, in emergency departments, or in urgent care centers. Current estimates indicate that 9% of primary care physicians serve as hospitalists, with hospitals looking to increase their hiring rates to avoid unnecessary hospitalizations and manage transitions back to the community.[21] While these physicians are capable of handling a wider range of complications, using them to alleviate the shortage of family physicians in primary care has the same problem as using NPs/PAs, because as their services are designed around single patient visits when complications arise. These alternatives falls short of the benefits of comprehensive and continuous care offered by family physicians in primary care that help prevent further health complications.

The best solution is to increase access to comprehensive, first contact, and continuous primary care offered by family physicians. This is the care shown to reduce the need for further and expensive health care services, emergency department visits, and hospitalizations. While there are patches to help alleviate the lack of access to family physicians, they are only a partial replacement of family physician's services and may not be adequate as demand for primary care grows. The best solution is to reverse the decline in the number of family physicians.

Barriers Facing Family Medicine

One of the clear deterrents to medical students pursuing family medicine is the relatively low compensation compared to other specialties.[22] However, this should not be viewed as a simple grievance with compensation. The underlying issue is the current fee-for-service (FFS) system's emphasis on quantity of care over quality of care. Under FFS, primary care physicians can increase their compensation only by working longer hours (i.e., disrupting their work-life balance) to increase the number of patient visits conducted in a day, or by electing to do more tests, procedures, and other services that may not have as high of a clinical return relative to their costs. The FFS system provides little direct reward for improved clinical practice and quality (or even cost-effective) care.[23,24] Since FFS systems pay only for patient visits and treatments, FFS effectively penalizes family physicians who help maintain patients' general health and reduce the need for sick visits. Further, the FFS system focuses physicians on quick services, which discourages treatment of some chronic conditions, such as depression, which require multiple, longer visits to complete an effective treatment.[24,25] In short, the FFS system incentivizes performing quick tasks in volume rather than rewarding the comprehensive, high-quality care family physicians provide.

Although practicing under a medical home model can alleviate some of the FFS burdens, this is not an easy solution. Many practices are not yet ready for the necessary transformation. As of 2013, approximately 40% of all primary care practices offer minimal or no medical home services,[26] and most solo and small practices (2 to 10 providers) are typically unable to make a quick transformation (i.e., under two years) without external supports for practice redesign, care management, and revised payment.[27] In addition, the cost of transformation can be prohibitive. Marstolf et al reviewed medical home transformations and estimated a median one-time cost of $30,991 (ranging from $7,694 to $117,810) with ongoing yearly costs of $147,573 (ranging from $83,829 to $346,603).[28] Patel et al estimated that 4.25 full-time equivalents (FTEs) should be staffed per one physician FTE in the practice (a 59% increase over the current ratio in the U.S.) with an additional 1.5 support staff for each physician added to the practice. [29] Although medical home transformation can benefit primary care physicians and their patients, the investment costs may present too high of a risk for many practices.

Even if compensation and practice-setting issues are resolved, there are additional factors that confront primary care physicians without offering a notable return. One such factor is the increasing burden of complicated electronic health records (EHRs), which have yet to fulfill their promise of improving patient care. EHRs can be a valuable health care tool that organizes patient records to prepare for patient visits; provides alerts about care gaps to assist care management; informs about health care trends to assist diagnosis of symptoms; and facilitates transfer of information to coordinate health plans between the primary care physician, specialists, and hospitals.[30,31] However, the reality of the current state of the industry is that difficult data entry and poor interoperability have prevented EHRs from providing true clinical benefits. The use of EHRs within the practice has been uncorrelated with maintaining or improving clinical performance, with the exception of (often underutilized) clinical health registries.[32] The use of EHRs for transfer of medical information has been hampered by poor interoperability of different EHR systems that deters the coordinate of care with agreed upon care plans.[30,31] If the effectiveness and interoperability of EHRs is improved, the effort to enter data into the system can benefit patient care. If not, the data entry becomes little more than additional uncompensated work that has little clinical benefit.

Another factor confronting primary care physicians is the use of complicated, sometimes contradictory metric methods to determine a physician's value and compensation. For example, there may be a disconnect between patient satisfaction metrics and metrics of clinical quality. Patient satisfaction is an important factor driving patients to maintain their preventive and clinical health services.[5] However, there is emerging evidence that current methods of gathering and analyzing patient satisfaction data show little or no correlation with current methods for

determining quality of care.[4,5,33] If both metrics are used to calculate physician value/compensation, physicians might likely face choices between the penalties of low patient satisfaction or penalties for low clinical outcomes, and potentially lose either way. Indeed, some patient satisfaction metrics have produced negative consequences, such as diminished physician satisfaction because of low patient satisfaction scores; undue administrative burden on clinicians in administering patient satisfaction surveys; more physicians acceding to patients' request for discretionary services; and others.[4,5,33] Although multiple factors are important to determining physicians' value, the development of complementary metrics is crucial to attracting more quality family physicians, rather than repelling physicians from primary care and increasing the primary care shortage.

Addressing the Problem

The value of family physicians and the primary care they provide are apparent. However, the drain on the specialty and the increasing shortage of family physicians are also evident. More investment in family physicians is needed to reverse the downward trend and preserve this valuable asset.

The passage of the Medicare and CHIP Reauthorization Act (MACRA) offers a potential starting point in this effort. MACRA marks the largest reform to Medicare physician payment under Part B since the inception of the resource-based relative value scale in 1989. In addition to stabilizing payment through repeal of the sustainable growth rate formula, MACRA also established two payment pathways for family physicians, the Merit-based Incentive Payment System (MIPS) and Alternative Payment Models (APMs). Through the APM pathway—and in particular the medical home model—Congress has recognized the foundational importance of family physicians and the unique nature of the primary care services they provide. Physicians who receive a minimum percentage of their Part B (or multi-payer) revenue through an advanced APM will be exempt from any negative payment adjustments under MIPS. In addition, practices that meet higher revenue targets and other criteria will qualify for an annual lump sum bonus payment in the amount of 5% of their Part B charges (based on estimated aggregate payments for services furnished in the year prior to the payment year).

This change clearly indicates a need to find payment structures with sufficient enhanced revenue to support practice transformation into models that incentivize value-oriented patient care. Physicians are currently paid under FFS systems that compensates them based on the number services rendered, and that incentivizes physicians to increase the quantity of services, rather than providing quality and cost-effective care.[23,24]

In recent years, there have been a number of proposals to modify payments to shift the incentives toward quality care, but each one has drawbacks. One initiative is the chronic care management fees established under Medicare. The viability of this alternative may be too dependent on patient willingness to consent to care management, and may have a break-even point that is too high for small and solo practices.[34,35] Another initiative is transitional care management (TCM) fees, but TCM requires coordination with hospitals that tend to be poor collaborators. Those hospitals have high expectations of the primary care physicians, but provide little help in terms of ensuring proper transition of medical records or sharing the financial savings.[36] Finally, capitation systems offer a potential solution by paying for cases rather than services, but current capitation systems need improvement to minimize the risk of underpayment and avoid incentives for cost cutting, rather than quality.[23]

This is a pivotal time in the development and transformation of the health care system as it moves away from paying for quantity to paying for quality. The passage of MACRA recognizes the magnitude of this moment. However, developing a better payment model will not be easy and may require a multifaceted approach, as any single solution carries additional complications. Even if solved from a payment standpoint, the overall success of the transformation will still depend heavily on simplifying and reducing administrative burdens and encouraging EHR vendors to develop better functioning, easy-to-use EHR software with interoperability capabilities that fulfills the promise of improving care coordination and clinical outcomes. Without those changes, the shortage of family physicians will continue to grow, and the front-line asset that reduces the overall burden on the health care system will be lost.

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Methodology

The online database, PubMed, was searched to retrieve relevant articles for this review. The criteria were limited to studies published since 2013. Two additional articles published in 2012 were added after the initial search due to their relevance. Search terms were identified through interviews with subject matter experts. The terms were then entered in the National Library of Medicine's Medical Subject Heading (MeSH) controlled vocabulary thesaurus to determine the key words used to search PubMed. The search terms were grouped by themes, and 10 separate PubMed searches were conducted. The initial searches resulted in a total of 741 articles. The research team excluded 606 articles as unsuitable based on title and abstract. In total, 135 full-text articles were evaluated and reviewed. Ultimately, the team identified 36 articles as relevant for this review.

The articles were divided into four major groups: value of family physicians (n = 15), shortage of family physicians (n = 7), barriers facing the family physician specialty (n = 7), and addressing the problems facing family physicians (n = 7). The research team acknowledges this is not an exhaustive review of the literature, but feels this is foundational work in the American Academy of Family Physicians' goal of proving the value of family medicine.

Annotated Bibliography

Akinci F, Patel PM. Quality improvement in health care delivery utilizing the patient-centered medical home model. *Hosp Top.* 2014;92(4):96-104.

The article attempted to demonstrate the need for quality improvement in health care by examining the patient-centered medical home (PCMH). The authors conducted a comprehensive literature search to understand the PCMH model and how it affects the quality of care in the United States. The authors conclude that the PCMH model may help alleviate the high costs of dealing with chronic conditions and lead to improvements in health care quality and patients' quality of life. Furthermore, the medical home can stand independently and continuously provide enhanced care services while organizations and government policy assess what types of incentives to put into place for the full collaboration and coordination of care in the health care system.

Aysola J, Bitton A, Zaslavsky AM, Ayanian JZ. Quality and equity of primary care with patient-centered medical homes: results from a national survey. *Med Care.* 2013;51(1):68-77.

Aysola et al attempted to determine if PCMHs are associated with improved quality and equity in pediatric primary care. The authors used the most recent results of the National Survey of Children's Health to evaluate the association of PCMHs with 10 quality-of-care measures. They found that compared with children without medical homes, those with medical homes had significantly better adjusted rates for six of 10 quality measures. The authors conclude that there are quality care benefits of the medical home model.

Chung S, Panattoni L, Hung D, Johns N, Trujillo L, Tai-Seale M. Why do we observe a limited impact of primary care access measures on clinical quality indicators? *J Ambul Care Manage.* 2014;37(2):155-163.

Chung et al reported data collected from a large group practice in northern California. Measures of interest included visit accessibility, care continuity, and electronic access. The authors tested these measures against 12 measures of clinical quality, including chronic conditions, intermediary outcomes of chronic conditions, and preventive screening. The authors conclude that better access to appointments and primary care continuity are associated with some clinical quality metrics, but nothing appeared to approach clinical significance. This article shows the difficulty of statistically quantifying the relationship between access and quality metrics, concluding that quality scores are driven by things other than medical care, itself, and subject to confounders.

Detzky J, Shaul RZ. Incentives to increase patient satisfaction: are we doing more harm than good? *CMAJ.* 2013;185(14):1199-1200.

Detzky and Shaul discussed what factors influence patient satisfaction. They conclude that patient satisfaction is greatly influenced by patient age, income, anxiety, education, and comorbidity. These confounding variables must be adjusted for when using satisfaction as a metric. The authors also discuss additional issues when using patient satisfaction as a metric. They found that definitions of satisfaction vary across studies. In addition, the time between the health encounter and the response to the questionnaire can vary, limiting the generalizability of results. When looking at survey examples, the authors found that the surveys often focus solely on the interaction with the physician, instead of asking about the broader practice experience. The authors found that increased patient satisfaction has been associated with increased mortality, perhaps due to greater use of discretionary care. Incentives exist for both patients and physicians to seek and deliver discretionary care, turning patient-centered care into patient-directed care. The study shows that limitations need to be placed on the incentives for physicians and hospitals to increase discretionary care, including tempering the financial ramifications of patients' ratings of overall satisfaction until a better understanding of the links between satisfaction and potentially harmful patient-directed care is found. The authors offer that there is a need to further study the best way to define satisfaction, how to properly measure it, and whether improvements in satisfaction are related to better health outcomes.

Fenton JJ, Jerant AF, Bertakis KD, Franks P. The cost of satisfaction: a national study of patient satisfaction, health care utilization, expenditures, and mortality. *Arch Intern Med.* 2012;172(5): 405-411.

The article attempted to provide a better understanding of the relationship between patient satisfaction and health care utilization, expenditures, and outcomes. The authors conducted a prospective cohort survey of adult patients over a period of time measuring their satisfaction of care provided and use of health care resources. They found that higher patient satisfaction was associated with fewer emergency room visits, but increased inpatient utilization, increased health care expenditures overall, and use of prescription drugs. Patients in the highest satisfaction group also had significantly greater mortality risk. These mostly negative findings suggest that there is not a full understanding of the factors associated with patient satisfaction and relationships with selected health outcomes. Health plans use patient satisfaction data to evaluate physicians and to determine incentive compensation, and consumer-oriented websites often report patient satisfaction so that consumers can compare physicians, but there are many limits to these data. Highly satisfied customers may be good for business, but patient satisfaction data outcomes and metrics may be better suited for internal quality improvement activities.

Fillmore H, DuBard CA, Ritter GA, Jackson CT. Health care savings with the patient-centered medical home: Community Care of North Carolina's experience. *Popul Health Manag.* 2014;17(3):141-148.

Fillmore et al presented an overview of cost savings experienced during the implementation of a systemic care management intervention program in a PCMH practice. The study found that the enrolled non-elderly disabled population achieved significant cost avoidance, and associated savings that increased with length of time in the program. The authors report that the program showed statistically significant net cost savings and a higher rate of nonacute physician visits by enrolled members. The cost savings ranged from $63.74 per-member-per-month (PMPM) in the last study year to $190.91 PMPM in the first year, producing an overall cost savings of $184,064,611 over 4.75 years. Additionally with this population, the authors found a lower rate of hospitalizations and declines for inpatient admission rates. When restricted to persons with multiple dominant chronic conditions, the costs savings ranged from $92.63 PMPM in 2011 to $228.41 PMPM in 2007. The prepost model found statically significant savings from Community Care of North Carolina (CCNC) in each year after the first. CCNC was able to achieve cost savings after adjusting for patient characteristics, physician practice characteristics, and geographic location. This study shows that a well-constructed, large-scale care management program can have significant cost impacts and can increase efficiency of health care delivery.

Finney Rutten LJ, Agunwamba AA, Beckjord E, Hesse BW, Moser RP, Arora NK. The relation between having a usual source of care and ratings of care quality: does patient-centered communication play a role? *J Health Commun.* 2015;20(7):759-765.

The authors use data from the Health Information National Trends Survey. Measures of interest included reports of having a "usual source of health care," patient-centered communication, ratings of health care quality, insurance status, and frequency of health care use. Having a usual source of care is associated with better ratings of health care quality. Patient-centered communication appears to be the driving factor. Primary care providers can provide a "usual source of care" to everyone, including populations who have historically been unserved. Not having a usual source of care has been shown to be associated with greater risk for negative health outcomes.

Higgins S, Chawla R, Colombo C, Snyder R, Nigam S. Medical homes and cost and utilization among high-risk patients. *Am J Manag Care.* 2014;20(3):e61-71.

Higgins et al compared the effects of adopting the PCMH model on health care costs and utilization in a non-pediatric population. Using data from 2009 to 2011, the authors compare 17 practices that adopted the PCMH model in 2009 and 103 non-PCMH practices that were members of commercial HMOs. After controlling for baseline differences between PCMH and non-PCMH practices, no statistically significant differences were observed. However, when looking at the highest-risk patients, significant utilization and cost reductions were observed. These reductions accounted for 61 hospitalizations per 1,000 patients and $115 PMPM in patient costs in 2009; 48 hospitalizations and $62 PMPM costs in 2010, and 94 hospitalizations in 2011. Total medical costs for the top 10% of risky patients were $107 PMPM lower in 2009 (11.2% decrease from baseline) and $75 PMPM in 2010 (7.9% decrease). This study proves the PCMH model does reduce inpatient admissions among high-risk patients, and is a successful model to use and share health information to better assess patients' needs and coordinate care.

Kelley T. Population care coordinators: a key to improved care at lower cost? *Manag Care.* 2014;23(9):46-48,50.

Kelley found that a Horizon Blue Cross Blue Shield PCMH program used claims data from 2013 on 200,000 members to show PCMH patients had a 14% higher rate of improved diabetes control, a 12% higher rate of effective cholesterol management, an 8% higher rate of breast cancer screening, and a 6% higher rate of colorectal cancer screenings. The rate of hospital admission was 2% lower for the PCMH practices and the number of emergency room visits, cost of care for diabetic patients, and the total cost of care was 4% lower for the PCMH practices. The PCMH practices had 1,200 avoided emergency visits and 260 avoided hospital admissions, representing a savings of approximately $4.5 million. This article shows that the PCMH model can reduce health care utilization and cost.

Kern LM, Dhopeshwarkar RV, Edwards A, Kaushal R. Patient experience over time in patient-centered medical homes. *Am J Manag Care.* 2013;19(5):403-410.

Kern et al measured patient's experiences over a period of time in a PCMH practice. The authors sampled patients receiving primary care in the Hudson Valley region of New York. Using a patient survey, they measured patient experience, a measure of patient-centeredness that is broader than patient satisfaction and includes reports from patients on what they did or did not experience in their interactions with the health care system. The authors found that patients' experiences with access to care improved over time in PCMH practices. This is one of the first studies to find an effect of the PCMH on patient experience in a community with multiple payers, fee-for-service (FFS) reimbursement, and locally driven quality improvement.

Lebrun-Harris, Shi L, Zhu J, Burke MT, Sripipatana A, Ngo-Metzger Q. Effects of patient-centered medical home attributes on patients' perceptions of quality in federally supported health centers. *Ann Fam Med.* 2013;11(6):508-516.

Lebrun-Harris et al used data collected through the 2009 Health Center Patient Survey to assess patients' ratings of PCMH attributes and overall quality of care within federally supported health centers. The authors found 84% of patients reported excellent/very good for overall quality of services, 81% reported excellent/very good quality of clinician care, and 84% were very likely to refer friends and relatives. This article proves that PCMH attributes related to access to care and communication were associated with greater likelihood of patients reporting high-quality care.

Paustian ML, Alexander JA, El Reda DK, Wise CG, Green LA, Fetters MD. Partial and incremental PCMH practice transformation: implications for quality and costs. *Health Serv Res.* 2014;49(1):52-74.

The authors used a sample of 2,432 physician practices in Michigan participating in the Blue Cross Blue Shield of Michigan (BCBSM) Physician Group Incentive Program (PGIP) in 2010 to examine that hypothesis that more extensive implementation of the PCMH model is positively associated with indicators of lower cost and higher quality of care. The authors found that a practice that achieved full PCMH implementation would have a 5.1% higher adult preventive composite score; a 12.2% higher pediatric preventive composite score; a 3.5% higher adult quality composite score; and a $26.37 lower adult PMPM cost. Similar positive effects on quality of care were found for incremental improvements in PCMH. However, no cost savings were associated with incremental improvements in PCMH model implementation. PCMH implementation was associated with lower medical and surgical costs for adults, but not for children. These results are consistent with the notion that PCMH improve the care of adults with chronic conditions through care management and coordination.

Rosenthal MB, Sinaiko AD, Eastman D, Chapman B, Partridge G. Impact of the Rochester Medical Home Initiative on primary care practices, quality, utilization, and costs. *Med Care.* 2015;53(11):967-973.

In this study, Rosenthal et al analyzed the effect of a PCMH intervention in Rochester, New York, on costs, utilization, and quality of care. The authors found that after three years, PCMH practices reported decreased emergency room visits and use of imaging tests, and increased primary care visits and laboratory tests. The authors also found that prescription drug use increased but, overall, drug spending decreased. PCMH practices reported increased rates of breast cancer screening and low-density lipid screening for diabetes patients, and decreased rates of any prevention quality indicator. The authors conclude that the PCMH model leads to significant changes in patient care with reductions in some services and increases in others. This study finds no effect of PCMH transformation on total health care spending.

Shi L, Lebrun-Harris LA, Parasuraman SR, Zhu J, Ngo-Metzger Q. The quality of primary care experienced by health center patients. *J Am Board Fam Med.* 2013;26(6):768-777.

Shi et al. use data from the 2009 Health Center Patient Survey, including measures of accessibility, communication, comprehensiveness, and coordination. Health center patients are satisfied with their primary care experiences, especially when it comes to accessibility and communication. The measures are consistent across racial and insurance categories, suggesting that health centers are effective at providing care without the disparities that exist in other health care settings. Primary care providers are an important source of regular medical care for underserved populations. Keeping them connected to a source of care is important for providing preventive care and managing chronic conditions.

van Hasselt M, McCall N, Keyes V, Wensky SG, Smith KW. Total cost of care lower among Medicare fee-for-service beneficiaries receiving care from patient-centered medical homes. *Health Serv Res.* 2015;50(1):253-272.

The authors compared patterns of health care use and expenditures for Medicare fee-for-service beneficiaries between practices with and without a National Committee for Quality Assurance (NCQA) PCMH recognition. The data shows baseline health care utilization was lower for the PCMH practices than the non-PCMH practices. Relative to the comparison group, the rate of emergency room visits for any condition declined on average by 55 per 1,000 beneficiaries and the rate of emergency room visits for ambulatory care sensitive conditions declined on average by 13 after a practice received NCQA recognition as a PCMH. Relative to the comparison group, the PCMH group had total annual Medicare payments that were $265 less (i.e., receipt of NCQA recognition was associated with a 4.9% reduction in the trend in total payments). Of this decline, $164 (62%) was attributed to a decline in payment to acute care hospitals. Practices with sicker than average patients, primary care practices, and solo practices saw larger declines in these measures. Total Medicare payments and payments to acute care hospitals for Medicare FFS beneficiaries served by NCQA-recognized PCMHs declined relative to those served by practices lacking NCQA PCMH recognition. This article shows the PCMH model has potential to reduce health care utilization and the cost of care.

Family Physician Shortage

Dill MJ, Pankow S, Erikson C, Shipman S. Survey shows consumers open to a greater role for physician assistants and nurse practitioners. *Health Aff* (Millwood). 2013;32(6):1135-1142.

The authors report that consumers, particularly those under the age of 35, are willing to see medical professionals other than a family physician if it will allow them to get an appointment sooner. With physician shortages, waits to see a doctor can take days or weeks. In this study, the authors found that those who had previously seen a nurse practitioner (NP) or physician assistant (PA) were more likely to agree to see one again, rather than wait to see their primary care physician. Even those without prior experience with NPs or PAs responded 48% of the time that they would see an NP or PA if they could see them sooner than their physician. Younger adults were significantly more likely to have had previous exposure to NPs and PAs. Lowest income groups were most likely to see an NP or PA, whereas those with Medicare plus Medigap were least likely. Those who prefer to see an NP or PA often cited lower cost, easier to get an appointment quickly, and greater accessibility as their reasons. Ultimately, as whole, health care consumers are open to seeing NPs and PAs.

Finnegan SC, Cheng N, Bazemore AW, Rankin JL, Petterson SM. The changing landscape of primary care HPSAs and the influence on practice location. *Am Fam Physician.* 2014;89(9). http://www.aafp.org/afp/2014/0501/od1.html. Accessed March 21, 2016.

In this Robert Graham Center's policy one-pager, Finnegan et al. found that, as a whole, those in health care professional shortage areas (HPSA) experienced a 2.4% decrease in practicing physicians in the area. However, they also experienced a residing population decrease of 8.6% from 2008 to 2013. The number of health care professionals practicing in areas experiencing shortages is remaining relatively flat while the population declines. These new numbers may add to a list of reasons why previous studies have found current incentives to be insufficient to drive physicians to practice in HPSAs.

McCarthy M. US production of new primary care doctors falls far short of need, study finds. *BMJ.* 2013;346:f4018.

McCarthy finds that one of the problems with primary care physician shortages is that less than 25% of doctors coming out of U.S. training programs are going into primary care (office and hospital based). Currently, approximately 30% of practicing physicians are in primary care, which is short of the 40% goal set by the Counsel on Graduation Medical Education. The primary care physician shortage is likely being underestimated. Further, the current medical schools are not producing enough primary care physicians, particularly those who practice in underserved areas.

Park J., Jones K. Use of hospitalists and office-based primary care physicians' productivity. *J Gen Intern Med.* 2015;30(5):572-581.

Based on the findings in this study, some of the pressure on primary care physicians due to the shortage can be alleviated with the extensive use of hospitalists. The authors found that approximately 9% of primary care physicians are hospitalists. This number is likely to increase, and their role will likely become more important as hospitals utilize them to reduce unnecessary hospitalizations and enhance care transitions. However, there is some question as to whether the growing hospitalist group is cannibalizing the other primary care specialties. Based on the numbers in this study, there is cautious optimism that hospitalists may at least relieve the current burden of work on primary care physicians.

Petterson SM, Liaw WR, Tran C, Bazemore AW. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med.* 2015;13(2):107-114.

In the article authored by staff from the Robert Graham Center, it is reported that more than 44,000 primary care physicians will be needed by 2035, but the current rates of retirement and emerging new physicians will result in a shortage of at least 33,000 primary care physicians. The authors conclude that residency changes are required, including the number of programs offered. In order to offer more primary care residencies, it will impact funding and recruiting tactics. This article estimates that primary care residencies will need to increase by 21% compared to their current numbers. Further, redistribution of the workforce may be needed in order to offer smaller patient-to-physician ratios.

Search is on for primary care providers. *Manag Care.* 2014;23(10):13.

The article reported that of all the organizations doing physician searches in the study, the number one search was for family medicine. Internal medicine ranked third with pediatrics ranking sixth. The top provider searches in the study were for nurse practitioners, family medicine physicians, and physician assistants. More and more open searches are being unfilled due to the primary care shortage. The high number of NPs and PAs that are being sought further backs up the primary care physician shortage.

Barriers Facing Family Medicine

Brilleman SL, Gravelle H, Hollinghurst S, Purdy S, Salisbury C, Windmeijer F. Keep it simple? Predicting primary health care costs with clinical morbidity measures. *J Health Econ.* 2014;35:109-122.

The authors examined payment model fit and payment equity of a traditional primary care capitation system that adjusts payments by age and gender. They compared that system to payment systems that incorporate a measure of morbidity based on diagnosis and severity. A few different morbidity categorization systems were explored. The authors found a better model fit when including morbidity or with morbidity alone than when using age and gender alone. The authors concluded that capitation models need to include morbidity as a payment system determinant. However, these models open the door for more instances of patient selectivity on the part of the provider, as well as an incentive to up code for higher reimbursement. Simple capitation systems that adjust for age and gender are not adequate. However, we need clear controls for manipulating the system, especially when it comes to conditions that tend to be underpaid according to the models they developed, which include asthma, obesity, and hypertension.

Fifield J, Forrest DD, Martin-Peele M, et al. A randomized, controlled trial of implementing the patient-centered medical home model in solo and small practices. *J Gen Intern Med.* 2013;28(6):770-777.

In this randomized control trial, the authors tested the effectiveness of providing external supports, including practice redesign, care management, and revised payment. They compared that to no support in transitioning to PCMH among solo and small (2-10) providers in primary care practices over two years. The authors found that irrespective of size, practices can make rapid and sustained transition to a PCMH when provided external supports, including practice redesign, care management, and payment reform. Without such supports, change is slow and limited in scope.

Landon BE. Structuring payments to patient-centered medical homes. *JAMA.* 2014;312(16):1633-1634.

In the editorial, Landon argued that enhanced models of primary care delivery greatly affect the way primary care physicians practice and are also reimbursed. The author claims that practices are expected to change to provide enhanced services that optimize patient experiences and health. This change in care delivery requires a fundamental shift in the way primary care practices are reimbursed for their services. Landon presents an ideal payment model under this new system that includes reimbursement for non-visit based services (including telephone and email exchanges), the addition of staff for care management, support for visit based care, and allows for non-visit based care. Finally, the new payment system should promote the reductions of wasteful services and the use of recommended services. Landon contends that these payment incentives could encourage primary care physicians to engage and manage their patients' health care costs, health outcomes, and care experiences.

Marstolf GR, Kandrack R, Gabby RA, Friedberg MW. Cost of transformation among primary care practices participating in a medical home pilot. *J Gen Intern Med.* 2015;[Epub ahead of print]. http://link.springer.com/article/10.1007%2Fs11606-015-3553-6. Accessed March 21, 2016.

In the article, the authors attempted to estimate the costs of transformation incurred by primary care practices participating in a medical home pilot in Pennsylvania. Through interviews with practice leaders to identify what changes were made to transform to a PCMH, the authors estimated the costs of additional personnel and other investments associated with the changes. The study found that practices incurred median one-time transformation-associated costs of $30,991 per practice. Median ongoing yearly costs associated with transformation were $147,573 per practice. Care management activities accounted for over 60% of practices' transformation-associated costs. Per-clinician and per-patient transformation costs were greater for small and independent practices than for large and system-affiliated practices. The authors concluded that the costs of medical home transformation vary widely, creating potential financial challenges for primary care practices, especially those that are small and independent. Tailored subsidies from payers may help practices make these investments.

Patel MS, Arron MJ, Sinsky TA, et al. Estimating the staffing infrastructure for a patient-centered medical home. *Am J Manag Care.* 2013;19(6):509-16.

Patel et al evaluated the roles of personnel within a PCMH and attempted to propose staffing ratios and associated costs to implement the PCMH model. The authors sampled primary care practices that either successfully deployed or were in the process of implementing a PCMH practice model. The researchers interviewed administrators from these practices and reviewed published literature on the personnel roles within a PCMH practice. The authors found that primary care practices that successfully transitioned to a PCMH model incorporated new staff and functionalities. Based on their findings, they estimate that 4.25 full-time equivalents (FTEs) should be allocated to staffing personnel per one physician. This article suggests that additional staff and training is necessary to implement a PCMH successfully.

Ullrich FA, MacKinney AC, Mueller KJ. Are primary care practices ready to become patient-centered medical homes? *J Rural Health.* 2013;29(2):180-187.

In the study, the authors used the 2008 Health Tracking Physician Survey to compare PCMH readiness scores among metropolitan and non-metropolitan primary care practices. They used the NCQA assessment system as a framework to assess the PCMH capabilities of primary care practices based on their services, processes, and policies. The authors found little difference between urban and rural practices. At the time of this study, approximately 41% of all primary care practices offered minimal or no PCMH services. The authors concluded that achieving the designation of PCMH in small rural practices may require additional national promotion, technical assistance, and financial incentives.

Whitebird RR, Solberg LI, Margolis KL, Asche SE, Trangle MA, Wineman AP. Barriers to improving primary care of depression: perspectives of medical group leaders. *Qual Health Res.* 2013;23(6):805-814.

Whitebird et al interviewed physicians and administrative leaders of medical groups to learn what is preventing organizations from implementing changes to improve care of patients with depression. The identified barriers to improving care included: external contextual factors (reimbursement, scarce resources, and access to communication with mental health specialists), individual attitudes (physician and patient resistance), and internal care process barriers (organizational and condition complexity, difficulty standardizing and measuring care). The authors concluded that treatment of depression by primary care physicians is underperformed and hampered by an inadequate compensation system and poor coordination of care across providers. Primary care could help ease the burden of treating depression on the health system if better methods were in place for coordinating care and adequately compensating for the entire case rather than the single services.

Addressing the Problems Facing Family Physicians

Basu S, Phillips RS, Bitton A, Song Z, Landon BE. Medicare chronic care management payments and financial returns to primary care practices: a modeling study. *Ann Intern Med.* 2015;163(8):580-588.

The authors analyzed the cost of care management in a primary care practices. The authors identified simulated Medicare chronic care management (CCM) fees in a scenario where half of the patients eligible for care management consented to the care (assuming 20 minutes per month of service). The authors found the average practice could make about $80,000 for hiring a full-time registered nurse as a care manager and $90,000 for a licensed practical nurse. The authors concluded that care management fees could be a viable revenue source if a full-time care manager can be hired.

Edwards ST, Landon BE. Medicare's chronic care management payment—payment reform for primary care. *N Engl J Med.* 2014;371(22):2049-2051.

In the paper, Edward and Landon addressed the promise of CCM fees as a way to improve reimbursement under FFS systems. The authors highlight the following potential problems with CCM, including coinsurance, ability to pay, and patient consent may lead to biased patient selection; smaller practices might not have the resources to pursue opportunities; there are currently unclear guidelines for care plan implementation; specialists can also provide and apply for CCM payments on the same patients as primary care physicians; and there are no clear incentives to provide high-quality care. This article shows that there are a lot of issues to consider when discussing payment reform, and any strong stance on an alternative payment model may need to be reserved.

Graetz I, Reed M, Shortell SM, Rundall TG, Bellows J, Hsu J. The next step towards making use meaningful: electronic information exchange and care coordination across clinicians and delivery sites. *Med Care.* 2014;52(12):1037-1041.

In the article, Graetz et al examined the association between electronic health record (EHR) use and clinician perceptions of care coordination for patients transferred across clinicians and delivery sites. The authors surveyed primary care clinicians during an EHR integration in a large integrated primary care setting. The goal of the survey was to measure the association between EHR use stages (no use, outpatient EHR only, and integrated inpatient-outpatient EHR) and care coordination. The authors found that use of an outpatient EHR was significantly correlated with complete and timely transition of information between physicians. The use of an integrated outpatient-inpatient EHR was associated with complete and timely transfer of information between sites, as well as agreements between physicians at each site with regard to patients' goals and plans. This article shows that managed care across practices requires transfer of information and interoperability between physicians at each site.

Mold, JW, Lawler F, Schauf KJ, Aspy CB. Does patient assessment of the quality of the primary care they receive predict subsequent outcomes?: An Oklahoma Physicians Resource/Research Network (OKPRN) study. *J Am Board Fam Med.* 2012;25(4):e1-e12.

In the study, Mold et al analyzed data from a cohort of older patients to determine whether the patients' baseline assessments of the quality of the primary care they received was associated with subsequent changes in health-related quality of life and/or survival. The authors found that older patients' level of satisfaction with the quality of their primary care may not be a good surrogate measure of effectiveness. The study shows that patient satisfaction scores should not be relied on as measures of clinical effectiveness.

Morton S, Shih SC, Winther CH, Tinoco A, Kessler RS, Scholle SH. Health IT–enabled care coordination: a national survey of patient-centered medical home clinicians. *Ann Fam Med.* 2015;13(3): 250-256.

In the article, the authors surveyed physician-owned and hospital/health system-affiliated primary care practices that achieved patient-centered medical home recognition and participated in the meaningful use program, and community health clinics with patient-centered medical home recognition (most with certified EHR systems). The authors found that the most important tasks performed for coordinating care management were the ones that were the least likely to be supported by or performed through EHR, including referrals and hospital admission/discharge. Survey respondents also reported that physicians often wait on reports coming back from referred physicians, rather than reminders and follow-ups prompted by internal EHR. The authors concluded that team cohesion is needed for making the best use of the EHR, but coordinating care outside the practice means that one is often working with those who are not part of the practice team. EHRs need improvement to help support the transfer of information between practices. The article warns that the lack of EHR interoperability can undermine effective care management.

Nguyen OK, Kruger J, Greysen SR, Lyndon A, Goldman LE. Understanding how to improve collaboration between hospitals and primary care in postdischarge care transitions: a qualitative study of primary care leaders' perspectives. *J Hosp Med.* 2014;9(11):700-706.

Nguyen et al surveyed primary care leaders to analyze barriers and issues in hospitals collaborating with primary care practices for post-discharge transitions. Their conclusions pointed to a lack of financial incentives as hospitals save the most by avoiding readmissions, but are reluctant to share in the savings; competing priorities and too high of an expectation for primary care to coordinate all ongoing care management; and there is currently inadequate sharing of patient information across systems. The authors concluded there is room for improvement with collaboration, but hospitals need to see the advantage of using primary care providers and incentivize them.

Ornstein SM, Nemeth LS, Nietert P, Jenkins RG, Wessell AM, Litvin CB. Learning from primary care meaningful use exemplars. *J Am Board Fam Med.* 2015;28(3):360-370.

In the article, Ornstein et al discussed meaningful use of EHRs, quality improvement (QI) initiatives, and clinical quality measures (CQM). From their examination, the authors found that EHR use is not correlated with high performance. They also concluded that improvement strategies for CQMs seem to be happening regardless of EHR use. Regarding QI measures, the largest benefit is from reminders provided by EHRs. The authors also found that the only technology that correlated with improved CQM is registry use. The article showed that the use of EHRs is not a magic bullet that will improve care. Specific functions can help with QI, but the majority of QI in medical practices is independent of EHR use. The authors concluded that there needs to be a push for clinical registries both for population health and for improving clinical outcomes, especially with chronic care.