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**Paying for the Primary Care Function:  
Where We've Been and the Way Forward**

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Policy Studies in Family Medicine and Primary Care



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## **Abstract**

Both the Declaration of Alma Ata and work of Dr. Barbara Starfield highlighted the moral underpinnings and evidence of primary care for a highly functioning healthcare system. By contrast, the U.S. demonstrates a shortage of primary care providers and a surplus of specialists, perhaps explaining why we have fallen short of the Triple Aim. A payment system rooted in fee-for-service has perpetuated a healthcare system that diminishes the role of primary care, and favors volume over value. Fortunately, the ACA and MACRA offer an opportunity to advance value-based payment models that reinforce the primary care function, and help the U.S. attain the Triple Aim. This paper reviewed how primary care is paid for in the U.S. healthcare system, and developed a taxonomy of key payment models. Further, we highlighted significant examples and studies of each payment model, reflecting upon how each may advance or inhibit the primary care function.

Based on the evidence, no payment models emerged as clearly superior, given inconsistent or preliminary results of each model on the Triple Aim or primary care function. The available evidence and theoretical reasoning behind each payment model informed novel recommendations for better understanding effective primary care payment in the post-MACRA era, including a) increasing proportions of financial investment in primary care and social services, b) providing prospective payments intended to help practices invest in primary care infrastructure, c) risk-adjusting at both patient- and community- levels, d) researching appropriate amounts of care management fees to pay for adaptive teams at the clinic- and



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community- levels, e) incorporating two-sided risk while investigating appropriate levels of nominal risk required in MACRA.

Evaluating novel payment models in the post-MACRA era will entail a paradigm shift in measurement, including a) researching meaningful and validated risk-adjustment tools at patient- and community- levels, b) shifting quality measures towards patient- and community- centered outcomes and the ability to uphold the 4 pillars of primary care, c) ensuring longer study periods to allow changes in payment and delivery models to permeate, d) imagining new data platforms to capture these information in real-time. We believe these changes will advance primary care in the U.S., and deliver value-based payment that matters to patients and communities.



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## **Introduction**

In 1978, at the International Conference on Primary Health Care held in Alma Ata, then-director-general of the World Health Organization, Dr. Halfdan Mahler, declared health as a fundamental human right, and urgently called upon the global community to improve health by positioning primary care at the foundation of healthcare<sup>1</sup>. The Declaration reinforced the philosophical significance and moral underpinnings of the role of primary care in a highly functioning and just healthcare system. Nearly a quarter century later, Dr. Barbara Starfield provided the evidence to support what so many at Alma Ata had already intuited: that the overall health of a population is correlated with the strength of its primary care system<sup>2</sup>. Further, she found that countries whose healthcare systems are organized around a strong and stable primary care foundation produced higher quality of care, increased access, and ultimately, improved health outcomes for less healthcare expenditures<sup>3</sup>. Dr. Starfield's research also found that a strong primary care foundation has been associated with better outcomes for psychosocially complex patients<sup>4</sup>.

Taken together, Dr. Starfield's body of work lends insight into why the U.S. healthcare has fallen short of the Triple Aim<sup>5,6,7,8,9</sup>. The U.S. has experienced a shortage of primary care providers and a surplus of specialists<sup>10</sup>, and in the context of an aging population and growth in the number of people seeking care after the passage of the Affordable Care Act, further stress will be placed on the primary care system, with a projected shortage of 33,000 primary care physicians by 2035<sup>11</sup>. Subsequently, despite spending more money per capita on healthcare than any other country around the world<sup>12</sup>, the U.S. population leads shorter lives in poorer health<sup>13</sup>,



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and the country has not yet developed effective and widespread systems to improve population health or to prevent disease<sup>14,15</sup>. The U.S. healthcare system's failure to attain the Triple Aim has supported Dr. Starfield's findings, with its poor outcomes at least partly attributed to a healthcare climate that undervalues primary care.

### *Volume Over Value*

One of the central factors contributing to the U.S. primary care crisis is a dysfunctional payment system for healthcare services that perpetuates the diminishing role of primary care. Traditionally, the U.S. healthcare system has relied heavily upon a fee-for-service (FFS) payment system that incentivizes procedures and specialty care, and underpays for preventive services and primary care. FFS financially incentivizes the care for sick patients and overreliance on procedures, leading to episodic and fragmented medical care, while providing minimal incentives for the prevention of illness, avoidance of unnecessary care, and promotion of a well population. FFS has led to a payment system driven by volume rather than value<sup>16</sup>. At the intersection of U.S. healthcare delivery and payment, the episodic and procedure-based nature of FFS has obstructed the primary care function to promote the 4 Cs of first contact, continuity, comprehensiveness, coordination<sup>17</sup>, and thus, the country's ability to attain the Triple Aim.

Fortunately, the focus of healthcare is shifting from volume to value. In an attempt to fortify primary care, explore payment alternatives to the FFS model, and ultimately improve the Triple Aim outcomes, the Patient Protection and Affordable Care Act (PPACA or ACA) was signed into law in 2010. The ACA included several provisions aimed at supporting primary care, including expanding primary care residency slots, advancing the principles of the patient-



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centered medical home (PCMH), supporting the development of accountable care organizations (ACOs), and temporarily increasing Medicare and Medicaid reimbursements<sup>18</sup>. The ACA also helped establish the Center for Medicare and Medicaid Innovation (CMMI) to conduct demonstrations and initiate pilot projects testing alternate payment systems to FFS, including the Comprehensive Primary Care Initiative (CPCI) and Multi-Payer Advanced Primary Care Practice (MAPCP) demonstration projects<sup>19</sup>. Though the ACA as legislation largely represented insurance reform, symbolically, it represented a cultural shift towards the acknowledgment of the significance of laying a foundation of primary care and value-based payment structures, and thus, the need for continued delivery and payment reform.

### *The Post-MACRA Era*

Over 5 years later, the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015 passed with significant and bipartisan Congressional support, signifying an ongoing recognition of the need for rewarding value over volume. Permanently repealing Medicare's sustainable growth rate (SGR) formula for calculating Medicare reimbursements, MACRA also replaced SGR with a two-track payment system that aims to accelerate a transition from a volume-based FFS model, to a value-based payment system.

Under MACRA, from 2016 through 2019, Medicare provider payments will increase incrementally and cumulatively by 0.5 percent annually. By the end of 2019, however, these annual payments will stop, and providers will instead enter one of two tracks: the alternative payment model (APM) or the Merit-Based Incentive Payment System (MIPS) (**Figure 1**).



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Providers qualified to enter this track must meet one of the following MACRA definitions of an APM:

- A Center for Medicare & Medicaid Innovation (CMMI) participant
- A Medicare Shared Savings Program accountable care organization (ACO)
- A Medicare Health Care Quality Demonstration Program
- Another demonstration program required by federal law

Providers qualifying as an APM must then meet all of the following eligibility criteria:

- Monitors quality measures comparable to those in the MIPS track,
- Uses certified EHR technology,
- Requires participants to bear more than nominal financial risk **OR** operate as a medical home under the CMMI, and
- Has increasing percentage of payments linked to value through Medicare or all-payer APMs.

The specifics of the last criteria, in which providers in the APM track must demonstrate that a certain percentage of their payments are received through a qualified, eligible APM through MACRA, are detailed below.

Year	Eligibility
2019 and 2020	<ul style="list-style-type: none"><li>• <math>\geq 25\%</math> of total Medicare revenue is from a qualified, eligible APM</li></ul>
2021 and 2022	<ul style="list-style-type: none"><li>• <math>\geq 50\%</math> of total Medicare revenue <b>OR</b></li><li>• <math>\geq 25\%</math> of total Medicare revenue and 50% of all-payer revenue (e.g., Medicaid, private insurers) is from a qualified, eligible APM</li></ul>
2023 and beyond	<ul style="list-style-type: none"><li>• <math>\geq 75\%</math> of total Medicare revenue <b>OR</b></li><li>• <math>\geq 25\%</math> of total Medicare revenue and 75% of all-payer revenue is from a qualified, eligible APM</li></ul>





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Providers who meet all of the above criteria will be eligible to enter the APM track. Under this track, providers will receive an annual bonus, paid in lump sum equal to 5 percent of the prior year’s expenditures, from 2019 to 2024. Starting in 2026, APM provider payments will increase incrementally by 0.75 percent each year for APM participants. The APM group will be exempt from MIPS’s requirements.

The other track, MIPS, will be available in 2019 to providers not participating in APM. MIPS is an enhanced FFS model that aims to more tightly link payments with quality. MIPS will consolidate three existing quality reporting programs in Medicare – the Physician Quality Reporting System (PQRS), the value-based payment modifier (VBPM), and meaningful use – into a single process. MIPS will assess providers in the below 4 weighted categories, and generate a composite score of 0-100 to calculate payment adjustments:

- Quality (30%) – PQRS measures
- Resource Use (30%) – such as cost measures
- Meaningful Use of Certified EHR Technology (25%)
- Clinical Practice Improvement Activities (15%) – such as access, coordination, population management, and patient satisfaction

Based on this composite score, providers will receive an increased (i.e., upside risk), decreased (i.e., downside risk), or unchanged payment adjustment on each claim in the following year. Exceptionally high performing providers will be eligible for maximum adjustments, as well, calculated at up to three times the maximum baseline payment adjustment. The payment adjustments are outlined below.

	2019	2020	2021	2022 and beyond
Baseline	+/- 4%	+/- 5%	+/- 7%	+/- 9%



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payment adjustment				
Maximum payment adjustment for high performers	+ 12%	+ 15%	+ 21%	+27%

Furthermore, MACRA opens up an opportunity to develop more alternative payment models in the future, establishing the Physician Focused Payment Model (PFPM) Technical Advisory Committee (TAC) to both encourage and evaluate new APM options available to providers. Stakeholders will be able to submit proposals for new APMs to be tested to the TAC, who will subsequently make recommendations to the Secretary of Health and Human Services.

Though the majority of physicians will initially enroll into MIPS, one of the overarching aims of MACRA will be to assist providers toward the value-based payments represented by the APM track. As MACRA drives the U.S. healthcare system towards a more comprehensive, value-based payment system, primary care has a unique window to align delivery and payment reform in order to place a greater emphasis on primary care. Moving away from episodic, service-based payment creates opportunities to receive payments for team-based services longitudinally promotes health. Payment reform that shifts towards primary care and a value-based system could better invest in a primary care infrastructure that may enable, for example, better alignment of primary care with public health within an ACO, more seamless integration of behavioral health partners in clinical care, and the advancement of patient- and family-centered interventions in the medical home. These investments away from volume-based payment may serve to improve population health within our patient communities and provide increased value



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of care—to enable the primary care functions of continuity, comprehensiveness, and coordination.

Therefore, aligning delivery and payment reform demands finding a way to effectively pay for the primary care function; paying for primary care in the post-ACA age of MACRA will depend upon quickly and accurately measuring its function within newer, emerging alternative payment and delivery models. Preliminary investigations of the impact of several APM demonstration projects are already underway – such as the CPCI, MAPCP, and multiple ACO models – and the creation of the PFFM Technical Advisory Committee from MACRA will likely invite even greater numbers of new delivery and payment models, and their evaluations.

### *The Primary Care Paradox*

The primary care community will play a critical role in advocating for the appropriate set of metrics within these studies. MACRA has designated that providers in the APM track provide quality metrics “comparable” yet not identical to those under MIPS. This criterion offers an opportunity for primary care providers to navigate through what has previously been coined as the “primary care paradox<sup>20</sup>.” This paradox refers to research that demonstrates that when measured at the level of individual diseases, primary care physicians provide poorer quality care than do specialists (including for diabetes, congestive heart failure, depression)<sup>21,22,23,24,25,26</sup>, yet primary care is associated with greater value at the level of the whole person<sup>27,28</sup>, as well as lower costs<sup>3</sup>, improved health outcomes and quality<sup>3</sup>, and greater equity<sup>4</sup> at the level of populations. In regards to payment, the primary care paradox cautions against the perils of measurement as healthcare systems shift to paying for value: focused principally on measures at



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the disease level, as most healthcare systems currently are, we risk continuing to undervalue the primary care function while overemphasizing specialty care.

The primary care paradox points to the value of primary care with both the whole person through the maintenance of patient-centered care and the 4 Cs of primary care, as well as with population health through the complex ecological impacts of public health initiatives. These positive effects of primary care are believed to be largely due to the core tenets of primary care, which include the following<sup>15,29</sup>:

- Accessibility as the first contact with the health care system (contact),
- Accountability for addressing a vast majority of personal health care needs (comprehensiveness),
- Coordination of care across settings, and integration of care for acute and (often comorbid) chronic illnesses, mental health, and prevention, guiding access to more narrowly focused care when needed (coordination),
- Sustained partnership and personal relationships over time with patients known in the context of family and community (continuity).

In spite of widespread agreement on the core tenets of primary care, metrics directly measuring these principles are rarely used to gauge the success or failure of healthcare<sup>30</sup>. This can be explained by the tension illustrated by the primary care paradox in regards to measurement in healthcare: establishing a set of metrics that are broad enough to capture primary care's core tenets and the impacts of public health on upstream determinants veers too closely towards a measurement morass; avoiding this complexity in favor of finite, intermediate outcomes or indicators focused on the disease level further tips the scales of the primary care paradox in favor of specialty care<sup>31</sup>. Therefore, confronted with the primary care paradox, we must also avoid the measurement morass, and develop metrics that are simultaneously



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parsimonious in number, yet expansive in scope to capture the primary care function. In this way, a renewed focus on implementing a measurement paradigm that captures the tenets of primary care and the health of the whole person, communities, and entire populations is a major healthcare system priority, one with significant implications for the role and payment of primary care during the implementation of MACRA, and beyond.

The moral underpinnings of primary care articulated during Alma Ata and by Barbara Starfield continue to resonate in our post-ACA and MACRA era. Today, primary care is faced with the challenge of constructing payment and delivery systems that advance primary care, but also, accurately measure its function within the U.S. healthcare system. In this report, we will discuss the existing evidence in paying for primary care, in order to inform the development of effective payment of the primary care function, and achieve the Triple Aim. Based on these findings, we will provide policy and research recommendations for payment reform that would best advance the primary care function.

## **Paying for Primary Care Today**

### ***Primary Care Expenditures***

In total, healthcare expenditure in the U.S. in 2014 increased by 5.3 percent from the previous year, and was estimated to be \$3.0 trillion, representing 17.5 percent of the country's gross domestic product (GDP)<sup>32</sup>. Based on total healthcare expenditures for Medicare beneficiaries, it is estimated that primary care visits account for approximately 6 to 7 percent of that spending, with the percentage likely lower for the rest of the population<sup>33</sup>. By that estimate, at most, about \$210 million of the country's \$3.0 billion healthcare expenditures are invested



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into primary care (or 1.2 percent of the country's GDP). The amount of healthcare expenditures spent on primary care is disproportionate to the number of visits conducted by primary care providers, which amount to 54.6 percent of all healthcare visits, the largest across all medical specialties<sup>34</sup>. By comparison, experts have recommended doubling primary care financing to 10 to 12 percent of healthcare expenditures<sup>35</sup>. In 2009, Rhode Island's Office of the Health Insurance Commissioner, a state agency with regulatory authority over commercial health insurers, instituted a policy to increase the proportion of primary care and medical home spending. Over the span of 5 years, the proportion of primary care spending from state healthcare expenditure increased from 5.9 percent to 10.9 percent. In that time, primary care spending increased by \$18 million, while total healthcare expenditures decreased by \$115 million<sup>36</sup>.

### ***Key Payment Models: An Overview***

#### *Fee for service*

Under FFS, a provider is paid a separate, pre-determined amount for each individual service rendered. Consequently, there is a low level of financial risk to the provider, and a relatively higher risk at the payer level. Within Medicare FFS, a resource-based relative value scale (RBRVS) has been used to calculate payments, a system that has been criticized for disproportionately weighting specialist care and procedures over primary care services<sup>37</sup>. While the general consensus is that FFS is a flawed system, it may have a role for services that are low-cost and under-utilized<sup>38</sup>, such as vaccines in communities with low rates of immunizations. The disadvantage of FFS is that because there are no incentives to limit the amount of services



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provided or the quality of care provided, it rewards volume of care, without regard for containing costs or improving population health.

*Traditional (or full-risk) capitation / Global payments*

Starting in the 1980s, in response to the growing concerns of rising healthcare costs from the volume-based FFS model, managed care and health maintenance organizations (HMOs) emerged to facilitate better coordination of care and decrease utilization of costly subspecialty care<sup>39</sup>. HMOs further aimed to control costs via a capitation model of payment<sup>27</sup>. Traditional capitation (or full-risk capitation, global payments) refers to a prospective model in which a provider (or group of coordinated providers) are paid a single, pre-determined payment intended to cover all of the services for a patient within a specific period of time. Traditional capitation is subsequently sometimes referred to as full-risk capitation, as providers inherit full risk of their (and their group's) financial performance. In contrast to FFS, capitation incentivizes the underutilization of services, and if provided to a group of providers, can encourage coordination amongst specialties to streamline costs.

The disadvantage of capitation, however, is that it does not adjust for the medical or psychosocial complexity of patients, as payments are equal for all patients. Moreover, the underutilization of services may be harmful for patients, in cases in which withholding care is medically inappropriate. On the spectrum of financial risk, capitation subsequently falls on the opposite end of FFS, with higher risk conferred to the provider, and smaller risk to the payer. In this way, traditional capitation may limit the primary care function of access by incentivizing the avoidance of patients with multiple comorbidities (termed “cherrypicking”), along with the risk



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of limiting the comprehensiveness of primary care by financially rewarding under-utilization of health interventions that may be medically appropriate<sup>27</sup>.

Capitated models have gained increasing popularity recently, more often appearing in blended payment (i.e., the combination of multiple payment models) and in a risk-adjustment form as comprehensive care payment; these models will be discussed further in future sections. For the sake of outlining key payment models, our discussion will draw a distinction between traditional capitation, and those with risk-adjustment payments or included within blended components.

#### *Pay-for-performance (P4P)*

In the early 2000s, following the fall of HMOs, the pendulum swung away from traditional capitation, though not entirely back to FFS. The IOM's 2001 report, *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century*, criticized the fragmentation and poor quality of the U.S. healthcare system<sup>40</sup>, helping give rise to pay-for-performance (P4P). P4P often supplements an underlying payment model within a blended payment system, and is most often a bonus payment on top of FFS. P4P encompasses a wide array of approaches, but refers fundamentally to payment based on the achievement of an objective, quantitative, predetermined level of performance (e.g., A1c, age-appropriate cancer screening, development of quality improvement projects) or improvement in performance (e.g., increasing numbers of patients at-goal for A1c) for a quality measure.

The intended advantage for P4P is to directly incentivize high quality and cost-effective care. If P4P practices include metrics gauging the 4 Cs (e.g., monitoring percentage of patients'





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visits with their PCP), it has the potential to positively influence the primary function.

Furthermore, by rewarding improvement trends in quality (as opposed to attaining a level of performance), P4P can account for variation in quality across providers and patient populations, and provide incentives for both high- and low-performing practices<sup>41</sup>. P4P does not, however, address the disadvantages of the underlying payment system (e.g., FFS, capitation). Other criticisms against P4P are that it may not motivate providers who are already performing above targeted levels, and that financial incentives alone may not encourage providers to change behaviors on a systems level<sup>42</sup>.

From a primary care standpoint, P4P may present specific shortcomings to advancing the primary care tenets. First, like capitation, P4P may also lead to the avoidance of patients with complex needs for whom quality metrics may be more difficult to attain, thereby limiting access to a subgroup of patients<sup>43</sup>. Second, P4P may inhibit the care management efforts, as it does not provide upfront payment to invest in medical home services, which may be financially challenging for lower resourced or smaller practices. Third, in light of findings that satisfying all of the USPSTF recommendations would require 7.4 hours per working day<sup>44</sup>, P4P may only be as successful as the ease of attaining a quality metric. Metrics that are too time-consuming to deliver (e.g., depression screening during a complicated new patient encounter) or too vague to define (e.g., completing a “biopsychosocial assessment”) may discourage providers from engaging in improving quality of care<sup>45</sup>. Similarly, focusing on measured metrics has led to the degradation in performance of other quality indicators that are not incentivized, limiting the comprehensive responsibility required by primary care providers to prioritize more urgent health



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outcomes<sup>46</sup>. This point underlines that a majority of a primary care practice and scope cannot be measured<sup>47</sup>, and in fact, may encourage future research to monitor upstream determinants (e.g., food insecurity, housing instability, adverse childhood events) that may influence a wider array of downstream outcomes and indicators (e.g., depression, A1c, blood pressure) in primary care.

### *Potential payment models in the post-MACRA era*

The enactment of the ACA in 2010 and MACRA in 2015 have accelerated the movement towards implementing and evaluating a variety of new value-based, alternative payment models. There are several variations of APMs, currently implemented at varying stages. These APMs may aim to pay providers based on quality and cost containment, incentivize preventive measures, and hold providers accountable across an organization to deliver coordinated patient care<sup>48</sup>. We will highlight 3 of the primary value-based payment models that are currently emphasized with the potential to influence how primary care is paid for in the post-MACRA era, with the caveat that these models often appear within blended payment; in fact, most often, these models have been blended with a FFS model. Though many of these models are represented within a wide array of blended payment models, they will be represented individually here to better understand their respective components, advantages, and disadvantages.

- *Bundled payment / Episode-of-care payment*

Under a bundled payment model, a group of providers are reimbursed a negotiated, predetermined amount for all services rendered for a given episode of care. One example is the traditional payment method for labor and delivery, where a delivering provider is reimbursed a set fee for providing a collection of obstetrical services during pregnancy. This episodic model of



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payment is similar to the diagnosis-related groups (DRGs), with the exception that a group of providers can be reimbursed under bundled payment. Payments may be either prospective or retrospective, and provider groups profit from cost savings. Bundled payment models may be optimal for high-cost, low-frequency conditions or episodes, such as hip fractures and deliveries<sup>49</sup>.

Because reimbursements for an episode of care are “bundled” for multiple providers, efficiency (i.e., limiting unnecessary services) and coordinated care are incentivized. Efforts are subsequently made to decrease complications of care and readmissions. There are benefits conferred to the payer, as well, as fees are predictable, and provider groups work to save money. One major criticism against bundled payment systems, from a primary care perspective, rests in the difficulty of defining episodes of care; though bundled payments are more intuitive for procedures, it is difficult to define episodes for chronic conditions. Furthermore, though costs may be saved within episodes, providers have a financial incentive to increase volumes of individual episodes to increase income, similar to FFS. Because financial incentives are predicated partly upon savings, there may be a disincentive to provide access to care for more complex patient populations, as well. Though the ethos of primary care may be supported within bundled payment to prevent readmissions, it does not provide upfront payment to invest in services that may effectively address readmission risk, such as care coordination or pharmaceutical management. Finally, long-term, bundled payment is only financially sustainable if providers are able to ultimately deliver cost savings.

- *Shared savings*



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Shared savings has been mostly widely implemented within the Medicare Shared Savings Program (MSSP), established by section 3022 of the ACA, as part of the ACO model of care delivery. With shared savings, cost-saving targets are estimated based on payments made over a period of time (as opposed to an episode, in bundled payment), most often one year. This estimate becomes a benchmark for future years under the shared savings model. Similar to bundled payment, profits from shared savings derive from staying below the benchmark, with savings distributed across a group of providers based on quality measures and outcomes. Consequently, depending on the agreement with payers, there is a relatively higher level of financial risk to the provider, though not as high as traditional capitation models. Given this, payers may be more willing to adopt this model. Also, since the shared savings model links payment to savings and outcomes, efficiency and quality of care are incentivized. Finally, as benchmarks are often calculated from payments from previous time periods, practices caring for complex patient populations may not be as harshly penalized as other models (e.g., traditional capitation), as initial benchmarks would likely be higher for these groups.

From a primary care perspective, however, a few concerns arise about this model. First, due to the payment lag from distributing cost savings retrospectively at the end of the year, it is difficult for small or struggling primary care practices to invest in a relatively unpredictable model that is financially predicated on the possibility of cost savings at the end of one year<sup>50</sup>. Second, shared savings may blunt primary care transformation, as practices may not see enough savings at the end of the year to cover investments made in care management. Third, given cost



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saving targets are estimated from prior payments, it can reward high spenders over efficient ones, and conversely, penalize already high-performing practices.

- *Comprehensive care payment (risk- or condition- adjusted capitation)*

Often referred to as “risk-adjusted” or “condition-adjusted” capitation, like traditional capitation, under comprehensive care payment, providers receive a single, prospective payment intended to cover all of the services for a patient within a specific period of time. Unlike traditional capitation, however, comprehensive care payments are risk-adjusted based on the health or complexity of the patients cared for by the provider. For example, providers with higher proportions of patients with multiple comorbidities or poorly controlled diabetes would receive higher payments. These adjustments relieve some of the high financial risk to providers seen in traditional capitation, transferring part of the risk to payers<sup>51</sup>, though providers continue to maintain financial accountability by considering which services are necessary.

With the increasing interest in and implementation of PCMHs, the use of comprehensive primary care payment, a form of comprehensive care payment, has become more widespread. Due to the increased staffing and practice transformation required for effective medical home certification – such as care coordination across teams, use of electronic medical records, and longer clinic hours for access – additional payments are needed to support the upfront costs of investing in PCMH services. These prospective payments help pay for the construction of a primary care infrastructure and support for medical home activities by providing a fixed fee for each clinic patient over a set period of time, risk-adjusted for patient panel complexity.

Comprehensive primary care payment also aims to provide sufficient funds for individual



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practices to adapt to the needs of their patient communities. Due to the risk-adjustment of comprehensive care payment, the model has a role for patients where conditions occur more frequently than necessary, such as complications from chronic illnesses<sup>52</sup>.

There are several advantages of comprehensive care payment for primary care. First, as a prospective payment model, it aims to remove volume from the payment equation, and rewards value-based care. Second, the prospective payments are particularly favorable for advancing the PCMH, allowing practices flexibility in planning for and investing upfront in comprehensive services that can enhance the primary care function, such as hiring care coordinators and expanding office hours, without worrying if cost saving targets will be attained at the end of the year. These PCMH services intend to enhance the 4 Cs. Third, it is an inclusive model of payment, as risk-adjustments seek to protect practices from avoiding medically- and psychosocially-complex populations, thereby supporting the primary care tenet of accessibility for all patient groups. Finally, because comprehensive care payments are fixed, this model may be easy for payers to implement once risk-adjustments are calculated.

Nonetheless, a few disadvantages exist. First, providers and practices are at risk for operating costs if they exceed the total comprehensive care payment. Second, though the principles underlying comprehensive payments are appealing to primary care providers, it may present barriers for extending into the larger healthcare system, where PCMHs are not widely used. Third, it necessitates the development of validated risk-adjustment tools in order to calculate appropriate comprehensive care payments; over- and under-estimates risk unnecessary payments and insufficient funds for PCMH implementation, respectively. Developing these tools



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may confer upfront time and financial investments for payers. Furthermore, though risk-adjustment tools have demonstrated validity and consistency across large health plans (e.g., Medicare Advantage), there are ongoing concerns regarding the validity of current risk-adjustment tools at the individual practice level<sup>53</sup>. Fourth, like traditional capitation, the capitated nature of comprehensive care payment confers risk of underutilization of services. Finally, though comprehensive primary care payment may enhance primary services delivered within the walls of the medical home, it does not yet consider determinants of health outside of it. Future evolutions of this payment model may consider aligning investments in primary care with mental health and social services. Similarly, though risk-adjustments account for patient complexity on an individual level, community-weighted adjustments based on factors influencing wellness on a community level may provide medical homes further financial support to develop interventions that involve upstream determinants and outreach for patients not yet connected to primary care in “coldspots”<sup>54</sup>.

- *Care management fees*

Similar to comprehensive care payments, care management (also referred to as care coordination or case management) fees were created in response to concerns regarding the rise of chronic conditions. The most prominent example of care management fees is per-member-per-month (PMPM), in which a smaller, capitated fee is provided for medical homes monthly for each patient served by the practice. Unlike comprehensive care payments, care management fees are intended to financially cover only medical home components that occur outside of a traditional office visit, particularly activities that facilitate appropriate care across the healthcare



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system. In response to its broad interpretation, the AAFP developed the following 7 elements for care management<sup>55</sup>:

1. Nonphysician staff time dedicated to care management
2. Patient education
3. Use of advanced technology to support care management
4. Physician time dedicated to care management
5. Medication management
6. Population risk stratification and management
7. Integrated, coordinated care across the health care system

Though the CMS recommends that care management fees should total approximately \$42 PMPM<sup>56</sup>, in reality, these payments have ranged widely, from \$0.60 to \$444 PMPM<sup>57</sup>. These fees may also be risk-adjusted to diminish the risk of avoiding more complex patient populations.

In practice, care management fees are a component of a blended payment model, often retaining an underlying FFS system to pay for medical services. The reasoning behind combining care management fees and FFS outlines core principles of the theoretical advantage of blended payment models. First, blended payment can help mitigate the shortcomings of each individual payment model. In the case of care management fees, by adding a traditional capitation component to FFS, the incentives within each to under- and over-utilize services, respectively, are somewhat balanced by the presence of the other model. Second, it may be easier for both payers and providers to transition to a blended payment model that retains components of the predominant FFS system, rather than creating an entirely new payment structure. By maintaining systems that are already in place and adding smaller components, a blended payment model with FFS may have a higher chance of implementation and widespread adoption.

Due to the PCMH-orientation and capitated nature of care management fees, this





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payment model is subject to the same advantages and disadvantages of comprehensive care payments. Because it is often implemented alongside FFS, however, there is one additional consideration: the underlying FFS model helps protect against underutilization of care seen in capitation, but because the PMPMs supporting PCMH services are often significantly smaller than FFS income<sup>58</sup>, care management fees are at greater risk of perpetuating volume-based care.

### *Direct primary care*

In response to the failings of the FFS system, several disruptive innovations in primary care payment reform have emerged to circumvent the volume-based care and costly overhead associated with fee-for-service, and attempt to re-organize both the delivery and payment of healthcare to enable the primary care function. Foremost in this movement is the direct primary care (DPC) model. In DPC, consumers pay directly to the provider for services, without the need for third-party billing. Patients are charged a fixed, age-adjusted monthly fee to receive comprehensive primary care, independent of preexisting medical conditions<sup>59</sup>. Varied common ancillary services are generally provided as part of the monthly fee, including on-site lab tests, x-rays, and electrocardiograms.

The DPC payment model aims to enable the primary care tenets. By removing the need for volume to cover overhead costs, DPC providers are able to invest revenue into primary care services, and schedule longer office visits to build and sustain relationships with patients<sup>60</sup>. Decreased volume of care has also led to more time for access via e-mail and telephone communications<sup>61</sup>. DPC providers have also touted that they have had more time to provide comprehensive and coordinated care, with increased visit lengths (typically 30 to 60 minutes per



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visit) supporting delivery of recommended preventive services, performance of in-office procedures, and coordinating phone calls to specialists<sup>62</sup>.

Numerous concerns have emerged about the DPC model, however. First, DPC covers only outpatient services, and is not itself inclusive of comprehensive care for the inpatient setting, or coordination of care amongst specialists in the hospital. As such, given the insurance mandate under the ACA, patients are still required to buy insurance, often done through wrap-around or catastrophic plans, and this could lead to the potential of high cost sharing<sup>63</sup>. Like PMPM fees, its primary care focus makes widespread use of the DPC model unlikely across a healthcare system, which may hinder coordination of care across specialties. Second, DPC may in fact limit access for some patients, particularly communities of low socioeconomic status who cannot afford the monthly fee. Though some DPC models, such as Qliance, has contracted with Medicaid to ensure services are provided to lower income patients<sup>64</sup>, it remains to be seen whether the majority of DPC practices can be financially sustained by or make an effort towards providing affordable care for socioeconomically disadvantaged groups. Similarly, there are broader concerns about downstream impacts DPC could have on primary care, as panel sizes decrease to approximately one-fifth that of an average non-DPC provider, which could further compound the primary care shortage<sup>65</sup>.

### ***Key Payment Models: An Overview of the Evidence***

#### *Traditional capitation*

Though managed care failed to attain widespread traction due to criticisms from the primary care community due to its gatekeeper components and hindering of clinical autonomy<sup>66</sup>,



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over the years, its traditional capitation model has demonstrated overall positive cost and quality effects. In one literature review, traditional capitation was associated with decreased costs of care<sup>67</sup>, decreased rates of hospitalization<sup>68</sup>, decreased ambulatory testing (EKGs, chest x-rays)<sup>69</sup>, improved quality of ambulatory care<sup>70</sup>, without significant differences in access<sup>71</sup> or patient-reported experiences of care<sup>72</sup>, when compared against FFS models. These findings align with the motives behind capitated models to incentivize lower volumes of care.

The WellMed Medical Group represents a system of predominantly primary care providers who operate under a full-risk capitation model. Starting in 1990, WellMed provides primary care to exclusively Medicare Advantage patients across 4 states. In addition to paying for primary care services, capitated fees have also been invested in several PCMH services, including free transportation, health coaches (or care coordinators), EHR with quality improvement and registry functions, same-day appointments, community organization partnerships, and 24/7 web access for patients<sup>73</sup>. Hospital costs are not included within WellMed's capitated fee. Very similar to the philosophy behind comprehensive primary care payment (of course, without the risk adjustment), this capitated approach has allowed WellMed to invest more fully in a primary care infrastructure through building teams, decrease panel size, and use electronic data for quality improvement.

Overall, WellMed has produced mixed outcomes. Though results were not tested for statistical significance, WellMed demonstrated notable improvements from the study period of 2000 to 2008 for rates of age-appropriate mammography and colonoscopy testing, as well as guideline compliance for blood pressure and diabetes<sup>74</sup>. Mortality, notably, remained at half of



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the state age-specific rate, though this was not improved over the course of the WellMed study period<sup>75</sup>. Rates for all-cause crude death, ED visits, hospitalizations, and readmissions were noted to remain unchanged, if not increased<sup>76</sup>.

The WellMed evaluation does not evaluate or address concerns of the incentive to underutilize services in a fully capitated system. Furthermore, given concerns about the financial risk involved in caring for more complex patient groups under traditional capitation, it is unclear from these studies if capitated fees would be appropriate for the full-spectrum of care provided in primary care (as opposed to the Medicare population seen by the WellMed group). Though a capitated model itself may not limit access, it is uncertain how access to care for other age groups in WellMed's surrounding community may have been impacted by restricting their care to a Medicare-insured group.

#### *P4P*

As one of the older payment models in the post-FFS and post-capitation era, several studies have examined the impact of P4P on a number of outcomes. Overall, the evidence supporting P4P has been mixed, with inconsistent impacts of the model on quality of care<sup>77,78,79</sup>. Two systematic reviews conducted by the Cochrane Review<sup>80,81</sup>, as well as the Medicare Physician Group Practice (PGP) Demonstration (a Medicare demonstration project implementing value-based payment, including P4P, into practices), found mixed results in regards to P4P's effect on care quality, healthcare costs, and health outcomes<sup>82</sup>. Even in some individual studies demonstrating positive impacts on quality and patient outcomes initially during the study period,



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over time, these benefits stagnated, if not regressed to pre-intervention baselines<sup>83,84</sup>.

Researchers have also called for improved quality of studies examining P4P<sup>85</sup>.

Authors of these studies have proposed a number of factors that may explain the shortcomings of the P4P model, several of which have significant implications for primary care. First, though P4P is structured to improve quality of care, this approach may be too narrow in its scope. Much of the quality metrics used, for example, represent process measures, such as receiving an indicated lab test or medication, rather than the outcomes of care<sup>86</sup>. For this reason, P4P may not directly affect health outcomes of populations. Moreover, focusing largely on disease-oriented measures may also perpetuate the primary care paradox, and represent a missed opportunity to more comprehensively evaluate the effects of P4P in primary care, as well. As a response to P4P, critics have called for incentivizing patient-centered care through evaluating patient-focused outcomes and quality of life, in order to account for the multimorbidity and ecology of patients' lives are better accounted for<sup>87</sup>. Second, researchers have questioned whether payments provide adequate incentives for physicians to change their behaviors<sup>88,89</sup>. Even in the United Kingdom, where P4P reimbursements have been significantly higher than those in the U.S., quality metrics have not consistently improved<sup>90</sup>. These findings have also led many to speculate whether ceiling effects of many quality outcomes ultimately limit the gains of a P4P model<sup>91</sup>, which may provide further support for the monitoring of patient-centered outcomes in payment reform. Third, P4P itself does not provide upfront payments to facilitate primary care practice transformation and delivery reform. In fact, in the PGP demonstration project, all of the participating organizations were large multispecialty group practices that



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already had care management capabilities in place, and still did not yield significant improvements in quality or healthcare expenditures<sup>92</sup>.

#### *Potential payment models in the post-MACRA era*

- *Bundled payment / Episode-of-care payment*

In a 2010 report on bundled payment, the RAND Corporation found an overall lack of literature examining the impact of bundled payment<sup>93</sup>. Of the available studies, results consistently demonstrated a decrease in healthcare expenditures, though the vast majority of these findings were from hospitals applying Medicare bundled payments for hospitalizations and post-acute care involving coronary artery bypass grafts (CABGs). Bundled payments did not consistently demonstrate improvements in health outcomes measures, including in post-operative complications and mortality. Furthermore, the authors noted that no studies looked at the impact of bundled payment on the patient experience.

Since the RAND report, two large efforts study bundled payments have been implemented. The first is the Provider payment Reform for Outcomes, Margins, Evidence, Transparency, Hassle-reduction, Excellence, Understandability and Sustainability (PROMETHEUS) model, a Robert Wood Johnson Foundation funded payment project, started in 2006. PROMETHEUS aimed to calculate a bundled payment for a clinical episode by accounting for the evidence-based recommendations for a given condition, to enhance quality and decrease costs of care. Bundled payments were calculated as an evidence-informed case rate (ECR), using claims data to account for regional variations, minimum level of service for care, margin for potentially avoidable complications (PACs), and a profit margin for the provider.



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ECRs were calculated for common conditions treated across care systems, including chronic medical conditions (e.g., congestive heart failure, COPD), acute medical conditions (e.g., acute myocardial infarction, pneumonia), and inpatient procedures (e.g., CABG, knee replacements).

PROMETHEUS was conceptually appealing, with one early study estimating a 14% reduction in healthcare expenditures in relation to PACs alone for hip and knee replacements<sup>94</sup>. In practice, however, the model proved to be extremely challenging to implement, with one study examining 3 pilot sites finding that over the span of 3 years, none of the sites had implemented ECRs due to the complexity of the model<sup>95</sup>. Two of the sites focused on ECRs for chronic medical conditions, as this category is most representative of primary care practices and has demonstrated more common and costly avoidable complications<sup>96</sup>. Unfortunately, bundled payments for chronic medical conditions were reported to be much more difficult to implement, given the increasing number of providers and more complex clinical pathways often involved in treating these illnesses<sup>97</sup>. Concerns and uncertainties surrounding how financial risk would be shared across providers and payers were also cited as major barriers to implementation<sup>98</sup>. Cost, quality, and health outcomes were not available in this pilot study, as no sites were able to implement the PROMETHEUS model.

The other large initiative, CMMI's Bundled Payments for Care Improvement (BPCI), launched nationally in 2013. BPCI offered 48 episodes of care representing hospital admission diagnoses, 7 of which were non-surgical, acute and chronic conditions often treated by primary care providers, such as pneumonia, COPD, and urinary tract infections. BPCI sites participate in 1 of 4 models, but only Model 4 used a traditional prospective, bundled payment (which was



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risk-adjusted); the other 3 models contain retrospective and FFS aspects. Under Model 4, all hospital services were paid for, as well as related readmissions up to 30 days post-discharge. Based on preliminary results released by CMMI over the first 15 months of implementation, there were no significant differences between BPCI and non-BPCI hospitals in Model 4 for quality and costs<sup>99</sup>. Across all models, only Model 2 (which bundled inpatient care and post-acute care services 90 days after discharge for a given episode of care; CMS provided retrospective payments based on a pre-determined, risk-adjusted bundled amount) demonstrated significant improvements, with decreases in overall costs and SNF spending<sup>100,101,102</sup>. No significant changes in quality or other expenditures were demonstrated.

The available results and experiences from PROMETHEUS and BPCI lend insights into how bundled payment would affect the primary care function. First, not surprisingly, due to the episodic nature of bundled payment, these studies disproportionately underrepresented the chronic conditions typically seen in a primary care setting. Bundled payment may be misaligned with the primary care value of comprehensiveness that addresses the multimorbidity and social determinants that compose patients' health. Second, though bundled payments aim to limit post-procedure or post-admission complications, by nature, they are reactive to the occurrence of a negative health outcome (e.g., a surgical procedure, an acute or chronic illness), as opposed to proactively preventing these outcomes from ever developing. Within BPCI, primary care providers are relegated to post-acute care, and minimizing complications following discharge. In fact, as currently constituted, primary care providers would be financially incentivized for increasing admissions (i.e., episodes of care). Third, given preliminary results thus far have been





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mixed and have not monitored patient-centered outcomes, further attention could be given toward these aspects in future studies of BPCI and other bundled payment efforts.

- *Shared savings*

Due to its recent implementation following the passage of the ASA, relatively little evidence is available for the impact of shared savings. The most significant data examining shared savings are the preliminary results of the MSSP, two years into the demonstration project. Of 330 participating ACOs, only 3 participated in a two-sided risk track, in which they were subjected to both “upside risk” (i.e., receiving shared savings payments by spending below baseline benchmarks) and “downside risk” (i.e., financial responsibility by providers when spending above baseline benchmarks). To minimize financial risk and attract participating ACOs, the MSSP allowed groups to start on a one-sided risk track of only upside risk.

In all, 86 (26 percent of participating ACOs) received shared savings payments at the end of the second fiscal year of the program, and 2 of them in the two-sided risk track (66 percent of participating ACOs with two-sided risk)<sup>103</sup>. Together, these ACOs shared a modest total of \$341 million in shared savings payments; over the two-year span of the program, the MSSP total savings equaled 0.1 percent of total Medicare spending. The most influential factor contributing to ACOs spending below benchmarks were the baseline benchmarks themselves; that is, ACOs that did and did not receive shared savings spent similar amounts per beneficiary, but those receiving cost savings tended to have higher baseline benchmarks<sup>104</sup>. Overall, participating ACOs improved on 27 of 33 quality metrics including screening for tobacco use and hypertension, use of electronic health records, and patients’ ratings of their providers<sup>105</sup>. Similar



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to findings seen under P4P, there were no significant correlations between quality performance and cost savings in the MSSP<sup>106</sup>. The MSSP is collecting patient-centered outcomes by way of patients' ratings of their providers and reported Health Status/Functional Status<sup>107</sup>. Interestingly, the preliminary data demonstrate a significant inverse relationship between these outcomes and cost savings<sup>108</sup>.

A few notable characteristics separated ACOs spending below benchmarks and receiving shared savings payments. First, ACOs that had participated in MSSP longer were more likely to spend below set benchmarks and receive shared savings (35% of ACOs joining MSSP in 2012 vs. 18% of those joining in 2014), and they received nearly 28% more in payments (\$329 per beneficiary vs. \$238). Second, ACOs receiving payments were also more likely to be physician-based than hospital-based, suggesting that a shared savings model would be wise to anchor itself around a primary care orientation and PCMHs, as opposed to one centered on inpatient care. In fact, physician-based ACOs with federally qualified health centers (FQHCs) or rural health clinics (RHCs) were even more likely to receive shared savings payments<sup>109</sup>. Third, as mentioned previously, the disincentive of overspending added through downside risk led to higher proportions of cost-saving ACOs, albeit, for a very small sample size.

As the MSSP continues, there are several areas warranting further examination from a primary care perspective. First, efforts to better understand the role of and implement provider-based ACOs over hospital-based ones may advance the primary care function within shared savings models in the future. Second, in light of preliminary results suggesting the cost savings of a two-sided risk track, we must consider ways for providers and ACOs to be willing to take on



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the upfront downside risk for the potential of cost savings later on. Further, by implementing improved, faster data feedback systems that help provider groups predict risk, as well as understand characteristics of successful ACOs, could help mitigate the risk presented by a two-sided risk track. Potential solutions may be to enhance the use of EHRs in clinical settings to gather pertinent data for evaluating shared savings, implementing more forgiving baseline benchmarks initially to decrease downside risk, and decreasing costs of primary care services and interventions that advance the primary care function<sup>110</sup>.

- *Comprehensive care payment*

Kaiser Permanente has long employed a comprehensive care payment model across their entire health system, with significant improvements in rates of smoking, blood pressure control, blood glucose control, and cholesterol control<sup>111</sup>. Hospitalization rates for coronary heart disease, STEMI, and strokes have also decreased, as well as heart disease mortality rates<sup>112</sup>. Despite their success, Kaiser Permanente has been criticized for its high premiums, with some estimates calculating its cost to be the highest in the Los Angeles region<sup>113</sup>. In the post-ACA era of the individual mandate, expensive premiums may run counter to the primary care tenet and PCMH tenets of access for all patients.

Fortunately, the comprehensive care payment model offers possible synergy with primary care. The emergence of PCMHs has facilitated the growth of various payment models that intend to support and pay for medical home services, and thereby, enhance the primary care function. Goroll et al. introduced the concept of comprehensive primary care payments, in which payments purchased not medical services, but rather, features that advanced the effectiveness of



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primary care via an “advanced medical home,” with a multidisciplinary team, care coordination, quality metrics reporting, and highly functioning EHRs<sup>114</sup>. Thus, rather than calculating capitated payments based on RBRVS (as typified by other prospective payments), this group suggested that comprehensive primary care payment represent the investment costs for a medical home. Authors recommended that 15-25% of the payment be linked to quality metrics, delivery of evidence-based practice, and health outcomes, in order to minimize underutilization, as seen with traditional capitation<sup>115</sup>. In keeping with the comprehensive care payment model, these reimbursements are risk-adjusted to prevent disincentivizing treating sicker patients, as well.

This conceptual model was realized through Iora Health. Rather than charging copays or payments based on RVUs, Iora health receives a fixed, risk-adjusted fee per patient<sup>116</sup>. Ten percent of these fees are invested in primary care services, doubling the 4 to 5 percent spent on primary care by the U.S. healthcare system<sup>117</sup>. In addition, Iora implements P4P payments for attaining quality benchmarks, in order to prevent inappropriate underutilization of services<sup>118</sup>. These increased investments in primary care enable Iora Health to re-design their delivery model, such as increasing access through same-day appointments and 24/7 telephone availability, comprehensiveness through a personal health coach and on-site behavioral health, and continuity by utilizing regular telephone or e-mail check-ins<sup>119</sup>. Furthermore, the group developed a separate EHR to enhance quality monitoring and performance feedback. Iora has contracted this prospective model with self-insured employers, unions, and insurance companies, including Medicare Advantage<sup>120</sup>. To date, data on Iora Health have been limited, but demonstrated increased patient satisfaction with their provider, improvements in blood pressure and A1c, and a



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12.3% decrease in healthcare expenditures attributed to a 48% reduction in ER visits and 41% reduction in inpatient admissions<sup>121</sup>.

Comprehensive care payment, when adapted specifically into comprehensive primary care payment, holds significant potential to advance the primary care function. Because the payment model was built around a delivery model with primary care principles at its core, comprehensive primary care payment can help incentivize services that deliver the 4 C's. Questions remain, however, about the start-up feasibility and sustainability of the model, given the relative lack of literature available. Similarly, because Iora has been implemented at individual clinic levels, its scalability – both to larger healthcare systems and inpatient services – is uncertain. Furthermore, it is unclear how Iora Health reconciles the financial risk to providers if operating costs exceed the received comprehensive care payment. Finally, the model highlights the general need for ongoing research in validated risk-adjustment calculators, as well as metrics to better gauge patient-centered metrics and effectiveness of interventions aiming to follow through on a primary care tenet.

- *Care management fees*

Early studies of individual sites implementing care management fees demonstrated promise to deliver on the primary care function and positive outcomes. Established in 1998, Community Care of North Carolina (CCNC) was unique for its partnership with Medicaid, as well as its creation of a community network outside of the clinic walls, nurturing relationships with local public health departments and mental health agencies<sup>122</sup>. Supplementing FFS with a \$3.00 PMPM per network for extra staffing (medical directors, pharmacists, care managers) and



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a \$2.50 PMPM per provider for medical home and population health activities, CCNC was estimated to save the state about \$284 million to \$314 million over 1 year<sup>123</sup>. Multiple health outcomes and healthcare utilization metrics improved under CCNC, including inpatient admissions; emergency department use; A1c, blood pressure, and LDL control for patients with diabetes (though statistical significance was not measured).

Enthusiasm for the potential of care management fees to improve healthcare outcomes through advancing primary care and the PCMH spurred the creation of 2 large, Medicare practice demonstration: CPCI and MAPCP. CPCI is a 4 year, multi-payer study to support collaborations between primary care providers and both public and private healthcare payers. Started in 2013, CPCI provided a care management fee of \$20 PMPM, in addition to FFS. In 2015, the care management fee decreased to \$15 PMPM, but implemented shared savings for practices that had invested the initial higher PMPM in a manner that demonstrated improved quality and decreased costs. On top of financial support, CPCI also provides learning activities to assist in practice transformation, as well as quarterly data feedback in regards to cost and quality. A major focus of the program has been to focus care management efforts to higher-risk patients. Practices largely had flexibility in regards to what care management services would be implemented with the PMPM fees.

Preliminary results for the first year of CPCI – encompassing 496 primary care practices, nearly 2,500 providers, and over 2.5 million patients in 7 different states, have been mixed<sup>124</sup>. Across all sites, expenditures (without accounting for care management fees) decreased 2 percent, hospitalizations decreased 2 percent, specialty care visits decreased 2 percent, and ED visits



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decreased 3 percent, all statistically significant when compared with non-CPCI beneficiaries in similar practices<sup>125</sup>. After accounting for care management fees, CPCI expenditures were found to be nearly cost neutral. Unplanned 30-day readmission rates also decreased by 4 percent, though this was not statistically significant. Quality of care measures, including multiple diabetes measures, was not significantly improved<sup>126</sup>.

CPCI is monitoring a number of metrics that may gauge the primary care function. Percentage of visits at assigned primary care practice (continuity) was monitored, though not significantly improved compared to comparator groups; following-up within 72 hours after hospital discharge (coordination) attained the CPCI goal of 75 percent; 99 percent of CPCI practices implemented 24/7 access (via EHR and/or telephone; contact)<sup>127</sup>.

Meanwhile, the MAPCP demonstration project started in 2011, and is studying existing multi-payer reform initiatives across 8 states that represent “advanced” PCMHs. In all 8 states, both Medicaid and private health plans are participating. In contrast to CPCI, the states themselves are administering the initiatives, rather than CMS. When participating states applied to the MAPCP, their proposals were required to budget within a Medicare care management fee of \$10 to provide care coordination, patient education, and increased access for patients. Additionally, states were asked to coordinate with community organizations and health promotion initiatives. Within these requirements, however, each state had the flexibility to cater these advanced PCMH services specifically to their respective patient populations. Each of the 8 states prioritized the expansion of medical home services, particularly multidisciplinary care, care coordinators, EHRs, and the use of statewide technical assistance for program



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implementation (e.g., practice coaches, learning collaboratives).

Preliminary results at the 12-month mark are available for MAPCP. This demonstration project has involved approximately 700 primary care practices, over 3,800 providers, and about 400,000 beneficiaries<sup>128</sup>. From a payment perspective, significant heterogeneity exists amongst the MAPCP group. Payments have ranged from \$1.20 PMPM to \$58.50 PMPM (after risk-adjustment) amongst the MAPCP cohort, though overall, state PMPM payments have been similar for the majority of patients<sup>129</sup>. Various characteristics have contributed to these disparate payments, including adjustments for practice characteristics, patient characteristics, and P4P benchmarks. Given the multi-payer model used in MAPCP, payers have accounted for varying proportions of clinic payments across all 8 states.

Preliminary results in regards to outcomes for MAPCP have been mixed. Net savings throughout MAPCP totaled approximately 4.2 million dollars<sup>130</sup>. Only 2 of the 8 MACPC states, Vermont and Michigan, reduced the rate of Medicare FFS healthcare expenditures, largely through decreasing hospital admissions<sup>131</sup>. Only 1 state, Minnesota, reduced healthcare utilization via decreasing ED visits, though this effect was also attributed to concurrent state pilot activities<sup>132</sup>. MAPCP is gathering data on several other categories, including quality of care, patient safety, health outcomes; notably, they are focusing on primary care tenets of access and coordination, as well as patient-centered outcomes, such as mortality, self-reported health status, and experience with care. Authors of this preliminary data reported that data sharing – in spite of the fact that all MAPCP sites had EHR capabilities – and patient engagement were two observed barriers to successful program implementation. They also acknowledged that given full practice





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and payment transformation take time, positive effects may occur at later study intervals.

Though not exclusive to Vermont and Michigan – the 2 states demonstrating positive effects on healthcare expenditures in MAPCP’s first year – there are some shared characteristics that lend insight into their programs’ successes. First, both states were relatively on the lower end of PMPM payments (\$1.20 to \$2.39 PMPM in Vermont, \$2.00 to \$6.50 PMPM in Michigan)<sup>133</sup>. Given cost savings were calculated through reductions in Medicare FFS payments, as opposed to total Medicare expenditures including PMPM payments, it is unclear whether lower PMPM payments contributed to improved costs of care. Second, both states heavily emphasized care coordination with linkages to community resources (through Community Health Teams in Vermont, and Care Management Resource Center in Michigan). In light of this finding, the potential for community and social services to have more immediate impacts on costs of care could be an area for future investigation.

#### *Direct primary care*

Direct primary care has become increasingly popular in recent years, with the number of providers implementing the model jumping from 146 in 2005, to 4,400 in 2015<sup>134</sup>. Quantitative analysis examining the effects of DPC is relatively scarce, given its relatively recent emergence. Still, the preliminary results have been largely supportive of the benefits of the model. One of the largest studies to date evaluated 5 clinics within MD-Value in Prevention (MDVIP), a DPC group with practices in 43 states and Washington, D.C. Comparing MDVIP members against non-members, members were 62% less likely to be hospitalized than their non-member counterparts<sup>135</sup>. Furthermore, patients enrolled in MDVIP experienced decreased readmission



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rates by 97%, 95%, and 91% for acute myocardial infarction, congestive heart failure, and pneumonia, respectively<sup>136</sup>. MDVIP also led to decreased healthcare expenditures, with an annual cost savings estimated to be \$119.4 million<sup>137</sup>.

Other studies have examined the effects of Qliance, a Seattle-based clinic network that is recognized as one of the primary early-adopters of the DPC model. Qliance patients demonstrated 35% fewer hospitalizations, 65% fewer emergency department visits, and 66% fewer specialist visits when compared with non-Qliance groups<sup>138</sup>. Conversely, the number of primary care visits increased from an average of 2 per year, to 4 per year<sup>139</sup>. According to a press release distributed by the group, Qliance has saved 19.6% per patient per year, amounting to \$679,000 per 1,000 Qliance patients<sup>140</sup>. The group also scored in the 95<sup>th</sup> percentile on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey, a patient evaluation of healthcare experiences<sup>141</sup>

In light of reports that nearly 10 percent of providers are either working in or planning on transition to a DPC model – and an additional 43 percent contemplating a transition<sup>142</sup> – more rigorous research will be needed to monitor the outcomes of this model. Though DPC philosophically was developed to enhance the primary care function, a specific area of concern is DPC's potential impact on patient access, given decreasing panel sizes and the impending primary care provider shortage. The model's impact on health inequities is also important to monitor, to ensure the model's monthly fees are not regressive against communities of lower socioeconomic status. Furthermore, though the longer visit times may facilitate comprehensive care within the outpatient setting, because DPC does not itself reimburse for inpatient care, it



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may not support physicians providing comprehensive hospital-based obstetrical, surgical, or procedural (e.g., colonoscopies, sigmoidoscopies) services in their scope of practice.

### **The Way Forward: Paying for the Primary Care Function in the Post-MACRA Era**

1. The Vision for Effective Primary Care Payment (i.e., what would it look like if primary care were paid for effectively?)
  - a. The payment model enables and incentivizes the 4 Cs
  - b. The payment accounts for complexity and community-level factors
    - i. Support team-based care across a community to address ecology of patients' lives
  - c. Outputs: leads to improved Triple Aim, improved patient-centered outcomes
2. Recommendations for Fulfilling the Vision of Effective Primary Care Payment
  - a. Invest more in primary care
    - i. Phillips & Bazemore: currently pay 5-6% of healthcare expenditures to primary care; recommend 10-12% of healthcare expenditures
    - ii. Rhode Island: increased from 6% to 11% in primary care expenditures; spent \$18 million on primary care, saved \$115 million
  - b. Invest more in broad definition of primary care to include social services
    - i. Bradley et al.: social-to-health services ratio off in the U.S.
  - c. Advocate for APMs that encourage comprehensive primary care payment
    - i. Zulvekas: 95% of office visits paid via FFS



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- ii. Comprehensive payment represents best opportunity to eliminate FFS, invest upfront/predictably in primary care infrastructure (prospective), discourage volume of services/episodes (capitation), inclusive (risk-adjustment), support data-enabled teams that connect to social services
  - 1. Goroll et al.: 15-25% may need to be tied to quality metrics to guard against under-utilization of capitated model
- d. Risk-adjust at patient- and community- levels to ensure complex patients/communities receive primary care
  - i. New Zealand as example
  - ii. Means developing data infrastructure to monitor community vital signs, researching validated risk-adjustment tools, anticipating concerns that community risk-adjustment perpetuates health disparities
- e. Pay for team-based care through the community
  - i. Paradigm shift away from paying for services provided by provider, and towards value provided by teams
  - ii. Aligning payment for behavioral health, public health, and social services to improve population health (not services benefitting individual health)
- f. Advocate for reasonable “nominal” risk in MACRA
  - i. Downside risk has shown preliminary benefit (over upside risk) → how much risk can providers take without jeopardizing their practice?
  - ii. Miller: recommends nominal risk in APM track at MIPS levels



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- g. Advocate for quality metrics that matter to patients when developing “comparable” metrics to MIPS in MACRA
  - i. Indicators: delivering 4Cs of primary care
  - ii. Outputs by which success is judged: population health, patient-centered outcomes/values
  - iii. Mindful of study intervals (PCMH demonstration project showed benefits could take 3-5 years)
  - iv. Potential traps: avoid measurement morass; develop data infrastructure to support these measures and ones that are readily available to teams; who pays to develop/implement this data infrastructure?
- h. Understand that MACRA is an evolutionary step towards a necessary payment revolution
  - i. Need to help practices enroll into MIPS, then become APMs
  - ii. FFS-blended payments may be necessary intermediary step
  - iii. Cannot disenfranchise the primary care community writ large
- i. Leverage this MACRA evolutionary step strategically (think about opportunities, grey areas to address/advocate for)
  - i. If MACRA is a step forward, we can’t leave our primary care colleagues behind
  - ii. Minimizing administrative burdens on practices (to meet MIPS/APM criteria, monitoring quality metrics)



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- iii. Monitor that percentage of increasing APM-based payments in APM track is feasible (is it ramping up too aggressively?)
- iv. Encourage MACRA TAC to be proactive collaborators, not reactive bureaucrats
- v. Mindful that plurality of options necessary during evolutionary steps (one size does not fit all)

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<sup>1</sup> World Health Organization (1978). Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6-12. September 1978.

<sup>2</sup> Starfield, B., Shi, L., Macinko, J. (2005). Contribution of primary care to health systems and health. *Milbank Quarterly*, 83(3), 457-502.

<sup>3</sup> Starfield, B., Shi, L. (2002). Policy relevant determinants of health: an international perspective. *Health Policy*, 60, 202-221.

<sup>4</sup> Shi, L., Macinko, J., Starfield, B., Politzer, R., & Xu, J. (2009). Primary care, race, and mortality in U.S. states. *Health Policy: Crisis and Reform in the US Health Care Delivery System: Crisis and Reform in the US Health Care Delivery System*, 185.

<sup>5</sup> Organization for Economic Co-operation and Development (2012). OECD Health Data 2012: How Does the United States Compare? The Organization for Economic Co-operation and Development. Paris, France. Accessed on March 4, 2016, at: <http://www.oecd.org/unitedstates/BriefingNoteUSA2012.pdf>.

<sup>6</sup> Berwick, D. M., Hackbarth, A. D. (2012). Eliminating Waste in U.S. Health Care. *Journal of the American Medical Association*, 307(14): 1513-1516.

<sup>7</sup> Mossialos, E., Wenzl, M., Osborn, R., & Anderson, C. (2015). International profiles of health care systems, 2014. *New York, NY: The Commonwealth Fund*.



## STARFIELD SUMMIT

...where primary care research inspires policy and practice

- 
- <sup>8</sup> Woolf, S. H., & Aron, L. (Eds.). (2013). *US Health in International Perspective: Shorter Lives, Poorer Health*. National Academies Press.
- <sup>9</sup> The Institute of Medicine (2013). *U.S. health in international perspective: Shorter lives, poorer health*. Washington, DC: The National Academies Press.
- <sup>10</sup> Zerehi, M. R. (2008). *How is a Shortage of Primary Care Physicians Affecting the Quality and Cost of Medical Care?: A Comprehensive Evidence Review*. American College of Physicians.
- <sup>11</sup> Petterson, S. M., Liaw, W. R., Tran, C., & Bazemore, A. W. (2015). Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *The Annals of Family Medicine*, 13(2), 107-114.
- <sup>12</sup> Organization for Economic Co-operation and Development (2012). *OECD Health Data 2012: How Does the United States Compare? The Organization for Economic Co-operation and Development*. Paris, France. Accessed on March 2, 2016, at: <http://www.oecd.org/unitedstates/BriefingNoteUSA2012.pdf>.
- <sup>13</sup> The Institute of Medicine (2013). *U.S. health in international perspective: Shorter lives, poorer health*. Washington, DC: The National Academies Press.
- <sup>14</sup> Woolf SH, Aron LY. The US health disadvantage relative to other high-income countries: Findings from a National Research Council/ Institute of Medicine report. *JAMA*. 2013;309(8):771-772.
- <sup>15</sup> Phillips RL Jr, Bazemore AW. Primary care and why it matters for US health system reform. *Health Aff (Millwood)*. 2010;29(5):806-810.
- <sup>16</sup> World Health Organization (WHO). *Health System Financing*. Geneva: WHO; 2010. p. 72-5.
- <sup>17</sup> Stange, K. C. (2011). Barbara Starfield: Passage of the pathfinder of primary care. *The Annals of Family Medicine*, 9(4), 292-296.
- <sup>18</sup> Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).
- <sup>19</sup> Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).
- <sup>20</sup> Stange, K. C., & Ferrer, R. L. (2009). The paradox of primary care. *The Annals of Family Medicine*, 7(4), 293-299.
- <sup>21</sup> Tseng, F. Y., & Lai, M. S. (2006). Effects of physician specialty on use of antidiabetes drugs, process and outcomes of diabetes care in a medical center. *Journal of the Formosan Medical Association*, 105(10), 821-831.
- <sup>22</sup> Pugh, M. J. V., Anderson, J., Pogach, L. M., & Berlowitz, D. R. (2003). Differential adoption of pharmacotherapy recommendations for type 2 diabetes by generalists and specialists. *Medical care research and review*, 60(2), 178-200.
- <sup>23</sup> McAlister, F. A., Majumdar, S. R., Eurich, D. T., & Johnson, J. A. (2007). The effect of specialist care within the first year on subsequent outcomes in 24 232 adults with new-onset diabetes mellitus: population-based cohort study. *Quality and Safety in Health Care*, 16(1), 6-11.
- <sup>24</sup> Chin, M. H., Zhang, J. X., & Merrell, K. (2000). Specialty differences in the care of older patients with diabetes. *Medical care*, 38(2), 131-140.
- <sup>25</sup> Foody, J. M., Rathore, S. S., Wang, Y., Herrin, J., Masoudi, F. A., Havranek, E. P., & Krumholz, H. M. (2005). Physician specialty and mortality among elderly patients hospitalized with heart failure. *The American journal of medicine*, 118(10), 1120-1125.
- <sup>26</sup> Simon, G. E., Von Korff, M., Rutter, C. M., & Peterson, D. A. (2001). Treatment process and outcomes for managed care patients receiving new antidepressant prescriptions from psychiatrists and primary care physicians. *Archives of General Psychiatry*, 58(4), 395-401.
- <sup>27</sup> Greenfield, S., Rogers, W., Mangotich, M., Carney, M. F., & Tarlov, A. R. (1995). Outcomes of Patients With Hypertension and Non—insulin-dependent Diabetes Mellitus Treated by Different Systems and Specialties: Results From the Medical Outcomes Study. *Jama*, 274(18), 1436-1444.
- <sup>28</sup> Greenfield, S., Nelson, E. C., Zubkoff, M., Manning, W., Rogers, W., Kravitz, R. L., ... & Ware, J. E. (1992). Variations in resource utilization among medical specialties and systems of care: results from the Medical Outcomes Study. *Jama*, 267(12), 1624-1630.



## STARFIELD SUMMIT

...where primary care research inspires policy and practice

- 
- <sup>29</sup> Donaldson, M. S., Yordy, K. D., Lohr, K. N., & Vanselow, N. A. (Eds.). (1996). *Primary care: America's health in a new era*. National Academies Press.
- <sup>30</sup> Stange, K. C., Etz, R. S., Gullett, H., Sweeney, S. A., Miller, W. L., Jaén, C. R., ... & Glasgow, R. E. (2014). Metrics for assessing improvements in primary health care. *Annual review of public health, 35*, 423-442.
- <sup>31</sup> Epstein, R. M., & Street, R. L. (2011). The values and value of patient-centered care. *The Annals of Family Medicine, 9*(2), 100-103.
- <sup>32</sup> Center for Medicare & Medicaid Services (2015). National Health Expenditures 2014 Highlights. *Center for Medicare & Medicaid Services*. Accessed on March 17, 2016 from <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf>.
- <sup>33</sup> Goroll, A. H., Berenson, R. A., Schoenbaum, S. C., & Gardner, L. B. (2007). Fundamental reform of payment for adult primary care: comprehensive payment for comprehensive care. *Journal of General Internal Medicine, 22*(3), 410-415.
- <sup>34</sup> The Center for Disease Control (2012). National Ambulatory Medical Care Survey: 2012 State and National Summary Tables. *Center for Disease Control*. Accessed on March 17, 2016 from [http://www.cdc.gov/nchs/data/ahcd/namcs\\_summary/2012\\_namcs\\_web\\_tables.pdf](http://www.cdc.gov/nchs/data/ahcd/namcs_summary/2012_namcs_web_tables.pdf).
- <sup>35</sup> Phillips, R. L., & Bazemore, A. W. (2010). Primary care and why it matters for US health system reform. *Health Affairs, 29*(5), 806-810.
- <sup>36</sup> Health Insurance Commissioner of the State of Rhode Island (January 2014). Primary Care Spending in Rhode Island: Commercial Health Insurer Compliance. *Office of the Rhode Island Health Insurance Commissioner*. Accessed on March 21, 2016 from <http://www.ohic.ri.gov/documents/Primary-Care-Spending-generalprimary-care-Jan-2014.pdf>.
- <sup>37</sup> Goodson, J. D. (2007). Unintended consequences of resource-based relative value scale reimbursement. *Jama, 298*(19), 2308-2310.
- <sup>38</sup> Miller, H. D. (2009). From volume to value: better ways to pay for health care. *Health Affairs, 28*(5), 1418-1428.
- <sup>39</sup> Draper, D. A., Hurley, R. E., Lesser, C. S., & Strunk, B. C. (2002). The changing face of managed care. *Health Affairs, 21*(1), 11-23.
- <sup>40</sup> Corrigan, J. M. (2001). *Crossing the quality chasm*. Washington, DC, National Academy Press.
- <sup>41</sup> LLanos, K., & Rothstein, J. (2007). *Physician pay-for-performance in Medicaid: A guide for states*. Center for Health Care Strategies, Incorporated.
- <sup>42</sup> Rosenthal, M. B., Frank, R. G., Li, Z., & Epstein, A. M. (2005). Early experience with pay-for-performance: from concept to practice. *Jama, 294*(14), 1788-1793.
- <sup>43</sup> Rosenthal, M. B., & Frank, R. G. (2006). What is the empirical basis for paying for quality in health care?. *Medical Care Research and Review, 63*(2), 135-157.
- <sup>44</sup> Yarnall, K. S., Pollak, K. I., Østbye, T., Krause, K. M., & Michener, J. L. (2003). Primary care: is there enough time for prevention?. *American journal of public health, 93*(4), 635-641.
- <sup>45</sup> Roland, M., & Campbell, S. (2014). Successes and failures of pay for performance in the United Kingdom. *New England Journal of Medicine, 370*(20), 1944-1949.
- <sup>46</sup> Roland, M., & Campbell, S. (2014). Successes and failures of pay for performance in the United Kingdom. *New England Journal of Medicine, 370*(20), 1944-1949.
- <sup>47</sup> Roland, M., & Campbell, S. (2014). Successes and failures of pay for performance in the United Kingdom. *New England Journal of Medicine, 370*(20), 1944-1949.
- <sup>48</sup> Burwell, S. M. (2015). Setting value-based payment goals—HHS efforts to improve US health care. *N Engl J Med, 372*(10), 897-9.
- <sup>49</sup> Miller, H. D. (2009). From volume to value: better ways to pay for health care. *Health Affairs, 28*(5), 1418-1428.
- <sup>50</sup> Shultz, C. G., & Jimbo, M. (2015). Search Family Medicine Share Links. *Fam Med, 47*(9), 679-92.





## STARFIELD SUMMIT

...where primary care research inspires policy and practice

- 
- <sup>51</sup> Miller, H. D. (2009). From volume to value: better ways to pay for health care. *Health Affairs*, 28(5), 1418-1428.
- <sup>52</sup> Miller, H. D. (2009). From volume to value: better ways to pay for health care. *Health Affairs*, 28(5), 1418-1428.
- <sup>53</sup> Thomas, J. W., Grazier, K. L., & Ward, K. (2004). Economic Profiling of Primary Care Physicians: Consistency among Risk-Adjusted Measures. *Health services research*, 39(4p1), 985-1004.
- <sup>54</sup> Westfall, J. M. (2013). Cold-spotting: Linking primary care and public health to create communities of solution. *The Journal of the American Board of Family Medicine*, 26(3), 239-240.
- <sup>55</sup> The American Academy of Family Physicians (2015). Care management fees. *The American Academy of Family Physicians*. Retrieved on March 11, 2016 from <http://www.aafp.org/about/policies/all/care-management.html>.
- <sup>57</sup> The Robert Graham Center (2013). Blended Payment Models and Associated Care Management Fees [Powerpoint]. Retrieved on March 11, 2015 from [http://www.graham-center.org/content/dam/rgc/documents/publications-reports/presentations/Care%20Management\\_Nov2013%20\(1\).pdf](http://www.graham-center.org/content/dam/rgc/documents/publications-reports/presentations/Care%20Management_Nov2013%20(1).pdf).
- <sup>58</sup> Merrell, K., & Berenson, R. A. (2010). Structuring payment for medical homes. *Health Affairs*, 29(5), 852-858.
- <sup>59</sup> Wu, W. N., Bliss, G., Bliss, E. B., & Green, L. A. (2010). A direct primary care medical home: the Qliance experience. *Health Affairs*, 29(5), 959-962.
- <sup>60</sup> Wu, W. N., Bliss, G., Bliss, E. B., & Green, L. A. (2010). A direct primary care medical home: the Qliance experience. *Health Affairs*, 29(5), 959-962.
- <sup>61</sup> Wu, W. N., Bliss, G., Bliss, E. B., & Green, L. A. (2010). A direct primary care medical home: the Qliance experience. *Health Affairs*, 29(5), 959-962.
- <sup>62</sup> McCorry, D. (2014). Direct primary care: an innovative alternative to conventional health insurance. *Backgrounder*, 2939, 1-13.
- <sup>63</sup> McCorry, D. (2014). Direct primary care: an innovative alternative to conventional health insurance. *Backgrounder*, 2939, 1-13.
- <sup>64</sup> Wu, W. N., Bliss, G., Bliss, E. B., & Green, L. A. (2010). A direct primary care medical home: the Qliance experience. *Health Affairs*, 29(5), 959-962.
- <sup>65</sup> McCorry, D. (2014). Direct primary care: an innovative alternative to conventional health insurance. *Backgrounder*, 2939, 1-13.
- <sup>66</sup> Draper, D. A., Hurley, R. E., Lesser, C. S., & Strunk, B. C. (2002). The changing face of managed care. *Health Affairs*, 21(1), 11-23.
- <sup>67</sup> Mongan, J. J., Ferris, T. G., & Lee, T. H. (2008). Options for slowing the growth of health care costs. *New England Journal of Medicine*, 358(14), 1509.
- <sup>68</sup> Hillman, A. L., Pauly, M. V., & Kerstein, J. J. (1989). How do financial incentives affect physicians' clinical decisions and the financial performance of health maintenance organizations?. *New England Journal of Medicine*, 321(2), 86-92.
- <sup>69</sup> Epstein, A. M., Begg, C. B., & McNeil, B. J. (1986). The use of ambulatory testing in prepaid and fee-for-service group practices. *New England Journal of Medicine*, 314(17), 1089-1094.
- <sup>70</sup> Murray, J. P., Greenfield, S., Kaplan, S. H., & Yano, E. M. (1992). Ambulatory testing for capitation and fee-for-service patients in the same practice setting: relationship to outcomes. *Medical Care*, 252-261.
- <sup>71</sup> Hohlen, M. M., Manheim, L. M., Fleming, G. V., Davidson, S. M., Yudkowsky, B. K., Werner, S. M., & Wheatley, G. M. (1990). Access to office-based physicians under capitation reimbursement and Medicaid case management: findings from the Children's Medicaid Program. *Medical care*, 59-68.



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...where primary care research inspires policy and practice

---

<sup>72</sup> Rubin, H. R., Gandek, B., Rogers, W. H., Kosinski, M., McHorney, C. A., & Ware, J. E. (1993). Patients' ratings of outpatient visits in different practice settings: results from the Medical Outcomes Study. *Jama*, *270*(7), 835-840.

<sup>73</sup> Phillips, R. L., Bronnikov, S., Petterson, S., Cifuentes, M., Teevan, B., Dadoo, M., ... & West, D. R. (2011). Case study of a primary care-based accountable care system approach to medical home transformation. *The Journal of ambulatory care management*, *34*(1), 67-77.

<sup>74</sup> Phillips, R. L., Bronnikov, S., Petterson, S., Cifuentes, M., Teevan, B., Dadoo, M., ... & West, D. R. (2011). Case study of a primary care-based accountable care system approach to medical home transformation. *The Journal of ambulatory care management*, *34*(1), 67-77.

<sup>75</sup> Phillips, R. L., Bronnikov, S., Petterson, S., Cifuentes, M., Teevan, B., Dadoo, M., ... & West, D. R. (2011). Case study of a primary care-based accountable care system approach to medical home transformation. *The Journal of ambulatory care management*, *34*(1), 67-77.

<sup>76</sup> Phillips, R. L., Bronnikov, S., Petterson, S., Cifuentes, M., Teevan, B., Dadoo, M., ... & West, D. R. (2011). Case study of a primary care-based accountable care system approach to medical home transformation. *The Journal of ambulatory care management*, *34*(1), 67-77.

<sup>77</sup> Gillam, S. J., Siriwardena, A. N., & Steel, N. (2012). Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review. *The Annals of Family Medicine*, *10*(5), 461-468.

<sup>78</sup> Rosenthal, M. B., Frank, R. G., Li, Z., & Epstein, A. M. (2005). Early experience with pay-for-performance: from concept to practice. *Jama*, *294*(14), 1788-1793.

<sup>79</sup> Lemak, C. H., Nahra, T. A., Cohen, G. R., Erb, N. D., Paustian, M. L., Share, D., & Hirth, R. A. (2015). Michigan's fee-for-value physician incentive program reduces spending and improves quality in primary care. *Health Affairs*, *34*(4), 645-652.

<sup>80</sup> Scott, A., Sivey, P., Ait Ouakrim, D., Willenberg, L., Naccarella, L., Furler, J., & Young, D. (2011). The effect of financial incentives on the quality of health care provided by primary care physicians. *Cochrane Database Syst Rev*, *9*(9).

<sup>81</sup> Eccles, M. P., Shepperd, S., Scott, A., Flodgren, G., Parmelli, E., & Beyer, F. R. (2010). An overview of reviews evaluating the effects of financial incentives in changing healthcare professional behaviours and patient outcomes. *The Cochrane Library*.

<sup>82</sup> Nelson, L. (2012). Lessons from Medicare's demonstration projects on value-based payment. *Congressional Budget Office, Working Paper*, 2.

<sup>83</sup> Gillam, S. J., Siriwardena, A. N., & Steel, N. (2012). Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review. *The Annals of Family Medicine*, *10*(5), 461-468.

<sup>84</sup> Werner, R. M., Kolstad, J. T., Stuart, E. A., & Polsky, D. (2011). The effect of pay-for-performance in hospitals: lessons for quality improvement. *Health Affairs*, *30*(4), 690-698.

<sup>85</sup> Scott, A., Sivey, P., Ait Ouakrim, D., Willenberg, L., Naccarella, L., Furler, J., & Young, D. (2011). The effect of financial incentives on the quality of health care provided by primary care physicians. *Cochrane Database Syst Rev*, *9*(9).

<sup>86</sup> Gillam, S. J., Siriwardena, A. N., & Steel, N. (2012). Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review. *The Annals of Family Medicine*, *10*(5), 461-468.

<sup>87</sup> Starfield, B., & Mangin, D. (2010). An international perspective on the basis for payment for performance. *Quality in primary care*, *18*(6), 399-404.

<sup>88</sup> Rosenthal, M. B., Frank, R. G., Li, Z., & Epstein, A. M. (2005). Early experience with pay-for-performance: from concept to practice. *Jama*, *294*(14), 1788-1793.

<sup>89</sup> Gillam, S. J., Siriwardena, A. N., & Steel, N. (2012). Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review. *The Annals of Family Medicine*, *10*(5), 461-468.



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...where primary care research inspires policy and practice

- 
- <sup>90</sup> Serumaga, B., Ross-Degnan, D., Avery, A. J., Elliott, R. A., Majumdar, S. R., Zhang, F., & Soumerai, S. B. (2011). Effect of pay for performance on the management and outcomes of hypertension in the United Kingdom: interrupted time series study. *Bmj*, *342*, d108.
- <sup>91</sup> Gillam, S. J., Siriwardena, A. N., & Steel, N. (2012). Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review. *The Annals of Family Medicine*, *10*(5), 461-468.
- <sup>92</sup> Nelson, L. (2012). Lessons from Medicare’s demonstration projects on value-based payment. *Congressional Budget Office, Working Paper*, 2.
- <sup>93</sup> Bertko, J. and Effros, R. (2010). Analysis of Bundled Payment. *RAND Health COMPARE*. Retrieved on March 9, 2016 from: [http://www.rand.org/pubs/technical\\_reports/TR562z20/analysis-of-bundled-payment.html](http://www.rand.org/pubs/technical_reports/TR562z20/analysis-of-bundled-payment.html).
- <sup>94</sup> Rastogi, A., Mohr, B. A., Williams, J. O., Soobader, M. J., & de Brantes, F. (2009). Prometheus payment model: application to hip and knee replacement surgery. *Clinical Orthopaedics and Related Research*, *467*(10), 2587-2597.
- <sup>95</sup> Hussey, P. S., Ridgely, M. S., & Rosenthal, M. B. (2011). The PROMETHEUS bundled payment experiment: slow start shows problems in implementing new payment models. *Health Affairs*, *30*(11), 2116-2124.
- <sup>96</sup> De Brantes, F., Rastogi, A., & Painter, M. (2010). Reducing potentially avoidable complications in patients with chronic diseases: the Prometheus Payment approach. *Health services research*, *45*(6p2), 1854-1871.
- <sup>97</sup> Hussey, P. S., Ridgely, M. S., & Rosenthal, M. B. (2011). The PROMETHEUS bundled payment experiment: slow start shows problems in implementing new payment models. *Health Affairs*, *30*(11), 2116-2124.
- <sup>98</sup> Hussey, P. S., Ridgely, M. S., & Rosenthal, M. B. (2011). The PROMETHEUS bundled payment experiment: slow start shows problems in implementing new payment models. *Health Affairs*, *30*(11), 2116-2124.
- <sup>99</sup> Center for Medicare & Medicaid Innovation (2015). BPCI Model 4: Prospective Acute Care Hospital Stay Only. Retrieved on March 10, 2016 from: <https://innovation.cms.gov/initiatives/BPCI-Model-4/index.html>.
- <sup>100</sup> Baseman, S., Boccuti, C., Moon, M., Griffin, S., Dutta, T. (2016). Payment and Delivery System Reform in Medicare: A Primer on Medical Homes, Accountable Care Organizations, and Bundled Payments. *The Henry J. Kaiser Family Foundation*. Retrieved on March 10, 2016 from: <http://kff.org/report-section/payment-and-delivery-system-reform-in-medicare-report/>.
- <sup>101</sup> Center for Medicare & Medicaid Innovation (2015). BPCI Model 2: Prospective Acute Care Hospital Stay Only. Retrieved on March 10, 2016 from: <https://innovation.cms.gov/initiatives/BPCI-Model-2/index.html>.
- <sup>102</sup> The Lewin Group (2015). CMS Bundled Payments for Care Improvement (BPCI) Initiative Models 2-4: Year 1 Evaluation & Monitoring Annual Reports. *Lewin Group*. Retrieved on March 10, 2016 from: <https://innovation.cms.gov/Files/reports/BPCI-EvalRpt1.pdf>.
- <sup>103</sup> Introcoso, D., Berger, G. (2015, September 4). MSSP Year Two: Medicare ACOs Show Muted Success. *Health Affairs Blog*. Retrieved on March 8, 2016 from: <http://healthaffairs.org/blog/2015/09/24/mssp-year-two-medicare-acos-show-muted-success/>.
- <sup>104</sup> Sutherland, S., Egan, B., Davis, R., Rutledge, V., and Sinopoli, A. (2015, December 21). Diving Into The Pool of ACO Quality Measures, MSSP Year 2 Performance Metrics. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/12/21/diving-into-the-pool-of-aco-quality-measures-mssp-year-2-performance-metrics/>.
- <sup>105</sup> McClellan, M., Kocot, S.L., White, R. (2015, November 4). Medicare ACOs Continue To Show Care Improvements – And More Savings Are Possible. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/11/04/medicare-acos-continue-to-show-care-improvements-and-more-savings-are-possible/>.
- <sup>106</sup> McClellan, M., Kocot, S.L., White, R. (2015, November 4). Medicare ACOs Continue To Show Care Improvements – And More Savings Are Possible. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/11/04/medicare-acos-continue-to-show-care-improvements-and-more-savings-are-possible/>.



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<sup>107</sup> Sutherland, S., Egan, B., Davis, R., Rutledge, V., and Sinopoli, A. (2015, December 21). Diving Into The Pool of ACO Quality Measures, MSSP Year 2 Performance Metrics. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/12/21/diving-into-the-pool-of-aco-quality-measures-mssp-year-2-performance-metrics/>.

<sup>108</sup> Sutherland, S., Egan, B., Davis, R., Rutledge, V., and Sinopoli, A. (2015, December 21). Diving Into The Pool of ACO Quality Measures, MSSP Year 2 Performance Metrics. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/12/21/diving-into-the-pool-of-aco-quality-measures-mssp-year-2-performance-metrics/>.

<sup>109</sup> Introcoso, D., Berger, G. (2015, September 4). MSSP Year Two: Medicare ACOs Show Muted Success. *Health Affairs Blog*. Retrieved on March 8, 2016 from: <http://healthaffairs.org/blog/2015/09/24/mssp-year-two-medicare-acos-show-muted-success/>.

<sup>110</sup> McClellan, M., Kocot, S.L., White, R. (2015, November 4). Medicare ACOs Continue To Show Care Improvements – And More Savings Are Possible. *Health Affairs Blog*. Retrieved on March 9, 2016 from: <http://healthaffairs.org/blog/2015/11/04/medicare-acos-continue-to-show-care-improvements-and-more-savings-are-possible/>.

<sup>111</sup> McCarthy, D., Mueller, K., & Wrenn, J. (2009). *Kaiser Permanente: Bridging the quality divide with integrated practice, group accountability, and health information technology*. New York: Commonwealth Fund.

<sup>112</sup> McCarthy, D., Mueller, K., & Wrenn, J. (2009). *Kaiser Permanente: Bridging the quality divide with integrated practice, group accountability, and health information technology*. New York: Commonwealth Fund.

<sup>113</sup> Terhune, C. (2013, June 12). Kaiser's Obamacare rates surprise analysts. *Los Angeles Times*. Retrieved on March 14, 2016 from <http://www.latimes.com/business/healthcare/la-fi-kaiser-health-rates-20130613-story.html>.

<sup>114</sup> Goroll, A. H., Berenson, R. A., Schoenbaum, S. C., & Gardner, L. B. (2007). Fundamental reform of payment for adult primary care: comprehensive payment for comprehensive care. *Journal of General Internal Medicine*, 22(3), 410-415.

<sup>115</sup> Goroll, A. H., Berenson, R. A., Schoenbaum, S. C., & Gardner, L. B. (2007). Fundamental reform of payment for adult primary care: comprehensive payment for comprehensive care. *Journal of General Internal Medicine*, 22(3), 410-415.

<sup>116</sup> Fernandopulle, R. (2013). Learning to fly: building de novo medical home practices to improve experience, outcomes, and affordability. *The Journal of ambulatory care management*, 36(2), 121-125.

<sup>117</sup> Phillips, R. L., & Bazemore, A. W. (2010). Primary care and why it matters for US health system reform. *Health Affairs*, 29(5), 806-810.

<sup>118</sup> Fernandopulle, R. (2015, August 17). Breaking The Fee-For-Service Addiction: Let's Move To A Comprehensive Primary Care Payment Model. *Health Affairs Blog*. Retrieved on March 10, 2016 from: <http://healthaffairs.org/blog/2015/08/17/breaking-the-fee-for-service-addiction-lets-move-to-a-comprehensive-primary-care-payment-model/>.

<sup>119</sup> Fernandopulle, R. (2015, August 17). Breaking The Fee-For-Service Addiction: Let's Move To A Comprehensive Primary Care Payment Model. *Health Affairs Blog*. Retrieved on March 10, 2016 from: <http://healthaffairs.org/blog/2015/08/17/breaking-the-fee-for-service-addiction-lets-move-to-a-comprehensive-primary-care-payment-model/>.

<sup>120</sup> Fernandopulle, R. (2015, August 17). Breaking The Fee-For-Service Addiction: Let's Move To A Comprehensive Primary Care Payment Model. *Health Affairs Blog*. Retrieved on March 10, 2016 from: <http://healthaffairs.org/blog/2015/08/17/breaking-the-fee-for-service-addiction-lets-move-to-a-comprehensive-primary-care-payment-model/>.

<sup>121</sup> Fernandopulle, R. (2013). Learning to fly: building de novo medical home practices to improve experience, outcomes, and affordability. *The Journal of ambulatory care management*, 36(2), 121-125.



## STARFIELD SUMMIT

...where primary care research inspires policy and practice

- 
- <sup>122</sup> McCarthy, D., & Mueller, K. (2009). *Community care of North Carolina: building community systems of care through state and local partnerships*. Commonwealth Fund.
- <sup>123</sup> McCarthy, D., & Mueller, K. (2009). *Community care of North Carolina: building community systems of care through state and local partnerships*. Commonwealth Fund.
- <sup>124</sup> Taylor, E. F., Dale, S., Peikes, D., Brown, R., Ghosh, A., Crosson, J., ... & Shapiro, R. (2015). Evaluation of the Comprehensive Primary Care initiative: first annual report. *Mathematica Policy Research (January 2015)*. Retrieved on March 11, 2016 from [https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci\\_1stannualrpt.pdf](https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci_1stannualrpt.pdf).
- <sup>125</sup> Taylor, E. F., Dale, S., Peikes, D., Brown, R., Ghosh, A., Crosson, J., ... & Shapiro, R. (2015). Evaluation of the Comprehensive Primary Care initiative: first annual report. *Mathematica Policy Research (January 2015)*. Retrieved on March 11, 2016 from [https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci\\_1stannualrpt.pdf](https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci_1stannualrpt.pdf).
- <sup>126</sup> Taylor, E. F., Dale, S., Peikes, D., Brown, R., Ghosh, A., Crosson, J., ... & Shapiro, R. (2015). Evaluation of the Comprehensive Primary Care initiative: first annual report. *Mathematica Policy Research (January 2015)*. Retrieved on March 11, 2016 from [https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci\\_1stannualrpt.pdf](https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci_1stannualrpt.pdf).
- <sup>127</sup> Taylor, E. F., Dale, S., Peikes, D., Brown, R., Ghosh, A., Crosson, J., ... & Shapiro, R. (2015). Evaluation of the Comprehensive Primary Care initiative: first annual report. *Mathematica Policy Research (January 2015)*. Retrieved on March 11, 2016 from [https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci\\_1stannualrpt.pdf](https://www.mathematica-mpr.com/~media/publications/pdfs/health/cpci_1stannualrpt.pdf).
- <sup>128</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>129</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>130</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>131</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>132</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>133</sup> Wensky, S. G. (2015). Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.
- <sup>134</sup> McCorry, D. (2014). Direct primary care: an innovative alternative to conventional health insurance. *Background*, 2939, 1-13.
- <sup>135</sup> Klemes, A., Seligmann, R. E., Allen, L., Kubica, M. A., Warth, K., & Kaminetsky, B. (2012). Personalized preventive care leads to significant reductions in hospital utilization. *The American journal of managed care*, 18(12), e453-60.
- <sup>136</sup> Klemes, A., Seligmann, R. E., Allen, L., Kubica, M. A., Warth, K., & Kaminetsky, B. (2012). Personalized preventive care leads to significant reductions in hospital utilization. *The American journal of managed care*, 18(12), e453-60.
- <sup>137</sup> Klemes, A., Seligmann, R. E., Allen, L., Kubica, M. A., Warth, K., & Kaminetsky, B. (2012). Personalized preventive care leads to significant reductions in hospital utilization. *The American journal of managed care*, 18(12), e453-60.
- <sup>138</sup> Page, L. (2013). The rise and further rise of concierge medicine.
- <sup>139</sup> Eskew, P. M., & Klink, K. (2015). Direct Primary Care: Practice Distribution and Cost Across the Nation. *The Journal of the American Board of Family Medicine*, 28(6), 793-801.
- <sup>140</sup> Qliance (2015, January 15). Direct Primary Care Model Delivers 20 Percent Lower Overall Healthcare





## STARFIELD SUMMIT

...where primary care research inspires policy and practice

---

Costs, Increases Patient Satisfaction and Delivers Better Care. *PRNewswire*. Retrieved on March 11, 2015 from <http://www.prnewswire.com/news-releases/new-primary-care-model-delivers-20-percent-lower-overall-healthcare-costs-increases-patient-satisfaction-and-delivers-better-care-300021116.html>.

<sup>141</sup> Qliance (2015, January 15). Direct Primary Care Model Delivers 20 Percent Lower Overall Healthcare Costs, Increases Patient Satisfaction and Delivers Better Care. *PRNewswire*. Retrieved on March 11, 2015 from <http://www.prnewswire.com/news-releases/new-primary-care-model-delivers-20-percent-lower-overall-healthcare-costs-increases-patient-satisfaction-and-delivers-better-care-300021116.html>.

<sup>142</sup> Physicians Practice (2015, October 30). The Great American Physician Survey. *Physicians Practice*. Retrieved on March 11, 2016 from:

[http://imaging.ubmmedica.com/all/editorial/physicianspractice/pdfs/2015\\_GAP\\_Survey\\_Results\\_Full.pdf](http://imaging.ubmmedica.com/all/editorial/physicianspractice/pdfs/2015_GAP_Survey_Results_Full.pdf).