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Value-based Payments and Primary Care

What Skills Will Primary Care Physicians Need to Be Successful With New Payment Models?

Over the past two decades, Medicare and commercial payers increasingly have linked healthcare payments to quality.[1] The payment models vary in structure but fundamentally link performance on process or outcomes of care to provider payments. The new payment models, broadly referred to as value-based, primarily focus on clinical and financial outcomes of patients as opposed to the payments for services in fee-for-service (FFS) models. The FFS system blindly rewards providers based on the volume of services delivered. Consumers and recipients of healthcare seek to reform this structure by aligning payment with value.

This shift provides a unique opportunity for primary care to recapture its place in healthcare delivery as the original advocate for patient-centered care and the center of value. Primary care clinicians can be rewarded with additional revenue for creating efficient care delivery by developing the skill sets to manage value-based care. The estimate of healthcare waste nears 30%, representing $690 billion annually, according to the Institute of Medicine (IOM).[2] If only half of this waste occurs in patients of one average three-clinician family practice, it represents more than $5 million in waste annually.

The new payment models directly incentivize primary care to reduce the harm resulting from low-value care. Primary care physicians can be the transformation that healthcare demands by building competencies to manage value, defined as patient health outcomes per dollar spent.[3] Engaging in this transition will allow primary care clinicians to reassert their place in care delivery as stewards for both their patients and value. While focusing on value for their patients and maximizing their outcomes, primary care clinicians can deliver truly patient-centered care. The only challenge these new payment models present to primary care clinicians is the development of skills necessary to manage their patients as a population more efficiently.

To understand where primary care is on the journey to value, it is necessary to become familiar with three key concepts: 1) the current state of value-based payment models using Medicare reforms as an example; 2) recent care redesign efforts, with a focus on reducing low-value care, or care that does not add better health or outcomes to

EXECUTIVE SUMMARY

Over the past two decades, Medicare and commercial payers have increasing linked healthcare payments to quality. These new payment models are broadly referred to as value-based, as payers primarily focus on clinical and financial outcomes of patients rather than simply paying for services in an unsustainable fee-for-service model.

- The Centers for Medicare and Medicaid Services has set a pace that would have 90% of fee-for-service payments linked to quality by 2018, with 50% tied to alternative payment models.
- When compared to similar practices, comprehensive primary care practices had only one statistically significant clinical quality measure improvement, but did reduce the number of emergency department visits and had a trend to lower hospitalizations.
- Skills needed to be successful in managing the drivers of value-based care currently are not being taught in undergraduate or postgraduate clinical education.
- Estimates of waste in healthcare are as high as 30%, with half being within the ability of primary care to manage.
- As incentives increasingly shift to reward value, primary care physicians have unique opportunities to provide leadership in the execution of the transformation in healthcare coming upon us.

patients; and 3) skill sets necessary to assure that clinicians can be successful in value-based care.

Creating Value in Healthcare Delivery

Opportunities for Primary Care

Over the past decade, several studies have both summarized and categorized waste in healthcare delivery. Included at the core of this waste are the inefficiencies relating to both the administrative and clinical aspect. Administrative waste is controlled mostly by policymakers, and clinical waste potentially can be managed within primary care practices. Approximately 15% of the IOM estimate of 30% waste in healthcare is generated clinically and requires clinician management to correct.[4] (*See Table 1.*)

Table 1. Distribution of Waste in Healthcare Spending

Healthcare Spending	Estimate of Excess Costs (2009)
Unnecessary services*	$210 billion
Inefficiently delivered services*	$130 billion
Excess administrative costs	$190 billion
Prices that are too high	$105 billion
Missed prevention opportunities*	$55 billion
Fraud	$75 billion

* Designates clinically controlled waste

Adapted from: Institute of Medicine. The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary. (2010) Available at: https://www.nap.edu/read/12750/chapter/2#50. Accessed Aug. 11, 2017.

Primary care clinicians are familiar with the inefficiencies that create waste from following their patients as they travel through the healthcare system. On the administrative side, clinicians see it in pricing of medications and in administrative burden that is created by insurance companies attempting to reduce utilization. On the clinical side, they see it as the underuse of health services that are evidence-based and in overuse of services that do not provide their patients with better clinical outcomes. To understand how much waste exists within the population cared for in an average three-clinician family practice, one can follow the IOM estimates applied to the average costs of care for the patient panel. By using the average insurer costs per member (patient) per year (PMPY), we can create a total "cost" of care for the panel. On average, a three-clinician primary care practice has a panel of 4,500 patients with a typical insurance blend of 50% Medicare, 40% commercial, and 10% Medicaid. (*See Table 2.*) Using 2012 estimates of PMPY, we can apply the 15% waste rule from the IOM to this "average" practice. This demonstrates that more than $5 million of waste per year may be occurring in the practice's population.[5,6] This $5 million represents not only increased costs without better health, but also unnecessary care and complications, both of which are avoidable. In addition, these costs are based only on what the insurer pays and do not reflect out-of-pocket costs that the patient may bear. As high-deductible plans become more prevalent, these frequent out-of-pocket costs increase.

Although waste occurs across all portions of the healthcare system, little is completely controlled at the primary care level. However, the influence of primary care decisions greatly affects overall waste through referral patterns and patient guidance. Since only 5% of the total cost

Table 2. Effect of Waste on a Three-clinician Practice

Payer	Percent of Practice Population	Number of Patients	Estimate per Member per Year	Total Insurance Payments
Medicare	50%	2,250	$11,400	$25,650,000
Commercial	40%	1,800	$4,100	$7,380,000
Medicaid	10%	450	$7,010	$3,154,500
Overall		4,500		$36,184,500
Waste at 30% (Institute of Medicine estimate)				$10,855,350
Clinically modifiable (15%)				$5,427,675

Source: Author created.

of care is attributable to primary care, less than 1% of waste would be occurring with a primary care practice. This means that primary care must become much more cognizant of costs outside the practice and develop methods of managing waste that exists wherever patients receive care.

Recognizing that there is controllable waste in healthcare, the Centers for Medicare and Medicaid Services (CMS) historically has led large changes in delivery models through payment reform. Currently, both CMS and commercial payers are deploying payment re-engineering programs. These programs focus on creating a reimbursement structure that encourages providers to manage populations with less waste while rewarding successful efforts through gain sharing and other alternative payment models.

Although healthcare waste has an obvious financial effect, there also is a substantial clinical effect. A system incentivized to provide more services, especially with weak indications, is the antithesis of patient-centered care.

Payment Model Re-engineering

CMS led the first changes in payment reform when it introduced the prospective payment system in the 1980s. The prospective payment system shifted payments to hospitals from a per-day payment based on charges to a set payment based on clinical reasons for hospitalization. For example, rather than paying a hospital for what it spent caring for a patient, CMS now pays a fixed amount based on the patient's diagnosis or diagnostic-related grouping (DRG). This change in payment dramatically transformed delivery of care by reducing length of stay and shifting care from an inpatient to outpatient setting.[7] This removed the incentive to lengthen patient stay and provide excess services. CMS provided hospitals with the opportunity to better match medical necessity with intensity of services in a patient-centric method.

Today, CMS continues to lead payment reform to support value-based care through the Center for Medicare and Medicaid Innovation (CMMI). CMMI has developed payment models for both hospitals and physicians that support and reward improved value for population outcomes.[8] CMS has developed a stepwise approach in a payment taxonomy framework (*see Table 3*) based on the level of maturity of any given delivery system. Beginning with fee-for-service not linked to quality, the categories progress to paying for quality or efficiency, then to managing episodes of care, and finally to managing a full population.[9] CMS also has set a pace that would have 90% of FFS payments linked to quality by 2018, with 50% tied to alternative payment models during the same time frame.

Comprehensive Primary Care Incentive Description and Results

Beginning first as a pilot project in 2012, the comprehensive primary care initiative (CPCI) was created to evaluate the effect of broad payment reform on clinical and financial outcomes in primary care practices.[10] The pilot was designed to engage CMS as a payer, along with commercial payers, in enhanced per member per month (PMPM) payments in addition to FFS payments to primary care practices. Engaging both public and commercial payers allowed the initiative to maximize the number of patients within a practice under the value-based payment pilot. The additional PMPM payments were designed to support the care transformation, which ensures practices commit the time and resources necessary to change how they deliver care.

Table 3. Payment Taxonomy Framework

	Category 1: Fee for Service — No Link to Quality	**Category 2:** Fee for Service — Link to Quality	**Category 3:** Alternative Payment Models Built on Fee-for-Service Architecture	**Category 4:** Population-based Payment
Description	Payments are based on volume of services and not linked to quality or efficiency.	At least a portion of payments vary based on the quality or efficiency of healthcare delivery.	Some payment is linked to the effective management of a population or an episode of care. Payments still are triggered by delivery of services, but there are opportunities for shared savings or two-sided risk.	Payment is not directly triggered by service delivery, so volume is not linked to payment. Clinicians and organizations are paid and responsible for the care of a beneficiary for a long period (e.g., ≥ 1 year).
Medicare fee-for-service	• Limited in Medicare fee-for-service • Majority of Medicare payments now are linked to quality	• Hospital value-based purchasing • Physician value-based modifier • Readmissions/hospital-acquired condition reduction program	• Accountable care organizations • Medical homes • Bundled payments • Comprehensive primary care initiative • Comprehensive ESRD • Medicare-Medicaid financial alignment initiative fee-for-service model	• Eligible Pioneer accountable care organizations in years 3 to 5

Adapted from: Saini V, Garcia-Armesto S, Klemperer D, et al. Drivers of poor medical care. *Lancet* 2017;390:178-190.

To be eligible to participate in the CPCI pilot, primary care practices must have undergone some foundational practice transformation, such as the National Committee for Quality Assurance (NCQA) Patient-centered Medical Home (PCMH) program.[11] To receive the PMPM payments, however, practices had to meet pre-set expectations for five functions. (*See Table 4.*)

In addition to the financial support provided to practices, CMS also provided practices with patient data and reports on hospitalization and emergency department utilization. Finally, practices were given opportunities to be involved in regular learning collaborative meetings.

As the pilot project gained interest from a number of different regions, seven regions were chosen, representing 445 practices with 2,135 clinicians caring for more than 824,081 patients. The initiative, which ended in 2016, had yearly evaluations performed by an independent auditor, Mathmatica.[14] The evaluation included measures of participation, milestone achievement, and aggregated clinical and financial outcomes. The clinical and financial evaluation was limited to Medicare patients since the claims from commercial payers were not aggregated across all regions. Mathmatica published the third annual report in December of 2016, which covered the first three years of operation. The evaluative approach compared care in comprehensive primary care practices with the care provided in matched practices using risk adjustment and stratification techniques.

Results of the CPCI

During the third year of pilot, the financial support for the practices averaged $175,775 per practice and $51,286 per clinician, which included enhanced PMPM payments from both Medicare and commercial payers. These enhanced payments amounted to 12.5% of the total practice revenue across participating practices.

When compared to similar practices, CPCI practices had evidence of more organization by providing risk-stratified care management of patients, practice access, and continuity of care. The effect on patient satisfaction demonstrated a small but statistically significant

Table 4. Five Functions of CPCI

1. Access and continuity
2. Planned care for chronic conditions and preventive care
3. Risk-stratified care management
4. Patient and caregiver engagement
5. Coordination of care across the medical neighborhood

Adapted from: CPC Program Year 2014 Implementation and Milestone Reporting Summary Guide. Published June 2014. Available at: https://innovation.cms.gov/Files/x/CPCI-Implementation-GuidePY2014.pdf. Accessed Aug. 11, 2017.

Table 5. Adjusted Differential Changes in Annual Medicare Spending

Differential Changes for Accountable Care Organizations vs. Control Group		
	2013 Performance Year Estimate, $ (95% CI); *P* value	**2014 Performance Year** Estimate, $ (95% CI); *P* value
Overall	-146 (-274 to -18); 0.03	-264 (-398 to -130); 0.001
Subgroups		
Independent physician groups	-217 (-449 to 15); 0.07	-334 (-559 to -110); 0.004
Hospital – Integrated	-48 (-144 to 47); 0.32	-179 (-285 to -72); 0.001

Adapted from: CMS Innovation Models. Available at: https://innovation.cms.gov/initiatives/#views=models. Accessed Aug. 11, 2017.

improvement. In terms of clinical outcomes, CPCI practices had a statistical improvement on only one clinical quality measure: the screening for albuminuria in diabetic patients. Over the three-year period, evaluation of clinical utilization showed a statistically significant reduction in the number of emergency department visits. There was also a trend toward lower hospitalizations, although not statistically significant, in the CPCI group. In terms of financial outcomes, the CPCI practices had a 1% ($9) lower spending than comparison groups that didn't include the PMPM care management payments. The lower spending of $9 per beneficiary per month averages out to $108 savings per beneficiary per year. With the care management fees, the CPCI cost $7 more PMPM than comparison practices or $84 more per beneficiary per year. Although this report covers only the first three years of the initiative, Mathmatica noted that "it was highly unlikely that these savings offset the $16 PMPM care management fees."[14]

Despite the lack of cost-savings, the first three years of the demonstration has been successful in several ways: 1) in aligning public and private payers to reform primary care practice payments toward value; 2) in engaging more than 2,000 primary care physicians across seven regions nationally in care transformation for their patients; and 3) in developing and executing a set of patient-centered process milestones in more than 450 practices.

A more recent evaluation of another CMMI initiative that had similar findings involved funding for structural and process changes within federally qualified health centers (FQHC). This initiative showed no significant improvement in clinical or financial outcomes in those practices undergoing PCMH recognition.[15]

These early evaluations of funding for care management, information technology, and other resources within primary care practices has not resulted in a demonstrable improvement of value. However, the initiative has provided an invaluable opportunity to advance the understanding of how to achieve the triple aims through a practice network that is engaged in quality improvement.

Other CMS Physician Initiatives — Accountable Care Organizations

CMS invested in several other more successful physician-driven value-based pilots focused on improving clinical quality and reducing costs. The largest effort is a portfolio of accountable care organization (ACO) program pilots that include the Medicare Shared Savings Program (MSSP), which links multiple groups of physicians to attributed Medicare patients, unlike the CPCI, which primarily focuses on individual practices. The MSSP also has more than 480 participating providers who care for approximately 9 million assigned beneficiaries.[15] Early results from the MSSP suggest that the program not only generated savings but that savings increased with program experience. [16] (*See Table 5.*)

MSSPs that began managing their Medicare population in 2012 produced overall savings in year 2 (2013 performance year) while also producing savings in the subgroups of independent and hospital-integrated physicians. These savings accelerated over time, resulting in significant increases for all groups in 2014 (year 3 of management). Furthermore, the subgroup analysis demonstrating the largest cost reductions is the independent physician groups rather than the hospital-integrated groups. This finding suggests spending can be controlled without a traditional physician-hospital organization.

The information from the MSSP initiative contrasts the loss of $84

after care management fees the CPCI had during its first two years.[17] For purposes of comparison, the costs that the MSSP participants incurred in care redesign are unknown, providing no measure of efficiency between the two programs. It appears the physician groups that are engaging in MSSP are improving each year through achieving the efficiencies measured by the increased savings from the year before.

Rethinking the Approach to Value Delivery in Primary Care

We can draw several conclusions from the early results of CMS experiments in payment redesign. Evaluating each of the three programs, (FQHC PCMH initiative, CPCI, and MSSP) from the perspectives of structural changes as defined by the NCQA, CMS-defined process redesign, and outcomes driven toward a cost-of-care reduction and shared savings, it can be broadly concluded that:

1. Programs that focus on structural transformation, such as PCMH, have small effects on clinical quality or costs.
2. Programs that specify generic process changes have small effect on improving clinical quality or reducing costs. These generic process changes include access, care management, and/or risk stratification without specific designation of what risks are being modified.
3. Independent physician groups that are engaged in the intention of shared savings are having an effect on the total cost of care for Medicare beneficiaries with no decline in quality.

With the initial findings from these payment experiments showing minimal results, questions should turn to why they did not succeed. In examining the results, one can ask "Did the initiative focus on the correct process of care?" (i.e., was the process that the practice chose to execute associated with the outcomes that are the goal of the project?) If the correct process was chosen, the next question would be: "Were the process changes executed with discipline?" (i.e., Were all factors affecting the process, and by extension the outcome, managed to achieve goals?)[18] Evaluating the focus of these initiatives and discipline of execution can help us understand elements of success for future payment reform programs. It also can help us understand what skill sets primary care clinicians will need to lead and participate in value-based payment programs.

The first two initiatives (PCMH and CPCI) were based on process changes that have varying evidence in terms of improving value. The five functions (domains) required by a practice participating in the CPCI rely on care management and care coordination in at-risk patients. The assumption that care management and care coordination automatically add value to care delivery increasingly is coming under question. Several articles suggest that applied generically, these functions add cost without adding clinical improvement.[19,20,21,22] The identification of at-risk patients in the CPCI was not well defined in terms of both the clinical risk and financial impact. Without a clear definition of the risk, the process change or care redesign that can modify or reduce the risk is difficult to execute.

The CPCI had an opportunity for clinicians to share in savings generated through process changes, but the primary focus was the five functions of primary care. Similarly, the FQHC NCQA program deployed both a structural transformation in conjunction with a small care management fee, with no specific expectations of clinical or financial outcomes. Evidence of the effect of PCMH structural transformation on value has been mixed.[23,24,25,26] Of the three programs, the MSSP is the only program that delivered value when using the definition of patient health outcomes per dollar

Table 6. Drivers of Poor Care

Driver	Effect
Money and finance	Poor access through coverage, incentives that drive poor care by influencing physician behavior, fragmentation driven by fragmented payments, commercial interests
Knowledge, bias, uncertainty	Poor decision-making based on inadequate knowledge Flawed production and dissemination of knowledge to manage value: use and generation of evidence-based care, bias of more care is better
Power and human relationships	Information asymmetry that exists between clinician and patient, poor joint decision-making between patient and clinician, patient views distorted by media, patient views while remaining silent on opportunity costs and marginal benefits of treatments

Adapted from: McWilliams J. Changes in Medicare Shared Savings Program Savings from 2013 to 2014. *JAMA* 2016;316:1711-1713.

spent. The reduction of costs in the MSSP most likely reflects a reduction in low-value services. An earlier study of Pioneer ACOs showed that delivery of low-value services was reduced in the ACO physician groups compared to non-ACO groups and contributed to cost savings.[27]

Evolving evidence suggests that focusing on waste, as previously defined as the reduction of overuse (low-value or unnecessary services) and the increase in underuse (high-value services), can be the key to providing value-based care. Neither the structure focus of the FQHC initiative or the process focus of the CPCI initiative was directed toward waste, although the CPCI did have components indirectly focused on underuse. The MSSP, through its shared savings component, was aligned directly with reducing waste by managing inefficiencies. The takeaway from these findings is that primary care clinicians can accelerate value-based care by focusing on clinical waste as the outcome to change. By specifically focusing on the reduction of low-value services and increasing delivery of high-value services, primary care initiatives will be successful in providing value.[28] This approach is different than what has been the mainstay of policy around care redesign, but recently has been identified as being a large threat to quality.

A recent series focused on Right Care described the threat that underuse and overuse contributes to healthcare.[29,30,31,32] This series of articles defined overuse as the provision of medical services that are more likely to cause harm than good (i.e., overuse of low-value services). Underuse was defined as the failure to use effective and affordable medical interventions or the underuse of high-value services.

Traditionally, clinicians have not viewed the cost of healthcare as being particularly important to clinical care. The perspective of low- and high-value services can help clinicians understand how to ensure patients receive the most appropriate care while being cognizant of the clinical and financial impact of the care at the patient and population level.

By defining poor care as the underuse of high-value care and the overuse of low-value care, we can evaluate the drivers of poor care.[31] A series in *The Lancet* highlighted the drivers of poor care as outlined in Table 6, which can provide an understanding of the leverage points clinicians must manage to provide high-value care. The drivers can be summarized as incentives, knowledge or information, and culture. This approach provides a framework of barriers that will require management to provide high-value care to patients and populations.

To create value, we need to focus specifically on reducing waste to be successful. Since we are trying to change a system that historically has created waste, it becomes very important to approach the goal in a disciplined manner.

Table 7. Curricular Domains That Can Serve as a Framework for Primary Care Skills

AMA Medical Education Consortium Curricular Domains
1. Healthcare Structure and Process
2. Healthcare Policy, Economics, and Management
3. Clinical Informatics
4. Population Management
5. Value-based Care
6. Health System Improvement

Adapted from: Skochelak SE, Hawkins R, Lawson L, et al. *Health System Science*. Philadelphia: Elsevier; 2017.

Identifying Skills Necessary to Be Successful in Value-based Care Delivery

Results from the CPCI and FQHC programs indicate that executing the value-focused process changes with discipline is necessary to ensure that waste, and the drivers of poor care, are addressed. The skills to manage these drivers as barriers to value-based care currently are not taught in undergraduate or postgraduate clinical education. With evolving payment models, they will be key elements in a clinician's ability to manage populations to value.

The lack of these skills in population management or value-based care have been recognized.[33] In response, the American Medical Association (AMA) created a consortium of educators to evaluate curriculum gaps in current medical education. The result of this effort was the publication of a text by the AMA Education Consortium focused on curriculum gaps in managing systems of care, with a focus on health system science. [34] The relative importance of these skills was reinforced by the consortium, naming Health Systems Sciences the "third pillar" of medical education after basic and clinical sciences.

Framework of Core Domains in Health Systems Sciences — Relationship to Value-based Care

The AMA Medical Education Consortium created six core curricular domains to organize Health Systems Sciences. (*See Table 7.*) These domains provide a theoretical framework to teach and understand the content. This framework works well to communicate the differences

Table 8. Clinical Informatics Analytic Functions and Examples

Type of Analysis	Function	Examples of Measure
Exploratory Analysis	Evaluate practice population for opportunities to improve clinical or financial outcomes using comparison data. Identify areas of overuse or underuse to manage. Generally using outcomes measures at the practice level, including utilization of hospitals, emergency department, or skilled nursing or home health. Total cost of care for patients with breakdown of cost drivers. Incidence rates of preventable clinical events, such as diabetes or preventable hospitalizations. Measures generally require risk adjustment/stratification.	Incidence rate of new-onset diabetes within clinical patients. Post-acute care costs for patients (skilled nursing facilities/home health). Per member per month costs adjusted for severity of illness.
Key Process Indicator Analysis	Evaluate deployed programs identified within exploratory analysis to track progress in closing the gaps that were targeted. Primarily process measures that should be tightly linked to the outcome the practice is trying to affect.	Number of prediabetics enrolled in a diabetes prevention program. Percent of at-risk heart failure patients enrolled in a function heart failure clinic.
Program Evaluation	Evaluate the effect of the program on outcomes compared to historical performance or benchmark comparison group. Generally outcomes measures that are risk adjusted/stratified to remove the confounding effect of the patients' severity of illness. Can include process measures that are linked through evidence to the outcome the clinician is interested in affecting.	Change in rate of hospitalization for preventable reasons. Change in incidence of chronic kidney disease. Change in rate of generic drug prescriptions.

Source: Author created.

in skill sets the clinicians need to be successful in value-based care delivery.

1. Healthcare Structures and Process

Healthcare delivery systems have been characterized in terms of the structure that they have, the processes they carry out, and the outcomes they achieve.[35] Understanding the current structure and care delivery processes that a clinician's patients receive is key to being able to define inefficiencies and fragmentation that may be affecting patient outcomes, both within the practice and across all caregivers. Structure includes the settings and the organization of the settings in which patients receive care. Processes are largely what care is delivered to patients. Outcomes — the clinical, financial, patient-perceived, and functional results patients achieve — are influenced by the structure and processes care delivery systems carry out.

2. Healthcare Policy, Economics, and Management

Having a basic understanding of policy intentions from payers, administrators, or regulators allows a clinician to understand the framework of the system in which they practice. Having primary care in a leadership role focused on achieving goals around policy within the local healthcare community is central to affecting the clinical and financial quality of care being provided to patients outside of their office. Having a deep understanding of the perspectives that other providers and hospitals have is key to allowing the primary care clinician to manage through the conflict inherent between value- and volume-based systems as more systems reside in an FFS setting.

3. Clinical Informatics/Health Information Technology

The key ingredient of any value-based initiative is the information the clinician has to manage populations. This ranges from the information technology supporting the electronic medical record and patient care through clinical decision support to advanced analytics supporting exploratory analysis around risk within a specific population. Having the tools, such as registries and access to population management reports with clinical

comparisons, is foundational to identifying opportunities and capitalizing on gaps in clinical care, which can result in reduced costs. The ability to track, evaluate, and improve specific care redesign initiatives requires the support of clinical informatics. The evolving science of risk-adjustment and predictive analytics is critical in evaluating outcomes after removing factors that may influence the outcome of patients but are outside the control of the clinician.

At a population level, clinicians need to use information to generate knowledge regarding opportunity gaps in clinical or financial outcome that their patients are experiencing. They need knowledge of key process indicators that they use to manage patient outcomes, and, finally, they need information regarding the effectiveness of the programs they have deployed on a continuous basis. Examples of these analyses are shown in Table 8.

Since having knowledge of opportunities within a population is key to success in managing the population, it is critical that a clinician's EMR provide timely reports and information. Vendors are developing these reports for measures that align with CMS and commercial insurers' expectations. It is critical that the pace of the development of value-based measures as management tools accelerates and becomes available within available EMRs.

4. Population Health

A key perspective that clinicians need to gain is that of populations. Clinical training focuses on diagnosing and treating patients. To manage populations, clinicians need to expand their perspective from individual patients to groups of patients, or populations. In addition, clinicians need to shift perspective from the treatment of a patient to systematic approaches dealing with all care provided to their patient populations across the continuum.

Being able to draw inference from existing literature and generalize it to the population they serve allows clinicians to manage specific populations and improve the care of specific patients.

Foundationally, population health starts with the traditional public health definition of the provision of preventive services and public health within the community. It also encompasses the need to understand and be able to affect diversity and disparities in healthcare delivery based on race, ethnicity, and socioeconomic factors. In addition, performing population health requires some skills in the discipline of health services' research. Competencies in creating inference from existing studies, dealing with bias, and having the ability to develop methods to evaluate office-based initiatives increasingly are important. Since we are testing the care redesign at the same time we deploy it, clinicians will be asked to manage complex populations and delivery systems without literature available to guide them. In essence, having the ability to interpret analysis to understand the clinical impact of care redesign is a core competency to be successful in value-based care.

5. Value-based Care

Although listed as a separate domain by the AMA, value-based care is a cross-cutting theme that, in essence, creates the need for the pillar of health system sciences. Value-based care links clinical and financial outcomes.

6. Health System Improvement

This domain focuses on the science of improvement. Continuous quality improvement (CQI) has been foundational to manufacturing and service industries outside of healthcare since the 1960s. Over the past decade, both patient safety and value-based care have been accelerating adoption of CQI within healthcare. Skills to manage systems of care to improve clinical and financial performance are vital to lead value transformation at the practice and system level. The largest challenge to any care delivery redesign is a lack of rigor in execution of a strategy, which results in minimal effect on the targeted outcome. The use of process measures and CQI can ensure that strategies are executed with discipline. Clinicians need to be stewards of continued process improvement to ensure that value is delivered.

The six domains provide an organizational structure for key skills that the AMA educational consortium agreed are necessary to be successful in delivery systems of the future. The following two examples are designed to enhance understanding of how these skills affect value-based care delivery and are important to clinicians managing populations. The examples align with underuse and overuse and highlight areas in which inefficiencies currently exist in the healthcare delivery system.

Underuse — Diabetes Prevention

Healthcare Policy, Economics, and Management

One of the major contributors to rising healthcare costs over the past three decades has been the large increase in Americans with type 2 diabetes mellitus (T2DM). Between 1976 and 2015, the proportion of Americans suffering from diabetes increased from 2.36% to 7.02% and the absolute number of diabetics increased from 4.97 million to 21.95 million.[36] On average, the cost of care for diabetic patients was $13,700 in 2012, and this has increased faster than the increase in prevalence, growing by 41% between 2007 and 2012.[37] In a value-based payment system, the incidence of diabetes becomes an important focus for aligning better health, better healthcare, and lower costs. In a payment system not aligned with value, there has been

little evidence of focus on T2DM prevention.[38] Reducing the incidence of T2DM within a population provides an excellent example of the management skills primary care clinicians will need in value-based care scenarios.

Healthcare Structure and Process

The structure of current healthcare systems does not align well to prevention programs. Primary care practices are generally the strongest proponent of prevention, but are woefully underfunded to be successful. Identifying institutions and organizations that would align with prevention projects can lead to success. This could include employers in the community as well as sites currently providing prevention programs, such as the YMCA.[39] In terms of process, identifying the key process for diabetes prevention and then creating a plan with a goal for the key process is necessary for deployment. To generate a plan, the primary care clinician needs to have information.

Clinical Informatics

Vital to managing a population is knowledge about risk in the population that the clinician is caring for. A framework of risk can be summarized as follows:

- What is the clinical risk opportunity gap?
- What portion of the clinical risk is modifiable?
- What is the redesign to mitigate or reduce the risk?
- What is the potential effect of risk mitigation (clinical, financial)?
- What is the cost of the risk mitigation strategy?
- What is the effect of the deployed program?
- How do we make the program more effective?

These questions can be answered by both clinical informatics and population management. However, answering these questions requires knowledge that is generated from clinical informatics or analysis and is based on evidence from studies. This type of analysis needs to be supported at the practice level by EMR.

Applying these risk questions to diabetes prevention gives us the following answers. Defining the clinical risk opportunity gap can be done using evidence but should be validated using a practice's data. Prediabetes is defined as having an HbA1c between 5.7% and 6.4% inclusive. In 2012, the prevalence of prediabetes within the general population older than 20 years of age was estimated at 18.5%; among individuals aged 45 years or more, the prevalence was 33.1%.[40] According to the diabetes prevention program, on average this population has an 11% annual risk of progression to diabetes each year or 33% risk at three years.[41] By engaging these at-risk patients in a structured lifestyle intervention, it was shown that their risk of progression was reduced by 58% at three years or reduced from 11% per year to 5% per year. This reduction was still apparent at 10 years, although the lifestyle intervention group's reduction had dropped to 31%.[42] This evidence demonstrates that there is a clinical opportunity risk in progression from a defined risk group (prediabetes) to diabetes with the clinical micro- and macrovascular complications.

In terms of cost risk, a recent study demonstrated that following the diagnosis of T2DM, healthcare costs doubled over the ensuing eight years.[43] Interestingly, the spike in healthcare costs was highest during the first year following diagnosis. With the average per capita healthcare costs in the United States being $9,990 in 2015, a doubling of costs would represent an increased spend of more than $9,000 per each new onset diabetic.[44] Independent estimates of cost savings associated with deployment of diabetes prevention programs have been modeled and suggest that the program can be cost saving; the actual cost reductions associated with the diabetes prevention program (DPP) have not been evaluated fully using observational studies and at the lower costs currently associated with the CDC DPP program.[45,46]

Population Management

The exploratory analysis described above gives the information necessary to manage a population at risk for becoming diabetic. Knowing the effect the DPP has on prediabetic patients, we can generate a plan to manage a population of diabetics within a practice. We can construct an approach using the example of a primary care practice with three clinicians and a panel of about 4,500 non-diabetic adults, with the assumption that none have been through a standardized CDC-approved DPP program.[47]

Of our 4,500 patients, we can assume that 833 patients are prediabetic, with an HbA1c between 5.7 and 6.4 inclusive. Of these patients, approximately 92 will progress to diabetes in each year. If we halve the estimated difference in spend increase associated with T2DM from above ($4,500), these 92 individuals will add $414,000 in healthcare spend to the practice's panel in the years after they are diagnosed. The DPP program offered by the YMCA and others costs approximately $500 per person.[48]

Enrolling 20% (167 patients) of the prediabetics in the DPP program will prevent 10 cases of diabetes. The cost savings/effectiveness of the DPP are significant enough for Medicare to include the DPP as a core benefit starting in 2018.[43] In addition, increasing numbers of employers have added this benefit to help their employees prevent diabetes.[49]

Health System Improvement

Having defined the risk (progression to diabetes), the risk modification (the diabetes prevention program), and the clinical and financial model that defines the value of the program, the next step is to develop a rigorous systematic approach to ensure the risk mitigation strategy is deployed consistently. The plan requires methods to change behaviors of providers and patients.

Leadership in changing culture around diabetes prevention is important. Primary care takes responsibility for creating an understanding among all groups influencing patients about the risk of prediabetes, the reduction available from the modest weight loss achieved in the DPP, and then supporting an organized approach to providing this service. The approach can include systematic identification of prediabetics, ensuring the consistent testing of HbA1c in at-risk patients, followed by counseling and reinforcement for participation. Influencing patients to engage in the program can be achieved through the provider, family, and community through marketing programs that are focused on patients and other partners. By tracking enrollment rates as the key process indicator of success of the practice's program, clinicians can use continuous quality improvement techniques to ensure that growth continues. Finally, using program evaluation to determine the program's effect on the incidence of diabetes within the practice will provide estimates of clinical and financial outcomes of the program.

The model of deploying the DPP within a primary care practice is an excellent example of value-based delivery focused on underuse. By using an evidence-based program and applying the skills of leadership, clinical informatics, and health system improvement, primary care clinicians can achieve population management of an at-risk population, vastly improving clinical outcomes by reducing progression to diabetes and reducing costs. The DPP is ideally situated to achieve all three aims simultaneously.

Overuse — Post-acute Care Spending: Bundled Payments for Care Improvement

Healthcare Policy, Economics, and Management

Overuse of resources not only contributes to wasteful spending, it also exposes patients to the risk of adverse events. Identifying overuse can be accomplished by an analysis that evaluates variation in use of resources after adjustment for patient factors that would drive different patterns of utilization. It is important for primary care to understand variation analysis, since the care delivery in which a practice is located can adversely affect the value provided to patients. There is good evidence that systematic variation exists in Medicare fee-for-healthcare spending, particularly during the post-acute care period, after a patient is discharged from the hospital.[51,52]

In 2013, the IOM also commissioned a study to assess geographic variation of healthcare spending levels and growth among Medicare and other populations in the United States. The committee's research concluded that variation in total Medicare spending across geographic areas is driven largely by variation in the utilization of post-acute care services, and to a lesser extent by variation in the utilization of acute care services. If there were no variation in post-acute care spending, variation in total Medicare spending would fall by 73%. If there were no variation in both acute care and post-acute care spending, total Medicare spending variation would drop by 89%. As a result, the IOM specifically encouraged CMS to continue to test payment reforms that incentivize the clinical and financial integration care delivery after a hospitalization.

Currently, primary care generally is not involved in post-acute care management of patients, and often will not see a patient until after the episode is over. Since a large amount of potentially wasteful spending occurs during the post-acute period, it is critical that primary care be stewards for their patients' healthcare dollars by referring to the most efficient specialists with the best outcomes.

Healthcare Structure and Process

The variation and potential overuse resulted in the development of the CMMI Bundled Payment for Care Improvement (BPCI) initiative launched in 2013.[53] This initiative allows hospitals or physician groups to take risk for an episode of care, which includes an index medical or surgical hospitalization and all care delivered for up to 90 days after discharge, providing the opportunity to make revenue by focusing on the details of post-acute management of the patient. The cost of episodes is fairly high; for example, the cost of a total joint replacement in a recent study was approximately $30,000, less than half of which is associated with the index, or surgical, admission.[54] Post-acute care costs have been driven by spending largely on skilled nursing facility use and home health agency use, which have increased much faster than inpatient costs over the past two decades.[51]

Clinical Informatics

Another identified risk to patients in an episode of care is the overuse of post-acute care services. The large variation in spending on post-acute care services, after adjustment for comorbids and

demographics, suggests that the post-acute care does not contribute to better healthcare and, in some cases, can result in poorer outcomes since early mobility may be reduced in patients discharged from a hospital to a skilled nursing facility.[55]

A recent study of the results of the BPCI in total joint replacement demonstrated a relative 5.7% reduction in post-acute care use compared to non-BPCI hospitals. This reduction was associated with a net savings of $1,166 per patient, with no increase in readmissions, emergency department utilization, or mortality.[56]

Population Management

The reduction in risk for post-acute care use associated with the BPCI was achieved in the total joint replacement, most likely by a focus on the functional recovery of these patients since clinical management post-surgically generally is minimal. There is evidence of an association between use of preoperative physical therapy and post-acute services and spending.[57]

Since a primary care practice may have only 10-20 joint replacements a year, organizing the post-acute care services would not be a good investment of resources. The high cost and variability of spending on episodes, of which 48 have been defined by the BPCI, make it important for primary care clinicians to understand the local performance of hospitals and specialists within episodes. Knowing the clinical and financial outcomes of episodes can provide primary care clinicians another opportunity to be stewards of value for their patients.

The effect that managing post-acute care settings can have on the cost of care was evident from participants in the 2012 MSSP, who achieved a $106 per beneficiary savings in post-acute care costs during the implementation of the initiative.[58]

Summary

Value-based payments have increased dramatically over the past decade. The pressure for healthcare reform will not decrease, as medical expenditures currently account for 18 cents of every dollar spent in the United States and are projected to grow to 20% as the population ages. Estimates of waste in healthcare are as high as 30% with half, or 15% of the total healthcare spending, being within the ability of primary care to manage. This represents the single largest opportunity for primary care to redefine its own value to patients and the delivery system.

Evaluating early results from CMS initiatives focused on primary care payment reform have not demonstrated improved clinical or financial outcomes with exception of the MSSP. Since both the CPCI and the FQHC-PCMH initiatives added costs to the delivery system in terms of care management and other fees, they arguably decreased value by adding costs without a concomitant increase in clinical quality. The most successful subgroup of the MSSP, independent physician groups, demonstrated a $334 reduction in spending per beneficiary per year. With the annual spend for Medicare beneficiaries approximating $11,000, the reduction represents a 3% decrease in waste, which may represent 20% of the clinically manageable waste.

Examining the methods the programs used to transform care in practices provides an opportunity to benefit from understanding what does and does not work. Care transformation using structural principles, as found in the PCMH, did not appear to create benefit. That is not to say that the principles of patient-centered care are flawed, only that their application within the practices did not achieve value. Principles, by themselves, do not provide concrete evidence-based care redesign, although they can support the discipline necessary to execute the care redesign. Similarly, the CPCI focused on specific process changes across five domains and showed better results than the PCMH initiative, but after accounting for care management fees did not show value. The link between the process changes in CPCI and the outcomes of value was tenuous at best, and the application of the process changes may not have been done with the discipline necessary to change the local healthcare "ecosystem" to provide higher value.

To be successful in value-based care, primary care clinicians need to approach the transformation by asking two elementary questions: What needs to be done to provide great clinical care at the lowest cost? How do I manage my practice population to value? The "what" can be explained by evolving examples of both underuse and overuse categories of waste. Underuse is defined as the failure to provide services that would benefit patients. The majority of the measures in CPCI were focused on underuse, for example the measurement of adequate treatment for diabetics or hypertension. The IOM reported that underuse contributes to about one-fourth of the waste that overuse does, suggesting that to be successful in value delivery, more focus on overuse is needed as well as the addition of more underuse projects. Although underuse contributes a lesser amount to overall waste than overuse, correcting underuse will add value, as demonstrated in the DPP example above. To approach overuse, the question of "how" becomes more important. Overuse is waste that adds cost without improvement in clinical outcomes; overuse also is a source of revenue that can create conflict that needs to be managed.

As incentives begin to shift to reward value, primary care clinicians are offered unique

opportunities of leadership to execute and benefit from the transformation. This can occur only if clinicians develop the skills to manage populations and provide value-based care. Although these skills are needed to manage the culture change and knowledge necessary to be successful in this type of transformation, currently they still are not included in medical education.

Much of this article has been directed to clinician opportunities to change the healthcare system with relatively little attention to patient-centered care in the traditional sense. Imagine a practice in which a primary care clinician is paid to be an advocate for the patient's best interest through an evidence-based collaborative partnership. Envision healthcare delivery that routinely identifies and negotiates the most cost-effective clinical care for the patients in the delivery ecosystem. This patients-as-partners approach in care contrasts the previous gatekeeper role of primary care during the managed care era. Primary care clinicians currently have the opportunity to redefine the specialty by engaging value-based care and payments. To be successful, primary care clinicians need to develop the skills and establish leadership roles to transform healthcare delivery.

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1. What was the percent of waste in healthcare estimated by the Institute of Medicine in 2009?
   a. 5%
   b. 15%
   c. 30%
   d. 40%

2. Which of the following is ***not*** a major payment reform with which the Centers for Medicare and Medicaid Services is experimenting?
   a. Hospital value-based purchasing
   b. Accountable care organizations
   c. Comprehensive primary care initiative
   d. Total cost of care

3. Which Centers for Medicare and Medicaid Services program initially has shown the most effect on reducing cost without reducing clinical quality?
   a. Comprehensive primary care initiative
   b. Medicare shared savings program
   c. Federally qualified health center patient-centered medical home
   d. Continuous quality improvement

4. According to the Institute of Medicine report, which of the following areas contributes the most to excess costs (waste)?
   a. Inefficiently delivered services
   b. Fraud
   c. Unnecessary services
   d. Missed prevention opportunity

5. Which of the following is ***not*** a skill domain suggested by the AMA Educational Consortium?
   a. Health services research
   b. Clinical informatics
   c. Population management
   d. Value-based care

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