Defining Value in Healthcare: Environmental Scan for the Healthcare Leadership Council

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Introduction & Methodology

The following environmental scan was prepared by NORC at the University of Chicago (NORC) on behalf of the Healthcare Leadership Council's (HLC) National Dialogue for Healthcare Innovation (NDHI). The purpose of the scan is to provide high level background information for a summit of leaders from American healthcare and key participants from government, academia, business and the patient community. As defined by HLC, the goal of the summit is to establish a common understanding of what constitutes value in healthcare, identifying existing barriers to patient-centered innovation, and determining payment and delivery models that can achieve both cost stability and access to innovative therapies and treatments that strengthen system value, patient outcomes, and population health. The policy directions resulting from this effort will be disseminated to policymakers and key opinion leaders.

"Value in healthcare" is a complex and evolving concept aimed at improving the quality of care relative to costs incurred through the rendering of services. Due to the multitude of stakeholders within the healthcare sector, the definition of value is applied to each stakeholder with different connotations. Thus, in order to understand "value in healthcare," one must look at how the definition of value applies to each stakeholder group, including the current state of value in healthcare within each group, barriers to achieving value across stakeholders, current initiatives aimed at achieving value, and future innovations designed to achieve a broad-spanning system where value is the main driver of healthcare.

To obtain literature relevant to this environmental scan, NORC searched numerous databases, print materials, and websites for grey literature, journal articles, government studies, graduate research materials, consultancy findings, think tank papers, industry leaders' current initiatives, and editorials, among other sources. NORC reviewed a series of articles authored by industry leaders, extracting from it key search terms which were then applied to find other relevant sources to inform this report. For each source used, NORC consulted works cited, as well as alternate sources that cited the original source. Hundreds of articles and other materials were consulted to populate this scan.

Defining Value

While there are numerous stakeholders necessary to achieve value in healthcare, the first step in realizing value is coming to a common definition that can be applied to all stakeholders. Michael Porter's definition of value is the most often-cited conceptualization:[1]

$$\text{VALUE} = \frac{Quality\,(Outcomes\ over\ full\ cycle\ of\ care)}{Costs\,(Dollars\ Spent\ over\ full\ cycle\ of\ care)}$$

Although there are variations on this definition, the fundamental idea of health outcomes achieved per dollar spent provides a sound foundation for looking at the components of value. "Quality" refers to specific outcome measures for a patient with a given condition. There is general agreement that these measures should capture health outcomes over the full cycle of care, including comorbidities and associated conditions.

Applying the Value Definition to Stakeholders

This general definition of value in healthcare is broad-spanning, however, it has different implications for the many industries that comprise the healthcare sector. Although there may be notable differences for sub-sectors of a specific industry (i.e. medical device manufacturers versus pharmaceutical manufacturers), for the purposes of this paper, sectors are grouped according to overall categories within the scope of this review.

Medical Manufacturers. Medical manufacturers of pharmaceuticals, devices, personal diagnostics, as well as labs, and healthcare information technology firms, among others, have a significant stake in promoting value through their products and services. In order for these firms to achieve value in their business, and subsequently for patients, the "promise" of a technology and associated development costs must be considered against its output, impact on health, and return on investment once the product is realized and disseminated for use.[2]

Payers. Payers are under continuing pressure to hold down costs for their customers, particularly employer customers who are demanding more value for each healthcare dollar spent. The historical approach once used by payers, such as restricting patients' choice of providers and managing treatment decisions, is being restructured to a model that maximizes value by aligning providers with quality-based outcomes along a value-based system framework. In an ideal model underpinned by value-based competition, payers vie for contracts with the most successful providers, defined as those who deliver services linked with the best outcomes for the patient, not those who deliver the most volume of services. Providers within a value driven network whose reporting shows better patient outcomes over the full cycle of care will be compensated accordingly by payers, versus those reporting worse patient outcomes. In this model, payer competition would also increase and consumers would assumingly choose health plans based on the quality and access offered by such a plan.

Providers and Systems. In order to achieve value, providers and health systems, much like payers, must take into account the full cycle of care for patient conditions. The current practice of delivering care places emphasis on the volume of care delivered, not necessarily the appropriateness and quality of care provided; in delivering health care, quantity does not equal quality. Such practices are heavily motivated by the current fee-for-service incentive structure that underpins healthcare delivery in the U.S. The fee-for-service structure incentivizes providers to duplicate services with little to no value-added in multiple disconnected sites of care. Providers do not currently have proper incentives in place to streamline care around medical conditions; nor do providers and systems have enough expertise and experience to create comprehensive initiatives that promote value-based care. While innovative practices are emerging in these settings, the provider and health system landscape will require dramatic transformation in order to achieve a more value-based idea of care.

Patients and Consumers. Value is predicated upon delivering patient-centered care over the full cycle of a condition. This inherent patient-centric approach means patients and consumers are at the heart of the value equation: care is structured around them, costing is organized by patient conditions, and services are rendered according to individual patient needs. However, in order for the value-based system to work, consumers and patients must start to bridge the gap that currently exists in decision-making regarding their own healthcare.

The Current State of Value: Barriers to Change

Previous efforts at reforming the current healthcare system towards a more value-oriented system have focused on two separate streams: quality improvement and cost containment.[3] These two concepts are often siloed rather than being considered in relation to each other under the overarching context of value creation in healthcare. The Center for Medicare & Medicaid Innovation (the Innovation Center) is currently working to bridge cost and quality by developing and evaluating alternative payment and service delivery models which are designed to overcome several major barriers to achieving value-based healthcare delivery.

Incentives and Institutionalized Payment Models. The current fee-for-service delivery model is perceived as perhaps the largest institutional barrier to achieving value in healthcare. Fee-for-service also adds additional cost burden, such as high out-of-pocket costs, direct and indirect legal costs, administrative costs, and system-wide costs of overutilization.[4] Each stakeholder responsible for organizing, delivering, consuming, or regulating healthcare has varying incentives and thus, may work against other sectors in order to achieve their own financial rewards.[5] New models of payment, such as global payments and bundled payments are emerging which incentivize care coordination over the full cycle of a condition, but these require significant infrastructure investments and expose providers and provider organizations financially due to assumption of risk.[6] Compounding misaligned industry incentives is the lack of incentives available to patients that help guide them in making informed choices about their own healthcare, such as when and where to get care and what types of care to seek. Patients are generally unaware of poor care standards, unnecessary costs, and larger implications of their healthcare purchasing decisions.[7]

Fragmented Care Delivery among Providers and Systems. Fragmentation in healthcare is perhaps most evident through analysis of care delivery: care is often delivered by multiple specialized providers in various, independent sites of delivery. Lack of patient engagement coupled with such systematic fragmentation in delivery leads to duplication of services and provision of unnecessary services, a disjointed care plan and lower quality patient outcomes, and higher patient and overall system costs.[8] Another contributing factor to system fragmentation is the lack of widely adopted corporate-, physician-, and patient-level evidence-based standardized "best practice" care guidelines for conditions.[9] While such disconnect and system fragmentation is institutionalized in the healthcare sector, the value framework aims to improve the integration, coordination, and delivery of healthcare by shifting the focus toward a shared common goal among all actors: improving the value for the patient over a fully integrated cycle of care.

Health Information Technology (IT). Many of the system-level barriers have an underlying contributing factor: insufficient health IT. Health IT has massive potential to drive value if structured and used correctly: it has the capacity to improve provider decision-making, enhance data collection, surveillance, and monitoring, enable connectivity among providers and between patients and those involved in care decisions, manage population health, and reduce administrative costs, among other benefits. While there are various forms of health IT (electronic health records (EHRs), outcomes and claims data processing, predictive modeling software, etc.), many face similar problems under the context of value.[10] While the U.S. has made significant progress in the adoption and meaningful use of health IT in the last decade, the complex and expensive nature of purchasing and maintaining health IT, coupled with issues of vendor continuity, privacy, integration of different types of health IT, and the change in work flow needed to incorporate health IT, especially EHRs, into practice help explain the ongoing challenges of adoption across care settings.[11] However, for value to be achieved, health IT needs to be embraced and nurtured – it provides the basis for communication, data reporting, and care integration in the 21st century and should be seen as a promising tool for achieving value in healthcare.

Data Standardization, Measurement, and Collection. There are also significant barriers to value creation in how and what types of data are currently collected. The data collected in healthcare is plagued by a lack of standardization. For manufacturers and providers, there is a significant lack of general guidance by the federal government and private payers regarding what sources of evidence must be provided in order to render appropriate coverage and reimbursement.[12]

Educating Stakeholders. Elements of value, such as public reporting, can only be realized if stakeholders are sufficiently engaged with and educated about the creation of value and each stakeholder's role in the process. Providers can become more effective partners in the care delivery process, becoming more aware of what matters to individual patients and delivering care accordingly.[13] Rebalancing incentives, investing in educational resources, and realigning organizational goals in order to effectively educate the provider workforce presents both institutional- and individual-level challenges to achieving value in healthcare.

Government Regulation. Central to achieving a value-based model of care delivery is greater provider integration. Currently, however, many federal and state laws limit or disincentivize provider collaboration in care delivery. Such laws include the Antitrust law, Stark law (federal physician self-referral law), Anti-kickback law, Civil Monetary Penalty law (CMP),[14] and the Internal Revenue Service (IRS) tax-exempt laws.[15] These laws are intended to restrict financial incentives to providers that could result in over- or under- utilization, or referrals that are not in the interest of the patient.[16] Further disincentivizing integration is a limited or lack of guidance from enforcement agencies on the implementation of these laws, creating confusion for arrangements designed to create value.

Current Initiatives Addressing Value: Quality Innovation in Healthcare

There are numerous innovative initiatives underway in the U.S. – such as those introduced by the Center for Medicare & Medicaid Innovation – aimed at improving value within the healthcare system. Below are brief descriptions of some of the key healthcare innovations that are being adopted by one or more organizations, either as pilots or as integral business practices.

Value-based Purchasing

- ***Pay for Performance (P4P).*** P4P initiatives are designed to promote value through incentives by rewarding providers who deliver high-value services in cost-efficient ways and by encouraging lesser-performing providers to raise their care delivery standards. P4P programs have proliferated over the past decade and are commonplace in Medicaid and HMO plans, as well as emerging in Medicare programs.[17]

- ***Value-based Insurance Design (VBID).*** VBID attempts to reduce or eliminate financial barriers to accessing care for patients, primarily to the access of high-value services and medications, encouraging patients instead to make value-based health choices and actively engage in choices that affect their health status.[18] VBID leverages reporting data on quality and costs of high-value drugs and services, encouraging patient use of such services over others though certain incentive structures, typically the lowering out-of-pocket costs for such services or shifting higher-value service into lower benefit tiers.

- ***Care Coordination Designs: ACO and PCMH.*** *Accountable Care Organizations (ACOs)* represent a form of P4P, where a group of providers (hospitals, primary care physicians, and/or specialists) enter into a contractual relationship to coordinate care and share the financial risks of their patient population. Participating providers "agree to assume responsibility for achieving clinical outcomes and a set of risks and rewards to reduce the growth of health care spending across a defined patient population."[19] A *Patient Centered Medical Home (PCMH)* is a comprehensive health care delivery model that provides coordinated and continuous care across an array of providers, specialists, and non-physicians to enhance the quality and value of care. The primary care provider facilitates the patient's care, working with a vast network of medical resources, communicating with the patient, fellow providers, specialists, and the patient's family.

Payment Reform: Global and Bundled Payments

- ***Global Payments.*** Under this payment model, "payors and providers agree to manage a given patient population with a set budget for a defined period."[20] The budget for a global payment is formed through claim and target assessments, and risk is shared across providers by aligning cost performance and setting incentives to quality benchmarks. Services included in a global payment typically include physician and hospital services, diagnostic test, prescription drugs and often other services, such as hospice and home health care.[21]

- ***Bundled Care Payment.*** Bundled care payment offers an alternative to the fee-for-service model. Instead of charging for individual services, bundled payments package payment for the entire medical treatment. Bundled care payment includes a clear breakdown of services received, including costs, procedures, appointments, and quality metrics to ensure that the patient can assess the overall value of each bundle. Ultimately, "this transparency enables patients to make better decisions about which provider offers the most value."[22] With an improved patient value consciousness, providers are incentivized to reduce costs while offering the best quality of care.

Time-driven Activity-based Costing

Time-driven activity-based costing (TDABC) is a promising accounting methodology that measures costs at the medical condition level, tracking expenses for all resources involved in treating a patient's condition (and associated comorbidities) over the full cycle of care. Using TDABC, healthcare organizations trace the path of a patient throughout the care continuum for a specific medical condition; identify the actual cost of each resource used in a patient's care, including personnel, facilities and equipment, as well as indirect and support costs associated with care (e.g. administration and IT); and document the amount of time the patient spends with each resource.[23, 24] All of these activities can then be added together to measure the total cost of an entire service or episode of care.

Conclusion

This environmental scan will serve as one part of a broader discussion for experts to identify further areas for consideration and action in bringing sustainable value to healthcare delivery and payment systems. The scan was composed through an iterative and comprehensive review of available literature to date, gathering academic, industry, consultancy, journal, government, and grey literature sources, among others. Many of the sources utilized similar frameworks for understanding value in healthcare, although the value definition had varying implications for the different industry stakeholder groups and was applied accordingly. Nevertheless, common characteristics arose across stakeholders, including the need for:

- A patient-centric approach to thinking about, delivering, managing, and paying for care at the condition level;
- Shifting away from fragmented fee-for-service care systems towards more integrated practices that cover the full cycle of care for a condition and incentivize proper utilization and care management;
- Utilizing standardized measures and practices that provide details on outcomes and costs;
- Collecting, processing, and reporting actionable data to consumers and stakeholders, and educating such groups accordingly so that they may properly interpret data;
- Integrating comprehensive health IT infrastructures to leverage data to enable coordination, inform choice, and improve care; and
- Having a shared goal across stakeholders of achieving value in healthcare, driving value-based competition.

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"Value in healthcare" is a complex and evolving concept aimed at improving the quality of care while simultaneously keeping costs incurred through the rendering of services in check. Due to the multitude of stakeholders within the healthcare sector, the definition of value is applied to each stakeholder with different connotations. Thus, in order to understand "value in healthcare," one must look at how the definition of value applies to each stakeholder group, including the current state of value in healthcare within each group, barriers to achieving value across stakeholders, current initiatives aimed at achieving value, and future innovations designed to achieve a broad-spanning system where value is the main driver of healthcare.

To obtain literature relevant to this environmental scan, NORC searched numerous databases, print materials, and websites for grey literature, journal articles, government studies, graduate research materials, consultancy findings, think tank papers, industry leaders' current initiatives, and editorials, among other sources. NORC started the scan by reviewing a series of articles authored by industry leaders, extracting from it key search terms which were then applied to find other relevant sources to inform this report. Upon identification of a relevant source, the source was reviewed and its key points were incorporated into a framework outline. Additionally, for each source used, NORC consulted works cited and alternate sources that cited the original source. The list of search terms was continuously updated with new terms garnered through progressive research. Hundreds of articles and other materials were consulted to populate the environmental scan.

Defining Value

While cooperation among numerous stakeholders is necessary to achieve value in healthcare, the first step in realizing value is coming to a common definition that can be applied to all stakeholders. Michael Porter's definition of value is the most often-cited conceptualization[25]:

$$\textbf{VALUE} = \frac{Quality\,(Outcomes\ over\ full\ cycle\ of\ care)}{Costs\,(Dollars\ Spent\ over\ full\ cycle\ of\ care)}$$

Although there are variations on this definition, the fundamental idea of value - health outcomes achieved per dollar spent - provides a sound foundation for looking at the components of value. "Quality" refers to specific outcome measures for a patient with a given condition. There is general agreement that these measures should capture health outcomes over the full cycle of care, including comorbidities and associated conditions. Measuring outcomes over the full cycle of care requires measurement of three types of outcomes in order to appropriately discern quality:

- ***Short-term measures*** - does the consumer survive and what is their degree of health or recovery.
- ***Functional measures of recovery*** - how much time it takes to return to normal activities of daily living, the degree of comfort, and any adverse effects from medical treatment.[26]
- ***Longitudinal measures*** - what are the long-term consequences of treatment and recovery and is health sustainable.[27]

These three types of measures provide a holistic picture of patient outcomes that can be used to assess the quality numerator of the value equation. The denominator, "costs," refers to payment for services and total dollars spent over the full cycle of care.[28] This includes costs incurred over a similar continuum to the measurement of outcomes.

Applying the Value Definition to Stakeholders

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Medical Manufacturers

Medical manufacturers of pharmaceuticals, devices, personal diagnostics, as well as labs, and healthcare information technology firms, among others, have a significant stake in promoting value through their products and services. In order for these firms to achieve value in their businesses, and subsequently for patients, the "promise" of a technology and associated development costs must be considered against its output, impact on health, and return on investment once the product is realized and disseminated for use.[29]

For such manufacturers, measures of economic value are especially important; these measures compare "the net costs and net health outcomes of two or more competing alternatives."[30]

- Examples include assessing "a technology's ease of administration in current delivery systems, political acceptability, or the broader social impacts", measuring the incremental benefits of a technology as compared to those commonly used already, or seeing a complete technological shift that changes the way care is delivered for the better.[31]

Proper value assessments on manufacturers' innovations are thus essential to achieving value for consumers. If an innovation is assessed using clear value criterion, the developers receive concrete feedback from decision-makers on what products will add value, what will be reimbursed, and on what areas to focus innovation in the future.[32] Since there are so many uncaptured elements of value, it is thought that current measures such as quality-adjusted life-years (QALYs) of value assessment for technology are not adequate. Hence, there is increased recent interest in **Multi Criteria Decision Analysis (MCDA)**, a tool that weights different elements of an innovation and gives a more holistic approach to determining the value of a product, allowing for trade-offs between defined, weighted criterion.[33] Manufacturers must balance delivering value to consumers successfully to gain profits and market share, demonstrating such value to payers, and delivering value to the system in terms of savings and medical or process improvements. Therefore, the crux of the value equation for medical manufacturers includes:

- How to best help decision-makers assess value of a product or innovation through weighted criterion and evidence-based research,[34] and
- Transferring value-rich innovations into actionable products that positively impact the value equation for patients, therefore creating more business.

Payers

The definition of value has differing, yet equally important connotations for payers with respect to how to best achieve value. Payers have historically tried to achieve value through a series of steps including restricting networks and patient choice, managing provider treatment decisions, minimizing administrative costs, and cost-shifting to consumers. However, there is emerging evidence that these approaches may not be conducive to maximizing value because they are thought to discourage delivery of quality care and prevent the alignment of providers along a value-based system framework.[35] In an ideal model underpinned by value-based competition, payers vie for contracts with the most successful providers, defined as those who deliver services linked with the best outcomes for the patient, not those who deliver the most volume of services.[36] Providers within a value driven network whose reporting shows better patient outcomes over the full cycle of care will be compensated accordingly by payers, versus those reporting worse patient outcomes. In this model, payer competition would also increase and consumers would assumingly choose health plans based on the quality and access offered by such a plan.

Building on this value-based competition model, the nature of patient costing (i.e., the process of estimating the actual costs of care for individual service recipient encounters) would change as well. Payers would compensate providers for services based on a costing model that uses single-billing per-patient, a billing structure that records costs for all services covered over the full cycle of care per patient condition (and associated comorbidities).[37] This model would create a highly results-driven competitive market where payers would be assessed based on their consumers' outcomes and associated costs to treat patient conditions.

Implementing this idea requires a high degree of coordination, however. Critical for such competition to succeed is wide-spread reporting of defined measures of subscribers' health outcomes and subsequent consumption by the general public of reported information.[38] For this model to succeed, payers would need to help "enable informed patient and physician choice and patient management of their health" while rewarding providers who excel with complimentary compensation and additional patient volume.[39] Additionally, payers would utilize different plan design structures in order to incentivize more value-based consumption of care by patients. Currently, although not necessarily effective, such structures include consumer-directed high-deductible health plans, tiering of benefits, and wellness programs.[40] What value means for payers is therefore tied directly to the connotations value has for others, mainly for providers and systems, patients, and the underlying information technology infrastructure.

Providers and Systems

In order to achieve value, providers and health systems, much like payers, must take into account the full cycle of care for patient conditions. The current practice of delivering care places emphasis on the volume of care delivered, not necessarily the appropriateness and quality of care provided; in delivering health care, quantity does not equal quality. Such practices are heavily motivated by the current fee-for-service incentive structure that underpins healthcare delivery in the U.S.[41] The fee-for-service structure incentivizes providers to duplicate services with little to no value-added in multiple disconnected sites of care. Providers do not currently have proper incentives in place to streamline care around medical conditions; nor do providers and systems have enough expertise and experience to create comprehensive initiatives that promote value-based care. While innovative practices are emerging in these settings, the provider and health system landscape will require a dramatic transformation in order to achieve a more value-based system of care. Surveys have shown that few providers have the experience and resources to engage in these transformative initiatives. Results of the Healthcare Financial Management Association's (HFMA) 2011 state survey of providers indicate that:

- More than 90 percent of respondents have some experience with redesigning clinical processes within a department, however, only 11 percent have experience redesigning care in a cross-continuum initiative that goes outside any particular facility.[42]

- Similarly, "only 12 percent of providers say they are ready now to take on network development. Slightly fewer—10 percent—are prepared for network management, and just 6 percent are ready today to engage in actuarial activities."

Shifting from fee-for-service towards a more value-based form of care delivery requires a variety of changes to provider and system practices. Together, these points can be taken as reducing the fragmentation, or rather, increasing the coordination of the current system of care delivery. According to the HFMA, value-based provider changes must encourage providers to work with payers on payment system evolutions so both parties can meet their financial needs, develop collaboration between practitioners, actuarial staff, and contract managers to implement cohesive billing practices aimed at delivering value-added care in a cost-effective way, and manage the appropriateness of care delivered throughout the patient population of a given system, organizing and coordinating such care around the condition of the patient.[43] By aligning these factors with an underlying IT infrastructure, incentive plans and care guidelines can be carefully structured so that the best possible care is delivered, costs are appropriately tracked, and measures of quality are reported.

Patients and Consumers

As noted previously, value is predicated upon delivering patient-centered care over the full cycle of a condition. This inherent **patient-centric approach** means patients and consumers are at the heart of the value equation: care is structured around them, costing is organized by patient condition, and services are rendered according to individual patient's needs. However, in order for the value-based system to work, consumers and patients must start to bridge the gap that currently exists in decision-making regarding their own healthcare.

> Economist Kenneth Arrow showed that "health care markets don't work as others do, because consumers lack the information to make good purchasing decisions…And health care decisions can be enormously consequential, with irreversible effects that make them qualitatively different from bad purchases in other markets."[44] Currently, most consumers are a step removed from making decisions about their care as employers make the first purchasing decision of what health plan is available; consumers therefore focus their concerns with access and quality – what doctors are the best and can I access such resources?[45]

These questions can only be effectively answered if patients are more engaged in their healthcare and the decisions affecting care. Such engagement is twofold: there is first a great need for augmented consumer education regarding consumption of healthcare and associated metrics, while there is also a need for patients to take an active role in reporting and interpreting outcomes – essentially becoming active contributors and consumers of publically reported quality information.[46] Value, then, is dependent on the "creation of meaningful, measurable standards to address patient concerns for care while balancing needs of other purchasers, payers, providers, systems, and manufacturers."[47] Consumer decisions based on these factors will

help propel the value-based industry and underlying health system forward, producing competition and ultimately, an increased focus on value-added services.

The Current State of Value: Barriers to Change

Previous efforts at reforming the current healthcare system towards a more value-oriented system have focused on two separate streams: quality improvement and cost containment.[48] These two concepts are often siloed rather than being considered in relation to each other under the overarching context of value creation in healthcare. The wider value landscape is currently characterized by several major barriers to achieving value-based healthcare delivery, often showing a disconnect between quality improvement and cost reduction.

Incentives and Institutionalized Payment Models

The current **fee-for-service delivery model** is perceived as perhaps the largest institutional barrier to achieving value in healthcare. Under such a system, providers are paid based on the volume and intensity of services provided, not the quality or appropriateness of such services. Fee-for-service also adds an additional cost burden, such as high out-of-pocket costs, direct and indirect legal costs, administrative costs, and system-wide costs of overutilization.[49] Each stakeholder responsible for organizing, delivering, consuming, or regulating healthcare has varying incentives and thus, may work against other sectors in order to achieve their own financial rewards.[50] Furthermore, current fee-for-service models provide estimates of costs incurred through accounting of charges; however, such models do not capture actual costs at the medical condition-level for individual patients, which includes costs for treating a condition over the full cycle of care.[51] New models of payment are emerging, such as global payments and bundled payments, which incentivize care coordination over the full cycle of a condition, but these require significant infrastructure investments and expose providers and provider organizations financially due to assumption of risk.[52] According to the 2014 National Scorecard on Payment Reform, commercial health plans have dramatically shifted how they pay physicians and hospitals with 40 percent of their payments now designed to encourage providers to deliver higher-quality care, a 29 percentage point increase over 2013 when just 11 percent of payments were value-oriented.[53] However, much value-oriented payment is in pay-for-performance arrangements with providers, offering only potential financial reward and no financial risk. Further, the results also found that only a small percentage of dollars flow through shared-risk arrangements and bundled payment (just 1 percent and .1 percent, respectively), despite the fact that these methods have strong potential to contain costs and improve care.[54] Thus, long-term advances in quality and affordability may require payers to pair bonuses with financial risk to providers. Compounding misaligned industry incentives is the lack of incentives available to patients for guiding them to make informed choices about their own healthcare, such as when and where to get care and what types of care to seek. Patients are generally unaware of poor care standards, unnecessary costs, and larger implications of their healthcare purchasing decisions.[55]

Fragmented Care Delivery among Providers and Systems

Fragmentation in healthcare is perhaps most evident through analysis of care delivery: care is often delivered by multiple specialized providers in various, independent sites of delivery. Lack of patient engagement coupled with such systematic fragmentation in delivery leads to duplication of services and provision of unnecessary services, a disjointed care plan and lower quality patient outcomes, and higher patient and overall system costs.[56] Another contributing factor to system fragmentation is the lack of corporate-, physician-, and patient-level adoption of evidence-based standardized "best practice" care guidelines for conditions.[57] While such disconnects and system fragmentation is institutionalized in the healthcare sector, the value framework aims to improve the integration, coordination, and delivery of healthcare by shifting the focus toward a shared common goal among all actors: improving the value for the patient over a fully integrated cycle of care.

Health Information Technology (IT)

Many of the system-level barriers have an underlying contributing factor: insufficient health IT. Health IT has massive potential to drive value if structured and used correctly: it has the capacity to improve provider decision-making, enhance data collection, surveillance, and monitoring, enable connectivity among providers and between patients and those involved in care decisions, manage population health, and reduce administrative costs, among other benefits. While there are various forms of health IT (electronic health records (EHRs), outcomes and claims data processing, predictive modeling software, etc.), many face similar problems under the context of value. One major issue that precludes value creation is the way in which data is collected and stored. Current health IT systems aggregate data but silo these data by department, type of service, or type of data; however, in order to discern costs and trends on a patient- and condition-level, data should be organized by patient condition across the full cycle of care.[58] System architecture and use is often further complicated by lack of common definitions for data points (treatments, diagnoses, etc.), lack of standardized templates in which data can be easily entered (EHRs), and a lack of accessibility to all parties involved in the delivery of care.[59] While the U.S. has made significant progress in the adoption and meaningful use of health IT in the last decade, the complex and expensive nature of purchasing and maintaining health IT, coupled with issues of vendor continuity, privacy, integration of different types of health IT, and the change in work flow needed to incorporate health IT, into practice help explain the ongoing challenges of adoption across care settings.[60] However, for value to be achieved, health IT needs to be embraced and nurtured – it provides the basis for communication, data reporting, and care integration in the 21st century and should be seen as a promising tool for achieving value in healthcare. According to Porter, a value-enhancing IT platform has six essential elements:[61]

- It is centered on patients,

- It uses common data definitions,
- It encompasses all types of patient data,
- The medical record is accessible to all parties involved in care,
- The system includes templates and expert systems for each medical condition, and
- The system architecture makes it easy to extract information.

Data Standardization, Measurement, and Collection

While health IT barriers highlight inefficiencies in the underlying data infrastructure that preclude value creation, there are also significant barriers to value creation in how and what types of data are currently collected. The data collected in healthcare is plagued by a lack of standardization. For manufacturers and providers, there is a significant lack of general guidance by the federal government and private payers regarding what sources of evidence must be provided in order to render appropriate coverage and reimbursement determinations. Better guidance would enable manufacturers and providers to measure and collect relevant data more easily and in a more timely manner.[62] Part of this debate centers around the definitions of **"medically necessary"** and **"reasonable and necessary",** the terms used to describe whether a medical service is needed, and therefore eligible for payment, and may include determinations based on comparisons to other services in the same treatment spectrum that provide similar benefits at lower cost. While intended to encourage the use of more cost-effective treatments, application of these policies have prompted increased calls for evidence-based data and subsequent incorporation of such data into coverage and reimbursement determinations for public and private payers.[63]

In addition, there is general consensus that in order to achieve value, there must be adoption and reporting of outcome measures that inform standards of care. However, competing definitions of "outcome" persist, resulting in data collection of measures that are inconsistent with the goals of value creation and measures that vary by payer. Some believe that present outcome measures rarely do more than track mortality and safety; they often focus on the least controversial and most easily-collected measures.[64] Measures may be overly narrow or too broad, such as measures covering a single department, hospital-wide readmissions, or specifically targeting adverse effects of treatment – none of which are indicators of true outcomes - those that have positive effects on patient health. Out of the 78 commonly used HEDIS (Healthcare Effectiveness Data and Information Set) measures, 73 are process measures and the remaining five are not considered true outcomes measures.[65] Such measures provide little information on the efficacy of care and actual impact on the patient, and rarely include measures that matter to the patient. In order to achieve value, there is general recognition that there must be a switch to implementing, collecting data on, and analyzing **true outcomes** measures that focus on three primary sets of measures:

- Short-term measures,

- Functional measures, and
- Longitudinal measures.

By organizing measures into these three sets, data can be better used to associate outcomes with a condition over the entire cycle of care and can thus, better meet the needs of patients and ultimately providers, payers and systems of care.[66]

Data on costs are also currently measured and collected on overly-broad fields such as department- and hospital-wide fee-for-service reimbursements, instead of at the patient level. While providers and patients have very limited knowledge about the costs of each component of care, there is even less ability to determine how costs and outcomes relate to each other and about the cost of services rendered over the full cycle of patient care for a particular condition.[67] Cost-accounting at the patient level over the full cycle of care includes understanding and accounting for all resources (personnel, equipment, facilities, and services) and associated support costs (IT and administrative) in order to determine the relationship between the costs of treatment for a patient condition and the outcomes achieved.[68] Understanding how costs relate to outcomes is a critical component to improving processes and care design.

These barriers to value are further entrenched due to a lack of effective measurement techniques and feedback loops for providers and patients that make use of such data. The need to go beyond typical evidence-based process measures resides in the ability to distinguish competent care from exceptional care as it pertains to patient health.[69] To do so requires that new measures be developed and implemented per condition and that these measures be consistently reported, an iterative process that will take gradual refinement until proper measures and collection processes are identified.[70] Functional measures and patient-reported measures are harder to accurately collect and quantify than are current measures used, such as readmission rates. Hence, there is a need for new methods of data collection that engage patients in their health, asking them how they feel and tailoring care accordingly.[71]

Just as collecting the data is a challenge, displaying any such data to stakeholders in **feedback loops** presents significant obstacles. The data collected would ideally be relayed back to providers to track progress as they treat their patients, while also publically reported so that consumers can compare providers, plans, and health systems based on quality.[72] However, such systems are expensive, hard to implement without disrupting organizational workflow, and require collaboration and agreement among a variety of stakeholders.[73] Despite these concerns, such systems provide the underlying foundation for value by coordinating organizational staff and processes, producing actionable data on outcomes and associated costs, and creating "patient information repositories that will become increasingly important as providers contemplate the assumption of risk," a staple of moving away from fee-for-service care delivery and towards value-based care.[74] On a larger, public scale, **public reporting** of quality information requires agreement and collaboration across industry and

government stakeholders, precise definitions and reporting mechanisms, and significant stakeholder engagement – all of which are difficult to achieve without a shared value framework as the overarching goal.

Educating Stakeholders

Elements of value, such as public reporting, can only be realized if stakeholders are sufficiently engaged with and educated about the creation of value and each stakeholder's role in the process. Value education needs to start during medical school and training programs with education in health economics, identification of cost-effective treatments, and accurate patient accounting.[75, 76] For current providers, instilling value requires leadership and corporate-level embracing of these ideas. Through these efforts, providers can become more effective partners in the care delivery process, staying attuned to what matters to individual patients and delivering care accordingly.[77] Rebalancing incentives, investing in educational resources, and realigning organizational goals in order to effectively educate the provider workforce presents both institutional- and individual-level challenges to achieving value in healthcare.

While **provider education** is essential to creating value for patients, education of healthcare consumers is equally important in creating value not just for patients, but for the overall healthcare system. Current incentives for consumers to seek value in their healthcare decision are weak: there is often little or no reliable information regarding the quality of providers available and consumers often focus on out-of-pocket costs when choosing whether or not to seek care.[78] Instead, patients should be making informed decisions based on value metrics to discern which providers to see, what treatment options to pursue, and how to comply with recommended medical prescriptions. However, most patients and healthcare consumers have historically had insurance plans chosen for them by their employers, detaching them from direct purchasing decisions in healthcare, and are generally uninformed about the cost implications of the care they receive.[79] Furthermore, patients have relatively low levels of health literacy which contributes to insufficient use of preventive services such as immunizations, lack of adherence to care protocols, preventable readmissions, and potential for higher costs of care.

Providers and organizations have sought to bridge these gaps through decision aids, such as e-health tools, and shared clinical decision-making processes, which have shown to improve patient knowledge and understanding of the care process.[80] **Shared decision-making** can help reduce costs and increase the patient-centeredness of care, key components of value. Patients have an essential role to play in achieving value – their decisions impact outcomes and costs and drive competition between other stakeholders – as such, patient engagement needs to be nurtured, incentivized, and strengthened so that healthcare consumers' decisions are based off of value, not purely costs and convenience.

Government Regulation

Central to achieving a value-based model of care delivery is greater provider integration. Currently, however, many federal and state laws limit or disincentivize hospital and provider collaboration in care delivery. Such laws include the Antitrust law, Stark law (federal physician self-referral law),[81] Anti-kickback law,[82] Civil Monetary Penalty law (CMP),[83, 84] and the Internal Revenue Service (IRS) tax-exempt laws.[85] These laws are intended to restrict financial incentives to providers that could result in over- or under- utilization, or referrals that are not in the interest of the patient.[86] Further disincentivizing integration is a limited or lack of guidance from enforcement agencies on the implementation of these laws, creating confusion for arrangements designed to create value. For instance, the Anti-kickback law creates uncertainty concerning arrangements where physicians in a clinically integrated hospital are rewarded for treating patients using evidence-based clinical protocols.[87] Similarly, the CMP, as interpreted by the HHS Office of Inspector General, prohibits any incentive that may result in reduction of care, even if the result is an improvement in the quality of care.[88] In a limited number of exceptions, regulatory agencies have worked with providers to reduce such barriers, as in the case of the waivers to the Stark and Anti-kickback laws for ACOs participating in the Medicare Shared Savings Program,[89] which were extended in 2014.[90, 91] Support for innovative and value-based models of incentive payments, insurance design, and care coordination depend, in large part, on support from the enforcing agencies for these laws. Similarly, current state regulatory barriers too often impede use of bonus payments, shared shavings, and shared risk/accountability.

Value creation cannot be sustained or achieved without appropriate and flexible data governance policies because patient-centered assessment and improvement require data sharing and collaboration across stakeholder groups. Current variation across federal regulations and ambiguity in areas such as requirements for de-identification and consent pose significant challenges for value creation.[92] Combined with the threat of severe penalties for those who violate the regulations,[93] ambiguity creates a significant disincentive for secondary use of data. Further, because the Health Insurance Portability and Accountability Act of 1996 (HIPAA) leaves room for interpretation regarding compliance, there is substantial variation in the way institutions interpret and apply the Privacy Rule.[94, 95] The tendency for institutions to rely heavily on Institutional Review Boards or Privacy Boards for these interpretations can add additional challenges, particularly for multi-site research studies. Public trust in the privacy of EHRs and the clinical information they contain is fundamental to the evolution of a modern, information-driven health care system. Central to facilitating this trust is the establishment of a governing body within networks with clear authority to enforce contracts/agreements and make ethical decisions. Without clear policies on data ownership, rules for sharing data, and protocols for relaying information back to patients and providers, the system cannot collect the kinds of information that would inform pay-for-performance or allow the creation of a learning healthcare system.[96] With proper data governance, performance improvement will be available at all levels of the health

care enterprise, enabling real value creation from cross-organizational performance improvements and cross-organizational information sharing.

An often discussed issue regarding the development approval and drugs, biologics, and medical devices is the role of the Food and Drug Administration (FDA). While there is general consensus that the FDA provides an essential public service by regulating the approval process for safe and effective products, there is also a long history of concern that the U.S. regulatory process serves as a barrier to the development and timely approval of new products and increases the cost to consumers and the healthcare system as a result of these barriers. At the same time, FDA continues to serve as a beacon of consumer confidence in approved marketed products. However, there continues to be strong concerns expressed by industry members, advocates, and members of the public contend that the FDA regulatory process inhibits value through a combination of the high capital costs and the long duration of time to complete the process.[97] Critics also contend that the burden of the FDA approval process is not conducive to sustainable investment in and discovery of novel biopharmaceutical products, and jeopardizes national security.[98]

There is also growing concern about the role of the FDA in emerging health IT technologies. Medical technology, ranging from wearable technologies and microsensors to health-oriented applications (apps), all represent opportunities to increase the value of healthcare and empower the role of the consumer towards a value-based system. However, many in the health technology industry are expressing concerns about current government regulations and the standards (or lack of standards) for healthcare technology, suggesting they may be stifling innovation in the field and inhibiting the value and ease of access to these devices and apps.[99] Advocates and members of Congress are considering addressing some of these barriers by proposing legislation that would refine and prioritize FDA's regulation of health IT by limiting oversight to technologies that pose the greatest health risk. The goal of this legislation is to improve patient safety and protect certain types of health IT from too much regulation that could stifle job creation, innovation and care improvement, according to its sponsors.[100]

Current Initiatives Addressing Value: Quality Innovation in Healthcare

There are numerous innovative initiatives underway in the U.S. aimed at improving value within the healthcare system. Below are brief descriptions of some of the key healthcare innovations that are being adopted by one or more organizations, either as pilots or as integral business practices.

Value-based Purchasing (VBP)

"Value-based Purchasing" is an overarching term used to characterize a variety of purchasing strategies used by both private and public entities aimed at improving quality and cost-efficiency of healthcare services provided.

> "Effective health care services and high performing health care providers are rewarded with improved reputations through public reporting, enhanced payments through differential reimbursements, and increased market share through purchaser, payer, and/or consumer selection."[101]

In many ways, VBP helps to create actionable methods of delivering value, incorporating four major elements of value: standardized performance measurement, transparency and public reporting, payment innovation, and informed consumer choice.[102]

Pay for Performance (P4P). P4P initiatives are designed to promote value through incentives by rewarding providers who deliver high-value services in cost-efficient ways and by encouraging lesser-performing providers to raise their care delivery standards. P4P programs have proliferated over the past decade and are commonplace in Medicaid and HMO plans, as well as emerging in Medicare programs.[103] Providers and hospitals in P4P programs are rewarded, either financially (elevated payments) or through non-monetary recognition (status through public reporting), for achieving certain clinical benchmarks and following process-based care guidelines. Similarly, P4P financial rewards can be applied to rewarding health plans who meet or exceed certain reporting, compliance, and quality metrics, as is done in TennCare, Tennessee's Medicaid managed care program.[104] Alternatively, penalties may be levied unto providers, hospitals and health plans who fall short of benchmarks. Such penalties include withholding payments for "never-events," medical errors and conditions that are reasonably preventable through adherence to practice guidelines.[105]

P4P can be beneficial in that it aligns payer and provider interests around delivering higher-quality care, provides incentives for doing so, and is measurable in its performance targets.[106] However, results from studies measuring the effects of P4P programs have thus far proved inconclusive. While many studies have demonstrated that payment incentives have a modest effect on improving outcomes,[107] questions about the strength of the study design raise doubts about whether these models are likely to show significant quality improvements in P4P demonstrations.[108] Some studies also show that P4P has the potential to be cost-effective, but there is a dearth of evidence showing this to be true in practice.[109] Early conclusions indicate that P4P programs are seemingly more effective when:

- Measures are used that have more room for improvement and are easy to track;
- Measures are directed at individual physicians or small groups;
- Rewards are based on providers' absolute performance;
- The program is designed collaboratively with providers;
- Larger payments are used (This is underscored by a recent US study that found that an increase in payments triggered an increase in behavioral response.[110]);

- The provider or group employs more care management processes and more health IT infrastructure;[111] and
- Incentives are aligned between multiple health care payers and providers.[112]

Despite P4P's alignment of delivering care to meet quality benchmarks, it does so typically within the context of fee-for-service incentives – while well intentioned, P4P's incentive structure still is rooted in delivering complex, intensive services instead of delivering integrated quality over the full cycle of care for a condition.[113] A major criticism of P4P is that instead of promoting value through payment incentives, it instead incentivizes adherence to certain clinical processes and HEDIS benchmarks – more of "pay for compliance" than "pay for performance."[114] Along with methodological weaknesses, this disconnect may contribute to the lack of conclusive studies available evaluating P4P effectiveness; value is determined based on true outcomes-based results, not on inputs and adherence to processes common in typical P4P programs.[115]

Furthermore, non-financial incentives such as public reporting have shown a similar moderate impact on provider performance – the most discernable effect was a short-term improvement in process quality, not outcomes.[116] In addition to its undetermined effects on value, P4P programs have noted some unintended consequences that could negatively impact care delivery. Such consequences include contracted physicians engaging in risk selection of patients, spillover onto non-incentivized measures, gaming of data to generate false scores, and negative impacts on providers' intrinsic motivation to deliver high-quality care.[117] While an attractive option to organizations looking to improve value, P4P still faces significant obstacles to being realized as an effective value-based innovation.

Value-based Insurance Design (VBID). VBID is another value-based purchasing initiative that aims to reduce costs, but is focused on targeting patients rather than providers. VBID attempts to reduce or eliminate financial barriers to accessing care for patients, primarily to the access of high-value services and medications, encouraging patients instead to make value-based health choices and actively engage in choices that affect their health status.[118] VBID leverages reporting data on quality and costs of high-value drugs and services, encouraging patient use of such services over others though certain incentive structures, typically lowering out-of-pocket costs for such services or shifting higher-value service into lower benefit tiers.

Such services are not necessarily low-cost, since value is determined by the ratio of clinical benefit to cost and not overall cost.[119] This approach to incentivizing value is also partially reliant on patient and consumer education – patients must be able to discern between high-value and low-value services in order to make the appropriate value-based decisions incentivized by VBID.[120] There are two main types of VBID programs: those that specifically target high-value services in a general patient population, and those that target patients with specific clinical diagnoses and lowers cost-sharing for those groups of patients.[121]

Pitney Bowes was one of the first employers to implement VBID in an attempt to improve employees' health outcomes.[122] Employers and health plans utilizing VBID are essentially using the incentive structure to stabilize costs and improve quality through chronic disease prevention, care plan adherence, and utilization of service that offer the most value for patients.[123] Recent reviews of VBID programs have shown that VBID is associated with "improved adherence, as well as with lower out-of-pocket spending for drugs."[124] To offset costs from the copay reductions, researchers were anticipating cost savings from reductions in future services avoided due to better initial clinical outcomes. However, few cost savings have been realized in the short-term, nor is it clear what incentive structures are most effective in encouraging use of value-based services.[125]

Care Coordination Designs: ACOs and PCMH

Accountable Care Organizations (ACOs). ACOs represent a form of P4P, where a group of providers (hospitals, primary care physicians, and specialists) enter into a contractual relationship to coordinate care and share the financial risks of their patient population. Participating providers "agree to assume responsibility for achieving clinical outcomes and a set of risks and rewards to reduce the growth of health care spending across a defined patient population."[126] At its core, an ACO aims to meet the quality and cost objectives set by payers to achieve financial rewards. As described later in the paper, ACOs can work with payers to utilize global payments (i.e. a pre-fixed payment for a set population) and bundled payments (an all-encompassing fee-for-a condition or procedure) as a means to meet cost and quality objectives.

Although ACOs typically vary in scope, key components include "payment reform, provider accountability, and a coordinated continuum of care."[127] To help providers achieve shared savings, ACOs often provide services such as care coordination, IT systems and support, and administrative and practice redesign guidance to participating providers. ACOs can take the form of "an independent nonprofit organization formed specifically to serve as an ACO, an independent practice association, a multi-specialty group, a hospital-medical staff organization or a physician-hospital organization."[128] There are also entire health systems that function as ACOs, offering a full range of comprehensive health services, such as the Cleveland and Mayo Clinics.

The Patient Protection and Affordable Care Act helped promote ACOs "that seek to reduce spending while maintaining care quality or to improve quality at no increased cost."[129] Currently, CMS has instituted three types of ACOs: the Pioneer ACO Model (for early adopters), the Medicare Shared Savings Program (for Medicare fee-for-service providers), and the Advance Payment ACO Model (for physician based and rural providers). CMS recently announced that the Pioneer Program achieved $96 million in savings for year two of the effort, creating ACO joint savings of $68 million. Cost savings were also accompanied by an improvement in quality scores "by 19 percent, and increased performance on 28 of 33 measures between performance year one and performance year two."[130].

Although ACOs represent a promising avenue to improve the cost, efficiency, and quality of healthcare, significant challenges remain to optimizing their potential. Deloitte presents four challenges to ACOs:[131]

- Physician buy-in (risk, capitation, and IT systems),
- Consumer response and leakage (willingness to stay within the ACO network),
- Payments and incentives (lack of payment consensus), and
- Infrastructure to manage risk (resources to build information systems and medical protocols, government compliance, and administrative burden).

Patient Centered Medical Homes (PCMH). A PCMH is a comprehensive health care delivery model that provides coordinated and continuous care across an array of providers, specialists, and non-physicians to enhance the quality and value of care. The primary care provider facilitates the patient's care, working with a vast network of medical resources, communicating with the patient, fellow providers, specialists, and the patient's family. The PCMH presents another framework that attempts to address the value dilemma in healthcare - cutting costs while maintaining or even improving the quality of care for patients. In 2007, the American Academy of Pediatrics, the American Academy of Family Physicians, the American College of Physicians, and the American Osteopathic Association created a set of "joint principles" that provide a guide for PCMHs:[132]

- *Personal Physician* – Each patient has an ongoing relationship with a personal physician that provides first contact and continuous and comprehensive care.
- *Physician-Directed Medical Practice* – The physician leads a team of physicians and non-physicians at the practice level who collectively take responsibility for the care of patients.
- *Whole Person Orientation* – The personal physician (or nurse practitioner, etc.) is responsible for providing all of the patient's health care needs or arranging care with other professionals for all stages of life (acute, chronic, preventive services, end of life).
- *Care is Coordinated and/or Integrated* – Patient care is coordinated across the health care system (subspecialty care, hospitals, home health, nursing homes, etc.), and within the community (family, public, and private community services).
- *Quality and Safety* – Quality and safety are achieved through a variety of techniques, centering on physician accountability for continuous quality improvement, practice and physician-level voluntary engagement in PCMH recognition processes and performance measurement, and active patient engagement in decision-making and quality improvement.
- *Enhanced Access* – Patients are provided enhanced access to care through systems like open scheduling, expanded hours, and new communication options between patients and physician and practice staff.

- *Payment* – Payment should reflect the additional costs of implementing and coordinating patient-centered care and should allow for incentive payments, including shared savings from reduced hospitalization and bonus payments for achieving measurable and continuous quality improvement.

While there has been significant expansion of this model, there are several barriers to implementing PCMHs including significant up-front investments by primary care practices and participating providers, developing or aligning IT systems for care coordination, and buy-in from physicians to approach care holistically and collaboratively.[133] PCHMs are likely to grow with the popularity of ACOs, where both can work in tandem to create "care teams, panel management, prevention and wellness, care guidelines, evidence-based medicine, and patient engagement."[134]

Medicare Payment Reform. To spur further use of value-based payment and delivery designs, the Department of Health and Human Services (HHS) recently announced goals and a timeline for moving 30 percent of traditional fee-for-service physician payments in Medicare to value- and quality-based payments by the end of 2016. This percentage would increase to 50 percent of payments outside of managed care to such models, including ACOs or bundled payments, by 2018.[135] HHS also set goals of transitioning from 80 percent (current) of hospital payments tied to quality or value through its Hospital Value-based Purchasing and Hospital Readmissions Reduction Programs to 85 percent by 2016 and to 90 percent by 2018.[136] To enable attainment of these goals and to increase scalability beyond public programs, HHS announced the creation of the Health Care Payment Learning and Action Network, which will work with stakeholders to expand the reach of alternative payment models to other sub-sectors of the healthcare industry.

Payment Reform: Global and Bundled Payments

Global Payments. Under this payment model, "payors and providers agree to manage a given patient population with a set budget for a defined period."[137] The budget for a global payment is formed through claim and target assessments, and risk is shared across providers by aligning cost performance and setting incentives to quality benchmarks. Services included in a global payment typically include physician and hospital services, diagnostic tests, prescription drugs and often other services, such as hospice and home health care.[138]

Global payments are often utilized within ACOs that have access to a network of specialized medical professionals capable of serving the needs of an entire patient group. Global payments are increasingly gaining in popularity as a method to achieve value. Under this model, providers are incentivized to "coordinate and deliver care efficiently and effectively to hold down expenses."[139]

The most prevalent approach to global payment is capitation: "an all-inclusive payment per enrollee for a defined scope of services, regardless of how much care is actually provided."[140] Capitated global payments are often used by health maintenance organizations on a monthly, per-patient basis that covers the patient's care

in its entirety.[141] A primary concern of the capitation model is that physicians would withhold care to cut costs, which is why global capitation must be paired with quality metrics to ensure value for the patient.

Global payments are designed to:[142]

- Promote cost-effective prevention and early intervention,
- Eliminate services of questionable value,
- Reduce excess health care system capacity, and
- Reverse the current incentive providers have under fee-for-service to provide more services to earn a higher income.

Global payments achieve cost reduction and improve the value framework by holding a network of providers responsible for the cost and quality of care. Providers share the benefits from operating under the agreed global payment, and care improves by attaching quality incentives. A beacon for the global payment movement resides within Blue Cross Blue Shield's Alternative Quality Contract, a global payment structure enacted in 2009 to reduce costs and increase the quality of care in Massachusetts. In the second year of the program, among 11 participating health care systems, providers practicing under the global payment agreement operated at a margin of 3.3 percent less than those under different payment schemes. Providers who previously operated under a fee-for-service model achieved even higher savings at 9.9 percent. Reductions in cost also came with quality enhancements for "chronic care management, pediatric care and adult preventive care."[143]

Bundled Care Payments. Bundled care payment offers an alternative to the fee-for-service model; instead of charging for individual services, bundled payments package payment for the entire medical treatment. This all-encompassing approach offers a single fee to pay for everything from "diagnosis to recovery."[144] Bundled care payment includes a clear breakdown of services received, including costs, procedures, appointments, and quality metrics to ensure that the patient can assess the overall value of each bundle. Ultimately, "this transparency enables patients to make better decisions about which provider offers the most value."[145] With an improved patient value consciousness, providers are incentivized to reduce costs while offering the best quality of care.

A bundled approach uses the value framework to align incentives among key stakeholders and eliminate fragmentation that creates costly inefficiencies. The shared mission of improving the value of care across a treatment cycle elicits collaboration between physicians and hospitals. By sharing information, providers can enhance treatment while reducing costs. There are two payment mechanisms for bundled care: retrospective payments and prospective payments.

A **retrospective payment model** uses an estimated budget for a medical condition, but continues to bill services on a fee-for-service scale. After a pre-determined time period, typically either annually or quarterly,

the payer assesses the billed payments against the predetermined budget; providers are either rewarded or penalized depending on whether they operate below or above the budget. Retrospective payments operate within the confines of the fee-for-service system, yet may add administrative burden with back-end budget assessments. Additionally, retrospective payments are not consumer-centric, and fail to involve the patient in bundling decisions which limit the ability to reduce costs.

A **prospective payment model** applies a single fee to a treatment service, allowing the consumer to make a value conscious decision, and avoid "complex co-pays and separate professional and facility fees."[146] Each bundle is risk-adjusted to account for preexisting health conditions, allowing both healthy and more vulnerable populations to benefit from bundled forms of care. Unfortunately, risk adjustment mechanisms are still in the infancy stages of development, and the current billing landscape poses a barrier to accurately projecting bundles. The Prometheus Bundled Payment Experiment, supported by the Commonwealth Fund and the Robert Wood Johnson Foundation, created a program that automates claim aggregation. The software takes data from current billing systems to estimate a bundled payment for a type of condition. Yet, barriers such as ensuring compatibility with multiple claims databases and depending on potentially outdated claims information poses significant challenges to systematically and accurately creating pricing bundles.

Bundled payments are currently being piloted around the country and take the form of acute episode bundles (hospital and physician costs), temporal care cycle bundles (major surgical interventions), medical condition bundles (long-term medical events), and subscription bundles (chronic conditions over a specific period).[147] The current landscape favors acute episodes and temporal care cycle, with bundles mainly targeting orthopedic and cardiac conditions. Most notably, the Medicare Participating Heart Bypass Center Demonstration, which operated from 1991 to 1996, conducted single fee coronary artery bypass graft [CABG] surgeries, covering the entire episode of care.[148] At the conclusion of the program, Medicare saved a total of $42.3 million, amounting to an average decrease of 10 percent, while beneficiaries saved $7.9 million.[149] The cost decreases were also paired with quality improvements, with the CABG bundle witnessing an 8 percent drop in mortality rates.[150]

Time-driven Activity-based Costing

In addition to the payment and care delivery initiatives previously mentioned, a modified approach to estimating the costs of delivering patient care, and how those costs compare to outcomes achieved, can help to create value in healthcare. **Time-driven activity-based costing** (TDABC) is a promising accounting methodology that measures costs at the medical condition level, tracking expenses for all resources involved in treating a patient's condition (and associated comorbidities) over the full cycle of care. Using TDABC, healthcare organizations trace the path of a patient throughout the care continuum for a specific medical condition; identify the actual cost of each resource used in a patient's care, including personnel, facilities and

equipment, as well as indirect and support costs associated with care (e.g. administration and IT); and document the amount of time the patient spends with each resource.[151, 152] All of these activities can then be added together to measure the total cost of an entire service or episode of care.

TDABC represents a rediscovery of the cost-accounting equation **(Resource cost = Quantity of resource units x Price per unit of the resource)**, applying it to all resources acquired and supplied by the healthcare organization, not just direct labor and direct materials. As a result, all hospital-and physician-related costs are captured as part of an integrated calculation. In this model, standard costs are based on estimates of a resource's capacity cost rates – that is, how much it costs, per hour or per minute, for a resource to be available for patient-related work **(Capacity costs = Expenses attributable to resource / Available capacity of resource)**.[153] This methodology also uses a bottom-up approach to costing patient care based on the actual clinical and administrative processes and resources used to treat patients. By mapping processes and measuring the costs involved in treating specific medical conditions over complete cycles of care, healthcare organizations can better determine the true cost of providing care for the conditions.[154] This approach bridges a historical divide between physicians, clinical teams, administrative staff, and finance professionals by engaging them in creating process maps and estimating the resource costs involved in treating patients over the care cycle. Further, through TDABC, clinicians and staff are able to see a valid outcome and cost measurement for their clinical and administrative processes, and are able to use this information to redesign and improve their processes to deliver the same or better outcomes at a lower total cost.[155] Other value-enhancing opportunities that this method of costing reveal include:[156]

- Eliminating unnecessary process variations and processes that do not add value,
- Improving resource capacity utilization,
- Delivering the right processes at the right locations,
- Matching clinical skills to the process,
- Speeding up cycle time, and
- Optimizing over the full cycle of care.

TDABC also has significant implications for value-based business models. In contrast to typical relative value unit costing approaches, TDABC compares efficiency and resource costs across different units by clinical conditions, and measures the cost of unused capacity. Measuring both the outcomes produced and the costs incurred in treating specific populations also helps providers determine whether a bundled payment for a defined episode of care covers the true cost of that care, and helps purchasers understand the value of the care and service provided. TDABC also supports the ability to aggregate cost information across multiple organizations that deliver care to a patient throughout a defined episode of care (the activity portion of TDABC) using a consistent methodology.[157]

Conclusion

This environmental scan will serve as one part of the discussion for experts to identify further areas for consideration and action in bringing sustainable value to healthcare delivery and payment systems.

The scan was composed through an iterative and comprehensive review of available literature to date, gathering academic, industry, consultancy, journal, government, and grey literature sources, among others. Many of the sources utilized similar frameworks for understanding value in healthcare, although the value definition had varying implications for the different industry stakeholder groups and was applied accordingly. Nevertheless, common characteristics arose across stakeholders, including the need for:

- A patient-centric approach to thinking about, delivering, managing, and paying for care at the condition level,
- Shifting away from fragmented fee-for-service care systems towards more integrated practices that cover the full cycle of care for a condition and incentivize proper utilization and care management,
- Utilizing standardized measures and practices that provide details on outcomes and costs,
- Collecting, processing, and reporting actionable data to consumers and stakeholders, and educating such groups accordingly so that they may properly interpret data,
- Integrating comprehensive health IT infrastructures to leverage data to enable coordination, inform choice, and improve care, and
- Having a shared goal across stakeholders of achieving value in healthcare, driving value-based competition.

The current healthcare system, rooted in fee-for-service ideology and practice, experiences numerous barriers to achieving value in healthcare. While efforts to address such barriers are often thought of in terms of separately reducing costs or improving outcomes, few have historically attempted to address both streams simultaneously in relation to each other. There are currently many innovative initiatives underway that attempt to address the barriers to achieving value in healthcare, either through pilot studies are already-adopted industry practices. Many of these current initiatives have shown promise in reducing costs and improving outcomes for the patient, however, others have encountered significant problems in achieving value. It is clear that more research must be undertaken to properly inform the path forward to achieve value in healthcare. Regardless of any successes or shortcomings that initiatives have encountered thus far, any efforts to achieve value must be cognizant of the above principles and must actively engage all stakeholders, balancing the interests of each, if the U.S. healthcare system is going to become more efficient, less costly, and healthier.

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