

VALUE-BASED CONTRACTING IN HEALTHCARE: WHAT IS IT AND HOW CAN IT BE ACHIEVED?



Jeff McCombs, PhD

Rebecca Myerson, PhD

Yifan Xu, MS

Robert Popovian, PharmD, MS

USC Schaeffer

Leonard D. Schaeffer Center
for Health Policy & Economics

AUTHOR AFFILIATIONS

Jeffrey McCombs is an associate professor of pharmaceutical and health economics in the USC School of Pharmacy.

Rebecca Myerson is an assistant professor of pharmaceutical and health economics in the USC School of Pharmacy.

Yifan Xu is a 5th year doctoral student in the USC School of Pharmacy's health economics program and a research assistant at the USC School of Pharmacy.

Robert Popovian is the vice president of U.S. government relations with Pfizer Inc.

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ABSTRACT

Dynamics that guide the branded consumer market—market price, available income and expected benefits – break down in healthcare where the inherent characteristics of healthcare goods and services prevent patients from comparing marginal value against price. Specifically, information asymmetry and health insurance cause healthcare markets to not function like other consumer markets. Given this, we asked the question of how the delivery and financing of healthcare can be reorganized such that healthcare utilization decisions would mimic the decisions of a sufficiently knowledgeable consumer paying the full price of care. Presently, efforts to link payment and value are hampered by the fragmentation of the U.S. healthcare system. We argue that value-based contracts must incentivize the clinical decision maker, usually the physician, to allocate treatment based on both price and value. In such an allocation, the patients with high expected benefit from treatment would be treated even at a high price and the number of treated patients increases as price drops, mimicking a demand curve in the market for consumer goods. Our review of the existing healthcare system suggests that changing certain elements in the financing system could create an environment for successful value-based contracting without having to reform the entire system.

INTRODUCTION

The total cost of healthcare in the United States reached \$3.3 trillion in 2016, or \$10,348 per capita.¹ Healthcare consumed 17.2 percent of the U.S. gross domestic product, exceeding all other developed countries. For example, Switzerland devotes 12.3 percent of its GDP to healthcare while Canada has limited healthcare spending to 10.4 percent of GDP.¹ The return on our investment of resources into healthcare is lagging when measured using common public health metrics. For example, the U.S. has the lowest life expectancy and highest infant mortality rate across all 13 OECD countries for which data are reported.² It is no surprise that questions concerning value are rife in the U.S.

The purpose of this paper is

to discuss the concept of ‘value-based contracting’ which is being pursued primarily by developers of new, patented medical technologies (e.g., drugs, medical devices) and large buyers of their products, such as health maintenance organizations (HMOs), health insurance companies, and government programs. Health insurance companies are also using selective contracting with hospitals and physician groups with the goal of reducing price, controlling utilization and improving quality of care.³⁻⁷ Small government programs, such as the Veterans’ Administration and the Department of Defense, negotiate aggressively on price for pharmaceuticals and other healthcare products,⁸ while Medicare is restricted from pursuing similar contracting approaches.⁹

We begin by reviewing how

consumer markets for branded products set prices, allocate products across consumers and, ultimately, establish the share of GDP allocated across most sectors of our economy. Next, we briefly review the nature of healthcare as a consumer product and detail the reasons why healthcare markets do not function like other consumer markets. The question is whether value-based contracts can be constructed to correct these flaws in markets for healthcare. Finally, we review past attempts to control prices and utilizations through the lens of value-based contracting, including those with physician-facing and patient-facing incentives. These comparisons lead us to argue that the potential impact of value-based contracting on cost and health outcomes may depend strongly on the payment context to which they are added.

PRICE AND ALLOCATION OF RESOURCES IN MARKETS FOR BRANDED CONSUMER PRODUCTS

Individual consumers and heads of households purchase branded consumer products based on market price, available income and expected benefits (utility). The consumer purchases a mix of products such that the expected benefit per dollar spent is equal across all products consumed. That is, individual consumers ration their own use of consumer goods based on expected benefits, prices and income.

These dynamics break down in healthcare markets. The inherent characteristics of healthcare goods and services prevent patients from comparing marginal value against price:

1. Consumers [patients] do not value healthcare intrinsically, but rather value healthcare as an input in producing health. Health is valued both as a consumption good, adding to utility, and as an investment in human capital.¹⁰ Moreover, the 'investment' value of preventive services and prescription drugs, for example, reduce the risk of future medical events, sometimes decades into the future.
2. Determining the optimal combination of healthcare goods and services to produce health requires specialized training. Patients depend on healthcare professionals to serve as their agent for healthcare decisions.¹¹
3. Due to the uncertainty of future demand for healthcare and the risk of high future expenses, patients demand health insurance. For historical reasons related to tax subsidies for employer provided insurance, insurance

is relatively generous and is not based on value in the U.S.^{12,13}

4. Demand for healthcare is inflated by insurance. A patient paying a fraction of the price of healthcare services will be willing to consume more healthcare than they would if they were paying full price.¹⁴⁻¹⁶
5. Health insurance providers compete for enrollees based on up-front costs of joining the plan (premiums), generosity of coverage provided, and the quality of care provided and health outcomes achieved among enrollees. Consumers are much more responsive to premiums than other plan features, and are often ill-equipped to assess the generosity of coverage or quality of care provided, even when this information is conveyed to them.¹⁷⁻²¹

These unique characteristics of healthcare have resulted in the over-consumption of healthcare in many cases. In such a context:

- Can value-based contracts be constructed that ensure that healthcare is purchased and consumed by patients only when its expected benefits exceed its cost?
- Can value-based contracts mimic the self-rationing by consumers that drives allocation of income across alternative products the markets for normal consumer goods and services?

We consider these questions below.

TREATMENT PROTOCOLS AND EVIDENCE-BASED MEDICINE

In the medical literature, the term 'cost-effectiveness' is used to

summarize the health benefits a given health service provides to a patient, relative to its price.

The need to explicitly model cost and effect distinguishes healthcare from other goods and services. For most non-healthcare goods and services, the consumer/head of household evaluates the marginal benefits of an array of consumer products and pays full price. An increase in price will cause consumers to reduce their use of a product, and producers/sellers recognize this inverse demand relationship between price and quantity when they set price. In contrast, in healthcare markets with insurance, patients may over-consume healthcare because they are not personally liable for paying the full price.

To reduce over-consumption of healthcare that is not cost-effective, health systems use a myriad of tools aimed at controlling utilization. Sellers of health care technology also face a myriad of payment systems and pricing regulations aimed at controlling price. A value-based contract between sellers and buyers of healthcare can then be defined as an agreement on price coupled with an enforceable method of allocating the use of healthcare based on cost-effectiveness.

The key element of any value-based contract is the treatment protocol. Health benefits vary across patients, just as the marginal utility of consumer products varies widely across consumers, and the treatment protocol allocates treatments to patients based on this health benefit. A treatment protocol can serve as the equivalent to the market 'demand curve' for the population covered by the buyer. Once a contract price is negotiated, the buyer of the health services (i.e., typically an insurance provider or government payer) would incentivize patients and their physician agents to allocate care to those for whom it is most cost-effective, while staying within the

buyer's budget (i.e., the sum of all funds collected from patients and available to be spent on care). Ideally, the expected benefits per dollar spent across covered patients and all healthcare goods and services should be equal across covered patients. This maps to buyers setting a price per unit of health produced.

Unfortunately, developing and implementing treatment protocols at this level of detail would require more coordination across payers and providers than is typical in the U.S. healthcare system, as well as a larger evidence base than is currently available. Every healthcare good and service would require an evidence-based treatment protocol documenting the relationship between its expected impact on patient outcomes and the patient's characteristics. Finally, once protocols are in place, the buyer would need to incentivize patients and their physicians to allocate treatment according to the protocol.

Below, we consider the gap between current practice and the optimal treatment protocols, and how this gap can be closed. How well do the methods for connecting payment and value currently employed in the United States encourage use of cost-effective treatment, and where would the impact of optimal treatment protocols be largest?

THEORY VERSUS PRACTICE: HEALTHCARE COST CONTAINMENT EFFORTS IN THE UNITED STATES

In a classic theoretical paper, Kenneth Arrow claimed that an optimal level of healthcare can be produced if physicians take on risk and are paid based on patient outcomes.¹⁴ Yet despite the significant attention paid to Arrow's seminal article,²² and similar findings in subsequent theoretical papers,²³⁻²⁵ risk-sharing arrangements of this nature remain relatively limited in the U.S.²⁶⁻²⁸ Data limitations

and interoperability are cited as a key barrier preventing adoption of performance-based risk-sharing arrangements by health insurers [buyers] and other large payers.²⁹

In practice, the cost containment efforts most commonly used can be described as full capitation, partial capitation, bundling, pay for performance, changing patient cost-sharing, and utilization restrictions, each of which we will define and describe below. These efforts can be critiqued by considering how they address the following key components of value-based contracting: treatment protocol development, price negotiation, and creating incentives for patient and physicians to follow protocol guidelines.

Full Capitation

In a fully capitated healthcare system, a provider or group of providers accept the full responsibility for providing health to its members in exchange for a set fee per month or year. In the United States, this is often achieved by using a Health Maintenance Organization (HMO), a health insurer that directly controls all patient care and only fully covers care provided by its closed network of providers.

In a competitive insurance market, a value-based contract may emerge between enrollees and their HMO if patients are provided with information about quality of care achieved and fees charged by each HMO.³⁰ Fully capitated HMOs perform two functions for their enrollees which lead to this result. First, the HMO determines the quality of care provided to the patient. That is, the HMO recommends and provides a specific regimen of recommended healthcare goods and services to the patient, which results in a certain amount of health improvement. HMOs with fully integrated delivery systems have the managerial systems in place to implement ration services

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bases on marginal health benefit, if they so choose. Second, the HMO must adhere to a budget determined by the total fees collected. In a scenario where patients can select their HMO and are informed of the quality of care achieved and fees charged by each HMO, HMOs will compete on both price and quality. That is, the HMO will have to be incentivized to select patients' treatment regimens to maximize quality of care within a given budget, by rationing health services based on their incremental health benefits.

In the U.S., plan selection occurs once a year during an open enrollment period, at which time consumers are provided with information on health plan premiums, services covered, breadth of the physician and hospital networks, patient satisfaction and the level of health provided to its members. In such an environment, HMOs will lose business in competitive health insurance markets if they are not efficient producers of health, that is, provide enough value to their patients relative to the fees they charge. The result is a value-based contract between insurers and patients; if value standards are not upheld to the patient's satisfaction, they simply switch plans.^{31,32}

Partial Capitation

As an alternative to full capitation, partial capitation is also used in the U.S. context. In this payment model, providers take on some but not all financial risk for the healthcare goods and services provided to the patients they care for on an annual basis.

In Medicare, the government insurance program for the elderly and disabled, a new payment model using partial capitation is called Accountable Care Organizations (ACOs). ACOs are groups of healthcare providers who are given incentive payments and face financial risk based on the costs and quality of care achieved for Medicare

patients who receive the plurality of their care from these providers, measured annually. Recent studies have found that the impact of the ACO model on costs, quality of care, and patient outcomes has been relatively small.³³⁻³⁵

The ACO model has also been criticized for holding physicians at-risk for the outcomes [e.g., expenditures, hospitalizations] achieved by patients whose care is not fully under the physician's control.³⁶ ACO leaders have complained that the financial incentives payments they receive are insufficient to reimburse providers for the up-front investments necessary to improve population health.³⁷ Finally, there is a disconnect between the annual ACO payments and individual clinical decisions by patients and physician which are limited to a partial bundle of services. Given this disconnect, it is not surprising that this partial capitation model has not produced large changes in clinical practice to align cost and value.³⁸

Bundling

A third payment approach frequently used in the United States is called bundling. Rather than being paid for the number of months that the patient is in their care (e.g., HMOs), bundling involves paying healthcare providers for each discrete bundle of care, such as a hospital episode.

A classic example of bundled payment in the U.S. is Medicare's prospective payment system (PPS) for hospital services. The PPS pays an administered price per hospital visit which is set administratively and adjusted for the patient's current healthcare needs, defined using clusters of diagnoses called diagnosis-related groups [DRG]. After the PPS was implemented, hospitals were no longer reimbursed based on the cost of care or on an itemized hospital bill. As a result, the PPS/DRG payment system resulted in an immediate and

significant drop in length of stay for Medicare patients.³⁹⁻⁴¹ Bundling of hospital services into DRGs has also affected the mix of pharmaceuticals used in the hospital. Indeed, the advent of pharmaceutical economics followed the advent of the Medicare's PPS/DRG payment system which incentivized hospital pharmacy managers to evaluate the price and effectiveness of the medications purchased.

Medicare is implementing additional bundled payment initiatives. For example, Medicare has proposed bundling the cost of oncology drugs into its payments to oncologist, thus placing the physician at financial risk for the mix of medications used.⁴² Early evaluations of voluntary Bundled Payments for Care Improvement (BPCI) initiative indicate that providers (hospitals) which participated received reduced payments without reductions in quality.⁴³

There are three main impediments that must be addressed before a bundling system will result in a value-based contract. First, the bundle of services must be the most efficient mix of services needed to produce the health outcome desired. However, Medicare is prohibited from using cost-effectiveness in determining bundles for payment or setting the administered price paid for each bundle of services. These constraints may impede Medicare bundling systems from achieving the cost-effective use of services.⁴⁴ In particular, if the price set per bundle does not accurately reflect its value, it would be unsurprising for inefficiencies in care to remain pervasive under an administered pricing system. Second, because the price per bundle or episode of care is fixed, the provider has an incentive to economize on cost within an episode, but not on the number of episodes. For example, the PPS system creates a financial incentive to shorten length of

hospital stays and increase the risk of readmissions. To counteract this incentive, the Medicare program initiated penalties for excess readmissions within 30 days. The PPS system also created incentives for hospitals to discharge patients early to nursing home facilities. Finally, bundled service systems also encourage providers to select lower cost patients and avoid more severely ill patients. In a competitive market, where providers will be incentivized to provide high quality care to retain their market share, these impediments may be somewhat reduced.

Pay-for-Performance

An alternative to paying healthcare providers based on the amount of time they are caring for a patient, or the type of care provided, is paying based on outcomes. This is the concept underlying pay-for-performance (P4P) or payment-for-quality schemes.

In P4P schemes, achieving a clinical 'success' may trigger additional payments, and/or clinical failures may trigger financial penalties. The crucial issues in setting up P4P payment systems, therefore, are how to define success and failure and set the price/penalty for success/failure. These definitions and payments must be structured carefully to avoid unintended consequences.^{45,46} For example, payments defining success as a change in an intermediate laboratory value (e.g., patients' LDL cholesterol levels) may be more closely correlated with reductions in cardiovascular risk than payments based on achieving a specific LDL goal. This latter definition of 'success' would set up an incentive for the provider to select healthier patients who are closer to the LDL goal and at lower baseline risk.⁴⁷⁻⁴⁹ Programs that create penalties for poor-quality care face similar challenges. In Medicare, a Hospital Readmissions Reductions program has been introduced which

levies penalties when hospital readmissions occur. Yet, providers have argued, readmissions rates may depend critically on factors outside the scope of the health care system, such as the environment to which the patient is discharged. Patient advocates have called for reform of the current penalty formulas to avoid disproportionately penalizing safety-net hospitals serving the poor and homeless.⁵⁰

P4P programs typically aim to increase use of health-improving services and decrease use of low-value services, but the evidence connecting the programs to these outcomes is relatively mixed.⁵¹⁻⁵³ In Medicare, the Hospital Value Based Purchasing Program rewarded or penalized hospitals based on quality measures. Although many evaluations showed minimal or zero effects,⁵³⁻⁵⁵ there is evidence that hospitals did improve performance over time in areas with the largest marginal incentives to improve care.⁵⁶ Given that the success of P4P programs hinges on the choice of measurements and level of incentive payments, these mixed results may not be unexpected.

In contrast, a mix between P4P and other systems may have a larger impact on cost and outcomes.⁵⁷ For example, the Alternative Quality Contract combines a global budget with P4P payments based on metrics of clinically appropriate care. This model has subsequently been associated with increases in quality of care and decreases in health care spending, suggesting a selective decrease in over-treatment.⁵⁸

Changing Patient Cost-Sharing

Capitation, partial capitation, and bundling of services all change the financial incentives faced by health care providers in order to motivate physicians to allocate health care based on its health benefits and full price. Another possible strategy to align clinical decisions with the cost-effectiveness of care is to change the amount of cost-sharing

faced by the patient.

Intuitively, limiting insurance coverage or increasing patient cost sharing for selected low-value health care services means that these services will be used less by the patient.^{59,60} This is particularly salient for recurring and predictable health care needs, such as prescriptions for chronic conditions. Historically, insurance coverage was not necessarily designed with the value of health care services in mind. More recently, value-based insurance designs have been developed wherein higher value services carry lower cost-sharing.⁶¹ These designs help to increase the use of cost-effective healthcare.^{62,63}

Direct Regulation of Utilization Decisions

Many cost containment initiatives directly regulate clinical decisions. The following discussion will focus on regulation of the use of drug therapies, but utilization restrictions may operate similarly in other categories of healthcare.

Virtually all health insurance plans in the United States use formularies (lists of approved drugs, approved uses for the drugs, and corresponding out-of-pocket costs to the patient) to control the use of high-cost drug therapies. In Medicare Part D (the market of optional prescription drug plans available for purchase by Medicare beneficiaries), drug plans' formularies must comply with certain restrictions, such as including drugs from each therapeutic class.^{64,65}

When coupled with price negotiations, formularies may become akin to a value-based contract if many therapeutically equivalent drugs are available. Patients can be discouraged from using non-preferred drugs by requiring higher patient cost-sharing, or by using protocol restrictions such as step therapy (i.e., requiring that a patient tries a cheaper drug first before advancing to a more expensive one). In the case of innovative prescription

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drugs, formulary restrictions may be based on the clinical characteristics of the patient such as age and severity of disease. Restrictions may be significant when drugs have high cost, and may be relaxed to encourage use by more patients as drugs drop in price. For example, direct acting antiviral [DAA] drugs which cure hepatitis C commanded a very high price initially and were restricted to patients with high viral load counts or with documented cirrhosis. A significant drop in price following FDA approval of competing DAA medications resulted in plans significantly relaxing these restrictions.

The potential of utilization restrictions to allocate services to the patients for whom they are most cost-effective may not be realized, however, when health benefits do not translate to financial benefit to the insurance plan paying for care. Two papers have shown that insurance plans that cover both drug spending and medical spending tend to provide more generous coverage for drugs that may reduce future medical costs.^{66,67} The root problem is stand-alone prescription drug plans in Medicare do not gain any financial benefits when their patients receive effective prescription treatments that prevent a hospitalization. As a result, these plans responsible for prescription costs but not hospital care costs provide too little coverage for prescription drugs that can prevent hospitalizations, compared to plans that cover both. A related series of papers have found that when enrollees frequently change health insurance payers, this ‘churn’ reduces the incentives for payers to cover preventive health care that would have been covered under optimal health insurance.^{25,68–70}

In short, under a fragmented health insurance market, insurance plans are unlikely to design their utilization restrictions to encourage optimal care.

Treatment guidelines published

by specialty societies are another tool to regulate utilization; the logic behind guidelines is that if physicians know for whom services are valuable, they will allocate care accordingly. Yet, these guidelines are advisory and carry no financial penalty. Given these low stakes, it may be unsurprising that researchers have observed a multi-year lag between development of evidence and changes in clinical practice.⁷¹ To encourage uptake, several options have been proposed based on behavioral economics which attempt to ‘nudge’ physician behavior toward high-value guideline-based care. Demonstration projects focusing on the use of antibiotics in the outpatient setting have been developed and tested using random assignment techniques. These demonstrations found that requiring physicians to justify their use of antibiotics and peer comparisons resulted in lower rates of antibiotic use.⁷² These researchers also found that simply displaying poster-sized commitment letters in examinations rooms had a similar effect.⁷³ While helpful, these interventions do not fully close gaps in uptake of cost-effective medical care.

Setting Price in Healthcare Markets

The discussion to this point has focused on methods to incentivize clinical decision makers to combine health care goods and services to produce health efficiently given price. Here, we briefly consider how health care prices are set.

Healthcare payers often determine the price paid to suppliers by pitting healthcare suppliers against each other for business. As such, the payer and providers’ market power play a role in determining the prices that private health insurance plans pay external providers for healthcare goods and services. Prescription drugs covered by Medicare Part D plans may face competitive pressure as Part D plans may offer preferred formulary status for lower prices. Likewise,

prescription drugs purchased by HMOs, the Defense Department and the Veterans Administration (VA) Healthcare system are negotiated between buyer and seller, often with specific treatment protocols guiding negotiations. Other health insurance plans may negotiate reduced fees with external medical groups and hospitals in exchange for membership on the plan's list of preferred providers. These contracts may take on the characteristics of a value-based contract if quality of care metrics and utilization control mechanisms are included in the contract.

Public and private payers each face unique restrictions and challenges in setting price based on value through competition.⁷⁴ Price-setting initiatives by public payers can be influenced by political processes.^{75,76} For example, attempts to set prices for durable medical equipment and clinical laboratory services based on market-based competitive bidding were halted after political pressure from industry.⁷⁷⁻⁷⁹ Agencies of the federal government are prohibited from recommending care based on medical evidence about its cost-effectiveness.⁸⁰ Medicare is forbidden by law from directly negotiating drug prices. Finally, consumers (patients) covered by both public and private insurance may have difficulty finding the information about healthcare prices in order to comparison-shop for recommended services.⁸¹ Given these challenges, developing systems which link health care prices for specific healthcare services to their value in producing health or their production costs requires creative solutions.⁸²

The Medicare program historically depended on administered pricing algorithms set based on prices submitted by providers which were then compared to the prices submitted by other providers and each provider's historical price. This

approach was not tethered to the cost of production for services and led to rapid inflation of prices and inaccurate relative prices over time. In response, Medicare's Resource-Based Relative Value Scale (RBRVS) system for physician fees was developed and initially tied to the estimated cost of providing physician services. These estimates include complex adjustments for geographic location, practice inputs, level of training required, stress and other factors.⁸³ The developers of the RBRVS compared their relative fee schedule to existing Medicare fees based on 25 years of usual, customary, and reasonable (UCR) fee calculations. The results estimated that family practice providers stood to gain over 60 percent increase in total revenue from Medicare while specialty physicians, such as thoracic and cardiovascular surgeons and ophthalmologist, were estimated to lose over 40 percent of their Medicare revenue. That is, relative fees inherent in the administered UCR pricing system were not consistent with relative fee estimates based on the cost of producing these services. Medicare implemented an RBRVS fee system in 1992 which was followed by quick adoption of RBRVS systems by other payers.⁸⁴ While payment for hospital services was changed by the PPS, the RBRVS is still used to determine reimbursement for physician and clinical services for Medicare Part B.⁸⁵

Competitive bidding has been proposed as a method for setting price under the Medicare program. It was thought that competition to be included on Medicare's list of winning bidders would drive healthcare bid prices toward their cost of production. Yet, when market power is highly concentrated, as would be the case with Medicare, this method may cause mergers among providers and/or cause smaller providers to exit the market. Private sector markets which use

competitive pricing systems for healthcare inputs such as physician and hospital services have become less competitive over time due to widespread mergers in response to aggressive price negotiations by major insurance companies and HMOs, leading to higher prices.⁸⁶⁻⁸⁹ Competitive bidding systems designed to adjust the Medicare price of laboratory tests to reflect changes in technology were blocked through political pressure, though just the threat of competitive bidding has been used to reduce lab test prices over time.⁹⁰ In 2009, a competitive bidding demonstration on the feasibility of using bidding to set Medicare prices for durable medical equipment for was found to significantly reduce prices across a wide array of products.⁷⁷

DISCUSSION

The goal of this paper was to summarize the challenges policymakers and payers face when linking price and value to encourage cost-effective use of healthcare. The nature of healthcare as a consumer good and the presence of insurance remove the consumer/patient from their normal market role of self-rationing use in response to price. Instead, the physician is the consumer's agent in utilization decisions while insurance companies, employers, and government programs are the buyers of healthcare. There are a wide range of efforts to improve the performance of the insured market for healthcare in the U.S., some of which have been reviewed here through the lens of value-based contracting.

Payers' ability to pay for value in healthcare depends critically on their ability to incentivize treatment allocation that reflects both value and price. Ideally, treatment should be allocated to patients for whom the expected impact on health is highest and the treatment should be allocated to more patients as

it drops in price, mimicking a demand curve for consumer goods that consumers purchase when the value to them exceeds the price. Yet, for payers, implementation of such a healthcare treatment allocation mechanism is complicated by the fact that the power to prescribe and take-up treatment ultimately resides with physicians and patients. A value-based contract is an agreement between providers, buyers, patients and clinical decision makers that results in healthcare being allocated based on price and its expected contribution to the patient's health.

Above, we reviewed current and past attempts to control prices and utilization and considered how well they can approximate the cost control and outcomes achieved by an optimal value-based contract. Our review suggests that partial capitation systems or publication of guidelines alone, for example, are unlikely to approximate the optimal value-based contract due

to the difficulty in creating a link between appropriate care and financial outcomes. In contrast, incentivizing health insurance plans to implement optimal utilization review and patient out-of-pocket price-setting could be feasible, if health insurance plans could be made fully accountable for the impact of their care on the patient's future health.

CONCLUSION

We began this examination of the efficiency of the U.S. healthcare system using the lens of consumer theory. Specifically, we asked the question of how can the delivery and financing of healthcare be reorganized such that healthcare utilization decisions would mimic the decisions of a sufficiently knowledgeable consumer paying the full price of care. As others have noted previously, the fragmentation of the United States healthcare

system hampers efforts to link payment and value by severing the link between health impacts and financial gains.^{30,70} We suggest that full capitation such as by HMOs linked to integrated delivery systems could approximate the ideal value-based contract if the full health value provided by each plan is well-measured, patients are well-informed about cost and value, and markets for such health insurance are relatively competitive. Thus, value-based contracts can be approximated by integrated, fully capitated healthcare systems, a conclusion similar to that suggested by Alain Enthoven.³⁰ We conclude that providing better linkages across payers and information to consumers while bolstering competition might work nearly as well as building the ideal value-based contract from the ground up.

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USC Schaeffer

Leonard D. Schaeffer Center
for Health Policy & Economics

Kukla Vera

Director of External Affairs
Schaeffer Center for Health Policy & Economics
University of Southern California
kuklaver@usc.edu
213.821.7978