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SUPPLEMENT

Best Practices and Innovative Healthcare Reform Models

Highlights

- Value-Based Insurance Design: Embracing Value Over Cost Alone
- Integrated Delivery Systems: The Cure for Fragmentation
- A Guide to the Medical Home as a Practice-Level Intervention
- Innovative Health Reform Models: Pay-for-Performance Initiatives
- Lessons to Apply to National Comprehensive Healthcare Reform

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Best Practices and Innovative Healthcare Reform Models

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Best Practices and Innovative Healthcare Reform Models

Table of Contents

A Supplement to *The American Journal of Managed Care.* www.ajmc.com PROJ A264

Best Practices and Innovative Healthcare Reform Models

This supplement to *The American Journal of Managed Care* reviews healthcare practice models and concepts such as value-based insurance design, integrated delivery systems, medical home, and pay for performance; as well as discusses their role and application in healthcare reform.

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Value-Based Insurance Design: Embracing Value Over Cost Alone

A. Mark Fendrick, MD; Michael Chernew, PhD; and Gary W. Levi, JD

Abstract

The US healthcare system is in crisis, with documented gaps in quality, safety, access, and affordability. Many believe the solution to unsustainable cost increases is increased patient cost-sharing. From an overall cost perspective, reduced consumption of certain essential services may yield short-term savings but lead to worse health and markedly higher costs down the road—in complications, hospitalizations, and increased utilization. Value-based insurance design (VBID) can help plug the inherent shortfalls in "across-the-board" patient cost-sharing. Instead of focusing on cost or quality alone, VBID focuses on value, aligning the financial and nonfinancial incentives of the various stakeholders and complementing other current initiatives to improve quality and subdue costs, such as high-deductible consumer-directed health plans, pay-for-performance programs, and disease management. Mounting evidence, both peer-reviewed and empirical, indicates not only that VBID can be implemented, but also leads to desired changes in behavior. For all its documented successes and recognized promise, VBID is in its infancy and is not a panacea for the current healthcare crisis. However, the available research and documented experiences indicate that as an overall approach, and in its fully evolved and widely adopted form, VBID will promote a healthier population and therefore support cost-containment efforts by producing better health at any price point.

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For author information and disclosures, see end of text.

Introduction—The Backdrop

The US healthcare system is in crisis, with documented gaps in quality, safety, access, and affordability. Years of escalating costs—which will be pushed even higher by new medical advances[1]—have not always paid off in terms of better quality or outcomes.[2] In short, we pay more than any other country for healthcare, but get less.[3] We need to somehow contain costs, yet improve quality.

Across-the-Board Cost-Sharing and What Went Wrong

Many believe the solution to our cost crisis is increased patient cost-sharing at the point of medical service. The rationale[4-6]: with more "skin in the game," patients would use only essential care, thereby eliminating wasteful overuse and reducing costs, with no effect on outcomes.[5-7] Thus, higher copays, coinsurance rates, tiered pharmacy benefits, and high-deductible health plans have appeared across the board.[4]

Although the "one size fits all" cost-sharing solution has produced the intended effect (by dampening consumption), the underlying rationale has proved short-sighted.[5,8] Ample evidence shows that increased, untargeted cost-sharing, even in modest amounts:

- Decreases use of essential care, including potentially life-saving medications and services (such as immunizations and cancer screening).[9-11]
- Adversely affects compliance, adherence,[6,12-14] and outcomes,[5] and ultimately leads to worse overall population health.[2,4-6]

From an overall cost perspective, reduced consumption of essential care may yield short-term savings but may also lead to worse health outcomes and markedly higher costs down the road—in complications, hospitalizations, and increased utilization.[15]

These adverse consequences flow from 2 major shortfalls in the "one size fits all" approach. First, it disregards heterogeneity—medical interventions have different clinical benefits for different people.[8] Second, giving patients expanded cost and decision-making responsibility in isolation simply does not correlate with optimal clinical outcomes, especially for patients who are not adequately informed.[1,4] Research reflects that patients, even when paying more, do not (some might argue cannot) distinguish between high- and low-value therapies.[5] The latter shortfall bears emphasis. Shifting the information and decision-making burden to the patients:

- Ignores variations in intelligence, methods of learning, and education (the average US reading level is 10th grade)
- Ignores susceptibility to marketing messages, and consumer cultures and values[16,17]
- Unjustifiably assumes that consumers have adequate information to evaluate benefits and costs.

Therefore, even if the premise of equating patient responsibility to responsible choices was watertight, a pronounced gap in both information and knowledge impairs informed decisions.[2,5] This gap is particularly problematic among vulnerable populations (eg, the poor, ethnic minorities, the uninsured).[15]

Enter Value-Based Insurance Design

Value-based insurance design (VBID) can help plug the inherent shortfalls in across-the-board patient cost-sharing.[1] Instead of focusing on cost or even quality, VBID focuses on *value*,[2] aligning the financial and nonfinancial incentives of the various stakeholders and complementing other current initiatives to improve quality and subdue costs, such as high-deductible consumer-directed health plans (CDHPs), pay-for-performance (P4P), and disease management (DM).[2] The overarching goal of VBID is better population health rather than saving money.[8,18]

We and our colleagues first introduced VBID (then called benefit-based copayment) in 2001.[1,16] VBID has since evolved and been successfully deployed. More recently, VBID and VBID concepts have been incorporated into proposed healthcare reform bills in both the US House of Representatives and the Senate, with the latter expressly calling for a VBID demonstration program for Medicare.[19,20]

VBID Defined

Approach and Scope

VBID is system-oriented and population health-centered, yet more targeted than across-the-board solutions.[1] Similar to those solutions, VBID recognizes that greater patient involvement and cost-sharing remain important to help solve the current systemic problems.[1] But VBID takes a "clinically sensitive, fiscally responsible" path to align incentives[2] and mitigate the negative clinical effects associated with increased cost-sharing[2,9,21] by:

- Decreasing cost-sharing for interventions that are known to be effective and increasing cost-sharing for those that are not. Cost-sharing amounts are set in relation to the clinical value, not the cost, of a specific intervention to a targeted patient group.[2,9] Targeting accounts for heterogeneity.
- More explicitly guiding patients to use high-value, and avoid low-value, interventions—addressing the information gap.

VBID's targeted, "clinically sensitive" approach can therefore yield efficiencies not previously achieved and, ultimately, generate better health outcomes for the dollars spent.[1,2,9] Thus, VBID—originally associated with cost-sharing for pharmaceuticals—is now recognized as translatable to other healthcare services, including diagnostics, surgical procedures, and physician selection.[22]

Moreover, VBID principles have been deemed key elements in national healthcare reform. This signifies a credible consensus on the merit of VBID. For example, in its May 2009 letter to the Senate Finance Committee, the American Academy of Actuaries stated: "There is inherent value in the implementation of value-based insurance designs."[23]

Although limited data preclude VBID programs for all conditions, undisputed data on what works best are available for some, including the "Big 5": cancer, cardiovascular disease, diabetes, obesity, and respiratory conditions. For those conditions, more refined cost-sharing would likely produce higher-value care.[9]

Key Tenets of VBID

By switching focus from cost alone to the clinical value of health services, VBID aims to systemically restructure health benefits.[21] Value-centric VBID programs promote optimum outcomes from expenditures while minimizing the nonadherence to evidence-based medicine (EBM) that attends across-the-board cost-sharing.[24]

VBID flows from this 3-part algorithm:

1. "Value" equals the clinical benefit gained for the money spent.
2. Cost-sharing for all health services is based on their expected clinical benefit to certain patient populations as determined by EBM.
3. The greater the expected clinical benefit, the lower the cost-share.[21]

VBID aligns financial and nonfinancial incentives by encouraging use of—and reducing barriers to access for—high-value services (those medically necessary or EBM-recommended) and discouraging low-value or unproven services.[1,25] For example, VBID would have no or low cost-sharing for lipid-lowering therapy for individuals with a history of myocardial infarction, and higher cost-sharing for total body computed tomographic scanning.[1]

Defining Value in Healthcare. High-value healthcare has been defined as the right care to the right patient at the right time

for the right price. Value equals what is gained in exchange for what is given up—the benefit relative to the cost. Applying this to an individual patient, value equals the health and well-being gained in exchange for the cost. From a population-health—and VBID—perspective, value is expressed as the aggregate system health gains relative to aggregate system costs.[3]

That said, what is "right" about care, time, and price is somewhat subjective.[3] Private employers, for example, who are in business to make money and will bear the cost of lower VBID-driven copays, assess value differently and need a business reason for adopting fundamental change.

VBID, therefore, takes a "fiscally responsible" approach tethered to the real world, offering 3 tranches of potential cost-savings:

1. *Targeting*. For any intervention, skillful targeting can identify those who will benefit the most. This limits the number of individuals eligible for lower copays, and avoids higher treatment costs for those individuals down the road.[2,9] Long-term savings can be enhanced by coupling improved targeting with initiatives to improve adherence.[26]
2. *Shifting costs to lower-value interventions*. Plan sponsors can fund short-term subsidies of high-value services via increased cost-sharing for low-value services.[27]
3. *Increased productivity (eg, less absenteeism and presenteeism, fewer disability claims)*.[8] Although many consider these savings difficult to quantify, a strong link has been established between worker health and productivity,[28] together with credible evidence of the associated costs and recently developed measuring tools. For example, a 2006 study of workers with diabetes estimated absentee costs of $1000 per worker per year; costs for reduced performance (presenteeism) were 6-fold higher.[26] According to the American Diabetes Association, in 2007, diabetes accounted for approximately $58 billion in indirect costs, attributable to 15 million workdays absent and 120 million workdays of reduced performance.[29] A 2009 study reported that health-related productivity costs (particularly for chronic conditions) were 2 to 3 times higher than direct costs and were strong drivers of higher overall healthcare costs. Comorbidities can drive costs even higher.[28,30] Using productivity-loss modeling to assess the impact of impaired worker health, the city of Battle Creek, Michigan, discovered that employees were losing 13 days a year, 41% of which were attributed to absenteeism and 59% to presenteeism. The analysis also showed that recapturing 10% of productivity would yield almost $250,000—equivalent to adding 3.1 full-time employees.[31]

Compatibility With Other Healthcare Reform Platform. VBID offers a unified and unifying template to promote value through compatibility with other healthcare reform platforms.[24]

Health Information Technology. Health information technology (HIT) refers to interoperable, systemic resources that combine electronic medical records, electronic health records, clinical information (eg, comparative effectiveness research [CER] and evidence-based guidelines), claims, and financial data. Top government policymakers consider HIT crucial to healthcare reform and economic recovery.

HIT is a central element of VBID. Because VBID targets benefits that encourage value and discourage waste, optimal results depend on relevant, objective, and actionable data (1) for clinicians at the point of care, (2) for consumer education, and (3) for decision makers to discern targets and evaluate results.

CDHPs. CDHPs and VBID complement each other. Both promote greater patient responsibility and EBM to encourage cost-consciousness and clinically appropriate high-value services, and discourage lower-value services.[32] However, most CDHPs have imposed patient cost-sharing in isolation, which has raised the above-noted risk of adverse clinical outcomes and higher subsequent costs,[32] and perpetuated the information gap that hinders informed patient decisions.

The next iteration of CDHPs could therefore be improved by instilling VBID principles. For example, insurers can offer more enrollee education about EBM, expand the use of HIT, and integrate financial incentives into benefit design. On the latter point, an evidence-based "VBID waiver"[32] can be offered to ensure that interventions already identified through EBM as high value are available to enrollees with little or no out-of-pocket expense.

From a financial perspective, this hybrid CDHP/VBID strategy may cost more than a standard CDHP. In exchange, sponsors and payers would gain assurance that the added cost would likely leverage consumption of high-value interventions, which evidence suggests will improve health outcomes and save money in the long term.[32]

Physician Payment Reform—P4P and Patient-Centered Medical Homes (PCMHs). P4P and PCMHs aim to increase preventive care, decrease overuse of services, and reward providers for meeting quality measures—all based on EBM. Integral to both platforms are the VBID precepts of aligning patient and provider incentives[9] and giving patients ready access to essential services. PCMH and VBID have other features in common, including greater patient involvement and using HIT to support evidence-based clinical decisions.

CER. CER by definition compares interventions to determine what works best for patients with certain conditions, and therefore inherently supports appropriate use of medical services.[33] CER has real-world implications; improving the evidence base that informs medical decisions[33] promotes better decisions, thereby inducing use of interventions with high clinical value (hence better outcomes). Thus CER, by changing the "adopt everything for everyone" mentality to an "adopt when appropriate" paradigm, can promote efficiency, help reduce medical errors, and eliminate waste—and help curtail unnecessary spending.[33] For these reasons, federal policymakers pursuing healthcare reform have championed CER.[34]

CER and VBID are perfectly aligned. CER can help target patient groups that benefit most from certain interventions. It is the keystone of EBM and evidence-based guidelines. CER can help to objectively assess both the clinical and financial effects of inventions, including worker productivity.[33]

In sum, CER helps determine the right medical intervention for the right person at the right time[33]—the very definition of value in healthcare. Thus, knowing what works best is a predicate to effective VBID.[33]

VBID's compatibility with these key reform initiatives reflects the ascendency of value in healthcare. It also reflects the current trend toward integrated healthcare, which rejects the documented "silo" mentality of traditional healthcare[35] and emphasizes consumer responsibility for individual health.

Who Uses VBID?

VBID is used by a diverse and growing number of entities, public and private, including employers, health plans, and pharmacy benefit managers.[9] A 2008 study determined that 20% to 30% of large employers use some form of VBID strategy.[36] In a 2008 survey of 500 large employers, each with more than 10,000 employees, 12% reported current value-based initiatives, and 5% planned to introduce them.[37]

Pitney Bowes is the most celebrated first mover in VBID. Its program provided copay relief for drugs to treat asthma and diabetes, and is considered an exemplar of how VBID is feasible, acceptable to employees, and produces clinical and economic returns.[1]

Other notable VBID pioneers include Aetna Insurance; the city of Asheville, North Carolina; Marriott International; the state of Maine (pharmacy benefit manager: WellPoint Inc); United HealthCare (UHC); and the University of Michigan.

VBID Designs and Who Uses Them

There are 4 basic VBID formats[2,24]:

1. ***Design by service.*** Copayment or coinsurance is reduced or waived for select drugs or services for all enrollees.

   This approach is used by Pitney Bowes and Marriott for drugs treating asthma, diabetes, and hypertension.

2. ***Design by condition.*** Copayment or coinsurance is reduced or waived for evidence-based interventions to treat patients diagnosed with specific conditions.

   This approach was used by the University of Michigan for all employees with diabetes, who received reduced copayments for antidiabetics, insulin, beta-blockers, calcium channel blockers, antihypertensives, diuretics, antihyperlipidemics, and antidepressants.[21] Asheville, North Carolina, and UHC also targeted diabetes.[9,24]

3. ***Design by condition severity.*** Copayment or coinsurance is reduced or waived for targeted high-risk members found eligible to participate in a DM program.

   WellPoint offers this format.[38]

4. ***Design by participation.*** An extension of the third design approach, payment relief is offered to high-risk members who actively participate in a DM or similar incentive program.

   Gulfstream offered reduced office visit copays to employees who use physicians that meet EBM guidelines.[37]

Some entities have blended the basic formats, primarily relating to asthma, diabetes, and hypertension:

Asheville, North Carolina. For employees with diabetes, lower copays were coupled with pharmacist-led coaching.[21]

Healthcare Alliance Medical Plans, Inc (HAMP). Created a fourth copayment tier, making specific drugs available for a reduced copayment. HAMP anticipates expanding this tier to include drugs for multiple sclerosis, rheumatoid arthritis, and other diseases using compliance-based incentives.[37]

Service Employees International Union Health Care Access Trust (SEIU). Its VBID program couples copayment with participation in a DM program; SEIU absorbs office visit copayments for participating employees.[37]

Evidence That VBID Works

Increasing evidence, both peer-reviewed and empirical, indicates not only that VBID *can* work, but *does* work.

Debate continues, however, over the quality of the evidence. Much of the available evidence, although compelling, is self-reported and anecdotal, derived from the popular press, or based on simulations. There are relatively few peer-reviewed, controlled studies to give the VBID movement definitive gravitas. This is partly because VBID is still somewhat new, and insufficient time has elapsed for robust results to accumulate,[9] including data as to wheth-

Table. Employers and Positive Results From VBID Initiatives

Entity	Positive VBID Results
Caterpillar	VBID diabetes initiative: 50% reduction in employee disability days 50% of enrollees with reduced A1C levels over 1 year (8.7 to 7.2 on average)
IBM	Healthcare cost trend of 3% to 4%, compared with 12%+ average
Gulfstream	Healthcare cost increases held to 3.4% per year for 4 years
WellPoint	State of Maine diabetes initiative: Improved medication possession rate (77%-86%) Compared with control group, an adjusted average cost of $1300 less per participating member over 1 year of follow-up
Healthcare Alliance Medical Plans, Inc	New fourth (value-based) copayment tier: Medication possession rates for diabetics and asthmatics increased 10.6% and 32.7%, respectively For diabetics, better blood sugar control For asthmatics, a move from rescue medications to control drugs Fewer episodes of heart attack, stroke, and kidney failure
City of Springfield, OR	Diabetes program modeled after Asheville, NC, program. Study comparing control and intervention groups before and after copayment waived for both: At inception, mean A1C levels were 7.25% and 7.32%, respectively. After intervention group received counseling, A1C levels decreased 30% and 50%, respectively. With respect to patients with A1C level of ≤7% (target recommended by American Diabetes Association), the control group achieved similar target level (decreasing from 50% to 48% before and after program inception) but the intervention group rose from 46% to 63%, respectively. Because of this success, benefit became available to all enrollees with diabetes.
United HealthCare	Estimated its Diabetes Health Plan will yield savings of $500 per member per year (26 million covered lives).

VBID indicates value-based insurance design.

er estimated savings/return on investment (ROI) will be realized.[37]

Arguably, the debate is academic. Early VBID movers have reported notably positive results[27] and employers have reported saving money by lowering the cost of preventive care.[39] For example, Pitney Bowes' reduced copayments for asthma and diabetes medications translated into $1 million in savings from decreased complications.[39] However, many question the general utility of the Pitney Bowes' results because no external control group was involved and predictive modeling was used.[9] On the other hand, a 2008 analysis noted that value-based plans help channel the appropriate drug to the appropriate person—markers of value as noted above.[40]

Goldman and colleagues'[6] simulation relating to cholesterol-lowering therapy reported a marked inverse relationship between copayments and compliance, and concluded that notwithstanding obstacles in refining risk groups, varying copayments for cholesterol-lowering therapy by therapeutic need would reduce emergency department use and hospitalizations, representing more than $1 billion annually in projected savings. The analysis also indicated that benefit-based copayment designs could improve aggregate health outcomes without raising health plan pharmacy payments.

A study of one large employer's VBID initiative reinforced Goldman et al's conclusions, reporting that compared with a control employer using the same DM program, medication compliance increased among VBID enrollees for 4 of 5 medication classes, and noncompliance reduced by 7% to 14%.[41]

Other positive results have been reported. Space limitations preclude a full recital, but the **Table** lists prominent examples.

The Business Case. As previously suggested, whether VBID "works" is actually a 2-part question, involving both clinical and financial impact. Although the available evidence makes a compelling case associating VBID with positive clinical results—and despite the above-cited potential for savings—no definitive proof exists that VBID will generate overall savings or ROI. After all, there is no single VBID intervention and therefore no routine answer—or even rule of thumb—regarding the bottom-line impact of VBID.[9] This may partially explain why, despite overt interest from employer groups and health plans, uptake on VBID programs has been gradual.[24]

VBID by definition contemplates these determinations. Rigorously measuring and evaluating clinical and economic results is essential for designing astute plans and employee health strategies,[28] and involves 4 main components: (1) measuring patient-reported clinical outcomes in addition to process measures, (2) using control groups to determine if observed clinical and economic changes are attributable to VBID design, (3) incorporating long-term follow-up to confirm clinical gains from high-value services,[24] and (4) measuring economic losses from absenteeism and presenteeism, and integrating them with clinical data to quantify the overall "burden of illness."[42]

Currently, this mission is easier to identify than execute, for several reasons. First, VBID itself entails a new mindset: embracing value over cost. Second, traditionally, payers and employers have not assessed costs, value, or benefit design this comprehensively.[35] Third, measuring and quantifying value, and setting appropriate copayments, requires a blend of clinical judgment, health economics, and actuarial analysis,[24] and systemwide HIT and analytic tools of an amplitude not yet available. A 2007 analysis of employers confirmed these conclusions; of the more than 175 existing pharmacy benefit–related measures identified, only 4% focused on value.[24] This underscores why HIT/CER are core dependencies for VBID. VBID programs will be easier to create as CER reveals more about high-value services and HIT offers more robust data to gauge them.

Despite the difficulties in proving the business case, the available research does contain the following savings indicators (previously explained), all of which can increase the likelihood of positive ROI:

- Finely tuned targeting of patient subsets reduces VBID program costs[24]
- Programs that increase cost-sharing for low-value services are likely to save money[9] (this and other design changes can help offset VBID program costs)
- Better worker health saves money (this suggests the benefits of an effective communication strategy coupled with employee health initiatives[37]).

The healthcare system is intricate and interconnected. Properly evaluating VBID results requires both a long-term horizon and a systemwide perspective. Several studies support this view and have shown that, particularly for chronic diseases, increased cost-sharing for prescription drugs is associated with spending increases in other sectors.[35]

Conclusions

VBID is centered on value, not cost, and thus contemplates fundamental change, both cultural and systemic. For all its documented successes and recognized promise, VBID is in its infancy and is not a panacea for the current healthcare crisis[1,4,9]—which is national, even global, in scope.

VBID is not firmly formulaic. It represents a set of cohesive, yet flexible, guiding principles[24] that if properly deployed can align healthcare silos and stakeholders on both sides of the cost/quality equation, and complement other healthcare reform strategies.[9,21,24]

By focusing on value, VBID is not a cost-cutting system. However, the available research and documented experiences indicate that, as an overall approach, and in its fully evolved and widely adopted form, VBID will promote a healthier population and therefore support cost containment by yielding more health per dollar spent through improved adherence, better outcomes, reductions in services utilized, and increased worker productivity.[24] Therefore, VBID—despite the debate about ROI—offers the best available, comprehensive approach to efficiently deliver better healthcare per dollar. Moreover, even if VBID is supplanted by a bigger and better idea, VBID is on sound footing and can play a supporting role.[9]

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Integrated Delivery Systems: The Cure for Fragmentation

Alain C. Enthoven, PhD

Abstract

Our healthcare system is fragmented, with a misalignment of incentives, or lack of coordination, that spawns inefficient allocation of resources. Fragmentation adversely impacts quality, cost, and outcomes. Eliminating waste from unnecessary, unsafe care is crucial for improving quality and reducing costs—and making the system financially sustainable. Many believe this can be achieved through greater integration of healthcare delivery, more specifically via integrated delivery systems (IDSs). An IDS is an organized, coordinated, and collaborative network that links various healthcare providers to provide a coordinated, vertical continuum of services to a particular patient population or community. It is also accountable, both clinically and fiscally, for the clinical outcomes and health status of the population or community served, and has systems in place to manage and improve them. The marketplace already contains numerous styles and degrees of integration, ranging from Kaiser Permanente–style full integration, to more loosely organized individual practice associations, to public–private partnerships. Evidence suggests that IDSs can improve healthcare quality, improve outcomes, and reduce costs—especially for patients with complex needs—if properly implemented and coordinated. No single approach or public policy will fix the fragmented healthcare system, but IDSs represent an important step in the right direction.

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For author information and disclosures, see end of text.

Introduction

It is no secret: our healthcare system is fragmented, suffering from what George Halvorson calls "clinical linkage deficiencies."[1] These systemic deficiencies, evidenced by conflicting incentives and lack of coordination, cost lives and fuel the unsustainable spiral of US healthcare expenditures.[2,3]

For example, the Dartmouth Institute for Health Policy & Clinical Practice estimated that 30% to 40% of all hospitalizations are avoidable and that among regions, Medicare costs can vary 2- or 3-fold higher to treat similarly ill patients, without better outcomes.[4] As late as 2005, preventable medical errors[5] caused more deaths than breast cancer, automobile accidents, or drowning.[6] In January 2009, an article in *The New England Journal of Medicine* stated that using a simple surgical checklist could reduce the death rate from surgery by half, decrease complications by more than a third, and save US hospitals about $15 billion per year.[7]

Eliminating waste from unnecessary, unsafe care is crucial for improving quality and reducing costs—and making the system financially sustainable. Many believe this can be achieved through greater integration of healthcare delivery,[3,8,9] more specifically via integrated delivery systems (IDSs). Without greater integration, some predict a systemic "meltdown."[3] However, relatively few people, inside or outside healthcare, know about the benefits—or even the existence—of IDSs.[10]

The IDS concept is not new. It first appeared in the 1930s,[8,11] and gained traction in the 1980s. In the 1990s, IDSs were confused with "managed care," created by insurance companies, usually with little or no integration of providers. Given the accelerating costs of US healthcare, the recent economic downturn, and the outcry for reform, interest in IDSs has been rekindled. Even President Obama talks about Mayo, Intermountain, Geisinger, and Kaiser Permanente—all prominent IDSs.

IDS Defined

Integrated healthcare can be better understood by considering the opposite.

What Does "Fragmented" Mean and How Did We Get Here?

"Fragmentation" in healthcare delivery means the systemic misalignment of incentives, or lack of coordination, that spawns inefficient

allocation of resources or harm to patients. Fragmentation adversely impacts quality, cost, and outcomes.[12]

This systemic fragmentation is difficult to dislodge. Fragmentation is steeped in the history and culture of medicine and is embedded populationwide in the current system—operationally, financially, and in the clinic.

Charles D. Weller called the current fragmented system "guild-free choice," suggesting that the traditional American model of medical care can be likened to guilds in medieval Europe.[13-15] Organized medicine uses the term "free choice" fee-for-service (FFS); specifically, individuals should have freedom to choose physicians and hospitals anytime a la carte.[16] They should not be allowed to choose an insurance plan that limits their choice of provider to those in an organized delivery system in exchange for what they judge to be superior value.

After World War II, health insurance became the province of employers. To give employees insurance without provoking the medical profession, employers and insurers followed the "free choice" FFS construct. For administrative simplicity, most employers adopted the single-carrier, single-plan design—a "one size fits all" approach.

The professional culture of medicine has contributed to fragmentation by revering physician autonomy and infallibility.[14,15,17] Education and training emphasize individual rather than team performance; physicians tend to practice as individuals.[18] Predictably, solo or small single-specialty group practices have dominated the landscape, with unfortunate fallout: wide variation in practices and costs and relatively low accountability—a dearth of guidelines, utilization and quality management, collaboration, and peer review.[14,15]

Traditional guild-like control, coupled with insulation from accountability, has given physicians a de facto monopoly over major decisions, including admitting patients to the hospital and choosing interventions. As a result, physicians still control (directly or indirectly) most of personal health spending,[19] notwithstanding extensive insurer-imposed limitations.

The accelerating advances and complexity of modern healthcare have driven greater specialization and a "silo approach" to healthcare consistent with the described isolationist history and professional culture.[6] Yet, in recent years, increasingly prevalent chronic, often comorbid conditions (eg, diabetes, heart failure, depression) require that patients receive care from multiple providers in multiple settings. Although intensified specialization sought to generate greater interdependence among clinicians and the need for cross-silo coordination, greater specialization has exacerbated fragmentation by increasing the number of narrowly trained specialists.

Other observers assert that organized medicine has historically used its considerable clout to preserve the status quo, resisting efforts to systemically improve the quality and safety of medical care[20] and to form multispecialty group practices (MSGPs) or prepaid group practices (PGPs).[21]

Throughout this evolution, FFS has been the primary payment model.[10] However, the FFS model contributes to fragmentation. Under FFS, physicians earn more by providing more services, thereby interposing an inherent disconnect between physicians' economic self-interest and the interests of their patients. In short, traditional FFS rewards production volume rather than value or outcomes.[9]

For patients, who simply want their doctors to help them stay healthy or get better, the fragmented system resembles, as George Bernard Shaw wrote in *The Doctor's Dilemma*, arrayed "conspiracies against the laity."[22]

What Does "Integrated" Mean?

The opposite of a fragmented healthcare delivery system is a coordinated, integrated system—an IDS. The IDS model flows from the recognition that there is more to safe, appropriate, and affordable healthcare than the face-to-face encounter between doctor and patient: the care delivered is the output of a *system*. Therefore, healthcare reform must be based on redesigned *systems* of care.[2]

As for what constitutes an IDS, various definitions have emerged. Evashwick and Meadors produced a definition in 1994,[23] but lack of clarity remains about the meaning of the term—and the term itself. For example, IDSs are also called Integrated Health Services, Integrated Delivery Networks, and Integrated Health Care Delivery.

That said, a workable definition can be distilled from the research. An IDS is an organized, coordinated, and collaborative network that: (1) links various healthcare providers, via common ownership or contract, across 3 domains of integration—economic, noneconomic, and clinical[24]—to provide a coordinated, vertical continuum of services to a particular patient population or community and (2) is accountable, both clinically and fiscally, for the clinical outcomes and health status of the population or community served, and has systems in place to manage and improve them.[25]

The Successful IDS: Key Attributes and Principles in the Content of Competition Over Value for Money

Cultures, values, and leadership. High-performing, integrated healthcare begins with shared values and goals. All participants are committed to deliver high-quality, affordable care to patients.[25,26] Committed executive leadership, and a coherent organizational structure, implant and consistently reinforce this mindset to maximize benefit to patients.[12,25]

Physician leadership is equally essential.[9,25] A successful IDS must win the loyalty, commitment, and responsible participation of physicians.

The IDS instills and reinforces a culture of safety and teamwork in the clinic among physicians, nurses, and technicians. Clinicians work collaboratively, in an atmosphere of mutual trust and respect, to continuously improve practice rules, processes, safety, and quality.[14,27]

Although the team leader (usually a physician) has ultimate decision-making authority, all team members are accountable to each other, must review each others' work, and collaborate to deliver high-quality, high-value care. Activities are reported routinely and transparently.[9,12,20,28]

Patient-centered and population health focus. Patients have multiple points of entry to appropriate care and information.[9,25] Providers respect and respond to individual patient preferences, needs, and values—this includes cultural competence (ie, knowledge of the patient's language and culture as relevant to health)[12]—to inform all clinical decisions. Patients participate in those decisions.[2,9,12,26] Resources and services are matched to the needs of, and are directed toward improving the overall somatic and mental health of, the population/community served, including prevention initiatives.[10,25]

Coordination. Care is coordinated and information shared across all settings and providers—inpatient, outpatient, physician's office, and home—to provide a seamless continuum of services. Care is delivered at the least invasive and most cost-effective appropriate setting. All or most of a patient's care remains within the system, enabling maximum efficiency and coordination.[10] Transitions and handoffs between settings are explicitly and effectively managed to reduce costs by avoiding rehospitalizations and other complications.

Financial incentives. Financial incentives are aligned with the interests of consumers/patients for high-quality, affordable care among providers, ideally based on (1) a shared revenue stream mediated at the enterprise level, and (2) risk-adjusted, capitated payments to provider organizations.[25] A common revenue stream and capitated payments create incentives to avoid duplication and facilitate efficient deployment of resources.[25] Thus, an IDS manifests attuned consciousness of cost versus benefit, echoing the Institute of Medicine's call for continuous decreases in waste.[2,8]

Evidence-based medicine. All providers employ the same current concepts of best practice and the same evidence-based practice guidelines to minimize quality shortfalls and variations in care.[10] The IDS dedicates sufficient financial and logistic resources to promote evidence-based medicine, including health information technology (HIT).[29]

Comprehensive records. The IDS has, through its HIT, longitudinal records (electronic medical records [EMRs]/electronic health records [EHRs]) that are accessible and shared by all providers and track the following: (1) each patient's path through the healthcare continuum, so that each provider treating the patient can access all relevant information at the point of care,[12] appropriate information accompanies all patient transfers,[12] (2) all patient encounters, aggregating data to enable systemwide evaluation, benchmarking, and improvement, and (3) status of health problems such as chronic conditions across a primary care physician's panel.

Ability to "right size" capacity. IDSs should (1) retain the needed number and types of physician specialties for the enrolled population; (2) have enough primary care physicians so that everyone has good access to a primary care physician, and few enough surgeons so that each one is fully busy, proficient, and able to make a good living at a low cost per case; and (3) adjust the facilities and equipment to the needs of the enrolled population.

Continuous innovation and learning to improve value. The IDS seeks new ways to improve quality, value, and patient experiences with healthcare delivery with an emphasis on primary care as the coordinating agent.[9,12]

IDS Prevalence and Permutations

Forms of IDSs

Although the marketplace embraces multiple customized variations, the Commonwealth Fund has identified 4 basic integration models.[12]

Model 1: IDS or MSGP with a health plan—a single-entity delivery system (hospitals, physicians, and other providers) that includes a health plan. This model, which is both provider and payer, involves physicians in strategic planning. Other advantages include enhanced collection and integration of data, utilization review, and cost-control capacity. Duplication of services is greatly minimized.[25] Kaiser Permanente follows this model, but only serves members of its health plan. Geisinger Health System is similarly structured, but serves patients outside its health plans.[10]

Model 2: IDS or MSGP without a health plan—a single-entity delivery system without a health plan. Examples of

this model include the Mayo Clinic and HealthCare Partners Medical Group.

Model 3: Private networks of independent providers—an organization composed of multiple independent providers that share and coordinate services. Similar to models 1 and 2, model 3 may include infrastructure services (eg, performance improvement and care management). The Hill Physicians Medical Group is an example of model 3. The Washington State Hospital Association has identified other integration formats that fit under model 3, including physician–hospital organizations, management service organizations, group practices without walls, individual practice associations (IPAs), and California "delegated model" health maintenance organizations (HMOs).[25]

Model 4: Government-facilitated networks of independent providers. In this model, government takes an active role in organizing independent providers, usually to create a delivery system for Medicaid beneficiaries. Community Care of North Carolina, a public–private partnership, is an example of this model.

Table. Integrated Delivery Systems and Enrollment in the United States[10]

Common Revenue Streams	Enrollment (millions)
Kaiser Permanente	8.6
Veterans Administration	7.9
Other prepaid group practices	1.5
Multiple Revenue Streams	
Intermountain Healthcare	1.0
"California Delegated" HMOs[a]	9.0
Other large multispecialty group practices	10.0

HMO indicates health maintenance organization.
[a]"California Delegated" HMOs are medical groups paid per capita for professional services by insurance companies. Although nominally classified as integrated, these HMOs have poor incentives alignment. Medical groups, hospitals, and insurance companies have conflicting objectives and interests.

IDS Reach

Although definitions vary and definitive statistics are elusive, there are more than 100 IDSs in operation in the United States.[8,30,31] They are especially common in the West and upper Midwest.[8] An estimated 40 million persons are enrolled in integrated care (Table).[10]

Other well-known IDS entities (with varying degrees and styles of integration) include large multispecialty group practices such as Dean Health System, Geisinger Health System, Harvard Pilgrim Health Care, Health Partners of Minnesota, Hill Physicians Medical Group, Marshfield Clinic, Mayo Clinic, Scott & White Healthcare (Texas), and the Veterans Administration. Group Healthcare Cooperatives (Puget Sound; Eau Claire, Wisconsin; South Central Wisconsin) are prepaid group practices.

Health Maintenance Organizations

Some HMOs are considered integrated because they deliver and finance comprehensive health services to a voluntary enrolled population for a fixed, prepaid fee. The HMO population can be divided into (1) "delivery system HMOs" based on IDSs, and (2) "carrier HMOs," whose chassis is an insurance company that mainly contracts with nonintegrated traditional providers. It has been a great disservice to confuse the two. Paul Ellwood, who coined the term "HMO," was thinking of IDSs and regrets the political necessity that led to the inclusion of uncoordinated traditional providers. The carrier HMOs offered members HMO plan designs that left them unconscious of cost at the point of service. The carriers contracted with FFS doctors with incentives to do more services, whether or not they were necessary or beneficial to the patient. Also, insurance carriers put themselves in the middle as traffic cops—inevitably, a losing proposition.

Evidence That IDSs Work

Evidence suggests that integrated systems can improve healthcare quality, improve outcomes, and reduce costs—especially for patients with complex needs—if properly implemented and coordinated.[10,12]

Specific Examples

Health Insurance Experiment. In the landmark Health Insurance Experiment (HIE), RAND conducted a randomized controlled trial comparing "free-choice FFS" in Seattle to Group Healthcare Cooperative-Puget Sound, a fully integrated PGP. HIE determined that resource use, specifically relative value schedule units of physician visits and hospital stays, for the PGP group was 28% less than the FFS group, with the same outcomes.[32]

Intermountain Healthcare. Intermountain's Clinical Integration program, which was designed to improve value systemwide, focused on integrating HIT, clinical and operations management, and incentives. Eleven clinical improvement projects yielded $20 million in savings.[12]

Kaiser Permanente. Sir Richard Feachem and associates did a systematic comparison of the adjusted costs per patient

at Kaiser Permanente in California and the British National Health Service (NHS).[33] The results surprised and shook up the British. As the title of the article implied, Californians got more for their dollar. Kaiser in California was a little more expensive, but gave patients far more convenient access to more advanced medical technologies than are generally available in the NHS.

Medicare. A 2007 study reported that chronically ill Medicare patients in IDSs used significantly fewer resources in the last 24 months of life compared with the national average. Total physician and hospital spending for patients in organized systems were 24% and 2% less, respectively.[34]

General Examples

Growing evidence, including peer-reviewed studies, reflects that greater organization and integration are associated with higher quality and efficiency, and that large group practices perform better than solo practitioners or small groups.[9,35] For example, group practices have achieved better health outcomes, such as reduced mortality in heart attacks.[12] Physicians in large group practices are more than twice as likely to use organized care management processes as physicians in small groups or those not in a group.[36] IPAs are twice as likely to use effective care management processes as small groups with no IPA affiliation.[12]

Full integration is associated with even higher performance. Compared with IPAs, integrated medical groups in California achieve a higher level of clinical quality, and are more likely to use EMRs, follow quality improvement strategies, collect patient satisfaction data, and offer health promotion programs. HMOs with physician employees or those that partner with physicians tend to score higher on clinical measures than HMOs with independent physician networks.[12]

Finally, from an overall business perceptive, IDSs are potentially formidable economic units. Coordinated organizations functioning under a cohesive strategy can achieve economies of scale and make efficient use of both capital and operating resources, enabling them to meet the same level of demand with less capacity than stand-alone facilities. Larger scale also promotes increased productivity, lower staffing requirements, and reduced operating and unit costs that can be passed on to consumers.[25]

Key Lessons on Integrated Delivery—How Do We Get There From Here?

Provider/Delivery Side

The above analysis and available research send multiple, yet discernible signals. The history and culture surrounding both the practice and profession of medicine created a "guild-free choice," silo mentality.[9] This, coupled with how the business of healthcare has been conducted, has resulted in a fragmented, dysfunctional system saddled with misaligned incentives. It is now recognized that this scenario is outdated. Increasingly prevalent chronic, comorbid conditions and spiraling costs, coupled with poor outcomes, demonstrate the need to better coordinate healthcare—and transform US healthcare delivery systems into IDSs.

Research linking integration and teamwork with better results indicates that healthcare should be delivered by more formally organized, coordinated teams—physicians, nurses, and other healthcare professionals—through practice configurations that more closely resemble PGPs.[9,35]

Current education and training, which often inadequately prepare physicians and other health professionals to practice in an IDS or as part of a team, should encourage systems thinking and shift emphasis from treating disease to preventing disease and promoting population health.[9,12]

The transformation to IDSs requires an altered mindset for physicians and their educators, but cannot succeed without physician leadership and participation.[9] Although the "guild-free choice" stance has recently softened, it remains the default setting.

Another key to successful integration is widespread adoption and deployment of interoperable HIT/EMR/EHR, including (1) access to all relevant information by providers at the point of care, (2) access by patients,[12] and (3) use of HIT, not just internally, locally, and regionally, but nationally to transparently report, measure, and improve performance.[12]

Payment reform is essential to better align financial incentives and reward high-quality, patient-centered care. This would entail broader consumer choice beyond the traditional FFS model and market-based competition among providers. Pay-for-performance would be part of the equation, as would patient cost-sharing[9,12] in order to discourage overuse of unnecessary, low-value interventions[37] and motivate participation in prevention and disease management programs.

Employer/Consumer Side: Market-Free Choice Leans to IDS

Conceptually, the cure for fragmentation is simple and reprises Weller: "guild-free choice" yields to "market-free choice."[13] But practical implementation can be complex, and appreciable obstacles remain. Following are some real-life, illuminating examples of employers offering employees several health plan options with employee cost responsibility.

Stanford University (Stanford) employees can choose from 5 health plans: 3 HMOs and 2 preferred provider organizations (PPOs). The PPOs are self-insured, uncoordinated FFS options. The HMOs include Kaiser Permanente and 2 "California

Delegated" HMOs serviced mainly by the Palo Alto Medical Foundation (PAMF), a large MSGP with salaried doctors. For employees who choose the lowest-priced plan (usually Kaiser), Stanford pays 100% of individual coverage and 82% to 100% (depending on income) of dependent coverage. Employees who choose a higher-priced plan must pay the premium differences. (They can, however, shelter their contributions through "salary reduction" under Section 125 of the Internal Revenue Code, which dilutes the incentive to choose wisely.)

Reflecting the cost-conscious climate, about 80% of Stanford employees choose "delivery system HMOs" because per family per year, the HMOs cost less than FFS PPOs. Between the 2 HMO providers, market competition has yielded visible advances; both improved service and adopted HIT. Like Kaiser, PAMF has EMRs and secure physician–patient e-mail. On the other hand, because few employers offer employees a cost-conscious choice of plans, and because Medicare and the employer community have locked in cost-unconscious FFS, only attenuated price competition has occurred—and even that is being undermined by large-scale employer preferences for self-insurance and therefore FFS payment. Large medical groups have both HMO and PPO/FFS patients. If a preponderance of employers offer to pay FFS, the incentive for medical groups to reduce the cost of their HMO plans is attenuated, if not destroyed.

The scenario is similar at the University of California and with the state employees of California and Wisconsin. The employees of each have a range of choices, and the employer contributes fixed amounts. In Madison, Wisconsin, state employees have a large market share, the value for money competition is strong, and family annual premiums are thousands of dollars less than elsewhere in the state.

These examples make a notable point. In this era of rising concerns over costs, people who were given a range of alternatives that included FFS and IDS, and could decide what is the best value for their money, overwhelmingly chose IDSs.[38,39] This supports the long-held belief that the key to US healthcare reform is "open the markets and level the playing field."

Political and Practical Obstacles to IDS

Despite the documented success of and progress toward IDSs, formidable practical and political obstacles constrict more universal adoption. For example, large employers generally resist offering employees more plan choices. Even if offered, employers tend to contribute more toward costlier models (ie, large employers pay 80%-100% of the premium of the plan of the employee's choice). If one plan costs more than another, these employers pay 80% to 100% of the difference, thus destroying any marketplace reward to the less costly plan for being less expensive. For emphasis, let me reiterate, these employers destroy the incentives of delivery systems to be less costly.

Some consumers value the right to obtain the services from any doctor, anywhere, in case the "best doctor" for their condition is not in an IDS. Their preferences, of course, should be respected, but they should be expected to pay out of pocket for any extra costs associated with their choice.

Small employers generally believe that offering more choices is too costly or impractical, although some manage to do so.

Insurance companies oppose "sliced business"—that is, offering side-by-side choices. They want to be the sole source of health insurance, indeed the "single payer" for each employment group. The insurance industry thus opposes creating exchanges to cover employee groups. They do not want that kind of competition.

Labor and management oppose capping the open-ended exclusion of employer contributions, and even employee contributions, from the taxable incomes of employees, which is necessary to give consumer incentives for cost-conscious choice.

Device manufacturers and providers generally prefer the fragmented traditional system because their customers are cost-unconscious. Thus, they oppose public policies that would lead to the proliferation of competing IDSs.

These large components of the medical industrial complex spend enormous amounts of money employing lobbyists and supporting or attacking congressional candidates who do or do not support the policies they prefer.

Conclusion

The vastness and complexity of healthcare in the United States, accompanied by regional differences, indicate that no single approach or public policy will fix the fragmented healthcare system.[12] Even if that were so, the marketplace already contains numerous styles and degrees of integration, ranging from Kaiser Permanente–style full integration, to more loosely organized IPAs, to public–private partnerships. Moreover, notwithstanding the potential role for government in promoting IDS, many in the healthcare realm will resist universal change imposed by government fiat.

In response to these genuine concerns, the available evidence provides 2 valuable lessons. First, for the extent to which positive IDS hallmarks (as described above) are met, each IDS configuration and approach can yield more efficient, higher-value performance, thereby reducing waste, improving quality, and lowering costs.[9,12] Second, substantial positive change can

be achieved through private, value-based, market competition—as ever, the catalyst for American innovation. Such innovation is needed to cure the present fragmentation.[9]

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A Guide to the Medical Home as a Practice-Level Intervention

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Abstract

The medical home (also known as patient-centered medical home or advanced medical home) is a composite policy construct representing a set of interventions intended to revitalize primary care practices and improve patient care. As an idealized vision, the medical home has gained the support of stakeholders including employers, health professional societies, health plans, not-for-profit entities, and government agencies. Expectations of the medical home include improvements in healthcare quality, patient experience, provider worklife satisfaction, costs of care, and increased recruitment of medical students into primary care careers. However, multiple definitions of the medical home exist, and the degree to which some often-cited examples of "medical home" successes match these definitions is unclear. Scant evidence currently supports the effectiveness of practice-level medical home interventions for improving quality and reducing costs, but demonstration projects are only recently under way. Carefully specifying the exact components of "medical home" interventions—and interpreting their results in the context of these specifications—will help build a coherent body of evidence to guide the revitalization of primary care.

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For author information and disclosures, see end of text.

Overview

The medical home (also known as patient-centered medical home or advanced medical home) is a composite policy construct applied to interventions intended to revitalize primary care practices and improve patient care. It is hoped that these interventions will increase the appeal of primary care as a medical career and improve healthcare quality, patient experience, provider worklife satisfaction, and costs of care. This article is intended as a guide for policymakers, healthcare purchasers, and physicians who are thinking about facilitating, paying for, or engaging in medical home interventions.

The phrase "medical home" has multiple definitions, and each definition contains many components. There can be confusion over what is meant when somebody proposes participation in (or reports having engaged in) a medical home intervention. To facilitate comparisons between medical home definitions, we classify their components into resource inputs, specified processes, and desired outcomes. We then apply a parallel classification system to the descriptions of medical home interventions that have already reported results. This review summarizes the findings and discusses their implications for future work.

Definitions of the Medical Home

The term *medical home* originated in a 1967 proposal from the American Academy of Pediatrics (AAP) intended to establish centralized, accessible medical records for medically complex, chronically ill children.[1] Since then, physician professional societies have expanded the definition of the medical home to include a broader array of practice capabilities and elements of the Chronic Care Model, culminating in the 2007 Joint Principles of the Patient-Centered Medical Home issued by the American Academy of Family Physicians (AAFP), AAP, American College of Physicians, and American Osteopathic Association.[2,3] As an idealized vision of primary care, the medical home is supported by stakeholders including employers, health professional societies, health plans, not-for-profit entities, and government agencies.[4]

Despite wide acceptance, the Joint Principles have not easily translated into concrete actions. Some principles describe processes to be undertaken by physician practices, but others describe new goals for a patient's total healthcare experience (ie, goals compatible with an idealized vision of primary care). The Joint Principles do not provide

Table 1. Major Medical Home Definitions: Specified Processes Corresponding to Each Desired Outcome[a]

Desired Outcomes in the Joint Principles	Processes Included in the Joint Principles	Selected Processes Included in Operational Definitions[a]
First contact, continuous, comprehensive care	Not specified	Scheduling procedures to maximize continuity with personal physician Written agreement between practice and patients[b]
Care that is coordinated across the healthcare system and community	Patient population registries Information technology Health information exchange	Medication reconciliation Referral tracking Care management by nonphysician staff Facilitate information transfer
Culturally, linguistically appropriate care	Not specified	Identify communication issues Provide language services
Safe, high-quality, evidence-based care	Practice advocates for patients Patient participation in decision making Clinical decision-support tools Information technology Performance measurement Quality improvement activities Participation in a recognition program that certifies practice capabilities	Patient self-management support Electronic health record with clinical data, prescribing, and decision support Condition-specific registries Physician and patient reminders for preventive services Test tracking and follow-up Identify common diagnoses and risk factors in the practice Performance measurement on quality and patient experience Quality improvement activities
Enhanced access	Open scheduling Expanded hours Secure e-mail and telephone consultation	Offer same-day appointments Offer 24-hour communication options Interactive Web site
Not specified	Use of a care team led by a personal physician	Use of structured templates for office notes Many written policies

[a]Operational definitions contributing care processes are from the National Committee for Quality Assurance, the planned Medicare Medical Home demonstration, and TransforMed. Selected processes are those common to 2 or more of these definitions.
[b]Medicare demonstration only.
Sources: References 3, 5-7, and 9.

a complete action path for primary care practices seeking to reach these idealized goals. Instead, many practices and demonstration projects rely on an operational definition developed by the National Committee for Quality Assurance (NCQA): the Physician Practice Connections–Patient-Centered Medical Home (PPC-PCMH).[5] The NCQA provides certification that individual primary care practices possess specific structural capabilities and partake in certain processes, and offers 3 levels of medical home recognition. In some medical home demonstrations, this certification process is used to determine whether participating practices qualify for enhanced payments. A variant of this NCQA definition was devised for use in the planned Medicare medical home demonstration authorized by the Tax Relief and Health Care Act of 2006.[6,7]

Another operational definition was developed by TransforMed, an AAFP subsidiary originally intended to facilitate the practice transformations envisioned in the AAFP's 2004 report "The Future of Family Medicine."[8] With the advent of the medical home, TransforMed's mission evolved to include a prominent National Demonstration Project that uses its own medical home definition.[9] Similar to the NCQA definitions, TransforMed's definition applies to individual primary care practices.

Components of the Medical Home

Each medical home definition comprises a set of specific components for primary care practices. The elements of these definitions fall into 3 fundamental categories: desired outcomes (ie, characteristics of care received by patients), specified processes for primary care practices to follow, and resource inputs to support these processes.

Desired outcomes. Desired outcomes expressed in the Joint Principles include first contact, continuous, comprehensive

Table 2. Major Medical Home Definitions: Resource Inputs

Resource Inputs	Joint Principles	PPC-PCMH[a]	Medicare Demonstration	TransforMed
Additional payment				
Per-patient per-month payment	X		X	
Payment for use of HIT	X		X	
Practices share in savings generated by medical home activities	X		X	
Payment for improvement on quality measures	X			
In-kind investments				
Technical support to facilitate practice transformation			X	X

HIT indicates health information technology; PPC-PCMH, Physician-Practice Connections–Patient-Centered Medical Home.
[a]By design, the PPC-PCMH definition excludes consideration of resource inputs.
Sources: References 3, 5-7, and 9.

care; care that is coordinated across the healthcare system and community; culturally and linguistically appropriate care; safe, high-quality, evidence-based care; and enhanced access (Table 1). Although not mentioned in the Joint Principles, medical homes are expected to reduce costs of care, improve provider worklife satisfaction, and draw more medical students into primary care.[10] Better cost control can result from processes such as enhanced access (eg, so that patients can substitute away from high-cost care in emergency departments) and care management.[11,12] Increased payments to medical homes may result in higher take-home incomes for primary care physicians, or not.[13] Higher incomes, coupled with improved professional satisfaction, may increase the number of medical students choosing primary care careers.[14]

Specified processes. The processes of care specified in the major medical home definitions can be classified into categories corresponding to the desired outcomes expressed in the Joint Principles (Table 1). The Joint Principles do not specify which processes would enable practices to achieve first contact, continuous, and comprehensive care. To produce these outcomes, the PPC-PCMH and TransforMed definitions have focused on improving continuity through new appointment scheduling procedures. Recognizing the importance of mutually understood responsibility, the Medicare demonstration would require written agreements between patients and medical homes that delineate the expectations of each party.[7]

Coordinated care can be achieved through processes such as care management by nonphysician staff and the use of information technology. A variety of specified processes are intended to achieve safe, high-quality care: advanced electronic health records, test tracking, and targeted quality improvement activities. The processes intended to achieve enhanced access include "open scheduling" (to allow same-day appointments), expanded office hours, and enhanced telephone and electronic communications.

Some specified processes are not clearly tied to any particular desired outcome. The Joint Principles call for the use of a physician-led care team, and other definitions encourage structured templates for office notes and written policies for practice governance.[5]

Resource inputs. To support investment in medical home processes, payers and demonstration collaboratives provide resource inputs to participating practices. These resources take the form of additional payment (included in both the Joint Principles and planned Medicare demonstration), in-kind investments (not included in any major definition), and technical support for practice transformation (included in the Medicare and TransforMed definitions) (Table 2). Of note, the PPC-PCMH definition—primarily intended as a practice certification tool—does not specify any resource inputs to primary care practices. These inputs are left to the payers and demonstration collaboratives that will facilitate each medical home intervention.

Will Medical Home Interventions Produce the Desired Outcomes?

Each medical home intervention consists of a combination of resource inputs and specified processes applied in a particular practice setting. Numerous studies of individual inputs and processes of the medical home have been published, and many of these individual components—

Table 3. Components of "Medical Home" Interventions With Published Results

Intervention	Group Health Cooperative (GHC)	TransforMed	Geisinger ProvenHealth Navigator
Practice setting	One practice of an integrated insurer/multispecialty group	36 Volunteering family practices in 24 states	Predominantly practices in an integrated insurer/multispecialty group
Resource inputs			
Additional payment	Physician salaries were exempted from RVU-based adjustments. Without this exemption, physician salaries would have been lower as daily visit counts were reduced.	None	Monthly payments to practices: $1800/physician, $5/Medicare beneficiary Pay-for-performance on quality measures Practices share in savings
In-kind investments	Additional physicians Mean panel size reduction from 2327 to 1800; 50% reduction in per-physician daily visit count New practice nonphysician staff	None	Nurse care managers employed by Geisinger Health Plan and embedded in primary care practices Electronic health record provided to practices
Technical support	Not specified	All practices given access to a practice improvement Web site 18 Practices received on-site technical assistance	Not specified
Specified processes	***Selected processes:*** Systematic follow-up of emergency visits and hospital discharges Patient self-management workshops Standard office visit lengthened from 20 to 30 minutes Team-based care, team huddles Scheduled "desktop medicine" time E-mail and telephone visits Group visits Real-time specialist consultations via electronic health record Electronic health risk assessment	***Selected processes:*** Engage in change management; become a learning organization Leadership development Same-day appointments Group visits Patient engagement and education Coordination arrangements with other providers Care transition management Quality improvement activities Team-based care Use of electronic health record with registries, e-prescribing, patient portal	***Selected processes:*** 24-Hour access to case management Transition management Hospital discharge follow-up calls Patient and family education Analysis of readmissions Home-based telemonitoring Use of electronic health record templates and electronic decision support

PMPM indicates per member per month; RVU, relative value unit.
Sources: References 18-25.

especially those included in the Chronic Care Model—have been associated with favorable effects on clinical outcomes, clinical processes, and quality of life.[15,16] The use of health information technology, studied primarily in a few large academic institutions, was also associated with favorable effects on quality of care.[17] These studies of individual inputs and processes have helped guide the creation of medical home definitions, but they may not accurately predict the effects of more complex medical home interventions.

From the perspective of stakeholders considering a medical home intervention, the best guidance is likely to come from published evaluations of practice transformations that include multiple medical home components. These evaluations measure the overall effects of medical home interventions, net of any synergistic or antagonistic interactions among their components. In reviewing the results of published medical home evaluations, there are 3 main questions to ask. First, what were the intervention components (ie, what were the resource inputs and specified processes, and

Intermountain Healthcare Care Management Plus	Geriatric Care Resources for the Assessment and Care of Elders (GRACE)	Community Care of North Carolina (CCNC)
7 Primary care clinics within a large integrated delivery system	6 Community-based health centers within a larger university-affiliated medical group	14 Regional networks of ~1200 primary care practices, hospitals, and local community partners
None	None	Enhanced case management fees: $2.50 PMPM to practices and $3 PMPM to networks
Nurse care managers employed by the study were placed within intervention clinics Specialized information technology tools	3 GRACE support teams (an advanced practice nurse and a social worker) employed by the larger medical group; each support team assigned to specific physicians Only some physicians within a clinic were randomized to receive these inputs	Networks employ case managers for selected enrollees
Not specified	Not specified	Networks provide technical assistance to practices
Physicians referred medically complex patients to nurse care managers Nurse care managers completed patient assessments and performed case management using electronic protocols, guidelines, and a care management tracking database	***Selected processes:*** GRACE support teams assess patients GRACE interdisciplinary team develops care management plans Primary care physicians approve care plans GRACE support teams implement care plans with electronic health record support	***Selected processes:*** Network clinical directors disseminate quality improvement initiatives Networks do rapid-cycle quality improvement, share best practices Each enrollee designates one practice as "medical home" Pharmacy management Disease management for certain chronic conditions

how completely did the intervention components match the major medical home definitions)? Second, what outcomes did the intervention produce? Third, what is the strength of the evidence, and how well do the findings generalize?

Components of Reported Medical Home Interventions: Settings, Inputs, and Processes

A small number of medical home interventions have already reported results: the Group Health Cooperative (GHC), TransforMed, Geisinger Health System's ProvenHealth Navigator, Intermountain Healthcare Care Management Plus, Geriatric Care Resources for the Assessment and Care of Elders (GRACE), and Community Care of North Carolina (CCNC) (Table 3).[18-20] These interventions began before the March 2007 publication of the Joint Principles of the Patient-Centered Medical Home as well as the major operational definitions of the medical home. In a sense, these interventions have been rebranded as medical home interventions, and vary in the extent to which they match the major medical home definitions.

Table 4. Published Results of "Medical Home" Interventions

Intervention	Group Health Cooperative (GHC)	TransforMed	Geisinger ProvenHealth Navigator
Outcomes	***At 12-month comparison to control practices:*** Improvements in patient experience ratings, performance on global quality measure composite, and staff burnout ratings No significant differences in overall costs	***Initial qualitative lessons:*** Practice transformation is a whole-practice endeavor Electronic health record adoption is difficult Personal transformation of physicians is required Change fatigue is a problem Transformation pathways vary among practices	***Preliminary results from 2 pilot practices:*** All-cause hospital admission rate decreased by 20% Increased medication adherence, generic use Increased compliance with evidence-based care 7% Overall cost savings ***Preliminary results from 11 expansion practices:*** Decreased hospital readmission rate 4% Overall cost savings
Strength of evidence	Peer-reviewed publication Complete description of intervention and evaluation methodology	Peer-reviewed publication Results are preliminary	Not peer-reviewed Results are preliminary Methodology incompletely described
Generalizability	Atypical practice setting Single intervention practice	Settings typical of most primary care practices	Atypical practice setting

Sources: References 21-23, 26, and 28-30.

Practice settings. Among these 6 interventions, 3 (GHC, Geisinger, and Intermountain) occurred in practices that were part of large, integrated delivery systems (Table 3).[21-23] The GRACE and CCNC interventions both involved levels of provider organization beyond the primary care practice.[24,25] Only TransforMed's intervention took place within independent primary care practices.[9]

Resource inputs. Three of the interventions (GHC, Geisinger, and CCNC) provided additional payment to participating practices, with Geisinger being the most generous.[22] Two of the interventions provided technical support to participating practices (TransforMed and CCNC). Excepting TransforMed, all interventions provided in-kind investments, most commonly in the form of additional staff to perform case management.

Specified processes. The 6 medical home interventions have also varied in the extent to which their specified processes have matched the medical home definitions. By default, the processes of the TransforMed intervention constitute a perfect match to a major medical home definition. However, TransforMed's preliminary qualitative findings suggest that performing the specified processes (eg, adopting electronic health records) has been difficult, and practices have exhibited change fatigue.[26] The number of practices able to successfully perform TransforMed's processes has not yet been published.

The GHC and Geisinger interventions each included multiple processes of the medical home, particularly those related to care management, patient self-management support, and use of electronic health records. As with TransforMed, GHC practices reported difficulties in changing the work processes of professional staff.[27] The Intermountain, GRACE, and CCNC interventions, however, involved fewer specified processes of the major medical home definitions. The Intermountain and GRACE interventions included care management processes that were provided by the same care managers who constituted the practice inputs. Each Medicaid enrollee in CCNC was required to designate one practice as a "medical home." However, most processes of the CCNC intervention were performed by network staff; CCNC has not expected redesign of its participating practices.[25]

Have the Desired Outcomes Been Achieved in Demonstration Projects?

The GHC's intervention is the only "medical home" intervention that includes a wide variety of medical home components and has produced a peer-reviewed evaluation. At 12 months, the GHC intervention reported improvements in multiple domains of patient experience (including coordination of care and access) and a global composite measure of

Intermountain Healthcare Care Management Plus	Geriatric Care Resources for the Assessment and Care of Elders (GRACE)	Community Care of North Carolina (CCNC)
Compared with matched controls: Trend toward lower all-cause mortality at 2 years (16.6% among controls vs 13.1% with intervention; $P = .07$) More emergency department visits	***Compared with usual care:*** Improved health-related quality of life Lower 2-year rates of emergency department use (1785 visits per 1000 patients receiving usual care vs 1445 with intervention; $P = .03$) Lower hospital admission rates (in a predefined subgroup of patients most likely to be hospitalized)	***Mercer Consulting reports:*** Estimated savings of up to $240 million in 2005 and $314 million in 2006, compared with fee-for-service Medicaid enrollees
Peer-reviewed publication	Peer-reviewed publication Randomized at physician level	Not peer-reviewed Incomplete description of methodology for calculating savings
Atypical practice setting	Not a practice-level intervention	Not a practice-level intervention

technical quality of care (Table 4).[21] There was no detectable effect on overall healthcare costs. However, with only one intervention practice and an integrated insurer/multispecialty group (with salaried physicians at baseline) as the intervention setting, the generalizability of these findings to independent primary care practices may be limited.

As noted earlier, TransforMed released preliminary qualitative results,[26] but full evaluation results have yet to be published. Preliminary results from the first 2 pilot practices in Geisinger's medical home intervention included a 20% drop in hospital admissions, improvements in guideline adherence, and a 7% reduction in overall costs of care.[22,28] The Geisinger medical home intervention was subsequently extended to another 21 Geisinger-owned practices and 4 independent practices, and preliminary results from a subset of these expansion practices include a 4% reduction in costs of care.[28] The methodology underlying these cost estimates has not been completely described, nor have these estimates been presented in a peer-reviewed scientific publication. As with the GHC evaluation, the generalizability of Geisinger's findings to independent primary care practices may be limited.

Compared with matched controls, medically complex patients in Intermountain Healthcare's Care Management Plus intervention practices exhibited a trend toward lower 2-year all-cause mortality (16.6% among controls vs 13.1% in the intervention, $P = .07$).[23] Compared with patients receiving usual care, elderly indigent patients receiving the GRACE intervention reported higher health-related quality of life and had lower 2-year rates of emergency department use (1748 vs 1445 visits per 1000 patients; $P = .03$).[29] CCNC's outcomes have included hundreds of millions of dollars in estimated annual savings to North Carolina's Medicaid program.[30] Neither the Intermountain, GRACE, nor CCNC interventions closely matched the medical home definitions, so their generalization to proposed medical home interventions bears scrutiny. In addition, the methodology used to estimate the savings attributed to CCNC has not been completely described in publicly available materials, and these estimates, which have some skepticism,[31] have not been presented in a peer-reviewed scientific publication.

Summary State of the Evidence

Currently, there is limited evidence that the medical home, as a multifaceted practice-level intervention, will produce the results expected by its stakeholders. Comparing Table 1 to 3 demonstrates that some interventions cited in support of the medical home bear little resemblance to the major practice-level medical home definitions—particularly in the degree of practice transformation required. Other interventions occurred in unusual organizational settings, and some prominent results have not been peer-reviewed.

To take advantage of current political opportunities, policy-level decisions about transforming primary care practices

will be running ahead of the evidence. However, medical home pilot projects in several states are under way, and many others are planned.[7,32] Although their diversity may frustrate efforts to pool results, these pilots offer a chance to carefully examine which combinations of medical home settings, inputs, and processes are likely to produce the best results.

Guidance for Stakeholders

Beyond the need to test the medical home, there is a need to clearly specify what is being tested: for each intervention, exactly what are the practice settings, practice inputs, and specified processes?[33] Without careful identification of medical home components, the use of the phrase "medical home" risks transmitting the appearance of failure (or success) across interventions that have little else in common. For example, practice transformation that is facilitated by significant practice inputs and in-kind support from an integrated health system may lead to desirable outcomes. However, these outcomes may not accurately predict the results of interventions on independent primary care practices (or interventions lacking significant practice resource inputs). Stakeholders who expect a proposed medical home intervention to produce GHC- or Geisinger-like results should ask: to what extent are the setting, practice inputs, and specified processes of the proposed intervention congruent to these prior examples?

Because of its common use in medical home pilots, it is worth pointing out that the NCQA's PPC-PCMH, as a certification instrument silent on practice inputs, cannot completely define a medical home intervention. In addition, the PPC-PCMH does not completely specify the combination of processes expected of primary care practices. Each level of NCQA medical home certification can be achieved in many different ways. If medical home pilots require NCQA certification but give no further guidance about which particular PPC-PCMH elements are expected, the resulting intervention may need to be analyzed as a heterogeneous family of experiments.

The Medical Home in the Context of Overall Primary Care Reform

Well-respected observational research supports the superiority of a primary care–oriented healthcare delivery system.[34,35] Based on existing evidence, it is unclear whether the transformation of individual primary care practices is the best path to this goal. Other avenues can simultaneously be explored. For example, the recently announced Medicare-Medicaid Advanced Primary Care Demonstration Initiative will evaluate interventions including the majority of primary care practices in each participating state.[36] The proposed expansion of the Medicare Physician Group Practice Demonstration may create accountable care organizations that integrate individual primary care practices into full-service health systems.[37] Accountable care organizations may enhance the ability of primary care practices to perform core medical home processes and to share in savings generated across all care settings.[38] Results from these new efforts and ongoing medical home demonstrations will provide valuable guidance to the overall revitalization of primary care.

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Innovative Health Reform Models: Pay-for-Performance Initiatives

Seth W. Glickman, MD, MBA; and Eric D. Peterson, MD, MPH

Abstract

Pay-for-performance (P4P) programs have the potential to improve overall quality of care by narrowing gaps between what national care guidelines recommend and those treatments actually delivered in routine community practice. P4P is also viewed as a tool to promote more efficient use of healthcare resources while improving patient outcomes. P4P provides financial incentives for quality of service instead of quantity of service. Despite the promise of healthcare quality, concerns have been raised that P4P may have potential unintended consequences for patients, physicians, and hospitals. The shortcomings of many traditional P4P programs have fueled the emergence of new and innovative models of payment reform. P4P and newer models that link reimbursement with quality and efficiency show promise to improve patient outcomes and lower costs, but multiple approaches are needed to ensure that future initiatives provide value for key stakeholders, including patients, providers, and payers.

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What Is Pay for Performance?

The concept of linking financial incentives to the quality of healthcare provided has been termed *pay for performance*, or P4P. P4P has received significant national attention as a potential means of improving overall quality of care by narrowing gaps between what national care guidelines recommend and those treatments actually delivered in routine community practice.[1-5] In an era of rapidly rising healthcare costs, P4P is also viewed as a tool to promote more efficient use of healthcare resources while improving patient outcomes. Over the past decade, commercial and federal payers have implemented a vast array of P4P initiatives. The structure of these programs is remarkably diverse, spanning a variety of payment models, intended targets (eg, hospitals, physician groups, individual providers), and clinical conditions. While a number of programs have shown promise, additional work is necessary to determine whether they achieve their intended long-term effects. The purpose of the article is to provide a brief overview of current P4P initiatives, discuss the evidence regarding their effectiveness, and provide insight into newer, innovative payment models that have emerged.

P4P Programs

More than half of commercial health plans in the United States currently use P4P incentives in their provider contracts.[6] Many of these programs involve joint efforts among employers, health management organizations, pharmaceutical companies, physician groups, academia, as well as for-profit and not-for-profit organizations (**Table**).[2,7-13] Complementing efforts by the private sector, the Centers for Medicare & Medicaid Services (CMS) has sponsored P4P demonstration projects in a variety of clinical settings, including physician practices, acute care hospitals, dialysis facilities, nursing homes, as well as programs to increase the adoption of information technology and disease management. The largest demonstration project to date is the Hospital Quality Improvement Demonstration (HQID) Project, which offers financial incentives to hospitals based on the inpatient quality of care for 5 clinical conditions—acute myocardial infarction, heart failure, pneumonia, coronary artery bypass surgery, and hip and knee replacement. In addition to these US programs, P4P has gained significant traction overseas.[14-16] For example, the National Health Service (NHS) in the United Kingdom has invested massive resources in P4P initiatives. The NHS's Quality and

Table. Examples of Some of the Largest Pay-for-Performance Initiatives to Date

Program	Participant	Sponsor	Target	Results
Hospital Quality Improvement Demonstration Project	230 Acute care hospitals in the United States	Center for Medicare & Medicaid Services	Process measures for heart failure, acute myocardial infarction, pneumonia, hip replacement, coronary artery bypass grafting surgery	Modest improvements in process performance, no identifiable impact on outcomes
Quality and Outcomes Framework/General Practitioner Pay-for-Performance contract	42 Family practices in England	National Health Service	146 Indicators related to chronic disease and patient experience	Short-term improvements in care which slowed once performance targets were reached
Integrated Healthcare Association Pay-for-Performance Program[10]	225 Physician groups in California	8 Health plans in California representing 10.5 million patients	Multiple, including clinical process measures, patient experiences of care, adoption of information technology	Modest improvements in targeted areas of care
Bridges to Excellence[11]	Multiple provider groups operating in 13 states	Collaborative effort among large employers, including General Electric and Verizon Communications	Includes excellence programs in diabetes, cardiac, spine, and depression	Cost savings in diabetes care, achievement of performance thresholds in diabetes and cardiac care
Hill Physicians Medical Group[12]	2200 Physicians in North Carolina	Hill Physicians Medical Group serving 332,000 patients in 7 HMOs	Resource utilization, clinical performance (cancer, diabetes, low back pain, immunization), patient experience, up to 15% of compensation to quality performance	Improvement in threshold diabetes care by 42% and cholesterol levels by 32%
Hawaii Medical Service Association Practitioner and Hospital Quality and Service Recognition Programs[13]	More than 2500 physicians in its preferred provider plan, 17 hospitals	Blue Cross Blue Shield of Hawaii	Patient safety, adherence to evidence-based guidelines, patient satisfaction	Significant improvements in adherence to clinical measures in a number of areas, including cancer screening, immunization, and heart failure

HMO indicates health maintenance organization.

Outcomes Framework, which provides financial incentives to primary care physicians for 146 quality indicators related to chronic disease and patient experience, has distributed over £2 billion to providers since 2004.

Potential Benefits of P4P

Compensation models that link financial incentives to performance have been widely implemented in other industries and are a powerful lever to influence behavior. P4P is seen as a way to create a "business case" for quality by better aligning payment with quality of service instead of quantity of service.[17,18] This helps address the issue that hospitals and physicians are not necessarily rewarded for delivering high-quality care. For example, hospitals that produce better health outcomes may paradoxically face lower margins through phenomena such as diagnosis-related group switching and a reduction in unplanned rehospitalizations for the chronically ill.[19] P4P also holds promise because many of the traditional approaches to improving quality, such as physician education, provider certification, and consumerism, have failed, largely due to the fragmented nature of our healthcare delivery system.[20] Linking financial incentives to quality is also viewed by many as a more palatable approach than traditional managed care models where financial incentives are provided to physicians to limit referrals and see more patients per day.[21]

Concerns About P4P

Despite the promise of healthcare quality, concerns have

been raised that P4P may have potential unintended consequences for patients, physicians, and hospitals.[22] For example, most P4P programs reward providers based on evaluation of a limited number of process performance metrics. If hospitals and physicians become too focused on these metrics, they may lose sight of the global goals of healthcare (analogous to students studying just what is on the test).[23] Some have argued that forcing hospitals and providers to follow select process patterns could stifle innovation and the ability or willingness of organizations to develop creative solutions to improving quality.[24] Others have worried that the large fixed costs required to support P4P data collection and quality improvement programs could deviate important resources away from patient care and have unintended consequences.[25] In a similar manner, the financial incentives in P4P could paradoxically exacerbate healthcare disparities—either by financially penalizing hospitals that treat underserved populations or by prompting caregivers to avoid sick and "high-risk" patients from their practice.[26,27]

Evidence Regarding the Effectiveness of P4P

While many have speculated on both the potential positives and negatives of P4P programs, the evidence regarding its impacts has been mixed.[28-30] A systematic review conducted in 2006 identified 17 studies on P4P published between 1980 and 2005.[31] These studies focused primarily on programs targeting preventive care services. The studies tended to be inconclusive due in part to their small sample size, specialized setting, and short-term follow-up. More recently, however, there have been investigations on the impact of large P4P initiatives sponsored by the US federal government and the United Kingdom. These studies have generally found that P4P programs were associated with modest improvements in process of care measures, yet none of these programs had an impact on patient outcomes or efficiency of care. For example, Lindenauer et al found that hospitals engaged in both public reporting and CMS' HQID P4P program achieved modestly greater improvements in quality than did hospitals engaged only in public reporting.[3] The estimated incremental effect on a composite quality score for cardiac and pneumonia care ranged from approximately 2.8% to 4.3%. Glickman et al evaluated CMS' HQID program in a cohort of 500 hospitals participating in a voluntary quality improvement initiative for acute myocardial infarction and found that financial incentives were not associated with a significant incremental improvement in quality or reduction in mortality.[4] Evidence from the large P4P program in the United Kingdom for asthma, diabetes, and coronary heart disease suggests that family practitioners achieved high levels of achievement in the first year of the program.[14] Over the ensuing 3 years, however, improvements in the quality of care slowed and actually declined for conditions not linked to financial incentives.[15] Unfortunately, few large-scale, randomized controlled trials have evaluated the effectiveness of P4P interventions.

Issues Involved in the Methodology for P4P Measurement and Provider Ratings

A key challenge to implementing P4P programs is selecting valid and reliable measures of quality and performance. The largest P4P programs to date have focused primarily on processes of care (ie, adherence to evidence-based treatment guidelines). For example, the 2009 CMS Physician's Quality Reporting Initiative is tracking 153 quality measures spanning multiple therapeutic areas.[32] A number of professional organizations, including the National Quality Forum, the American Heart Association, and the American College of Cardiology developed consensus methodology for the selection and creation of performance measures.[33,34] Performance measures must be valid (eg, have a robust evidence base supporting their use), accurate and reliable, easy to interpret, and allow for reliable comparisons among providers. Other important considerations are the clinical relevance of the outcome, adherence to the process measure, and variability in baseline adherence to the measure (ie, is there already a ceiling effect in performance?).

Despite the popularity of using process measures to gauge quality, such measures present significant challenges. Selecting performance measures that do not meet evidence-based criteria may negate their intended effects of improved efficiency and patient outcomes.[35] For example, a recent study of quality measures for acute myocardial infarction in 1351 hospitals found that in a resource-constrained environment, hospitals that focus on "administrative" process measures (eg, smoking cessation counseling or discharge instructions) at the expense of clinical interventions (eg, aspirin or angioplasty) have worse patient outcomes.[36] Another issue is the possibility of obtaining stable estimates of performance for small hospitals and physician groups or whether additional techniques are needed to account for small and unequal denominators. A recent study by O'Brien et al demonstrated that high-volume hospitals had better performance on average, but were significantly less likely to be identified as "top" hospitals (ie, top decile).[37]

There are also challenges in finding ways to combine performance measures to create a valid aggregate measure of hospital or physician performance. Composite scores that combine several performance measures into a single ranking are commonly used to assess hospital performance. Yet,

existing methods used to create composite scores are highly variable in their weighting of process versus outcomes metrics, which can, in turn, lead to highly divergent provider rankings.[38] Composite scores are typically weighted by the total number of treatment opportunities, although evidence suggests that weighting based on how hospitals organize care or the range for possible improvement in scores may provide more useful information.[36] Finally, although performance measures are not typically risk-adjusted, a recent study by Mehta et al found that accounting for hospital case mix (such as age, sex, race, insurance status, and medical comorbidities) can dramatically affect a hospital's ranking and financial benefits in P4P programs.[39]

In addition to process measures, P4P programs can also reward patient outcomes (eg, inpatient mortality, 30-day mortality, 30-day hospital readmission), patient perceptions of care, measures of efficiency (eg, ratio of observed to expected costs), and hospital and physician group structural characteristics (eg, adoption of information technology). Outcomes performance assessment, however, can be challenging due to the potential confounding influence of patient case mix on provider outcomes, as well as the instability of hospital outcome estimates due to low event rates.

New Care Models With Financial Incentives

The shortcomings of many traditional P4P programs, including their limited impact on provider behavior, value, and health outcomes, have fueled the emergence of new and innovative models of payment reform.[40] Primary care capitation models that include large performance and efficiency bonuses are currently being piloted in Massachusetts. Other groups are moving toward episode-based payments, which reimburse providers on the basis of expected costs for clinically defined episodes of care. The Geisinger Health System recently implemented a bundled payment for coronary artery bypass grafting (ProvenCare) that covers all care 30 days before and 90 days after the procedure, including any complications, hospital readmissions, and follow-up care.[41] This model has been associated with a significant reduction in hospital readmissions and hospital charges, and has been expanded to a number of other clinical conditions, including angioplasty and hip replacement surgery. In California, P4P programs have shifted toward efficiency measurements using bundled payment for acute surgical and medical interventions.[42]

One of the most promising payment models to emerge is the accountable care organization (ACO).[43] This concept is rooted in the observation that there are dramatic differences in Medicare spending, by both region and hospital. Regions with lower per beneficiary spending in Medicare achieve equal or better quality and health outcomes than their counterparts. The goal of the ACO model is to create organizational accountability for quality, improve coordination of care for Medicare beneficiaries, and reward innovations that simultaneously improve healthcare quality and reduce costs.[44]

In 2005, Medicare implemented the Physician Group Practice (PGP) demonstration program in large group practices that serve at least 5000 Medicare patients. The program allows group practices to share the cost savings they achieve in caring for their patients if they simultaneously meet quality improvement targets. The cost savings are calculated by comparing actual spending to a target. The target is determined by the PGP's base year per capita expenditures trended forwarded by a per capita growth rate from the same area. Medicare savings in excess of 2% are shared with CMS depending on whether process performance targets are achieved. In the first 2 years of the program, there was overall improvement in quality-of-care targets and lower risk-adjusted expenditure growth rates for several of the participating groups. A recent study demonstrated that more than 75% of Medicare beneficiaries nationally receive care in ACO-eligible networks (>5000 beneficiaries) and that widespread adoption of ACOs would lead to considerable savings in Medicare spending.[43] Yet, there are important challenges to widespread adoption of ACOs. These include fragmentation of provider efforts by competing P4P programs, applicability of ACOs to patients living in rural and underserved areas, and concerns that a primary focus in efficiency may undermine the credibility of these programs among physicians and other stakeholders.

Another promising option is to provide financial incentives for patients to modify their behavior.[45] Targeting unhealthy patient behaviors such as smoking, poor diet, and physical inactivity may yield important public health benefits and reduce overall healthcare costs. This is because unhealthy patient behaviors may account for as much as 40% of premature deaths in the United States, whereas inefficiencies in healthcare delivery account for only 10%. In a recent study of 878 employees at a large company, the group that received a $750 financial incentive for smoking cessation had a significantly high rate of smoking cessation up to 18 months after enrollment compared with those in the group who received no incentives (9.4% vs 3.6%, respectively).[46] P4P for patients merits additional study, and future programs will need to draw on insights from behavioral economics in order to optimize the structure of these programs.

Future Directions

P4P and newer models of payment reform hold tremendous promise to improve healthcare quality and reduce costs.

Multiple approaches are needed to ensure that future initiatives provide value for key stakeholders, including patients, providers, and payers. In general, the goal should be to foster innovative approaches to improving quality patient outcomes, promote accountability for quality on the part of both patients and providers, and improve the value of services purchased by federal and private payers.

It is important to continue to build consensus about the selection of evidence-based performance measures, including measures that reward technical aspects of care, outcomes, efficiency, and patient-centered care. Given the traditionally long lag time between the translation of new evidence into clinical practice, it will be critical to find ways to rapidly incorporate validated process measures into everyday use. Greater focus on outcome and efficiency measures appears warranted. Further refinement of risk-adjustment methods is needed to standardize outcome and cost-efficiency metrics and allow for valid benchmarking across providers.

The creation of a more compelling "business case" and value proposition for quality on the part of key stakeholders is essential to creating sustainable quality improvement efforts.[47] Adoption of well-designed patient outcome and efficiency measures would encourage providers and hospitals to develop innovative solutions for improving value. In contrast, promulgation of too many measures that focus on technical aspects of care may distract providers and lead to fragmented care. As we transition toward greater use of outcome and efficiency measures, additional investments in comparative effectiveness and health services research will be needed to help payers and providers identify and implement higher-quality, more cost-effective treatment approaches. These efforts would be facilitated by greater investments in large quality improvement registries and patient information systems.

P4P programs will need to be sensitive to hospitals and provider groups that care for vulnerable patient populations, including the underinsured, racial and ethnic minorities, and patients living in rural areas. In addition, further efforts are needed to better understand hospital structural characteristics that facilitate high-quality healthcare delivery, including the role of information technology, management, culture, and organizational structure.[48]

Conclusion

P4P and newer models that link reimbursement with quality and efficiency show promise to improve patient outcomes and lower costs. Future success hinges on collaboration among key stakeholders including patients, physicians, payers, and policymakers.

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Lessons to Apply to National Comprehensive Healthcare Reform

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Abstract

Fragmentation, insufficient coordination of care, and absence of unified accountability for patient care has resulted in medical errors, rehospitalizations, and preventable complications, all of which increase costs and negatively affect patient outcomes. The current US healthcare system is unsustainable and the national healthcare reform package must address cost containment and quality improvement. Four innovative healthcare models—integrated delivery systems, pay for performance, value-based insurance design, and the medical home—strive to improve quality of care and contain costs. None of these models will solve all healthcare problems alone, nor will they all work everywhere. Different regions, patient populations, and purchaser/payer/provider coalitions may respond to different innovations and modified combinations of the models may eventually predominate. Initial evidence from the Centers for Medicare & Medicaid Services and private sector demonstrations suggests that payment system changes and other innovations would do more than help control runaway healthcare costs. If widely implemented, value-based reforms might achieve long-term improvements in public health. Congress will soon decide whether changing the entire system would be the most value-based reform of all.

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Most observers agree that the current US healthcare system is unsustainable.[1] Fragmentation, insufficient coordination of care, and absence of unified accountability for patient care transitions and handoffs yield unacceptable levels of redundant testing, emergency department utilization, medical errors, rehospitalizations, and preventable complications,[2] all costly in dollars and patient outcomes. A national healthcare reform package should address cost containment and quality improvement.[3]

Proposed bills before Congress have concentrated primarily on insurance coverage.[4] However, different bills have included Centers for Medicare & Medicaid Services (CMS) patient-centered medical home projects, accountable care organizations, financial incentives for primary care, comparative effectiveness research, "quality measure development processes," and testing of innovative payment structures within CMS.[4] The legislative proposals mention these value-based innovations briefly and sometimes nonspecifically. Caution is appropriate, because several innovations have not yet been tested for robustness over adequate time periods or diverse geographic areas, and definitions may yet change. It is wise for national legislation to leave details up to states, payers, provider organizations, and other stakeholders. Indeed, many of the initiatives already under way are privately funded and reflect the need for variation and local flexibility in implementation. However, federal embrace of innovations in quality improvement and cost containment, with CMS models and incentives for the private sector, can encourage widespread adoption.

Essential Elements for a Value-Based Healthcare System

Two recent reports described the essential components of an ideal, high-performance healthcare delivery system[5,6]:

- Payment reform which induces improved patient outcomes
- Patient care that is coordinated among providers and managed across transitions in care settings; healthcare teams for individual patients incorporate physicians, nurses, and other health professionals
- Accountability for total care of the patient which is clearly established
- Clinically relevant information that is available to patient and provider through electronic records and clinical decision support systems

- Patient engagement which is facilitated with easy access to care and information, including after hours and multiple points of entry
- Providers that are culturally competent and provide appropriate education and counseling
- Systems which are continually innovating, monitoring results, and learning to improve quality, value, and patient experience

Incentives, information, evidence-based care processes, and responsiveness to patient and family conditions are fundamental to cultural and structural changes in healthcare delivery.

US Healthcare Components That Require Fundamental Change

Value-based healthcare means maximizing individual and population health outcomes at minimum cost. To achieve this duality of cost containment and quality improvement, several components of the system require fundamental restructuring.

Emphasis on Outcomes

The lack of focus on patient and population outcomes is a major shortcoming of the healthcare system. Enormous sums of money are spent without apparent benefit,[7] while outcomes such as life expectancy lag behind other industrialized nations. The solution involves cultural shifts among providers and payers. Individual outcomes can improve through accountability for each patient, and public health outcomes through application of evidence-based practice recommendations. Both changes require adequate incentives, information, and accountable organizational structures.

Financial Incentives

Current payment systems offer *general* financial incentives based on volume, creating a conflict between the economic interest of the provider and the health interests of the patient.[8] Straight fee-for-service (FFS) motivates high-cost versus high-value care, whereas straight capitation motivates minimal, even insufficient, care. Reformed payment systems should include *selective* financial incentives, such as those described by Glickman and Peterson[9] for quality improvement.

Certain unintended consequences of quality-related incentives can be minimized. Broad outcomes measures, adjusted for patient risk factors, and blending FFS and capitation schemes decrease the potential for treating to the test.[10,11] Case-mix adjustment discourages "cream skimming" (selecting patients for whom achieving performance targets is easier) by compensating providers for patients with complex conditions and comorbidities.[8] This is particularly important in such coordinated care initiatives as integrated delivery systems (IDS) or the medical home, which attract higher-risk patients.[2]

Evidence supports several conclusions about provider financial incentives[9-13]:

- Rewards and penalties both get results. Continuous incentives for *absolute* performance relative to achievable targets are more likely to promote improvement than incentives based on performance relative to other providers or all-or-none targets that fail to incent incremental improvement.
- Incentives primarily should target evidence-based care processes known to improve health outcomes (again, because such processes are controlled by the provider), with a secondary emphasis on outcomes per se.
- The best results derive from blending incentives to groups and individuals. Group incentives allow distribution according to group values and support infrastructure improvement, while individual incentives mitigate free-rider problems.
- To sustain active participation of providers, incentives must be attuned to medical professional norms, achievable, certain, frequent, and progressive over the long term.
- Continuous monitoring and reevaluation of performance measures ensures their attainability while improving quality; risk adjustment of patient populations sustains the program.
- To enhance their implementability, payment incentives should be aligned with provider organization structures.[14] For example, capitation and episode-based payments are more conformable with large multispecialty medical groups and IDSs, which have the internal capacity and scope of services to coordinate care across settings and providers and to assume economic risk for the continuum of care. In contrast, FFS is a more natural fit for small, independent practices. Provider infrastructure grants could compensate practices that achieve economies of scale in modifying infrastructures for performance improvement, thus encouraging expansion of smaller practices.

It should be noted that provider financial incentives are less effective for healthcare goals of population access and equity.[10] The Senate and House bills focus on broadening insurance coverage to attain those goals.

Value-Based Insurance Design

A unique consumer incentive mechanism, value-based insurance design (VBID) motivates greater patient engagement.[15] When targeted patient groups have lower out-of-

pocket costs for medications and services of evidence-based high value, compliance becomes less burdensome. When payers switch from generalized to value-based cost-sharing, the cost of increased use of high-value medications and services can be offset by increasing copayments for lower-value services and other benefit design changes.[15] Overall costs can decrease through decreased use of lower value services and less need for emergency department visits, hospitalizations, and treatment for later-stage disease.[15] Employers can realize decreased productivity losses and disability expenses.[15]

Care Teams and Coordination of Care

Evidence (mostly cross-sectional) has shown higher quality with large group practices and greater care integration.[16] However, uncoordinated treatment by multiple individual providers remains the norm in most areas. Of US physicians, 32% still practice alone or in 2-person partnerships, 60% in groups of 50 or less.[2] Inadequate coordination of care may relate to lack of financial incentives for additional communications, long-standing hierarchies in decision making, and the difficulty of establishing committed care teams. Superior efficiency and outcomes occur with teams of primary care and specialist physicians and other professionals (pharmacists, nurses, physical therapists, home health aides) in a variety of inpatient and outpatient settings. However, currently predominant payment models reimburse individual providers for attention to the immediate specialized need at hand without concern for longitudinal outcomes or the "whole person."

Coordinated care requires an organized structure. Although structures vary among the newer models—vertical integration requiring team care, "virtual" integration leaving coordination up to the primary care provider (PCP)—all include care coordination as a means to quality improvement and cost containment. The patient-centered medical home represents an organizational design seeking primary care that is consistently accessible, family-centered, and culturally competent, comprehensive, and well coordinated.[17]

Accountability

With multiple providers per patient and insufficient coordination, individual providers remain unaccountable for outcomes. FFS has rewarded unaccountability and poor quality by reimbursing additional care resulting from adverse events and medical errors.[18] CMS recognized this when it began withholding payment for "never events."[19] Quality improvement occurs when payers and all providers share a focus on evidence-based measures of optimal care and patient outcomes. By assuming responsibility for total care of each assigned patient, accountable care organizations (ACOs) change provider focus to ongoing, overall progress and outcome.[20,21] ACO delivery involves a collaboration of a PCP, specialists, allied health professionals, and a hospital. Enforcement of agreed-upon principles and processes for quality improvement depends on instituting a governance structure. Academic medical centers, extended hospital staff organizations, or the IDSs are examples. ACOs can be vertically or "virtually" integrated, and formed by cooperative agreements among independent providers. With the patient-centered medical home, a PCP, specialist, or hospital may assume the assigned responsibility, depending on the condition of the patient. For a complete clinically and financially accountable care *system*, an ACO would include a sponsored or owned health plan; however, ACOs can work with other payment sources.[1] To realize their potential, the market and regulatory environment must form a hospitable "neighborhood" for these collaborative organizational forms.[22]

Information Technology Infrastructure

Small practices with paper records have perpetuated incomplete provider communication with resulting duplicative testing, missed comorbid diagnoses, drug–drug interactions, and worse. According to the Joint Commission on Accreditation of Healthcare Organizations, almost 70% of adverse events arise from poor communication and half of those from poor communication during patient handoffs.[23] To improve efficiency, facilitate coordination, and protect patient safety, healthcare reform must include investment in electronic medical records (EMRs) with interoperability standards, shared among each patient's providers, and accessible to the patient. Extant evidence demonstrates that the use of clinical information management and decision support tools within an EMR can improve performance when data are readily retrievable and translatable in context-specific clinical decision applications.[24]

Standardized EMRs also generate a database of quality-related evidence. This can help care organizations to monitor and improve practice standards and can be used for research on best practices for nationwide quality improvement.

Consumer/Patient Education and Engagement

Because success of substantive reform requires the collaboration of all stakeholders including patients, consumer education is needed to explain the benefits of delivery changes.[2] As one example of the need for education, focus groups found resistance to the medical home concept because the term reminds people of nursing homes.[2,22] As another example, most of the information in this supplement is unknown to the general public and absent from media coverage of healthcare reform.

Table. Common and Unique Features of Select Healthcare Models

	P4P	VBID	Medical Home	IDS
Requires or motivates structures or processes intended to improve patient outcomes	X	X	X	X
Designed to reduce duplication and waste	X	X	X	X
Employs electronic medical record for efficiency, coordination of care, and systemwide evaluation	X	X	X	X
Particularly well suited to patients with multiple comorbidities or complex needs		X	X	X
Encourages prevention and early treatment, reducing disease exacerbation and resource utilization and resulting costs	X	X	X	X
Targets a limited number of chronic and/or high-cost conditions with evidence-based treatment guidelines	X	X		
Integrates healthcare delivery goals with finances (health plans)	X	X	X	X
Requires buy-in and active involvement of participating providers for success	X		X	X
Provides financial incentives, steps, or structures to providers for improved quality of care	X		X	X
Provides financial incentives to patients for treatment adherence		X		
Requires or rewards team care, coordination, and avoidance of errors	X		X	X
Specifies separate payment for care coordination and consultation outside face-to-face visits			X	
Design emphasizes primary care, accessible from multiple points of entry			X	X
Requires or works best with large multispecialty practices and large, well-funded hospitals	X		X	X
Can contribute data for evidence of effective treatments in populations	X	X	X	X
Requires or motivates a patient-centered, culturally competent focus			X	X
Requires or motivates patient participation in care decision making		X	X	X
Includes accountability of a principal provider for total care of individual patient, including long-term direction and outcome			X	X
Takes advantage of economies of scale to provide latest technology and equipment, high productivity, lower operating and unit costs				X

IDS indicates integrated delivery systems; P4P, pay for performance; VBID, value-based insurance design.
Sources: References 9-16 and 24-28.

Patient-centered care relies on engagement of well-informed patients. Understandable, culturally competent education must be designed into all care processes for accurate ascertainment of patient treatment preferences.[2] Active patient engagement may also include after-hours Internet-enabled electronic "visits."[2] Disease management programs, principal accountable providers, public outcomes reporting, and patient access to the EMR can all further patient understanding and compliance and may improve outcomes.

Shared decision making between clinicians and their patients is an important catalyst for patient engagement. Extant empirical evidence suggests that shared decision making, coupled with the use of patient decision aids, can lead to changes in ultimate treatment choices[25] and that the field of practice may be approaching a "tipping point" in the adoption of these patient-centered practices.[26,27] Systematic reviews of the evidence further suggest that the use of patient decision aids in the context of a shared decision-making process improves patient knowledge, reduces patients' decisional conflict associated with feeling uninformed or unclear about personal values, reduces patient passivity in decision making, reduces the proportion of patients who remain undecided, and tends to result in reduced rates of elective invasive surgery compared with more conservative treatment options.[28]

System Monitoring and Adjustment

Healthcare reforms that began as CMS demonstration projects or local business coalition initiatives may require years to prove their benefits. Ongoing reporting and design changes in response to aggregate results can ensure long-term viability and value for the investment of businesses and/or taxpayers. Process and outcomes measures should evolve to reflect ongoing advances in medical research. Changes in structure and processes will also reflect local circumstances including demographics, market conditions, and regulatory environments.

Applying Healthcare Innovations to the National System

None of the models described in this supplement will solve all healthcare problems alone, nor will they all work everywhere. Different regions, patient populations, and purchaser/payer/provider coalitions may respond to different innovations; modified combinations of the models may eventually predominate. However, the models in this supplement share the objectives of quality improvement and cost containment, with mechanisms that can be effective in a variety of circumstances. A comprehensive healthcare reform package should enable a broad spectrum of innovations to achieve true value-based healthcare spending. The **Table** illustrates unique and overlapping features of the 4 models discussed in this supplement.

Financial incentive options in different parts of the country must consider the sociodemographic, political, economic, cultural, and organizational environment and reflect the nature of healthcare funding and delivery of the area.[11] Where structures such as IDS and the medical home are possible, quality incentives can be designed into the structure. Where they are not, quality incentives can come from CMS or private insurers. Multipayer agreement on process and outcomes measures makes it easier for smaller providers to comply; therefore, CMS demonstration projects would be beneficial and serve as templates for other payers. Pay-for-performance (P4P) schemes are easier in large hospitals or provider groups and may not be universally scalable. Conversely, VBID is replicable and scalable anywhere for drugs and most places for other services, provided that those services are accessible to members.

Financial incentives have so far provided only modest quality improvements and cost savings, which may not be enough to offset the costs of structural changes and incentive payments.[10,12,13] Larger incentives are likely to be necessary, yet resistance to tax and premium increases is strong, so substantial increases in *overall* levels of provider payment seem unlikely. Thus, in a generally "budget-neutral" payment climate, positive incentives for superior performance inevitably will be balanced by penalties or withholds for inferior performance (or at least lower rates of increase). If CMS demonstration projects prove successful, passage of more federally funded incentives may be possible in the future. Meanwhile, P4P is expanding in the private sector along with such structures as IDS and medical homes. VBID sponsored by private employers, cities, and states is incorporating the patient into the financial incentive loop. These incentive projects are being watched closely by other payers and providers, and success could foster increased replication.

Vertical IDSs under unified ownership have generally been developed with large multispecialty physician practices and hospitals or academic medical centers. These vertically integrated systems will be more difficult to implement in areas with fewer provider resources. In those areas, "virtual ACOs" uniting independent providers are possible, but will require innovation in governance and care coordination arrangements.

Because EMRs are generally considered cost-effective or even cost saving,[24] implementation has been stressed as a goal of the Obama administration for any healthcare package. However, smaller physician practices and hospitals or clinics serving low-income populations may need additional funding to convert to EMRs and support the systems once installed.

Better patient education and engagement should be possible throughout the healthcare system. Disease-specific societies and government agencies already provide educational materials to providers, and this could be expanded. Government funding for the conversion to EMRs could be contingent on patient access to electronically based education and communication with providers. If providers must guarantee 24-hour electronic response, further financial support would be required for small practices and providers for low-income populations.

Ongoing monitoring and adjustment can be incorporated into all innovations. Privately and publicly funded analysis of data from universally adopted EMRs can identify what works locally and nationally. This research can enrich the evidence base and direct modification of process and outcomes measures, payment systems, and organizational structures.

Conclusion

Tasked with reforming healthcare, Congress has been embroiled in debates about funding. Proposals to increase insurance coverage, improve care quality, and even contain costs,

all cost money. As noted in a recent *New England Journal of Medicine* roundtable: "It would be nice to think that reductions in emergency-department utilization, more efficient use of primary and preventive care, would actually save us [enough] money…so that these bills would pay for themselves. They don't pay for themselves, if we're honest about it, and the CBO [Congressional Budget Office]…says no, you need to raise about a trillion dollars."[3]

Initial evidence from CMS and private sector demonstrations, however, suggests that payment system changes and other innovations in this supplement would do more than help control runaway healthcare costs. If widely implemented, value-based reforms might achieve long-term improvements in public health. All of these initiatives are possible with private funding under ideal circumstances (eg, large contiguous patient populations, well-funded business coalitions, and large provider groups). However, ACOs to implement the goals of outcomes emphasis, care coordination, patient involvement, and provider accountability may not arise without government help in some areas and for some populations. While the private sector continues to explore individual projects in value-based healthcare, Congress will soon decide whether changing the entire system would be the most value-based reform of all.

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