

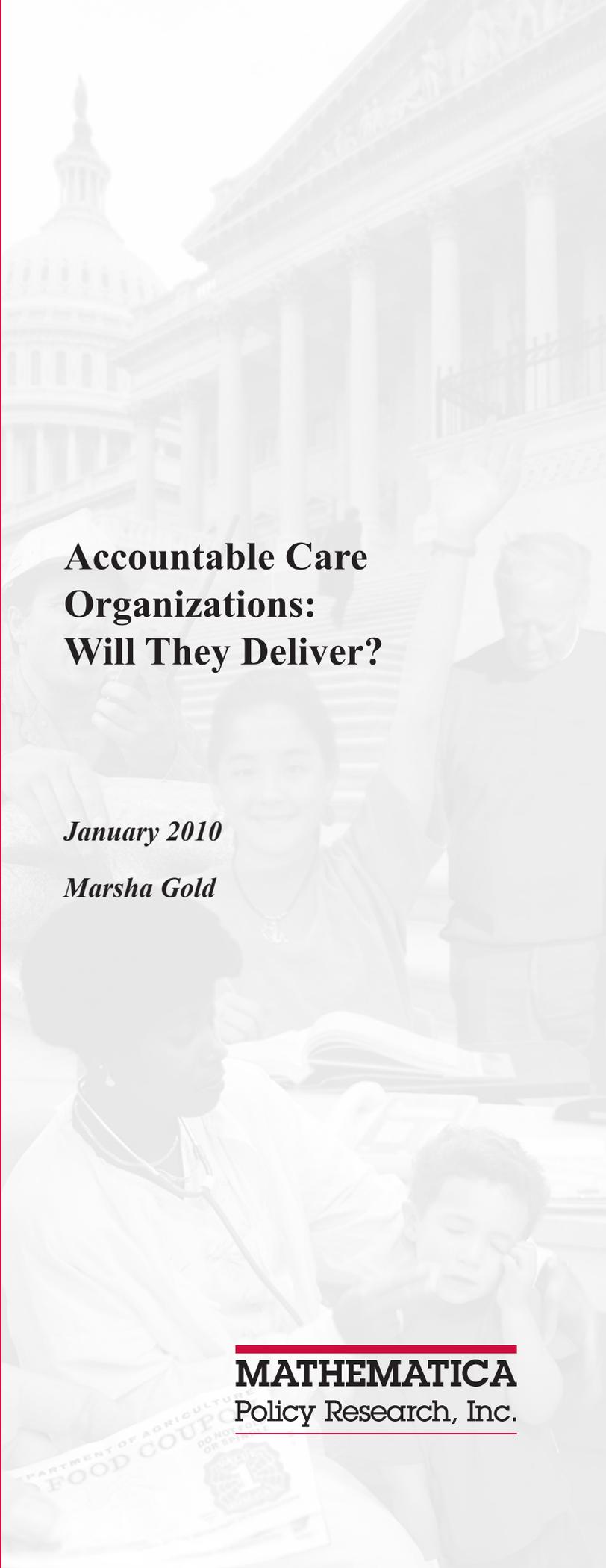
POLICY BRIEF

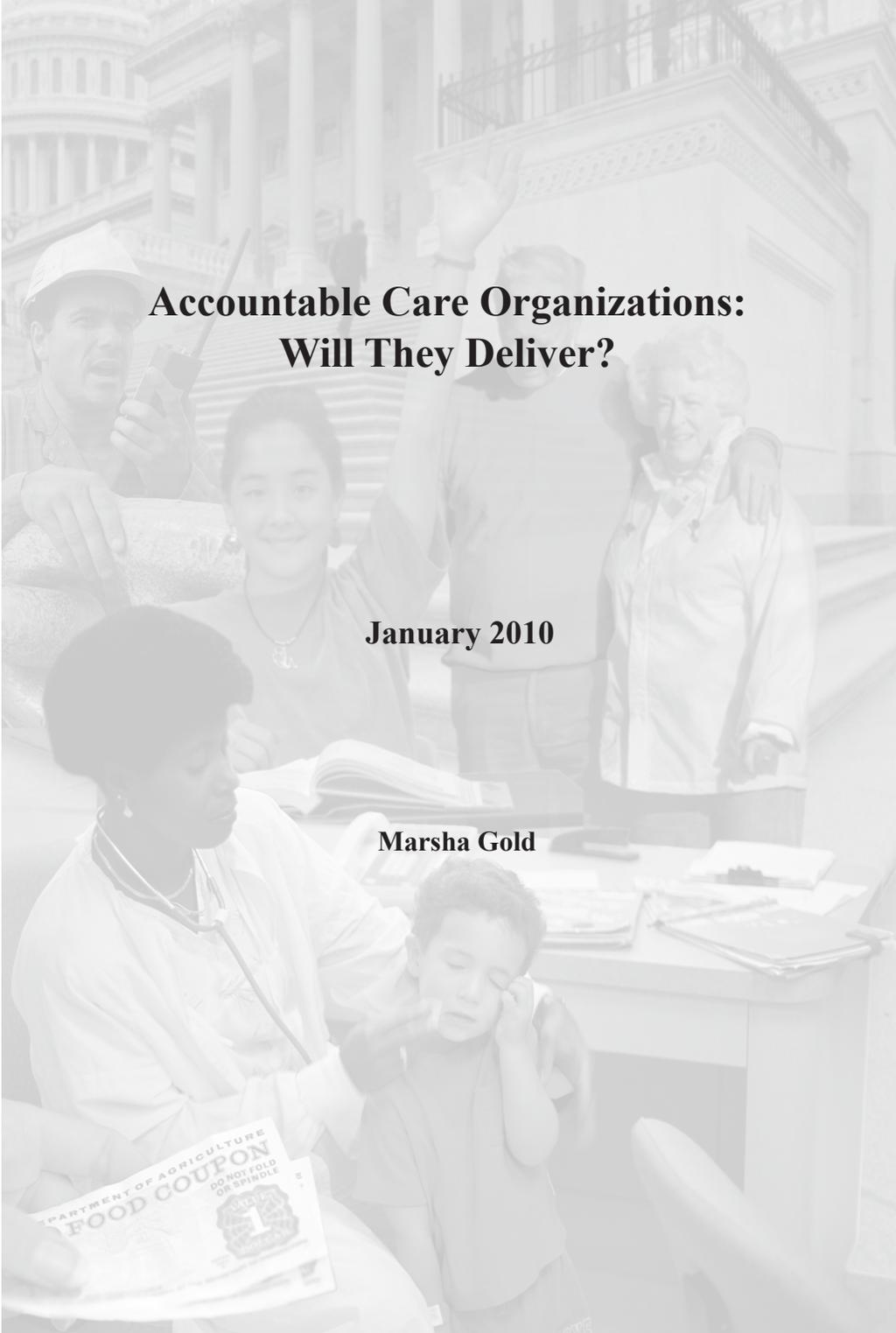
**Accountable Care
Organizations:
Will They Deliver?**

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Marsha Gold

MATHEMATICA
Policy Research, Inc.





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The health reform debate has focused on rewarding providers more for delivering quality care to their patients than for increasing the volume of services they provide (Gold and Felt-Lisk 2008). Accountable care organizations (ACOs) are one proposed way of changing payment systems to achieve this goal by creating incentives to increase clinical integration and care coordination (Rittenhouse et al. 2009; Fisher et al. 2006).

This brief examines the ACO concept broadly.¹ We define the concept and rationale for interest in it, review what has been learned from previous initiatives, and place ACOs in the context of the broader health care system. From this context, we draw insights for policymakers in the public and private sectors. (Note that the design and implementation of ACOs in connection with Medicare and health reform have been discussed elsewhere, for example, MedPAC 2009; Devers and Berenson 2009; Crosson et al. 2009.)

Issues at a Glance

Accountable care organizations (ACOs) seek to reshape the way care is delivered and the way providers with shared responsibility for patients are rewarded. The intent is to encourage providers to consider all of the care their patients receive and to coordinate with one another. ACOs are not a magic bullet for reforming the health care system but can be part of an integrated plan to enhance incentives and improve the care delivery infrastructure. Policymakers should view ACOs as part of a comprehensive strategy that also seeks to influence provider training and attitudes, the number and mix of providers, and regional differences in providers' and patients' perceptions of health care.

This brief reviews the long history of efforts to reform medical care practice in the United States to identify issues to be anticipated with ACOs and factors that may influence their success. The review paints a sober picture. As far back as 1932, provider opposition to more organized forms of delivery resulted in active opposition to recommendations from the landmark "Report of the Committee on the Costs of Medical Care." Later, the legislative debate over the HMO Act of 1973 and the subsequent response to provider interest in the individual practice association option showed how efforts to accommodate current provider practices in legislation can undermine intended reforms. More recently, in the 1990s, the managed care backlash demonstrated that financial incentives do not work without changes in the underlying infrastructure of provider practice but such change is difficult to impose externally whether by government or private insurers.

Although history is sobering, it also sheds light on policies that may enhance ACO success. These policies include (1) setting realistic expectations, (2) engaging providers in the initiative, (3) encouraging ACOs with an appropriate mix of providers to achieve their goals, (4) providing a balanced set of incentives to encourage providers to participate, (5) matching financial incentives to underlying organizational capacity, (6) creating flexible systems that can incorporate new metrics and risk adjustments as they evolve, (7) aligning ACO incentives with those in other initiatives, (8) leveraging purchasing power, (9) setting challenging but reachable goals, and (10) accommodating geographical diversity while continuing to question how much variation is desirable.

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The ACO Concept

Accountable care organizations aim to address defects in organization of and payment for health care (Devers and Berenson 2009). In our existing system, fee-for-service (FFS) payments, even when combined with pay-for-performance incentives, provide little impetus for providers to restructure to enhance their performance. ACO proposals aim to change these dynamics by providing financial incentives for broad cost containment and quality performance across multiple sites of care. They also encourage providers to think of themselves as a group with a common patient population, care delivery goals, and performance metrics, rather than as discrete entities.

Although various types of ACOs have been proposed, they all share two essential features:

- **Designated Accountable Provider Entities.** ACOs are collectives that share responsibility for treating a group of patients. Although some qualifying entities may already exist, most will have to be created. Entities may form voluntarily, with providers taking advantage of existing structures. Under some proposals, “virtual organizations” may be created, with patients identified from claims analysis showing existing patient referral relationships among local physicians, hospitals, and other providers.
- **Performance Measurement and New Payment Approaches.** Common ACO proposals call for part of each provider’s payments to be based on care the ACO as a whole provides to its patients. In most proposals, these payments will supplement existing fee-for-service payments. Supplemental payments, such as “shared savings,” will be provided retrospectively to the extent that an entity meets goals related to quality or cost. Some proposals call for more fundamental reforms involving global budgets or capitation.

The Medicare Payment Advisory Commission, an independent agency established to advise Congress on the Medicare program, assumes that an ACO entity, at a minimum, will include primary care physicians, specialists, and at least one hospital (MedPAC 2009). ACOs could be integrated delivery systems, physician hospital organizations, a hospital with multispecialty medical groups, or a hospital teamed with independent practices (Devers and Berenson 2009; Crosson et al. 2009). Providers could form these ACOs voluntarily. Alternatively, they could be “virtual” ACOs identified through analysis of claims data showing shared use of medical services in a population served by hospitals and their medical staffs.

Fisher et al. (2006) advocate the latter approach and make the case for Medicare to set ACO payments to “extended hospital medical staff” units defined empirically based on claims data. From the perspective of their proponents, ACOs differ from historical managed care arrange-

From the perspective of their proponents, ACOs differ from historical managed care arrangements—particularly HMOs—because they are built around providers rather than insurers and generally are not held at full financial risk for the cost of care.

ACOs: Improving Quality, Connecting Financial Incentives

ACOs are organizations made up of a group of providers responsible for the health care of a group of people. ACOs may be organized in different ways but all include, at a minimum, primary and specialty care physicians and at least one hospital. Most ACO proposals call for continuing to pay providers separately on a fee-for-service basis for the care they provide. However, providers in an ACO are expected to coordinate care for their shared patients to enhance quality and efficiency. The ACO as a whole is held accountable for such care; its providers share in any cost savings that stem from quality improvements and enhanced efficiency.

ments—particularly HMOs—because they are built around providers rather than insurers and generally are not held at full financial risk for the cost of care (we discuss these distinctions below). Ideally, ACO payment approaches will include improvements in quality of care measurement that take into account the continuum of service delivery ACOs are designed to provide.

If enacted, national health reform will likely include some experimentation with ACO incentives. As approved by the U.S. House of Representatives on November 7, 2009, the Affordable Healthcare for America Act (H.R. 3962) calls for incentive payment pilots encouraging ACOs in both Medicare and Medicaid, as well as other payment policy changes and mandated pilots and demonstrations (KFF 2009). The Senate health reform bill, the Patient Protection and Affordable Health Care Act (H.R. 3590), approved on December 24, 2009, would allow ACOs that meet quality thresholds to share in any cost savings they generate for Medicare (KFF 2009), though the act does not address Medicaid. Massachusetts is proposing to create incentives for provider integration as part of its state’s health reform efforts, though it is emphasizing more fundamental provider payment reforms, including global payment (that is, capitation) (Massachusetts Special Commission 2009).

Rationale for Current Interest

ACOs are one response to concerns over the fragmented nature of health care delivery across the United States. Organized delivery systems that involve multispecialty physician practices linked to other components of health care can provide cohesion, scale, and affiliation, leading to enhanced quality of care and efficiency (Tollen 2008; McCarthy and Mueller 2009). Yet medical care in our country still tends to be a localized “cottage industry” (Rittenhouse et al. 2004). Almost one-third of physicians work in solo or two-physician practices, 15 percent work in practices of 3 to 5 physicians, and 19 percent work in practices of 6 to 50 physicians (Boukus et al. 2009). These types of practices face disproportionate challenges in developing and using tools for effective care management and are usually too small to support effective use of electronic information technology and multidisciplinary care teams (Rittenhouse et al. 2004; Casalino, Gillies, et al. 2003).

ACO proposals aim to create incentives for providers to work together more closely by tying at least part of their payments to metrics reflecting care the ACO as a whole provides for defined groups of people—incentives that are lacking in current FFS payment systems. Grouping patients served by multiple providers together should facilitate development of more statistically reliable and clinically broad-based quality performance measures.

Allowing some flexibility in ACO structure and requirements is sensible, given the variability in current medical practice across the United States. Integrated delivery systems and large multispecialty group practices are uncommon in most of the country, with some notable geographically focused exceptions (McCarthy and Mueller 2009). Most delivery systems are relatively fragmented, with distinct forms of medical organization (Gillies et al. 2003; Casalino, Devers et al. 2003). Factors likely to influence the feasibility and development of ACOs include an area’s (1) dominant hospital systems and medical groups, and ties between them; (2) concentration in ownership and services; (3) extent of solo or small group physician practices, versus larger more integrated groups, particularly ones that are multispecialty; (4) homogeneity of community concerns and patient characteristics; and (5) provider interest and willingness to collaborate rather than compete.

Regardless of their structure, ACOs should possess some minimum capabilities. A key issue is making incentives powerful enough to promote change while avoiding large-scale transfer of

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financial risk to providers. In the late 1990s, problems associated with increasing financial risk to providers undermined managed care (Robinson 2001; Casalino 2001). Policymakers need to determine how great a shift from volume-based payments to more aggregate payments linked to quality and cost performance is warranted or feasible to achieve reform goals. They also need to consider how rapidly such a shift should be encouraged. This emphasis on payment incentives reflects the policy preference in the United States for initiatives that employ market forces and competition (Ellwood 2005).

Lessons from History

ACOs are part of a long history of policy interest in reforming the practice of medical care in the United States. That history includes opposition from many providers to proposals for reforms and frequent failures of public policy to achieve major changes. The past also shows that reforms based on providers' responses to market incentives are not necessarily successful either. Various political, organizational, and professional factors limit the potential for modifying the way providers are organized to deliver care—and these factors must be taken into account in order to design effective ACOs. These points are well illustrated in several prominent examples from the past.

“Report of the Committee on the Costs of Medical Care.” The tension over whether medical practice should be controlled by an autonomous set of individual practitioners or assume a more organized structure dates back to the early development of the medical profession (Starr 1982). Over the years, such tensions have undermined efforts to reform the delivery system, as seen in the response to the “Report of the Committee on the Costs of Medical Care,” which appeared in 1932 (Roemer 1985).² ACOs might be subject to the same reaction.

The committee's final report called for (1) group practice of medicine, preferably around a hospital; (2) more effective public health and preventive services available to the entire population based on its needs; (3) group-based payment for health services structured through the use of insurance or taxation to share health care costs broadly across people and time; (4) enhanced coordination between medical and community services; and (5) improvements in medical education to strengthen the social content of curriculum and expand the supply of general practitioners, as contrasted with specialists (Roemer 1985; Falk 1958). Despite agreement on three of the five recommendations, a minority report (approved by the American Medical Association) took issue with support for group practice and the call for group payment (recommendations 1 and 3) (Falk 1958).³

Though almost 80 years old, the committee's experience is still relevant today, and medical practice remains fragmented. Perkins (1998) suggests that the committee's work was an early effort to “rationalize” medicine through reforms in economic organization to enhance quality, access, and efficiency. She argues that the conflict between these two business models—individual entrepreneurship versus institutional corporations—persists and remains significant.

This conflict between professional autonomy and institutionalization continues today. For example, a recent New York Times article described the efforts of IntermountainHealth to improve quality by using protocols to standardize practice. In response, some well-respected clinicians argued that clinical intuition is invaluable and threatened by such an approach (Leonhardt 2009).

The Federal HMO Act. Federal policy efforts illustrate the legislative compromises that occur when health reform seeks to accommodate professional interests. A good example is the federal HMO Act, passed in 1973 as a market-based response to concerns over cost containment in

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health care (Iglehart 1980). The act provided financial support and other incentives (such as employer-mandated offerings) to form HMOs consistent with federal requirements.

The act's history of debate on requirements for eligible organizations is particularly relevant to ACOs. Conceptually, interest in HMOs was grounded in the experience of prepaid group practices such as Kaiser Permanente and Group Health Cooperative of Puget Sound. Early bills emphasized development of organizations to provide integrated care systems serving a defined population in return for receipt of per capita payments in advance (Dorsey 1975). Because this form of practice represented a dramatic change for physicians, the act included two options—the medical group model, based on a prepaid group practice, and the individual practice association (IPA) model, based on the examples put forth as defensive alternatives by state medical societies (Iglehart 1980). Under IPAs, physicians continued to practice individually but the medical society assumed collective responsibility for care.

Ultimately, accommodating physicians by allowing them to form IPAs reinforced the status quo. The act granted IPAs advantages not available to group practices, including more flexibility in the proportion of the practice required to be paid on a capitated rather than traditional FFS basis (Dorsey 1975). The act also legitimized and created a market for IPAs—the number nationwide grew from 5 before the law was enacted to 89 afterwards (Iglehart 1980). Although a stronger act might not have yielded a different outcome, the influence of the act is evident in evolution of HMOs during the 1990s.

Experience with the HMO Act and other policy initiatives, as well as various theories of human and organizational behavior, illustrate the preference providers, like people in general, have for the status quo. Providers will push policies to be less restrictive. If a less demanding alternative is available, providers will gravitate toward it rather than one with more challenging requirements.⁴ ACO proposals are likely to shape the form of any provider organization by defining minimum requirements. Requirements related to minimum infrastructure—such as shared electronic systems for communicating about patients or expectations for care management—may be particularly significant.

Managed Care and the Provider Backlash in the Mid- to Late 1990s. Market-based efforts to modify providers' financial incentives and encourage changes in practice have encountered similar resistance. Spurred by rapidly rising costs in the 1990s, major purchasers sought to change the structure of their health plans (Gold 1999b). Instead of conventional health insurance, which basically paid any qualified provider fees for services provided, purchasers sought plans with greater incentives to manage care. They initially emphasized HMOs but later added more loosely structured managed care options, particularly preferred provider organizations (PPOs), which gave patients more choice of providers.⁵ Most managed care plans were sponsored by insurance companies or other organizations that, in turn, contracted with providers. The assumption was that managed care plans would respond to payment incentives by encouraging providers to organize and deliver care more effectively.

During the 1990s, demand from purchasers and the possibility of Clinton-era health reform substantially changed the composition of health plans. Between 1988 and 1999, the percentage of insured workers with conventional coverage declined from 71 percent to 10 percent (Claxton et al. 2007). The HMO market share grew from 16 percent in 1988 to a high of 31 percent in 1996, before dropping to 28 percent in 1999, when 39 percent of workers were in a PPO and 24 percent were in hybrid point-of-service (POS) plans.⁶ Sixteen percent of Medicare beneficiaries were in coordinated care plans by 1999, virtually all in HMOs (Gold et al. 2004). Medicaid managed care also grew (Felt-Lisk et al. 2001).

Analysts concluded that the growth of managed care was based more on managing costs than care, with savings based substantially on price discounting.

In general, managed care had a greater effect on health care payment systems than on health care delivery, as shown in Exhibit 1. Insurers sponsored most managed care plans, and provider-sponsored plans encountered obstacles to success (Burns and Thorpe 2001). HMOs sometimes aimed to align their incentives with those of affiliated providers, through subcapitation arrangements that transferred risk and responsibility to various provider organizations (Lake et al. 2001). However, fragmentation in purchasing power limited the impact of these incentives (Gold et al. 2001). Further, many provider entities organized defensively to gain negotiating strength with managed care and showed little evidence of clinical integration that might lead to improvements in care delivery (Shortell et al. 1994).

Analysts concluded that the growth of managed care was based more on managing costs than care, with savings based substantially on price discounting (White 2007; Robinson 2004). Providers were not necessarily organized to manage such risk and pushed back. Further, patients preferred open access to providers, and less organized forms of managed care ultimately dominated the market (White 2007).

Research shows that reform leading to improved care requires clinical integration. True integration requires reconciling differences between physicians' and hospitals' goals, among other features (Burns and Mueller 2008). Integrated provider organizations tend to be strategically aligned. They also tend to have a cohesive mission and plan, information systems for sharing clinical data, and budgeting that promotes coordination across service lines (Shortell et al. 1994). Systems that overemphasize traditional hospital acute care models are more likely to encounter problems (Shortell et al. 1994). In some past markets, organizations overextended their financial risk and failed, disrupting provider-patient relationships (Brewster et al. 2000). External incentives can help improve quality, but they have tended to be used in places such as California, where existing provider infrastructure makes it easier to develop related processes (Gillies et al. 2003; Casalino 2001). Thus, while clinical integration may be required, it is challenging to achieve and meets with resistance.

As a result of the managed care backlash, health system reform over the past 10 years has largely reverted to FFS approaches and consumer-focused reforms, such as health savings accounts (HSAs) and efforts to make quality and cost more transparent to consumers. Use of pay-for-performance approaches in conjunction with FFS has increased. Overall, however, financial incentives for improvement have been limited, and quality measures have focused on a limited set of process-of-care measures for primary care (Gold and Felt-Lisk 2008).

Changing Times and Measurement Advances

Changing the way providers practice is difficult when the underlying structures are unsuited to the task. Currently, any reform is likely to require substantial time and ongoing external support. The managed care experience shows that financial incentives alone will not change practice in a timely manner—efforts that counter practical barriers and resistance from providers are also needed.

Historical experience does not suggest great potential for major change in the way providers practice in this country. But better performance metrics may serve as incentives for change. Perhaps the most significant recent development relevant to ACOs involves advances in the scope and sophistication of performance metrics that can encourage accountability. Expansion in the set of performance measures focused on efficiency, care coordination, patient-centered care, and outcomes, including rapid rehospitalizations, is promising (National Priorities Partnership 2008; Hussey et al. 2009; Miller et al. 2009; CMS undated; Fraser et al. 2008). Related efforts to de-

Exhibit 1. Summary of Select Insights from the 1990s Managed Care Experience

Insight	Evidence
Managed care has shown modest savings potential but evidence exists mainly for HMOs that were organized most tightly. There were no consistent effects on quality.	Meta-analysis shows some savings potential with tightly organized HMOs using less hospital care and other expensive services, doing more prevention, and having spillover effects (Miller and Luft 2002, 1997, 1994). Managed care tended to score lower on access and satisfaction, but there was no consistent difference in quality, with substantial variation across plans and delivery sites (Miller and Luft 2002, 1997, 1994). Medicare HMOs led to some savings, though Medicare did not reap them because payments did not adequately account for selection (Brown et al. 1993).
Providers faced obstacles in seeking to develop HMOs; many provider-sponsored plans were not successful.	While some integrated delivery systems (IDS) successfully established HMOs, many encountered substantial barriers (Burns and Thorpe 2001). Hospital-sponsored IDS often exited the market as a result of losses, difficulties in partnering with physicians, or managing complex Medicare patients. Medical society plans faced barriers to selective contracting and were inexperienced with care management. Physician-sponsored plans encountered major problems in accessing capital and management capacity and found it hard to monitor physicians. (Burns and Thorpe recommended that providers subcontract with an existing HMO rather than start one themselves). While Medicare+Choice had a provider-sponsored organization option, few providers elected it (Gold et al. 2004; Gold 2008). Locally based provider-sponsored plans may face challenges in competing with national health plans (Robinson 1999). Academic medical centers face unique barriers in a managed care environment (Gold 1996).
HMOs risk-based payment incentives were not consistent with those in provider networks.	Studies show HMOs used different payment methods across their networks, with payments varying with plan and provider preferences and characteristics. In 1999, 66 percent of HMOs made some use of global capitation risk-bearing provider groups, 53 percent made some use of professional services capitation (physician care), and 11 percent used hospital capitation. However, while capitation was most commonly used by HMOs for primary care physicians, most specialists tended to be paid on a FFS basis. (Lake et al. 2001). A follow-up survey of large entities receiving global payments found they were various forms of provider organizations, most with a minority of their revenue from risk-based payment (Gold et al. 2001). A review of the literature from that period showed 88 percent of physicians had a managed care contract in 1996 and 36 percent of physicians had at least some capitation revenue, which accounted for 25 percent of their income (Gold 1999b).
There is limited evidence showing that payment reform or economic integration among providers led to clinical integration.	The Health System Integration study found that the first generation of multi-hospital systems focused primarily on achieving administrative economies rather than clinical integration (Shortell et al. 1994). Key barriers include (1) limited IT, (2) geographic dispersion, (3) ambiguous roles and responsibilities, (4) overemphasis on acute care hospital paradigm, (5) lack of strategic alignment, (6) inability to execute the system's strategy, and (7) inability to "manage" managed care (Shortell et al. 1994). California policies provided large physician groups (with delegated risk from managed care) less incentive to compete on quality or improved efficiency than by increasing their negotiating leverage and other means of cost control (Casalino 2001). Practices were less developed for clinical integration than for economic integration (Burns and Muller 2008). But a 2000-2001 national survey of large medical groups and IPAs found more use of recommended care management processes in California where groups have more external incentives to improve quality (Gillies et al. 2003).

Exhibit 1. Summary of Select Insights from the 1990s Managed Care Experience (continued)

Insight	Evidence
<p>Prominent provider organizations paid on a risk basis ran into problems managing that risk, particularly under more global risk of capitation. The challenges providers faced with managed care led to “pushback” as they gained market power with the managed care backlash.</p>	<p>Hospital-physician alliances in the 1990s formed mainly as a tool to contract with managed care, as a countervailing bargaining force in the face of HMO consolidation, and to support hospital downsizing and restructuring (Burns et al. 2000). Between 1998 and 2000, provider risk sharing contracts in both California and New York reduced the scope of prepayment and revised delegated contractual relationships (Robinson and Casalino 2001). California’s 250 physician groups and IPAs that actively contracted with managed care were in a state of crisis and retrenching (Robinson 2001). The managed care experience from 1993-2005 reveals markets that function based more on market power to control prices than to manage utilization, leading to a reduction in price discounting and the growth of more popular PPOs (White 2007). In a mid 1990s national survey of physicians, the majority expressed a negative view on the recent evolution of the health system (Donelan et al. 1997). The managed care backlash was an evitable response to the rapid development of managed care in the 1990s, in part spurred by physician dissatisfaction (Gold 1999a). Aetna’s growth of managed care depended in part on low provider rates that fueled a provider revolt (Robinson 2004).</p>
<p>Certain characteristics make it more likely that provider integration will lead to improved care.</p>	<p>Care integration was greater when (1) members identified with the mission and values of the organization, (2) organizations had strategic planning processes in place with input across the system, (3) they had information systems providing clinical data across the systems, and (4) they had budgeting policies to promote coordination across service lines (Shortell et al. 1994). Preliminary data show these systems also performed better financially and in other areas.</p>
<p>Hospitals and physicians do not necessarily have the same goals in integration.</p>	<p>A review of the literature on hospital-physician relationships concluded that the goals of the two parties only partially overlap and their primary aim is not reducing cost or increasing quality but addressing provider concerns about volume and revenue (Burns and Muller 2008). In California, organization of physician practice around medical groups and IPAs has helped provide a balance with hospitals (Robinson and Casalino 1996).</p>

Source: Author’s analysis.

velop the data infrastructure to support these measures are also significant (Clancy et al. 2009). Currently, many metrics exist more as concepts or development efforts than comprehensive measures that span the range of providers. Continued refinement and development are essential if these measures are to support ACO initiatives.

Lessons from the Past for ACOs Today

ACOs’ focus on providers is an important departure from past experience with managed care and recognizes that changes in care are intrinsically tied to providers and factors influencing the way they practice medicine. However, ACOs face many barriers, including organizational inertia and resistance to change.

Policymakers can use prior reform efforts to shed light on how to design effective ACO initiatives encouraging successful, fundamental change. Ten areas to consider are discussed below and summarized in Exhibit 2.

Set Realistic Expectations. ACOs are not a magic bullet for reconfiguring the health care system, although they could begin to realign provider incentives (Devers and Berenson 2009).

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Because of their scale, hospitals and hospital-driven systems have been a frequent focus for integration.

Proposed Medicare ACO demonstrations involve relatively small modifications of current FFS policy that introduce rewards based on how well providers collaborate in caring for their shared patients, as documented in cost and quality metrics (MedPAC 2009). More aggressive initiatives, like those considered by Massachusetts that involve global payments to providers (Massachusetts Special Commission 2009), are likely to encounter some of the same challenges in managing risk that providers experienced in managed care. Advances in IT and care manage-

Exhibit 2: Policies to Enhance the Effectiveness of ACOs

- **Set Realistic Expectations.** ACOs are not a magic bullet for reconfiguring the health care system though they could begin to realign provider incentives.
- **Engage Providers.** In order to change clinical practice, providers—and particularly their leadership—must be actively engaged in the process.
- **Encourage Appropriate Provider Mix.** Achieving the appropriate balance for clinical integration that results in both high quality and cost containment will likely require reconciling differences in perspective across diverse providers with appropriate physician leadership and primary care engagement.
- **Balance Incentives for Individual Provider Participation.** The interest providers have in an ACO under voluntary models is likely to depend not only on the financial incentives but also on how those incentives and the ACO requirements compare relative to traditional practice.
- **Match Financial Incentives to Organizational Capacity.** Small financial incentives have less influence than large ones but achieving effective change will require balancing financial risk and provider capacity.
- **Improve Performance Measurement and Risk Adjustment.** Because current metrics are not adequate to provide an ideal and balanced set of incentives, it would be valuable to invest in the continued development of measures that can be used to support flexible payment systems.
- **Align ACO Incentives with Other Initiatives.** These other initiatives include patient-centered medical homes, chronic disease management, and effective use of information technology.
- **Leverage Purchaser Power.** Initiatives that align financial incentives across major purchasers will have a greater influence by making such incentives relevant to a substantial share of the provider practice.
- **Set Challenging but Reachable Goals.** Initiatives that are designed to push providers and counter resistance to change are likely to be more successful when the goals are realistic and the time frame appropriate.
- **Accommodate Geographic Diversity While Continuing to Question It.** Initiatives will have to accommodate the diversity in practice organization across the country, but effective change is likely to require that such differences be reported and explained.

The ability to engage providers is a critical issue to consider in judging the merit of ACO proposals that aim to gain scale through models that retrospectively construct accountable entities based on referral patterns and use attribution for patient assignment . . .

ment, along with the evolution of provider organizations, may result in better tools to manage this risk. Risk corridors and stop loss features may be important if providers face substantial financial risk.

Engage Providers. Changing clinical practice requires active engagement of providers—particularly their leadership. Policies developed jointly by the public and private sectors may be more influential than those promulgated by the public sector alone in helping providers identify opportunities to coordinate and improve care. However, public-private partnerships run the risk of being constrained by interest group politics, particularly when the status quo is more attractive than change. The issue is whether the current environment may be more conducive to change. Initiatives such as the National Priorities Partnership and the Commonwealth Commission for a High Performing System suggest growing consensus among national leaders and organizations that the status quo is untenable (National Priorities Partnership 2008; Shih et al. 2008). In this environment, effective public-private partnerships may be more likely.

The ability to engage providers is a critical issue to consider in judging the merit of ACO proposals that aim to gain scale through models that retrospectively construct accountable entities based on referral patterns and use attribution for patient assignment, such as those proposed by Fisher et al. (2006). Such proposals address some implementation constraints. However, they also raise questions about how effectively providers can be held accountable for delivering care to a population defined for them and to whom they may be unknown (MedPAC 2009; Crosson et al. 2009). Organizations created by statistical algorithms may not necessarily be consistent with the way providers have engaged with one another historically or with their interest in cooperation versus competition. On the other hand, small incentives inherent in such externally defined ACO models could provide an impetus for providers to communicate more with one another over the care of their collective set of patients.

Encourage an Appropriate Mix of Providers. Because of their scale, hospitals and hospital-driven systems have been a frequent focus for integration. Yet history shows that emphasizing an acute care hospital paradigm focused on filling beds and offering specialized services represents a barrier to effective clinical integration (Shortell et al. 2004). Further, the interests of hospitals and physicians often differ (Burns and Muller 2008). Many communities have an oversupply of specialists and expensive health care services—which strongly influence how care is delivered (MedPAC 2009) since physicians and hospitals may be competing rather than cooperating with one another (Berenson et al. 2006). Physician integration can provide a counterweight to the interests of hospitals, particularly if there is a strong emphasis on effective primary care (Robinson and Casalino 1996; Rittenhouse et al. 2009). Policymakers may want to consider how effectively ACO proposals engage an appropriate mix of providers and emphasize primary care to achieve clinical integration resulting in high quality care and cost containment.

Balance Incentives for Individual Provider Participation. Voluntary models must address incentives for participation. Incentives depend on the amount of revenue available within an ACO as well as the revenue available for those who remain outside the system. For example, the overall revenue available for care provided in ACOs (distributed based on quality and cost, as much as volume) could increase more rapidly than the revenue for non-ACO care. Such a structure might generate higher participation over time than one that leaves alternative revenue sources untouched, since this structure includes both a “carrot” and a “stick.”

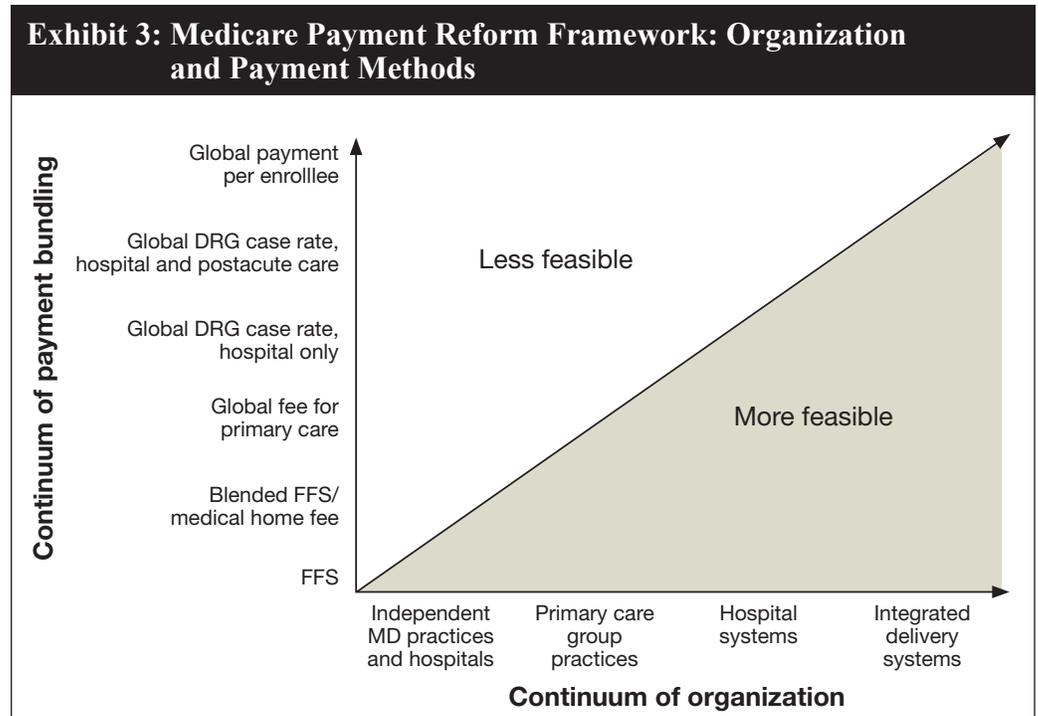
Other issues to consider include what ACO participation means, what it requires of a physician (such as exclusivity), and what it requires of an individual provider practice (such as data shar-

ing and patient management). As history shows, fewer requirements enhance participation but could also undercut the potential for performance improvements.

Match Financial Incentives to Organizational Capacity. Small financial incentives obviously have less influence than large ones, but achieving effective change requires balancing financial risk and provider capacity to deal with it. Potential forms of payment will differ with the degree of provider integration (Exhibit 3; see Guterman et al. 2009). ACO payments may need to vary somewhat across the nation or even within the same community, particularly when there is great variation in practice form. Overlaying small incentives based on pay-for-performance on traditional FFS practice has had limited effects on practice (Gold and Felt-Lisk 2008). Yet such incentives may be appropriate in fragmented provider markets with limited clinical integration capacity. Conversely, they may make little sense for systems that already demonstrate capacity for clinical integration; these systems presumably can handle, and benefit from, payments that transfer more financial risk, at least for services they are equipped to provide and have the patient scale to support.

Policymakers may want to consider varying payment methods depending on provider characteristics. Expecting payment methods or financial incentives to change over time may also make sense, to give providers incentives to integrate and develop desirable clinical capacities.

Improve Performance Measurement and Risk Adjustment. Current measures and risk adjustment methods, as well as the data infrastructure to support them, are still largely inadequate for judging the quality of care in ACOs. Across all relevant dimensions, measurement and data limitations are partially the result of our currently fragmented system. This creates a “chicken and egg”



Notes: DRG is diagnosis-related group; FFS is fee-for-service; MD is medical doctor.
 Source: S. Guterman, K. Davis, S. C. Schoenbaum, and A. Shih. “Using Medicare Payment Policy to Transform the Health System: Framework for Improving Performance,” *Health Affairs Web Exclusive* (Jan. 27, 2009): w238–w250.

Growing interest in systems reform creates a risk that initiatives to support reform will be as fragmented as the systems they seek to influence.

problem in terms of whether system reform can lead to improvements in measurement and data infrastructure, or whether data improvements will drive system reform. But as policy interest shifts back to increased risk sharing with providers, adequate measures of quality outcomes (and prior patient risk) are critical, so that incentives focus on improving quality as well as containing costs.

Align ACO Incentives with Other Initiatives. Growing interest in systems reform creates a risk that initiatives to support reform will be as fragmented as the systems they seek to influence. Policymakers should consider whether reforms are consistent and mutually reinforcing across initiatives. For example, analysts of evolving health care systems have argued that patient-centered medical homes and ACOs are both essential to reforming the delivery system. These analysts recommend that medical homes anchor ACOs in delivering primary care and creating “medical neighborhoods” (Rittenhouse et al. 2009). They conclude that it is important to align the accreditation and certification processes, use a consistent set of primary care metrics, and align payments so that primary care practices can benefit from participating in both approaches. Opportunities for synergy—or conflict—also exist in the areas of chronic disease management and use of information technology.

Aligning initiatives may involve challenges. In particular, purchasers will likely want to avoid micromanagement of care delivery. Because of the current system’s fragmentation, however, a large number of accountable entities are likely to lack the scale needed to handle more aggregate incentives consistent with this goal of delegated responsibility.

Leverage Purchaser Power. Managed care has shown that payer-specific initiatives may not create enough leverage to bring about change unless they reach a substantial share of the practice of a provider or integrated provider entity. Medicare, because of its scale and the extensive needs of the population it serves, has more ability to influence provider practice than other payers nationwide (CMS, undated). However, Medicare’s share of the provider market also varies across the country.

To the extent that Medicare can move practice more broadly, Medicare initiatives are likely to have more leverage under future reform scenarios. For example, in many parts of the country, one or two insurers dominate a market, with dominant organizations often ones that are geographically based (such as Blue Cross and Blue Shield plans) or under contract for major purchasers (such as state employees plans). Medicare could seek ways of collaborating with these organizations to enhance the leverage of initiatives to bring about change. Medicare also may want to be on the lookout for ways in which it can support initiatives developing in particular areas. For example, state and community interest in enhanced performance will be more likely to succeed if Medicare is willing to use its waiver processes to participate in initiatives that originate elsewhere (such as state-based medical homes). Health reform also may create opportunities to better coordinate Medicare and Medicaid payment incentives, at least for primary care, because the House-enacted legislation requires Medicaid to use Medicare payment rates for primary care physicians (KFF 2009).

Set Challenging but Reachable Goals. History shows that provider opposition can limit the appeal of major reform initiatives. It also demonstrates a pattern of amendments to initiatives to better accommodate existing practices, and to address provider burden and cost issues. These compromises create limited incentives for change and provide an “easy out” when providers are hesitant to modify the way they are organized. If the goal of ACOs is to encourage clinical integration, policymakers should set reasonable requirements and ensure that ACOs have the features they need to succeed, along with realistic goals and time frames.

Accommodate Geographic Diversity While Continuing to Question It. Reform initiatives must accommodate diversity in practice organizations across the country, but policymakers

may want to consider how much variation is acceptable in the long run. Analysis suggests that a substantial share of existing variation may reflect differences across communities in the use of supply-sensitive services (Fisher et al. 2009). However, the source of some variation may be hard to pinpoint (Gold 2004). ACOs on their own are unlikely to change this situation but they could enhance attention to it by expanding use of population-based metrics in payment. There may be opportunities, as ACOs develop, for policymakers to monitor variation in per capita spending, use of services, and quality of care to track changes and assess their causes to identify how, if at all, ACOs can confront the causes of variations.

Will ACOs Be Able to Deliver?

A variety of factors influence the cost and quality of care (Exhibit 4). Going forward, ACOs are best viewed as one part of a comprehensive strategy to redirect the health care system toward more patient-centered care and higher quality and efficiency.

Exhibit 4. Factors Affecting Health Care Use/Cost and Policy Levers	
Factors	Relevant Policy Influences
CONSUMER RELATED*	
Predisposing Factors	
Population size, health status, and sociodemographics	Policies that address social and economic determinants of health such as income, education, public health protection, and health promotion
Patient expectations: what consumers want, expect to receive, think is effective	Social marketing to enhance knowledge of available evidence and implications, regulation of direct-to-consumer advertising, ways in which policymakers, other influential groups, and the media frame issues and the content and messages they convey
Enabling Factors	
Out-of-pocket costs of health care (insurance, benefits, cost sharing)	Increased price transparency, “value-based” benefit design that varies cost sharing with what is known about effectiveness, more first dollar cost sharing, limits on cost sharing linked to ability to pay, tax policies relating to health insurance premiums and tax treatment of medical expenses
Convenience of care (travel time, waiting time for appointment, access to specialists)	Adequacy of supply, characteristics of network composition and adequacy, rules for specialist referrals, maximum appointment waits, transportation benefits, mass transit characteristics, ride programs, same-day appointment policies, and available facilities in locations consumers visit for other purposes
PROVIDER RELATED	
Available health care resources	Public programs that support facilities construction or influence capital, structure and financing of health professions education and training, constraints on developing new facilities or services (“certificate of need”), programs that support location in underserved areas
Provider views on desirable practice and quality care	Policies that influence content and orientation of training and continuing education (such as training support, accreditation, licensure), means of communicating evidence on effective practice, influence of policies on practice characteristics and organizational culture
Practice characteristics and the tools available to enable various practices	Policies that affect the availability and use of various forms of information technology (such as electronic medical records, registries, reminder systems), care management techniques, policies that affect the scale of practice and capacity to introduce various tools (such as anti-trust, financial incentives)
Payment and financial arrangements	Base methods of payment and the incentives they provide for favoring certain dimensions of care over others, specialization, use of procedures and ancillary services, additional incentive payments based on performance metrics of different types, medical coverage policy, influence of payment policy on competition

Source: Author’s construction.

* The factors included here, and their classification into predisposing and enabling factors, build on the well-established framework for examining utilization developed by Aday and Anderson (1982).

Many factors influence both the cost and quality of care, so an effective strategy for enhancing them is likely to include a variety of policy interventions.

ACOs focus on the provider side of the equation. Current Medicare proposals for ACOs, in particular, aim to make incremental changes in provider payment incentives to encourage more clinical integration and patient-centered focus to enhance care quality and efficiency.

ACOs are more likely to succeed if they are supported by complementary policies. If ACOs are rolled out as part of a multi-component strategy that includes influencing provider training and attitudes, number and mix of providers, and differences in perceptions of health care among providers and patients in different parts of the country, they may deliver on their potential.

Endnotes

1. Tim Lake, a senior researcher at Mathematica, and Craig Thornton, senior vice president for Health Research, provided valuable input and feedback in preparing this paper.
2. The Committee has been described by I.S. Falk, its well-known associate research director, as a “self-constituted group of persons, organized in 1927 to study the economic aspects of care and prevention of illness” with members representing private practice of medicine and dentistry, public health, diverse institutions, and special interests concerned with health, social sciences, and the public (Falk 1958). It was supported with grants from eight foundations.
3. When Medicare was enacted in 1965, the opposition by organized medicine led Congress to require that Medicare not interfere with the prevailing practice of medicine, tying payments to usual customary and reasonable charges by physicians and reasonable costs of hospitals (Marmor 1973).
4. A good example of this is the Medicare Advantage program, in which the authority for private FFS plans, originally created for one purpose, was later deployed to drive new growth in the industry (Gold 2008).
5. HMOs typically were required to be state licensed and were paid prospectively on a capitation fee per member per month basis to provide contracted benefits through a network of providers.
6. By 2007, the PPO share rose to 56 percent, with 21 percent of insured workers in an HMO and 13 percent in hybrid POS plans. The remainder were either in conventional plans (3 percent) or high deductible health plans (5 percent).

References

- Aday, LuAnn and Ronald M. Andersen, “Equity and Access in Medical Care: Realized and Potential.” *Medical Care*, vol. 19, no. 12 (Supplement 1982), pp. 4-27.
- Berenson, Robert A., Paul B. Ginsburg, and Jessica H. May. “Hospital-Physician Relations: Cooperation, Competition, or Separation.” *Health Affairs Web Exclusive*, December 5, 2006.
- Boukus, Ellyn, Alwyn Cassill, and Ann S. O’Malley. “A Snapshot of U.S. Physicians’ Key Findings from the 2008 Health Tracking Physician Survey.” Washington, DC: Center for Studying Health Systems Change, Bulletin No. 35, September 2009.
- Brewster, L., L. Jackson, and C. Lesser. “Insolvency and Challenges of Regulating Providers that Bear Risk.” Washington, DC: Center for Studying Health System Change. Issue Brief No. 26, February 2000.
- Brown, Randall S., Dolores G. Clement, Jerrold W. Hill, Sheldon M. Retchin, and Jeanette W. Bergeron. “Do Health Maintenance Organizations Work for Medicare?” *Health Care Financing Review*, vol. 15, no. 1, 1993, pp. 7-23.
- Burns, Lawton R, Gloria J. Bazzoli, Linda Dynan, and Douglas R. Wholey. “Impact of HMO Market Structure on Physician-Hospital Strategic Alliances.” *Health Services Research*, vol. 35, no. 1 (Part I), April 2000, pp. 101-132.
- Burns, Lawton Robert, and Ralph W. Muller. “Hospital-Physician Collaboration: Landscape of Economic Integration and Impact on Clinical Integration.” *Milbank Quarterly*, vol. 86, no. 3, 2008, pp. 375-434.
- Burns, Lawton R., and Darrell P. Thorpe. “Why Provider Sponsored Health Plans Don’t Work.” *HFM Resource Guide*, 2001, pp. 12-16.
- Casalino, Lawrence. “Canaries in a Coal Mine: California Physician Groups and Competition.” *Health Affairs*, vol. 20, no. 4, July/August 2001, pp. 97-108.

Casalino, Lawrence P., Kelly J. Devers, Timothy L. Lake, Marie Reed, and Jeffrey J. Stoddard. “Benefits of and Barriers to Large Medical Group Practice in the United States.” *Archives of Internal Medicine*, vol. 163, September 8, 2003, pp. 1958-1964.

Casalino, Lawrence, Robin R. Gillies, Stephen M. Shortell, Julie A. Schmittiel, Thomas Bodenheimer, and others. “External Incentives, Information Technology, and Organization Processes to Improve Health Care Quality for Patients with Chronic Diseases.” *Journal of the American Medical Association*, vol. 289, no.4, January 22/29, 2003, pp. 434-441.

Centers for Medicare & Medicaid Services. “Roadmap for Implementing Value Driven Healthcare in the Traditional Medicare Fee-for-Service Program.” Baltimore, MD: DHHS, undated.

Clancy, Carolyn, Christine Martin Anderson, and P. Jon White. “Investing in Health Information Infrastructure: Can It Help to Achieve Health Reform?” *Health Affairs*, vol. 28, no. 2, March/April 2009, pp. 478-482.

Claxton, Gary, Jon Gabel, Bianca DiJulio, Jeremy Pckreign, Heidi Whitmore, and others. “Health Benefits in 2007: Premium Increases Fall to an Eight-Year Low, While Offer Rates and Enrollment Remain Stable.” *Health Affairs*, vol. 26, no. 5, September/October 2007, pp. 1407-1416.

Crosson, Francis J., Stuart Guterman, Nancy Taylor, Rashell Young, and Laura Tollen. “How Can Medicare Lead to Delivery System Reform?” Issue Brief. New York: The Commonwealth Fund, November 2009.

Devers, Kelly, and Robert Berenson. “Can Accountable Care Organizations Improve the Value of Health Care by Solving the Cost and Quality Quandaries?” Robert Wood Johnson Foundation/Urban Institute Series on Timely Analysis of Immediate Health Policy Issues, October 2009.

Donelan, Karen, Robert J. Blendon, George D. Lundberg, David R. Calkins, Joseph P. Newhouse, and others. “The New Medical Marketplace: Physician Views.” *Health Affairs* vol. 16, no. 5, September/October 1997, pp. 139-148.

Dorsey, Joseph L. “The Health Maintenance Organization Act of 1973 (PL 93-222) and Prepaid Group Practice Plans.” *Medical Care*, vol. 13, no. 1, January 1975, pp. 1-9.

Ellwood, Paul. “Models for Organizing Health Services and Implications of Legislative Proposals.” *Milbank Quarterly*, vol. 83, no. 4, 2005, pp. 1-31.

Falk, I.S. “The Committee on the Costs of Medical Care—25 Years of Progress.” *Medical Care*, vol. 48, no. 8, August 1958, pp. 979-982.

Felt-Lisk, Suzanne, Rebecca Dodge, and Megan McHugh. “Trends in Health Plans Serving Medicaid—2000 Data Update.” Washington, DC: Kaiser Family Foundation, November 2001.

Fisher, Elliot S, Julie Bynum, and Jonathan Skinner. “The Policy Implications of Variations in Medicare Spending Growth.” Dartmouth Atlas Health Policy Brief. Hanover, NH: Dartmouth Institute for Health Policy and Clinical Practice, February 27, 2009.

Fisher, Elliot S., Douglas O. Staiger, Julie P.W. Bynum, and Daniel J. Gottlieb. “Creating Accountable Care Organizations: The Extended Hospital Medical Staff.” *Health Affairs* Web Exclusive, December 5, 2006, W44-W57.

Fraser, Irene, William Encinosa, and Sherry Glied. “Improving Value and Efficiency in Health Care.” *Health Services Research*, vol. 45, no. 5, October 2008, pp. 1781-1786.

Gillies, Robin R., Stephen M. Shortell, Lawrence Casalino, James C. Robinson, and Thomas G. Rundall. “How Different is California? A Comparison of U.S. Physician Organizations.” *Health Affairs* Web Exclusive, October 15, 2003.

Gold, Marsha R. “Effects of the Growth of Managed Care on Academic Medical Centers and Graduate Medical Education.” *Academic Medicine*, vol. 71, no. 8, August 1996, pp. 828-838.

Gold, Marsha. “Geographic Variation in Medicare Per Capita Spending: Should Policymakers Be Concerned?” Research Synthesis Report No. 6, The Synthesis Project. Princeton, NJ: Robert Wood Johnson Foundation, July 2004.

- Gold, Marsha R. "ISO Quick Fix, Free Lunch and Share of Pie." *Journal of Health Politics, Policy and Law*, vol. 24, no. 5, October 1999a, pp. 973-983.
- Gold, Marsha. "Medicare's Private Plans: A Report Card on Medicare Advantage." *Health Affairs* Web Exclusive, November 24, 2008.
- Gold, Marsha. "The Changing U.S. Health Care System: Challenges for Responsible Public Policy." *Milbank Quarterly*, vol. 77, no. 1, 1999b.
- Gold, Marsha, Lori Achman, Jessica Mittler, and Beth Stevens. "What Medicare+Choice: What Have We Learned? Findings and Operational Lessons for Medicare Advantage." Washington, DC: Mathematica Policy Research, August 2004.
- Gold, Marsha, and Sue Felt-Lisk. "Using Payment Reform to Enhance Health System Performance." Issue Brief. Washington, DC: Mathematica Policy Research, December 8, 2008.
- Gold, Marsha R., Robert Hurley, and Timothy Lake. "Provider Organizations at Risk: A Profile of Major Risk Bearing Intermediaries, 1999." *Health Affairs*, vol. 20, no. 2, March/April 2001, pp. 177-185.
- Guterman, Stuart, Karen Davis, Stephen C. Schoenbaum, and A. Shih. "Using Medicare Payment Policy to Transform the Health System: A Framework for Improving Performance." *Health Affairs* Web Exclusive, Jan. 27, 2009, w238-w250.
- Hussey, Peter S., Melony E Sorbero, Ateev Mehrotra, Hangsheng Liu, and Cheryl Damberg. "Episode Based Performance Measurement and Payment: Making It a Reality." *Health Affairs*, vol. 28, no. 5, September/October 2009, pp. 1406-1417.
- Iglehart, John K. "The Federal Government as Venture Capitalist: How Does It Fare?" *Milbank Quarterly*, vol. 58, no. 4, 1980, pp. 656-666.
- Kaiser Family Foundation. "Health Care Reform Proposals, last modified November 23, 2009." Available at www.kff.org, accessed December 1, 2009.
- Lake, Timothy, Marsha Gold and Robert Hurley. "HMO Provider Networks in Medicare+Choice: Comparing Medicare and Commercial Lines of Business." *Managed Care Quarterly*, vol. 9, no.4, 2001, pp. 16-22.
- Leonhardt, David. "Making Health Care Better." *New York Times Magazine*, Sunday, November 8, 2009.
- Marmor, Theodore R. *The Politics of Medicare*. Chicago: Aldine Publishing, 1973.
- Massachusetts Special Commission on the Health Care Payment System. "Recommendations of the Special Commission on the Health Care Payment Systems." Boston, MA: Executive Office for Administration and Finance, Division of Health Care Finance and Policy, July 16, 2009.
- McCarthy, Douglas, and Kimberly Mueller. "Series Overview: Findings and Methods." Organizing for Higher Performance: Case Studies of Organized Delivery Systems. NY: Commonwealth Fund Publication 1288, volume 21, July 2009.
- Medicare Payment Advisory Commission. "Chapter 2: Accountable Care Organizations" in *Report to Congress: Improving Incentives in the Medicare Program*. Washington, DC, June 2009 (pp. 39-58).
- Miller Robert H., and Harold S. Luft. "Does Managed Care Lead to Better or Worse Quality of Care?" *Health Affairs*, September-October 1997, pp. 7-25.
- Miller Robert H., and Harold S. Luft. "HMO Plan Performance Update: An Analysis of the Literature." *Health Affairs*, July-August 2002, pp. 63-36.
- Miller, Robert H., and Harold S. Luft. "Managed Care Plan Performance Since 1980: A Literature Analysis." *Journal of the American Medical Association*, vol. 271, no. 19, 1994, pp. 1512-1529.
- Miller, Thomas P., Troyen A. Brennan, and Arnold Milstein. "How Can We Make More Progress in Measuring Physicians' Performance to Improve the Value of Care?" *Health Affairs*, vol. 28, no. 5, September/October 2009, pp. 1429-1437.

National Priorities Partnership. "National Priorities and Goals: Aligning Our Efforts to Transform America's Health Care." Washington, DC: National Quality Forum, November 2008.

Perkins, Barbara Bridgman. "Economic Organization of Medicine and the Committee on the Costs of Medical Care." *American Journal of Public Health*, vol. 88, no. 11, November 1998, pp. 1721-1726.

Rittenhouse, Diane R., Kevin Grumbach, Edward H. O'Neil, Catherine Dower, and Andrew Bindman. "Physician Organization and Care Management in California: from Cottage to Kaiser." *Health Affairs*, vol. 23, no. 6, November/December 2004, pp. 51-62.

Rittenhouse, Diane R., Stephen M. Shortell, and Elliot S. Fisher. "Perspective: Primary Care and Accountable Care—Two Essential Elements of Delivery System Reform." Electronic publication at www.nejm.org on October 28, 2009.

Robinson, James C. "From Managed Care to Consumer Health Insurance: The Rise and Fall of Aetna." *Health Affairs*, vol. 23, no. 2, March/April 2004, pp. 43-55.

Robinson, James C. "Physician Organization in California: Crisis and Opportunity." *Health Affairs*, vol. 20, no. 4, July/August 2001, pp. 81-96.

Robinson, James C. "The Future of Managed Care Organization." *Health Affairs*, vol. 18, no. 2, March/April 1999, pp. 7-24.

Robinson, James C., and Lawrence P. Casalino. "Reevaluation of Capitation Contracting in New York and California." *Health Affairs Web Exclusive*, May 17, 2001.

Robinson, James C., and Lawrence P. Casalino. "Vertical Integration and Organizational Networks in Healthcare." *Health Affairs*, vol. 15, no. 1, spring 1996, pg. 7-22.

Roemer, Milton I. "I.S. Falk, the Committee on the Costs of Medical Care, and the Drive for National Health Insurance." *American Journal of Public Health*, vol. 75, no. 8, August 1985, pp. 841-848.

Shih, Anthony, Karen Davis, Stephen Schoenbaum, Anne Gauthier, Rachel Nuzum, and Douglas McCarthy. "Organizing the U.S. Health Care Delivery System for High Performance." The Commonwealth Fund, August 2008.

Shortell, Stephen M., Robin R. Gillies, and David A. Anderson. "The New World of Managed Care: Creating Organized Delivery Systems." *Health Affairs*, winter 1994, pp. 46-64.

Starr, Paul. *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. New York: Basic Books, 1982.

Tollen, Laura. "Physician Organization in Relation to Quality and Efficiency of Care: A Synthesis of Recent Literature." New York: Commonwealth Fund, Publication No. 1121, April 2008.

White, Joseph. "Markets and Medical Care: The United States, 1993-2005." *Milbank Quarterly*, vol. 85, no. 3, 2007, pp. 395-448.

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