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Issue Brief

The Group Employed Model as a Foundation for Health Care Delivery Reform

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ABSTRACT: With a focus on delivering low-cost, high-quality care, several organizations using the group employed model (GEM)—with physician groups whose primary and specialty care physicians are salaried or under contract—have been recognized for creating a culture of patient-centeredness and accountability, even in a toxic fee-for-service environment. The elements that leaders of such organizations identify as key to their success are physician leadership that promotes trust in the organization, integration that promotes teamwork and coordination, governance and strategy that drive results, transparency and health information technology that drive continual quality improvement, and a culture of accountability that focuses providers on patient needs and responsibility for effective care and efficient use of resources. These organizations provide important lessons for health care delivery system reform.

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OVERVIEW

The recent focus on improving the performance of the health care system has produced increasing awareness of the need to move away from uncoordinated fee-for-service payment.[1] Compensation based on the volume and intensity of services provided to an individual, rather than on the value obtained from that care, offers no incentives for physicians to provide the optimal mix of services to achieve the best outcomes for their patients, or to coordinate services across multiple providers and settings. The payment system, moreover, undervalues primary care by paying more for procedural than for cognitive services. Furthermore, compensation generally is not available for some critical components of coordinated care, such as transitional care after a hospital discharge or ongoing monitoring of patients with chronic conditions. Without such compensation, these services are frequently neglected, often resulting in additional costs to the system.

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Creating more coordinated and accountable care requires organizations and systems of payment that align incentives across providers and care settings, so that coordinated, effective, and efficient care is encouraged and rewarded.[2] The development of accountable care organizations (ACOs) is one approach specifically proposed by the Patient Protection and Affordable Care Act (H.R. 3590) to reform the delivery system and organize patient care. This law, signed by President Obama on March 23, 2010, would implement ACOs as part of a Medicare Shared Savings Program by 2012 and defines an ACO as a group of providers—which could include hospitals or physician groups, and other suppliers of services—that accepts responsibility for the cost and quality of care provided to Medicare beneficiaries within the traditional fee-for-service program.[3] Participating groups would share with the federal government the savings achieved by providing high-quality, lower-cost care as determined by set performance and cost measures. Over time, the quality standards on which those incentives are based would become more rigorous to promote continual improvement, potentially by all providers. This bill encourages care coordination and collaboration among providers.

Although the ACO label is relatively new, there are already organizations delivering low-cost, high-quality care. One model that has had such success is the group employed model, or GEM.[4] Physician groups operating under the GEM are typically composed of a large number of salaried primary care and specialty physicians, often aligned with other health care entities, including hospitals. Among these groups are some of the best-known and most widely recognized systems in the country. The experiences and lessons learned from them can inform the efforts of other organizations aiming to achieve more integrated care.

On September 16, 2009, the health services research and policy organization AcademyHealth hosted a colloquium that convened leaders from a dozen institutions that utilize the GEM. The goal was to identify the elements of that model that appear essential to producing high-quality, affordable care that is coordinated and patient-centered. This issue brief discusses the attributes that the organizations represented by these leaders have in common, and how recognition of those attributes may be helpful in the context of reforming the overall health care delivery system. The brief also examines factors that may have hindered the greater proliferation of these types of systems and presents recommendations for policymakers trying to reproduce aspects of this model.

WHAT IS THE GROUP EMPLOYED MODEL?

The core of the GEM is a physician group whose primary and specialty care physicians are salaried or under contract.[5] Compensation structures differ, but commonly include salary and incentives based on measures such as quality of care, patient satisfaction, and degree of involvement in the physician group. Physicians' salaries also may be productivity-based, reflecting the primarily fee-for-service environment in which many GEMs operate. Importantly, such productivity-based measures are usually tied to the physician's own work effort and not to the number of services that the physician may order for his or her patients.

Salary-based compensation, however necessary, is not sufficient to ensure effective coordination of high-quality care. The majority of physicians in the United States report receiving either a performance-adjusted or fixed salary, yet they do not always achieve the high-quality, low-cost care exemplified by GEMs.[6] The "salary" reported in many of these cases, however, may simply be describing what a physician chooses to pay him- or herself through a professional corporation, rather than reflecting the broader definition embodied in the GEM. Moreover, the payment of salaries to physicians may not in itself be sufficient to explain the success of many of the organizations using the model. Nonetheless, although the application of the salary model varies across the individual organizations, it

certainly appears to be one of the important common elements enabling them to achieve their objectives.

The GEMs represented at the September 16 meeting include some of the most widely recognized leaders in health care organization and delivery (Appendix A). Although these organizations are similar with respect to their employment of physicians, their payment of salaries to physicians, and their emphasis on physician leadership, they also differ in various aspects. The ownership structure and the degree of vertical integration vary across groups: Some GEMs are not-for-profit foundations that contract with closely aligned medical groups to provide care; some contract with hospitals to provide care, while others have hospitals that are integrated with the physician group; and in some cases, GEMs are aligned with health plans. Their catchment areas vary from populations of less than 500,000 to populations of more than 5 million.

GEMs differ in their use of resources as well, but they tend to be relatively efficient. According to the Dartmouth Atlas of Health Care's "Hospital Care Intensity Index," which measures the days patients spend in the hospital and the intensity of physician services during the last six months of life, most of the GEM hospitals operate in the quartile of hospitals that are the least resource-intensive.[7] (For more information about each GEM, including descriptive and performance attributes, see Appendix B.)

COMMON FEATURES IDENTIFIED AS INTEGRAL TO THE SUCCESS OF GEMS

The GEM is an organizational model that can achieve high-value health care and optimal patient outcomes through aligned financial incentives that encourage more effective and efficient care. Although a few of the GEMs, such as Kaiser Permanente, receive most of their revenue on a capitated basis and are well-aligned with their hospitals, most operate in a predominantly fee-for-service environment. Despite the challenges resulting from the current payment system, GEMs have been able to improve the quality of care they provide and contain costs. The following section describes the attributes that GEM leaders believe are integral to their success and are important for other providers hoping to move toward a more integrated and better-organized delivery system.

Physician Leadership That Promotes Organizational Trust and Cohesion

Physician leadership is critical in implementing policies that change care processes and physician behavior. Participants in the September 16 meeting note that when a physician leads an organization, there is a sense among the group's physicians that the leader is "one of us." The physician leader has had clinical training and likely shares the same values as the group physicians while emphasizing the best interest of patients. A physician leader can clearly and credibly deliver the message that the organization's mission is focused on the well-being of the patient, and can frame and transmit that message from the physician's perspective. This ability encourages rank-and-file trust, promotes greater cohesion among physicians, and creates support for organizational policies and strategy. When decisions are framed in the context of goals that matter to physicians, such as access, quality, and operational excellence, clinicians are more apt to support the necessary policies and tailor their practice behavior accordingly.

GEM participants note that physician leadership is critical in developing and sustaining two characteristics that are integral to supporting their ethos: collaboration and accountability. Collaboration among physicians is essential for providing high-quality, coordinated care; physician leaders can implement policies that promote teamwork and foster interconnectedness and collegiality among physicians, and get buy-in from their medical staffs in assuming accountability for the results of their work. Physician leaders also can ease the strain of incorporating new physicians from private practice in the existing organization, as well as maintaining and adapting the organization's culture when it expands into a new geographic area. When the Cleveland Clinic expanded its operations to Florida, for example, the clinic's leadership found it difficult to incorporate the state's local physicians into the Cleveland Clinic model of practice; the problem was

not resolved until physician leaders empowered local physicians to make their own decisions on how to align the organizational mission with the environment in which it was to be achieved.

Integration That Encourages Teamwork and Coordination Across Care Settings

Integration with hospitals is important as it instills accountability and promotes the coordination of care across inpatient and ambulatory care settings. Furthermore, physician–hospital integration can help align clinical and administrative strategies, such as physician recruitment, and promotes teamwork across all staff, including physicians, allied health care workers, and registered nurses. However, integration can be difficult owing to misaligned financial incentives in the current payment system. For example, physicians practicing in a GEM may receive incentives to manage patient utilization—including avoiding hospital stays and minimizing hospital days—but such efficiencies could threaten the financial viability of hospitals that receive reimbursement for each stay or day. Changes in the current payment policy would improve the ability of GEMs to align physician and hospital incentives.

Some GEMs are part of a delivery system that is integrated with an affiliated health plan. This arrangement provides financial flexibility to allow the GEMs to experiment with delivery system initiatives. Such initiatives could include medical homes or population management for select chronic conditions, which can benefit the plan and its providers—as well as its patients—by promoting higher-quality care at reduced overall costs. Vertical alignment of a health plan, hospital, and physician group allows leaders to cross-subsidize services that are less profitable (or even totally uncompensated) under the current fee-for-service system with funds from other services that are more profitable.

Governance and Strategy That Drive Results

The leaders of GEMs believe that aligning the business strategy of the organization with a mission focused on patient care is important for creating trust and support within the organization. They are selective about the physicians they recruit to join and lead the group, seeking physicians whose values fit within the organizational culture, whose goals are consistent with the organization's mission, and who are data-driven. At the time of hire, the GEMs set clear expectations about clinical performance, citizenship within the group, compensation, and the review process. Physician performance is reviewed and discussed periodically. Given physicians' often competitive nature and desire to provide the best patient care, this process drives continuous quality improvement.

Compensation structures are designed to encourage behaviors that support the mission. Physicians who seek employment with GEMs often appreciate the stable nature of the model. The GEM leaders note that while the amount of compensation is important, other opportunities they can offer, such as teaching or conducting research, are also important to the satisfaction of their physicians. Recognition from an individual physician's peers that he or she is providing high-quality care is also meaningful. To build trust in the compensation structure, GEM leaders suggest that it be transparent, physician-led, and based on principles of fairness.

Engaging physicians in governance and operations is important, and can be encouraged through the appropriate governance structures. GEM physicians work within, and often lead, hospital departments. These leaders are responsible for the daily operations and delivery of care within the departments. Having GEM physicians lead hospital departments increases alignment between the two organizations and helps facilitate the coordination of care across settings. GEMs that base physician salaries on work effort usually offer separate compensation for those taking on committee and administrative functions. While some GEMs are the sole source of physicians for the hospital (i.e., the hospital has a closed medical staff), others admit patients to hospitals that have physicians not affiliated with the GEM on the medical staff (hospitals with an open medical staff). Engaging independent physicians to collaborate with those of the GEM in

guiding hospital operations can prove challenging; they often prefer not to take time away from their clinical practice, as their compensation is typically based on their own billing.

Transparency and Health IT That Support Continuous Quality Improvement

Continuous quality improvement cannot be achieved without focused, transparent metrics based on relevant data. Health information technology (HIT) not only aids in the coordination of individual patient care across settings, but also collects performance data that can be used to discuss quality with physicians during periodic reviews and to set organizational benchmarks. Additionally, GEM leaders suggested that while public reporting of the group quality metrics helps to drive performance improvement, public reporting at the individual physician level could lead to conflicting incentives deleterious to the group dynamic and sense of teamwork. Some GEMs share individual physician-level data among physicians *within* the group.

Although the technology alone is certainly not sufficient, HIT and its effective use are helpful to GEMs in achieving their goals. (GEMs were performing well decades before HIT was invented.)

Physicians' Accountability for Their Patients

A pervasive theme mentioned by the GEMs represented at the September 16 meeting was a sense of both individual physician and group accountability for patient care and practice patterns. Physicians not only feel responsible for their own patients, but also recognize the responsibility of the organization toward its patients collectively. Physicians are also accountable to a physician leader and are held to expectations that are clearly set forth when they are hired and explicitly tracked over time. The leaders of the GEMs emphasize that physicians are accountable for their patients' care across the care continuum. Accountability encourages physicians to view with a broader perspective the care their patients receive and to coordinate patient care appropriately.

ORGANIZATIONS THAT THRIVE IN A TOXIC ENVIRONMENT

The GEMs provide a clear example of an analog to an "existence proof"; they achieve in the current system many of the goals of a high-performing health delivery system. In most instances (the exception being GEMs within fully integrated delivery and payment systems like Kaiser Permanente), this is in spite of operating at least in part within a fee-for-service payment environment with incentives that conflict with the organizations' objectives. Several issues, however, arise when considering the role of GEMs in reforming the health care delivery system.

The question many people ask is, "If GEMs are such a good idea, why aren't there more of them and why don't we see more recently developed GEMs?" Unless we can answer that question, GEMs may turn out to be a policy solution that fails to deliver fundamental change outside of the few areas in which they already exist. Currently, GEMs are not as rare as the question implies: They care for roughly 6 percent of the American population and do so in a wide variety of environments, from highly urbanized to quite rural. Their leaders identify many common traits that they feel are important aspects of GEM performance. Some, such as a clear mission and strong physician leadership, may be quite difficult to incorporate in legislation or regulation (although they may provide good examples for other organizations with similar aspirations); others, such as salary or employment, can be easily specified. Before policymakers focus on such details, however, it is worth discussing these traits in more depth.

If GEMs Are Such a Good Idea . . .

The concerns about the replicability of the GEM concept are real and need to be addressed. The GEM representatives highlighted several features that characterize the organizations' success and that may help explain their relatively small numbers. Leadership always seemed to be at the top of the list; but leadership is often discussed as a core feature of most successful organizations and is often in short supply. It is important, however, to consider the "package" of characteristics discussed above that are encompassed by the GEMs.

Although many of the GEMs are not-for-profit or operate as not-for-profit foundations contracting with a medical group, few would argue that the physicians in the groups have taken vows of poverty. However, although the "group" may be owned by its physicians, it generally has no external shareholders, which means that there is no external source of capital that can be tapped to build the entity. In GEMs, as well as in not-for-profit hospitals and health plans, growth is essentially internally financed or financed with borrowed funds.

Building this model was far less problematic decades ago when the GEMs began and the fixed costs of establishing medical practices, especially those with a broad range of primary care and specialty physicians, were far lower than they are today. Capital costs for even a moderately sized medical office building now are enormous, so establishing a new "stand-alone" medical group is much more likely to require outside investors, or the provision of publicly sponsored "seed money" such as was previously supplied to hospitals by the Hill-Burton Act, passed initially in 1946 and amended in 1975.

While physician entrepreneurs are not commonplace, neither are they unusual. While entrepreneurial behavior is not what characterizes the GEMs, they typically have strong leaders who are able to attend to the business aspects of care delivery. The issue here is not one of business acumen, but of the role of risk and reward. Part of what seems to characterize GEMs is their interest in providing high-quality medical care to their patients while allowing their physicians to earn reasonable incomes. Discussions with GEM leaders resound with the terms "sustainability and fairness," not "risk and profits."

Entrepreneurs are drawn to high-risk, high-profit situations and often are willing to ride a venture up and then leave when it fails. GEMs, in contrast, are notable for having succeeded with a different business model that is not optimized for performance in the current environment, yet manages to survive. Given the high capital requirements for building new GEMs, it is not surprising that few have been developed in the last half-century. Moreover, many GEMs were developed in geographic areas with a limited supply of health care services. Given the current distribution and supply of medical care across the United States, new GEMs will likely form through mergers and acquisitions of existing health care facilities. The ways in which GEMs grew in an environment where the overall system was expanding may not be repeated in one that requires contraction, especially in certain specialty areas. A strategy of mergers may increase both efficiency and antitrust concerns, making design of the appropriate policies more complex.[8] Whether we would see new forms of GEMs develop if purposefully stimulated by a different payment system is impossible to determine merely by looking at them in retrospect, but it is easy to see why these systems are not more prevalent in the current environment.

There are some lessons that can be learned, however, from the existing GEMs. With the exception of organizations like the Cleveland Clinic and Mayo Clinic, which have very large specialty referral practices, GEMs have a much higher ratio of generalists to specialists than one sees in the overall medical care system. Implicitly, they have recognized that by providing mainly primary care, the relatively fewer specialists can be kept very busy doing only what is necessary for their patient populations. By adding specialists only as the primary care population grows, GEMs reduce the incentive for their specialists to offer services of marginal value. If this observation is borne out, then as accountable care organizations grow and

develop, they will need relatively fewer specialists than generalists. Such selective recruiting may be a challenge in developing the organization.

What Does "Employment" Mean in the Context of the GEM?

Without in-depth case studies, it is impossible to understand the full implications of the employment relationships and expectations in each GEM. Moreover, the selection, vetting, and trial period process for new recruits can be used to ensure that one is dealing only with physicians who will both be comfortable with, and operate in a manner consistent with, the expectations of the group. Some of these expectations may be formal, but many may be informal.

The nature of an employment relationship, however, is quite different from that of a solo practitioner or partnership structure. GEMs have organizational expectations and, if necessary, mechanisms to enforce those expectations. That sets them apart from small or medium-sized medical groups that share business office expenses and rent, but allow each practitioner to set his or her own salary, essentially based on revenues less shared expenses. Physicians in such groups may technically be employees for tax and other purposes, but they function much more as independent entities.

GEMs, in contrast, seem to use the employment relationship to reshape how the incentives of the fee-for-service system impact physicians. Current fee structures typically offer greater rewards for tests, imaging, and procedures than for physician time. For tests and imaging, the fees essentially reflect a combination of physician work effort on one hand and, on the other, a return on the investment in the plant, equipment, and other labor needed to produce the tests and images. The GEM as an organization can bear the costs and responsibility for the latter, and likewise reaps the "profits" from those activities. Those "profits" may then be used for investment in growth, or for the cross-subsidization of primary care practitioners. This separation also blunts the incentive to overuse such tests and imaging since the individual clinician ordering them does not benefit directly from the revenue they generate.

The "groupness" of GEMs probably also has an indirect effect on incentives. Whereas some professional corporations allow each member to set his or her own salary, the GEMs typically have a compensation committee that sets the structures of the salaries, often allowing some variation based on performance it would like to reward, such as productivity, quality, and patient assessments. Discussions within the group, which are likely to address the consequences of salary structure for its long-term viability, as well as what the members see as being fair, also help determine how incentives are structured. A GEM may even decide to reduce its revenue per patient in order to become more attractive to certain payers and gain more favorable contracting terms.

The employment structure also may allow the group to make collective decisions that would be difficult for individual clinicians to undertake separately. For example, electronic health records (EHRs) can help make data conveniently available for a given patient, and more sophisticated EHRs allow a wide range of comparative analyses that can support clinical decision-making and alter clinician behavior. Since designing an EHR system for the latter function is far more complex and costly, the easier strategy, absent "buy-in" by all the relevant physicians, is for each individual physician to order the minimum EHR system (or none). By contrast, a GEM, operating as a group, is able to raise the capital to finance EHR systems that best suit the group's (and their patients') needs and make a collective decision that benefits all.

Lessons for the Development of ACOs

GEMs are "naturals" to be able to operate as ACOs under the Patient Protection and Affordable Care Act. Some are already parts of formal health plans; others have the capability to organize to promote quality improvements and achieve measurable savings. Moreover, physician leadership, physician accountability for the group's patients, and physician selectivity, all key attributes of GEMs, are seen by some ACO

thought leaders as essential to the successful implementation of ACOs. (See Appendix C for ACO thought leaders' reflections on how the GEM can inform and facilitate efforts to implement ACOs.)

The history of health maintenance organizations is instructive. Prior to the early 1970s, there was good evidence that prepaid group practices performed quite well, but the closed nature of those organizations was anathema to many individual physicians as well as to the American Medical Association. When a new name, HMO, was created to encompass not just prepaid groups but the loosely organized independent practice association model (IPA), political support became available for the concept. Not all IPAs performed well, and many failed, but the HMO Act of 1973 had major positive effects on transforming the delivery system. Likewise, the ACO concept is much broader than the GEM. Requiring less formal structure than GEMs, some ACOs may take less time to create. With less integration, however, some ACO models pose greater antitrust concerns.

Creating GEMs has been difficult in the current payment environment; we should see more such groups developing if the payment system is altered to facilitate ACOs and other types of care coordination. Will new GEMs develop quickly enough to achieve short-term cost savings? Only time will tell, but policymakers are unlikely to place all their bets on GEMs to achieve the desired savings. The GEM experience, however, offers important lessons for those seeking to create ACOs without incorporating all the GEM infrastructure. Such models of ACOs could include physician–hospital organizations, virtual ACOs formed through contracts, or independent practice associations.

One lesson is that, if savings are to occur, funds need to be implicitly transferred from the set of clinicians and facilities providing interventional and high-cost testing/imaging services to those offering primary care. While theoretically this could be done within a formal organization such as a new ACO, it is unlikely that many providers will willingly accept a reduction in their current incomes. The best way, then, to achieve the transfer is to mimic the GEMs by having a lower ratio of interventionists to primary care practitioners, thereby allowing those in the former category within the ACO to be very busy, but with fewer interventions, hospitalizations, and other forms of specialty care per patient. The changed ratio might be accomplished through selective recruiting—based on specialty and quality—of clinicians into a new ACO.

The lesson from the GEMs with respect to collective decision-making and capturing revenues as they are received, rather than asking physicians to give up income they already have received, may also inform the structure of various ACO models. Although a GEM may be the best long-term solution, careful attention needs to be paid to the transitions necessary to get there. Joining an existing GEM is one thing, but successful physicians in independent practice are unlikely to be persuaded to come together to create a new venture that requires them to accept major changes to their autonomy, compensation, and referral relationships. It has been suggested that ACOs, and therefore GEMs, could receive bonuses based on superior performance and use those bonuses to fund their infrastructure. Conceptually, this make sense, but it may be far better for the ACO to handle billing and other services for the participating clinicians with agreements that certain budgeted amounts will be taken "off the top" for collective purposes. The ACO would take on the business office, health information technology, and other functions that the GEMs provide. The core functions would then have the guaranteed revenue stream and bonuses dependent on superior performance. The physicians might still be independent practitioners, but would be paid in a manner collectively determined by the members of the ACO, with incremental payments reflecting the desired incentives.

Efforts to create ACOs also will benefit from an understanding of how GEMs provide support to physicians. ACO thought leaders believe it is essential to create a supportive environment for physicians in order to overcome what they perceive to be the greatest barrier to forming ACOs—gaining physician acceptance. Physicians doubt that such models will achieve high-quality and low-cost care and fear that public reporting

of quality measures will increase physician liability exposure. By providing mechanisms offered by GEMs, such as incentives for professional development and the infrastructure for professional and administrative support, ACOs may be able to recruit enough physicians to achieve the critical mass necessary for such organizational models.

Aside from showing how the ACOs might get the economic incentives correct, as individual entities the GEMs have another advantage that would be helpful if applied in the development of ACOs, i.e., the sharing of clinical data for quality improvement and other purposes, as well as peer review of medical practices. Also useful would be GEMs' experience with important federal and state laws and regulations (including the Health Insurance Portability and Accountability Act of 1996, or HIPAA), which would help ACOs comply with such regulations.

Implications Beyond the Context of Medicare

The ACO concept is applied in the current legislation primarily to address problems in Medicare expenditures, but most would agree that the overuse of certain services, and perhaps the underuse of others, is widespread and occurs regardless of who the payer is. Many clinicians prefer to identify what they believe is the best clinical strategy for a specific health problem and use that for all patients, regardless of the insurer. That is not to say, however, that payer mix does not affect clinician behavior, nor that the ability to cross-subsidize is irrelevant.

System change can be facilitated by the development of ACOs for Medicare patients, but it would help if those new structures also worked for non-Medicare patients. For example, suppose that new billing codes were developed for telephone consultations, either with patients or with other physicians, such as subspecialists, to decide whether a referral is warranted. It would be problematic if public policy restricted those codes to Medicare patients; making them readily accessible for other payers would be desirable.

FACTORS THAT COULD FACILITATE THE FORMATION OF MORE GEMS

As described above, the existing GEMs, now well-established organizations, are nonetheless survivors in a toxic fee-for-service payment environment that does little to foster coordination of care, and their leaders believe that environment has prevented the formation of many more. The following actions were identified as potential facilitators to help other organizations move toward more integrated systems that achieve high-value, patient-centered care.

Payment Reform

Payment reform is seen as the key to encouraging independent physicians to form real or virtual relationships with other providers to deliver high-quality patient care. Payment approaches that encourage collaboration among physicians would be the first step toward the development of more integrated and accountable organizations. The following payment reforms would help to encourage collaborative, low-cost, high-quality care:

- *Payments for coordinating care*. Additional payment for coordinating care would help patients receive care from the wide range of independent providers they may need to see. It should also encourage physicians to collaborate across the care continuum, particularly in the sharing of data, and may lead to virtual and/or real integration between providers and care settings.
- *Incentive payments for quality and efficiency at the community level*. Medicare and other payers could more broadly adopt the shared savings approach being used in some current initiatives and discussed in the context of health reform, with groups of providers being rewarded for slowing the rate of growth of expenditures for their patients, subject to the requirement that quality is not jeopardized. Under such an approach, independent physicians and hospitals are likely to find that by sharing their data and coordinating their care, they can achieve significant savings that could pay for the

extra infrastructure needed to achieve those efficiencies.

- *Differential sustainable growth rate (SGR)*. The current SGR formula constrains overall physician fee increases based on the overall rate of growth in total physician expenditures. If the SGR is to be continued, consideration should be given to enhanced SGRs for physicians to move into more integrated organizations. Participation would be voluntary, and this policy lever could be implemented to be budget-neutral overall.
- *Bundled payments at the episode level*. Bundled payments for episodes of care should promote integration and collaboration among providers, and especially between physicians and hospitals. Bundling payments or setting global fees for a particular condition or group of conditions, e.g., by combining the hospital's diagnosis-related group (DRG) payment and the physician fees associated with the episode of care, should also encourage greater teamwork and more efficient use of resources. This bundling could go further and include readmissions within a certain period of time, appropriate preadmission testing and imaging, and encouraging links between the inpatient and ambulatory settings.
- *Center for Medicare and Medicaid Innovation*. Such a center, which would be established by 2011 by the Patient Protection and Affordable Care Act, would have the authority to foster experimentation with alternative payment methodologies—such as the salaried models used by the GEMs—that promote high-quality, low-cost care. It would allow organizations that provide coordinated, effective, and efficient care to thrive and encourage development of more organizations seeking similar goals.

Other Policy Changes

In addition to payment reforms, the following initiatives could help to create more integrated systems of care:

- *Robust and meaningful definition of HIT and subsidies for implementing HIT.* Diffusion of HIT could assist the coordination of care across the care continuum and the collection of performance metrics that can drive quality improvement. Appropriately used HIT, and preferential funding of HIT for GEMs or ACOs that use it effectively, could also facilitate clinical integration.
- *Enterprise liability*. Enterprise liability would shift professional liability risk from individual providers to provider organizations. When physicians carry their own liability coverage, they often resist process changes for fear of being held liable in the event of a bad patient outcome. Enterprise liability that covers both the hospital and the physicians focuses organizations on providing staff with the appropriate training and expertise to undertake various tasks, and encourages the reengineering of processes to reduce cost and risk to patients.
- *Loan forgiveness*. To encourage newly trained physicians to seek employment in a GEM or other ACO, the federal government could provide loan forgiveness for primary care physicians who choose to work in this type of setting.
- *Technical assistance*. Technical assistance provided by the private sector, but potentially funded by (or at least organized and supported in part by) the public sector, could assist with the movement toward more integrated systems of care. Existing GEMs also could provide technical assistance to groups hoping to become more integrated.
- *Public funds to promote the development of GEMs*. The federal government could provide physician groups with sufficient capital to stimulate the development of GEMs.

CONCLUSIONS

The performance of the GEMs offers hope to those who believe the health care system can be made to be more efficient, effective, and responsive, even in the context of U.S. laws, regulations, and values. The success of GEMs in the current environment is notable; that environment and the gradual changes in the system help explain why they have not proliferated more widely. Impending payment and delivery system reforms resulting from the passage of health reform should, however, make the environment more conducive to this type of organization.

An important function of GEMs has been to begin to shift the balance of health care delivery back toward primary care. This shift could actually be achieved much more rapidly and effectively if the payment and delivery reforms described above were enacted and implemented, encouraging the proliferation of new GEMs and other organizations that would be more accountable for the quality and efficiency of their patients' care. The goal, however, is not necessarily to shift the relative hourly compensation for work effort across specialties (although that should not be ruled out) but to reduce the profits that some physicians can reap by ordering and delivering tests, imaging, and other services regardless of the likelihood that they will contribute to patients' health. Another approach to replicating what the GEMs appear to have achieved would be to add specific payments to compensate for the coordination of care without face-to-face contact between physicians and patients. Such coordination also should allow for the provision of some services by less highly trained, specialized personnel under the supervision of physicians and organizations who take responsibility for patient outcomes.

Leadership is a key feature of all existing GEMs, and in the creation of effective ACOs leadership may be even more important. The ACO is supposed to be a transformative entity, changing how physicians practice, introducing them to new and different ways of organizing care, compensation, and management of risk. Some of the physicians who will be needed are already doing quite well in the existing system; those who have the most to gain from a new organization probably also have the least time to take on new roles. One lesson to be learned from the GEMs is that, even with attractive financial incentives, physicians are unlikely to change what they do in order to join an organization that is not under physician control.

GEMs demonstrate that high-performing health care systems can function and sometimes thrive in the United States, even in the current nonsupportive fee-for-service environment. With reform of the payment system, GEMs may be able to do even better than they have to date. The lessons from the GEMs, moreover, are critical to discussions regarding the current policy interest in ACOs. Among those lessons are that ACOs will need to address issues of clinical and economic integration, achieve the appropriate balance of clinicians, and ensure forward-looking leadership. Developing the organizational and legal structures, the governance and culture, and the technological innovations necessary for constant improvement will be a challenge. It is only by changing the delivery system, however, that we will be able to achieve the goal of higher-quality care at sustainable cost.

Appendix A. Organizations Represented at the GEM Colloquium Sept. 16, 2009

- **Bassett Healthcare,** Cooperstown, N.Y. Founded in 1927, the physician-run organization is composed of 260 employed physicians in an integrated not-for-profit corporation directed by a board of trustees.
- **Billings Clinic,** Billings, Mont. The Billings Clinic was founded in 1911 and became a fully integrated organization with Deaconess Medical Center, forming a not-for-profit medical foundation, in 1993. The physician-led organization is composed of 238 employed physicians, a 245-bed acute-care hospital, and seven community clinic branch sites.
- **Cleveland Clinic,** Cleveland, Ohio. Founded in 1921, the physician-led organization is composed of 1,800 physicians. The main hospital is integrated with the physician group, and the group has facilities in Florida, Toronto, Canada, and Abu Dhabi, United Arab Emirates.
- **Geisinger Health System,** Danville, Pa. Founded in 1915, Geisinger Health System is a physician-led, integrated delivery system composed of two acute-care hospitals, a health plan, and a medical group of 745 physicians. The physicians are employed in the Geisinger Clinic, under the corporate umbrella of the Geisinger Foundation.
- **Gundersen Lutheran Health System,** La Crosse, Wis. Founded in 1995, Gundersen Lutheran Health System is a physician-led integrated delivery system composed of a health plan, a medical group, and a physician-owned acute-care hospital. The medical group, Gundersen Clinic, was founded in 1891 and comprises 453 employed physicians.
- **Guthrie Health,** Sayre, Pa. Founded in 1910, Guthrie Health is a physician-led organization that includes three acute-care hospitals and the Guthrie Clinic, a medical group composed of 245 employed physicians.
- **Henry Ford Health System,** Detroit, Mich. Founded in 1915, Henry Ford Health System is an integrated delivery system composed of six acute-care hospitals and a medical group of nearly 1,100 employed physicians. The medical group is led by a physician CEO who also serves as an executive vice president of the system.
- **Lahey Clinic,** Burlington, Mass. Founded in 1939, Lahey Clinic is a physician-led organization with a group practice composed of 550 physicians. The group owns one hospital.
- **Marshfield Clinic,** Marshfield, Wis. Founded in 1916, Marshfield Clinic is a physician-led organization composed of approximately 750 employed physicians. The group owns a hospital and is affiliated with a health plan.
- **Mayo Clinic,** Rochester, Minn. Founded in the late 1800s, the Mayo Clinic is the first integrated, multispecialty, not-for-profit group practice. The physician-led organization is composed of 3,700 employed physicians and provides clinic and hospital services at its locations in Rochester, Minnesota; Jacksonville, Florida; Phoenix and Scottsdale, Arizona; and 70 communities in southern Minnesota, northern Iowa, and western Wisconsin, known as the Mayo Health System. *(Authors' note: Leaders from Mayo Clinic were invited to the colloquium but were unable to attend.)*

- **Palo Alto Medical Foundation,** Palo Alto, Calif. The Palo Alto Medical Clinic was founded in 1930, and the Palo Alto Medical Foundation was founded in 1981. Palo Alto Medical Foundation is affiliated with Sutter Health. The group is physician-run and composed of 905 employed physicians.
- **The Permanente Medical Groups,** Oakland, Calif. The Permanente Medical Groups include seven medical groups that operate under a federated structure and have permanent business relationships with Kaiser Foundation Health Plan and Hospitals. This paired organization is known as Kaiser Permanente. The self-governed medical groups include approximately 15,000 employed physicians.
- **Scott and White Healthcare,** Temple, Texas. Established in 1897, Scott & White Healthcare is a not-for-profit, physician-led integrated delivery system composed of 10 hospitals or hospital partners, more than 50 clinics throughout central Texas, a health plan, and a medical group of approximately 800 employed physicians and researchers.

Appendix B. Attributes of Organizations Represented at the GEM Colloquium[9]
Sept. 16, 2009

	Bassett Healthcare	Billings Clinic	Cleveland Clinic	Geisinger Health System	Gundersen Lutheran Health System	Guthrie Health	Henry Ford Health System	Lahey Clinic
Governance	Board of trustees with CEO	12-member board (9 community members, 2 physicians, CEO)	CEO and board of trustees in a foundation not-for-profit model	Lay community board of directors	Board of governors, elected from medical staff	14-physician member board of directors	24-member board of trustees, including 4 physicians	Physician-member board of directors
Leadership	Physician CEO	Physician CEO	Physician CEO	Physician CEO	Physician CEO and medical VPs, elected by board of governors; dept. chairs/ section chiefs selected by medical VPs	Co-CEOs (one is a physician)	Non-physician CEO	Physician CEO
Catchment area	Central NY state, serving 470,000	Eastern Mont. and northern Wyo., serving 550,000	Surrounding communities of Cleveland, Ohio, serving 3 million; clinic in Weston, Fla., health center in Toronto, Can.	Central and northeastern Pa., serving 2.6 million	Western Wis., southeastern Minn. northeastern Iowa, serving 350,000	Northern Penn. and southern NY state serving 750,000	Southeastern Michigan, serving 4 million	Northeastern Mass., serving 1.3 million
Number of beds (staffed) at the flagship hospital	180	245	1,142	440	249	258	805	330
Annual visits	650,000	721,000	3.3 million	1.5 million	1.5 million	750,000	3.1 million	720,000
Number of physicians	260 employed	238	1,800	745	453	245 employed; 20 non-employed	1,100 employed; 1,800 non-employed	550
Ratio of medical specialist to primary care labor inputs	0.99	2.52	1.20	1.20	0.70	1.09	3.5	0.71
Acute care	Not-for-profit corporation employs physicians	Fully integrated, foundation model (infrastructure owned by not-for-profit foundation; physician group contracts with foundation)	Hospital integrated with physician group	Hospital owned by Geisinger Foundation	Hospital integrated with physician group	Hospital integrated with physician group	Hospital integrated with physician group	Hospital integrated with physician group
Teaching affiliation	Columbia University	University of Washington	Case Western Reserve University	Temple University	University of La Crosse-Wisconsin	State University of New York	Wayne State University	Tufts University
Compensation structure	Salaried productivity model based on relative value units (RVUs). Payer-neutral and benchmarked on national data	Salaried productivity model based on RVUs. Payer-neutral and benchmarked on national data	Salaried model based on annual professional review	Salary plus incentives. Incentives based on patient satisfaction, quality, service	Salaried productivity model based on RVUs.	Salary plus incentives	Salary plus incentives based on RVU and patient satisfaction	Salary, determined through qualitative assessment of physician performance
HCI Index vs. all U.S. hospitals[10]	24.5	10.7	51.3	9.0	1.5	18.0	47.2	46.8
Gross patient revenue	$678 million	$833 million	$7.7 billion	$2.1 billion	$1.25 billion	$515 million	$3.7 billion	$2 billion
Net income [loss]	$1.0 million	$12 million	$286 million	$80 million	$41 million	$14 million	$8.5 million	$25 million

	Marshfield Clinic	Mayo Clinic	Palo Alto Medical Foundation	The Permanente Medical Groups	Scott and White Healthcare
Governance	Physician-member board of directors	33-member board of trustees	33-member board of directors of foundation (11 physicians); infrastructure owned by foundation; physician group contracts with foundation	Seven self-governing medical groups under federated structure, with permanent business relationship with not-for-profit health plan and hospital foundation	22-member board of trustees—12 community trustees, 10 employed physicians, 9 of whom comprise clinic board of directors
Leadership	Physician CEO	Physician CEO	Physician CEO	Non-physician leads health plan/ hospital organization; physicians lead independent medical groups	Physician CEO
Catchment area	Northern, central, and western Wis., serving 370,000	Mayo provides services at its locations in Rochester, MN; Jacksonville, FL; and Phoenix and Scottsdale, AZ; and 70 communities in southern MN, northern IA, and western WI.	Greater San Francisco Bay area, serving 650,000	Area includes Col., D.C., Ga., Va., Md., Calif., Ore., Wash., Ha., Ohio, serving 8.6 million	Central Texas, serving 1.7 million
Number of beds (staffed) at the flagship hospital	69 beds[11]	1,271 beds	N/A	Kaiser owns and operates 30 hospitals	640 beds
Annual visits	3.5 million	2.4 million	2.1 million	36.7 million	2 million
Ratio of medical specialist to primary care labor inputs	0.48	1.3	N/A	About 1.00	2.35
Number of physicians	750 employed, 50 locums	3,700	905 (50% primary care, 50% specialty)	14,600 employed, 2000 non-employed	800
Acute care	Hospital is integrated with physician group	Hospital is integrated with physician group	No hospital	Hospitals jointly managed by Kaiser and Permanente physicians	Hospital is integrated with physician group
Teaching affiliation	University of Wisconsin	Mayo Medical School	N/A	Multiple medicals schools and internal residency programs	Texas A&M Health Science Center College of Medicine
Compensation structure	Salary, based on RVU production + incentives (teaching, research)	Predominately salaried, with small subset on RVU production	Compensation is based on work RVU productivity, with 2% of the annual compensation budget paid out for non productivity related good works. Market adjustments are also made.	Physicians are paid a salary, which is market-based. Physicians have an annual opportunity to share in a budgeted incentive pool, which depends upon the success of Kaiser Permanente in meeting its collective budget. Individual physicians are provided a share in any available incentive payment based on performance on quality and patient satisfaction measures. Physicians generally receive a modest increase in salary with longevity, assuming good performance.	Salary + incentives, which are based upon factors such as productivity, patient satisfaction, and research
HCI Index vs. all U.S. hospitals[10]	8.2	28.1	N/A	On average 25% below corresponding HRR averages	5.8
Gross patient revenue	$996 million	$10 billion	$1.3 billion	$40.3 billion[13]	$1.6 billion[12]
Net income [loss]	$9.2 million	$0 million	$95 million	$1.5 billion	$59 million[14]

Appendix C
How Do GEMs Fit Within the Movement Toward Accountable Care Organizations?

Given the diversity of health systems—with respect to geographic location, population served, workforce, and organizational structure—experimentation is needed across the country to derive and apply lessons from different models to achieve accountable care. Some communities and provider organizations are currently experimenting with various models of real or virtual integration. The GEM is an example of an established model that achieves outcomes consistent with the goals inherent in the accountable care organization (ACO) concept. The lessons learned from GEM organizations can inform the efforts to establish both similar and new models of integrated care. To understand how the GEM model fits within the movement toward ACOs, AcademyHealth asked ACO thought leaders John Bertko, of RAND and the Brookings Institution, Elliott Fisher, of Dartmouth Medical School, Mark McClellan, of the Brookings Institution, and Aaron McKethan, also of the Brookings Institution, to reflect on how the GEM can inform and facilitate efforts to implement ACOs, and to discuss policy levers that would promote the movement toward ACOs.

Attributes of GEMs That Are Most Important for ACOs

The ACO thought leaders believe that GEM systems would certainly fit within the parameters of an ACO model. While many of the attributes of the GEM are important for achieving the collaborative care sought in the ACO model, not all are necessary for organizations to become ACOs. For example, employing physicians is just one of several possible ways to achieve-high quality, low-cost care—the key task is to design better alternatives to the incentives inherent in the current fee-for-service payment system. The ACO thought leaders suggest that formal contracts between provider organizations, such as independent practice associations (IPAs) and hospitals, may be able to achieve the desired alignment of incentives; in such contracts, providers would agree to work together, implement some type of internal payment mechanism that supports the greater goals of the ACO, collaborate to achieve high-quality care, and develop performance measures that are reflected in compensation. Some GEM leaders, on the other hand, believe that virtual ACOs will not be enough to achieve high-quality, low-cost care. While they believe that the ACO concept is good and should be promoted, they suggest that the more integrated organizational models will be more adept at achieving high-quality, low-cost care.

The physician leadership, physician accountability for the group's patients, and selectivity that are key attributes of GEMs are also viewed by the ACO thought leaders as essential to the successful implementation of ACOs. They believe, however, that accountability for patient care can be achieved through the contractual process. The ability of GEMs to select the physicians they want in the group is important because it assures that selected physicians "buy in" to the overall goals of the organization. To assess whether an individual physician provides high-quality care requires having the capacity to generate accurate quality data for that physician.

The ACO concept is considered by the thought leaders to be a facilitator in achieving high-quality, low-cost care, rather than the sole solution for improving the quality of care. Mechanisms to achieve care coordination and disease management are needed to realize desired results, and the ACO model would provide an environment that supports such practices. The GEM already has many of those mechanisms in place. In fact, the GEM may be one of the more successful existing examples of an ACO. A Robert Wood Johnson Foundation and Urban Institute brief by Kelly Devers and Robert Berenson lists some of the organizational models that could potentially function as ACOs and the extent to which each model meets desired characteristics of more structured and accountable systems (see table). The authors note that the long-term success of ACOs is dependent on the ability to address the financial, organizational, regulatory, and legal barriers to implementing such entities.[15]

Organizational Models That Could Serve as Accountable Care Organizations

Provider Type	Ability to provide or manage care across continuum	Ability to plan budgets and resource needs (accept and manage non-FFS payment)	Provider inclusiveness	Level of performance accountability
IPA	Low/Medium	Medium	High	Medium
Multispecialty group	Medium/High	Medium	Low/Medium	Medium/High
Hospital medical staff organization	Medium	Low/Medium	Medium	Low/Medium
PHO	Medium/High	Medium/High	Low/Medium	Medium/High
Organized or integrated delivery systems	Medium/High	Medium/High	Medium	Medium/High
Virtual approach–extended hospital medical staff	Medium	Low/Medium	High	Low

Source: K. Devers and R. Berenson, "Can Accountable Care Organizations Improve the Value of Health Care by Solving the Cost and Quality Quandaries?" The Urban Institute/ The Robert Wood Johnson Foundation, Timely Analysis of Immediate Health Policy Issues, Oct. 2009.

Barriers to Forming ACOs and Ways That the GEM Model Can Help

The ACO thought leaders believe that transitioning private practice physicians into more organized systems of care will be one of the greatest challenges to forming ACOs. Not only are there technical and legal barriers, such as drawing up contracts between providers and organizations, but there are also challenges relating to physician support for the concept. These thought leaders believe there is a sense of doubt and skepticism among many providers that moving toward such models of care will achieve the desired outcomes. Many physicians are also concerned that public reporting will increase physician liability. As community providers begin trying to implement ACOs, one of the biggest challenges they face is putting in place specific strategies that improve quality and decrease costs.

To encourage physicians to join more organized systems of care and to attain the critical mass necessary for the viability of such organizations, it will be important to provide physicians with a supportive environment. Many of the GEM organizations, for example, offer incentives for professional development, teaching, and research, which many physicians value. In addition, physicians practicing within a GEM organization receive professional support through periodic reviews, discussions about quality improvement and teamwork, relatively stable compensation, and administrative support.

Policy Facilitators

Implementing accountable, coordinated care will be very difficult in the current fee-for-service payment environment. To encourage such care, the ACO thought leaders believe that policymakers should consider a variety of payment models to provide incentives for participation and promote collaboration across providers. Such payment changes should align incentives, provide supportive work environments, promote HIT implementation and adoption, and provide the opportunity to receive upside bonuses based on performance measures. While physicians could remain in fee-for-service, given the value achieved by more collaborative systems of care, new models of payment should make fee-for-service a less desirable option and reward higher-quality care.

Forming integrated systems of care will take substantial time and resources. To encourage movement toward ACOs, the ACO thought leaders proposed that the federal government should offer planning grants and technical assistance to organizations interested in integrating care. Planning grants would allow organizations interested in

integrating care components the opportunity to assess feasibility and then begin planning to implement an ACO in their area. Once community providers decide to form such an organization, those who have already achieved successful models of integrated care, such as the GEMs, could be very helpful in providing both encouragement and technical assistance. Technical assistance could include the provision of proven short-term strategies to reduce costs and improve quality or analytic support. Moreover, GEM leaders could assist others with developing a governance structure—including how to involve the community in governance—and structuring physician compensation. Many of the GEM leaders at the colloquium believe strongly in the efficacy of this model and expressed a willingness to participate in technical assistance activities where their guidance and experiences could be translated to other organizations trying to achieve such models of care.

Technical assistance for forming ACOs could also be structured similarly to the Department of Agriculture's Cooperative Extension Program model, such as the model now being used to foster deployment of HIT.[16] This federal/state, public/private collaborative model designates an individual to provide technical assistance to farmers within a county, and has been successful in disseminating innovative farming practices.[17] The Health Information Technology Extension Program is seeking nonprofit regional centers to redesign physician practices and workflow to facilitate "meaningful" use of HIT. [18] Similarly structured technical assistance could be provided to physician practices seeking to join an ACO. For example, small groups of experts, which could include practitioners, hospital administrators, or actuaries, scattered throughout the United States would "train the trainers" to provide regional technical assistance to entities forming ACOs. National centers and experts could support these regional extenders with payer data and help with the widespread diffusion of novel best practices. Eventually, each state would have at least one regional extender, with larger states having more.

Funds available for HIT implementation through the American Recovery and Reinvestment Act of 2009 (ARRA) provide an opportunity for communities to think strategically about how to use the funds to promote integration. States and localities, for example, could provide ARRA funding for HIT to providers that participate in an ACO. In addition, multipayer regional health information organizations (RHIOs) or health information exchanges that share data across providers could promote collaboration. GEM leaders could also provide states with their observations on what constitutes meaningful HIT.

The ACO thought leaders agreed with the GEM leaders that enterprise liability may reduce concerns regarding public reporting and liability and promote integration. Enterprise liability could be coupled with other incentives such as HIT and providing liability protection for processes that meet evidence-based guidelines. For example, in 1990, providers, consumers, and payers created the Maine Medical Liability Demonstration Project, which developed practice guidelines for physicians in four specialties, with physicians who followed these guidelines being protected from medical liability.[19] The ACO thought leaders noted that another potential legal model to explore and develop further as a strategy for reducing physician liability is the rebuttal presumption of non-liability. This legal concept holds that physicians who practice as a part of an ACO provide high-quality, evidence-based care, and therefore should not be presumed to be negligent in the provision of that care. This rebuttal does not negate a patient's ability to seek damages as a result of provider negligence, but would place greater burden on the patient to prove a provider's negligence.[20]

Next Steps

Some organizations—like the GEMs—currently have the organizational capacity to participate in the ACO initiatives outlined in the Patient Protection and Affordable Care Act. Others may need more time to develop that capacity and to determine which model to replicate to suit the environment in which they practice and the population for which they are responsible. To move forward, policymakers could consider a two-track process for implementing accountable care by allowing organizations and communities that already achieve the goals of ACOs to be part of the first

phase of an ACO pilot effort, while experimenting with different accountable care models, such as IPA or community-based models, that could be organized and replicated in other areas. Once additional successful models have been identified and implemented, policymakers could promote continued learning and innovation within these organizations by forming learning networks. It is important to note, however, that underlying ACOs is the presumption that they are eligible to share in savings achieved by Medicare if they meet certain quality and cost criteria. Meeting the definition of an ACO might make an entity eligible for some planning funds, technical assistance, and HIT subsidies, but its long-term success will depend on proof of superior performance.

NOTES

1. A. Shih, K. Davis, S. Schoenbaum, A. Gauthier, R. Nuzum, and D. McCarthy, *Organizing the U.S. Health Care Delivery System for High Performance* (New York: The Commonwealth Fund, Aug. 2008).
2. Ibid.
3. "H.R. 3590: Patient Protection and Affordable Care Act." Also see http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h3590enr.txt.pdf.
4. See Appendix B for a listing of GEMs' Hospital Care Intensity index percentage compared to all hospitals in the United States from the Dartmouth Atlas of Healthcare.
5. This issue brief is derived, in part, from a meeting of representatives of group employment model practices (see Appendix A). No attempt was made to create a census and a random sample of organizations meeting certain criteria. Furthermore, we did not attempt to assess whether other organizations, such as group practices in which the physicians are not employees, perform like the GEMs described here.
6. E. Boukus et al., "A Snapshot of U.S. Physicians: Key Findings from the 2008 Health Tracking Physicians Survey," *Data Bulletin*, No. 35 (Washington, D.C.: Center for Studying Health System Change, Sept. 2009).
7. The Hospital Care Intensity Index, or HCI, included in the Dartmouth Atlas of Health Care, reflects both the amount of time spent in the hospital and the intensity of physician services delivered in the hospital. It enables comparison of the intensity with which hospitals treat patients at the end of life based on two variables: the number of days spent in the hospital and the number of physician visits they experienced as inpatients. For each variable, the ratio of a given hospital's utilization rate to the national average was calculated, and these two ratios were averaged to create the index. Thus, a higher score indicates a higher relative level of inpatient care intensity, and a lower score indicates a lower relative level of intensity.
8. R. F. Leibenluft and H. S. Luft, "Health Reform and Market Competition: Opportunities and Challenges," Antitrust & Trade Regulation, The Bureau of National Affairs, 2010.
9. Data from the matrix were obtained from the American Hospital Directory (http://www.ahd.com), the GEM Web sites, and the Dartmouth Atlas of Health Care's "Hospital Care Intensity Index," (http://cecsweb.dartmouth.edu/atlas08/datatools/hci_s1.php) and were self-reported by GEM leaders.
10. See note 7 on HCI above.
11. Lakeview Medical Center is owned by Marshfield Clinic, although it is not the largest hospital with which Marshfield Clinic works, and it is not a tertiary referral center. The largest hospital at which Marshfield Clinic providers admits patients is St. Joseph's hospital, owned by the Ministry Medical Group. St. Joseph's hospital is a tertiary referral hospital, and Marshfield Clinic providers are on the medical staff.
12. Scott & White's operating revenue.
13. Kaiser Permanente's operating revenue.
14. Scott & White's operating income.
15. K. Devers and R. Berenson, "Can Accountable Care Organizations Improve the Value of Health Care by Solving the Cost and Quality Quandaries?" The Urban Institute/The Robert Wood Johnson Foundation, Timely Analysis of Immediate Health Policy Issues, Oct. 2009.
16. T. Bodenheimer et al., "A Lifeline for Primary Care," *New England Journal of Medicine*, June 25, 2009 360(25):2693–96.
17. Ibid.
18. "Funding Opportunity Announcement and Grant Application Instructions," Health Information Technology Extension Program: Regional Centers Cooperative Agreement Program, Office of the National Coordinator for Health Information Technology, Department of Health & Human Services, 2009.
19. "Medical Malpractice: Maine's Use of Practice Guidelines to Reduce Costs," Report to the Honorable William S. Cohen and the Honorable George J. Mitchell, U.S. Senate, U.S. General Accounting Office, Oct. 1993.

[20] Douglas A. Hastings proposes that the rebuttal presumption could be used with regard to clinical integration. He suggests that physicians who collaborate to improve quality and decrease costs through evidence-based measures are presumed compliant with laws such as physician self-referral and antitrust laws. See D. A. Hastings, "Addressing the Legal Issues in Achieving Quality and Cost Efficiency: The Need for Rebuttal Presumption," *Bureau of National Affairs Health Law Reporter*, June 4, 2009 18(22).

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