Accountable Care Organizations May Have Difficulty Avoiding The Failures Of Integrated Delivery Networks Of The 1990s

ABSTRACT Accountable care organizations are intended to improve the quality and lower the cost of health care through several mechanisms, such as disease management programs, care coordination, and aligning financial incentives for hospitals and physicians. Providers employed several of these mechanisms in forming the integrated delivery networks of the 1990s. The networks failed, however, because of heavy financial losses stemming from hospitals’ purchase of physician practices and their inability to align incentives, garner capitated contracts, and develop the infrastructure to manage risk. Although the current mechanisms underlying accountable care organizations continue to evolve, whether and how they will have an impact on quality and costs remains open to question. Care coordination and information technology are proving more complicated and expensive to implement than anticipated, providers may lack the ability to implement these mechanisms, and primary care providers are in short supply. As in the 1990s, success depends on targeting specific populations, such as people with multiple chronic conditions who need and may benefit from coordinated care.
Accountable care organizations as well as disease management programs and capitated risk contracts. The networks lacked a large, salaried multispecialty group of physicians, an insurance vehicle, and experience in managing risk-based contracts. Thus, they were less tightly bound together than staff and group model health maintenance organizations, such as Kaiser and Group Health. Although there were some exceptions, the integrated delivery networks were generally regarded as unsuccessful at improving quality or lowering cost.

There is enthusiasm this time that reforms along comparable lines will work. Much of the enthusiasm stems from the following two assumptions about accountable care organizations: that better care coordination will improve quality at any given cost, and that the organizations will lower Medicare’s rate of spending growth. However, the parallels with the disappointing 1990s seem quite strong to us, raising our concern that the fate of the organizations may resemble that of the earlier integrated delivery networks.

Accountable care organizations face daunting challenges. First, it is unclear what capabilities they possess to affect quality and cost. Second, even if these capabilities exist in theory, it is unclear whether provider organizations that excel at them will actually emerge.

In this article we ask how the current proposals differ from the earlier failed models and whether any of the differences are large enough to yield better results this time. First, we review the similarities and differences between integrated delivery networks and accountable care organizations. Next, we describe the capabilities that the organizations need to deliver on quality and cost, and we review the evidence on their chances of succeeding. We then consider whether providers can make the necessary changes, given their record of strategic change. We conclude by discussing the Achilles’ heels of accountable care organizations and what the future is likely to hold.

**Boldly Charging Into The Past?**

Today’s accountable care organizations strongly resemble the integrated delivery networks of the 1990s. For example, both models create a care continuum and involve horizontal consolidation of hospitals; both may also create vertical integration of hospitals, physicians, and providers of postacute care (Exhibit 1). Accountable care organizations and the older integrated delivery networks both had support from federal legislation to pursue what is now called the “Triple Aim” of improved quality of care, improved population health, and reduced cost.

The Clinton administration’s health plan called for the creation of purchasing cooperatives where people without large-group insurance could buy coverage. Through local insurer-provider collaborations, health plans and providers were to form “accountable health partnerships,” which would integrate the financing and provision of health care. Despite the failure of the Clinton plan to become law, the plan spurred the formation of integrated delivery networks for the population with commercial insurance.

The integrated delivery networks of the 1990s did not deliver on their promises for a variety of reasons. They lacked the information technology, such as electronic health records and data on claims, needed to manage risk contracts; they overpaid physicians for their practices; they acquired hospitals without achieving economies of scale; and they failed to coordinate care for the population most in need, the chronically ill.

They also entered capitated contracts on a piecemeal basis with a few private insurers, rather than with payers that covered a large portion of their patients. As a result, newer risk-based payment methods were few and variable. This variation led to mixed or conflicting incentives for providers: Although some payments were based on capitation (global or partial), most remained fee-for-service.

Finally, although they were labeled integrated delivery systems as well as networks, most of the organizations did not really take a systems approach that involved integrated organizational planning for everything from hiring and other

### Exhibit 1

<table>
<thead>
<tr>
<th>Type of similarity</th>
<th>Specific similarities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Origin</strong></td>
<td>Encouraged by federal legislation</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Focuses on “Triple Aim” (see Note 3 in text)</td>
</tr>
<tr>
<td></td>
<td>Requires start-up firms with new organizational structures such as physician-hospital organizations</td>
</tr>
<tr>
<td></td>
<td>Requires scale, capital, and systems of care</td>
</tr>
<tr>
<td><strong>Care</strong></td>
<td>Develops a continuum of care</td>
</tr>
<tr>
<td></td>
<td>Emphasizes care coordination</td>
</tr>
<tr>
<td></td>
<td>Focusses on disease management</td>
</tr>
<tr>
<td><strong>Payment</strong></td>
<td>Focuses on population health management</td>
</tr>
<tr>
<td></td>
<td>Escapes the volume incentives of fee-for-service</td>
</tr>
<tr>
<td></td>
<td>Relies on risk contracting, capitation, and employed physicians</td>
</tr>
<tr>
<td><strong>Providers</strong></td>
<td>Uses centralized contracting for multiple providers in the network</td>
</tr>
<tr>
<td></td>
<td>Encourages horizontal consolidation of providers</td>
</tr>
<tr>
<td></td>
<td>Encourages vertical integration of providers</td>
</tr>
<tr>
<td></td>
<td>Focusses on primary care providers</td>
</tr>
<tr>
<td></td>
<td>Places premium on physician alignment</td>
</tr>
</tbody>
</table>

**Source** Authors’ analysis.
personnel matters to physician culture. Instead, they bolted together various providers, such as doctors and hospitals, and mechanisms, such as disease management and population health management, hoping the combinations would work.

Accountable care organizations differ from integrated delivery networks in some important ways (Exhibit 2). For example, unlike the networks, accountable care organizations rely heavily on health information technology, data analytics, and decision support systems. They foster alternative payment methods, including bundled payments and shared savings—although it should be noted that most of these methods were present in, or at least contemplated for inclusion in, integrated delivery networks.

Finally, there is new management language that focuses on disruptive innovation, described below, and chronic care management. And there is an interest in process improvement such as “Lean manufacturing,” which emphasizes removing waste from the system.

Perhaps the biggest difference, however, is the impetus from the demand rather than the supply side. Private-sector providers and payers have developed commercial pilot accountable care organizations based on existing managed care models—for example, health maintenance organizations—in markets where such models already predominate, such as California, and increasingly in markets where they don’t, such as Illinois, Massachusetts, and northern Virginia.

Private-sector approaches, however, are not the main focus of the Affordable Care Act. The imprimatur for accountable care organizations comes from the Centers for Medicare and Medicaid Services (CMS), which—following the provisions of the Affordable Care Act—encourages such organizations of providers to serve the Medicare population. CMS is patron and protector of the current restructuring effort, seeking to bring costs down to help alleviate the federal deficit. This gives the accountable care organization movement a greater sense of urgency and political approbation.

Another difference this time around is the lack of consensus over what should be the new entities’ organizational core—a hospital system, physician group practice, or some wholly new type of organization—and over what the new entities should do, or stop doing, to reduce spending and how they should control out-of-network utilization. In contrast, in the 1990s there was some consensus that capitated contracting between insurers and integrated delivery networks (or between payers and health maintenance organizations) would cut costs by reducing hospital admissions and inpatient days, and by restricting out-of-network utilization.

### Needed For Success: Provider Capabilities

The Brookings Institution has enumerated several principles for both Medicare and private-sector accountable care organizations, including patient focus, provider accountability, transparency of performance, and payment reform. Brooking suggests that pursuing these principles will help providers to improve quality, control spending, and manage risk.

To comply with these principles, accountable care organizations must develop new infrastructure and capabilities; Exhibit 3 provides one list of potentially important resources. For example, the organizations need to invest in information technology, develop new governance structures and organizational processes, and institute cultural changes.

### WHICH CAPABILITIES MAKE A DIFFERENCE?

Some of the capabilities listed in Exhibit 3 have been shown to be necessary for cost-effective care, but the importance and effectiveness of others is unknown or questionable. Moreover, effective implementation requires a systems approach in which the needed capabilities are com-
have not promoted cooperation, improved quality, contained costs, or integrated clinical care. The history of hospital-physician relationships reveals conflicting goals, clinicians’ preference for remaining independent, and increasing physical separation between hospital practice sites and physician practice sites. Nevertheless, some organizational models, such as large medical groups that align physicians in different specialties, and some financial models, such as bundled payments that align the financial incentives of different providers, show promise of quality improvement and cost containment.11

**CARE COORDINATION** Coordination among multiple providers has long remained an elusive goal. In 2002 CMS funded fifteen demonstrations of care coordination for Medicare populations under the Medicare Coordinated Care Demonstration. Only three sites reduced patient costs and admissions, and even in those sites, there were no net savings to Medicare after factoring in fees for care coordination. Moreover, only one site—Health Quality Partners—is still operating under the demonstration and continues to be evaluated by CMS.

Evaluators concluded that care coordination alone “holds little promise of reducing total Medicare expenditures for beneficiaries with chronic illness.”12 Researchers studying another multicenter trial of care coordination similarly found little impact on utilization.13

These demonstrations offer several lessons. First, the programs demonstrated positive but modest impacts only for Medicare beneficiaries with multiple treatable chronic conditions and very serious illness; they were not effective for the broader low-risk Medicare population. Second, successful sites shared certain characteristics, including explicit transitional care models; timely information on acute episodes; patient self-management education; nurse coordinators; and intensive interactions among patients, physicians, and coordinators. The generalizability of any feature associated with the one continuing program has not been demonstrated.

At the same time, care coordination for Medicare patients poses some daunting challenges for integrated delivery networks that are not as established and dominant as Geisinger Health System, Intermountain Healthcare, and Advocate Health Care, and thus have not had the time and resources to develop these capabilities. For example, Medicare fee-for-service beneficiaries see an average of two primary care providers and five specialists across four sites of care annually.14 A physician treating 257 Medicare patients would have to deal with up to 229 other physicians practicing in 117 care sites.15

Care is thus dispersed across multiple practi-
tioners in multiple specialties practicing in multiple sites. To paraphrase the saying popularized by Hillary Clinton, “it takes a village” to coordinate care. However, it may not be easy to coordinate such a large village.

Patients with multiple chronic conditions use an even larger number of providers and have lower percentages of visits to their assigned primary care physicians than other patients do. Physicians will be challenged to coordinate care for such patients unless accountable care organizations can drastically reduce the number of providers patients can choose among. This is important because, at any one time, a small number of chronic patients account for most of Medicare’s spending.16

DISEASE MANAGEMENT Providers have long experimented with disease management programs that identify patients with chronic conditions and then monitor and educate those patients to better manage their conditions. Despite two decades of efforts, net program benefits—in terms of health or money—have remained elusive. The Congressional Budget Office found insufficient evidence that disease management programs for Medicare can even pay for themselves, concluding that any reduction in the cost of care is tempered by implementation costs.27 Such programs sometimes improve patients’ functional status but do not save money.18

Researchers summarized the experience of nine demonstration projects, many of them disease management demonstration programs, that have been funded by CMS and its predecessor agency since 1999.19 There was a net increase in costs in most programs, no widespread evidence of improved compliance with evidence-based care, and no evidence of behavioral change by patients. CMS concluded that how a program is implemented and its willingness to undergo continual refinement are critical to overcoming operating problems in these programs.19

Thomas Bodenheimer and Rachel Berry-Millett reached similar conclusions in their review of care management programs for patients with multiple chronic conditions.20 Such programs may improve quality, but they have at best mixed impacts on cost and utilization.

Supporters of disease management argue that the results of good programs are not published in scholarly journals. Major insurers continue to experiment and believe that they have achieved success. Often, however, patient sample sizes in their experiments are too small or the research designs are too informal to qualify as publishable evidence. Other studies suggest that disease management can sometimes control spending for beneficiaries who fully participate over long periods of time.21 These findings, however, do not fully account for program costs and selection effects.

PATIENT-CENTERED MEDICAL HOMES The accountable care organization is designed to work in tandem with a patient-centered medical home, in which a team led by a primary care physician provides comprehensive patient services. According to advocates, the patient-centered medical home works best when treating patients who have high-risk chronic conditions and when using face-to-face interactions among patients, physicians, and care coordinators.

Evidence suggests that patient-centered medical homes improve certain aspects of quality, such as prevention and chronic disease management; improve the patient’s experience; and reduce the utilization of the emergency department.22 By achieving these results, the homes bend the cost trend for a while and address the “Triple Aim” of improving care for individuals and populations and bringing costs under control.3 Much of this evidence comes from dominant, well-established care networks.23 Evidence from Seattle-based Group Health, for instance, indicates that realizing these improvements may require large staffs, strong institutional management, and the capacity to manage change.24

Demonstration projects suggest that any improvements rest on long-term practice transformation, an internal capability for organizational learning, development by physicians of a willingness to collaborate and function as a part of a care team, and a multiyear commitment to change. Most interventions to redesign physician practices do not meet such expectations.25

HEALTH INFORMATION TECHNOLOGY Perhaps no single element of accountable care organizations has received as much attention, funding, and enthusiasm as information technology. Recent reports have tempered expectations, however.

Research conducted on decision support systems; computerized physician order entry; and electronic health records, in which the prior two components are embedded, reveals mixed effects on cost and quality.26 Overall, the evidence suggests that information technology is necessary but insufficient to improve outcomes.

CLINICAL DECISION SUPPORT SYSTEMS: Decision support systems might increase quality by improving physician decision making, reducing medication errors, and facilitating the prevention and use of evidence-based recommended therapy.27 System effects are stronger for increasing preventive care than reducing utilization.28 Evidence on the benefits of diagnostic assistance offered by electronic systems is mixed, partly...
because physicians often ignore the systems’ advice.27

Theoretically, decision support systems can reduce adverse drug events and thereby reduce costs, but evidence of the effects on costs, testing, and clinicians’ time is again mixed.27 The Agency for Healthcare Research and Quality concluded that “it is unlikely that there will be any major improvements in the quality and cost of care from the use of health [information technology] without proper implementation and use of [clinical decision support systems],” which itself is a challenge.27

►COMPUTERIZED PHYSICIAN ORDER ENTRY: Computerized physician order entry can reduce costs and improve quality by reducing medication error rates,29 but evidence of this often comes from self-selected advanced integrated delivery networks with customized systems. Literature reviews30 report mixed success of the technology in averting adverse drug events, increasing adherence to guidelines, and prescribing efficiency.

►ELECTRONIC HEALTH RECORDS: Evidence on electronic health records and their impact on quality and cost is also mixed.31 A 2006 review reported that favorable evidence came from advanced integrated delivery networks whose histories and capabilities differ markedly from those of other providers and whose results may not be generalizable.32 A more recent review reports positive or mixed results from studies since 2007.33 There continues to be little evidence of the records’ cost-effectiveness or their ability to support such components of the accountable care organization as the patient-centered medical home.

Research suggests that provider organizations implementing electronic health records need to make a series of concomitant changes to realize the benefits of the records and avoid undesired consequences.34 The new technology must be blended into the social system, workflow, and physician culture of the organization. Achieving this involves a heavy emphasis on the implementation of parallel changes in people and work processes, and on the interoperability of information systems across care settings.35

PAY-FOR-PERFORMANCE AND SHARED SAVINGS

The shared savings approach of accountable care organizations parallels that of the 2005–10 Medicare Physician Group Practice Demonstration.36 Although all ten participating groups reached prespecified benchmarks on most quality measures, only five generated any savings, and only two generated enough savings to qualify for bonuses in all five years. There is also some debate as to whether the project caused the favorable results.37

Previous reviews of pay-for-performance programs suggest at best mixed results. Data from a large health maintenance organization contracting with physician groups in California38 show no improvement in outcomes and no transformation of care. Data from a large medical foundation39 likewise show no quality improvement. A RAND analysis40 finds inconclusive evidence for any impact on patient outcomes, and a recent analysis of the Premier Hospital Quality Improvement Demonstration finds no long-term effect.41

SUMMARY

The evidence reviewed above suggests that components of accountable care organizations have limited and uncertain impact, especially on cost savings, and thus provide little support for the two postulates mentioned above: that better care coordination will improve quality at any given cost, and that the organizations will lower Medicare’s rate of spending growth. If the organizations increase “value” (quality or outcome divided by cost), at best they raise the numerator but do not lower the denominator.

The Lens Of Change Management

The Brookings Institution acknowledges that accountable care organizations face “a multitude of technical, legal, and analytic changes”40 to develop the capabilities listed in Exhibit 3. The list should give developing accountable care organizations and their advocates pause for reflection on several points.

First, from the perspective of strategic implementation, there is no guidebook to help providers develop a coherent system of these capabilities and implement them effectively.

Second, implementing all of the changes will require considerable money and time. Accountable care organizations will incur steep development costs—and lack revenues needed to finance the changes, because revenue may decline together with the volume of inpatient care while the organizations focus on implementing those changes. At the same time, CMS wants the organizations, within a three-year period, to assume upside risk via shared savings and downside risk by voluntarily repaying the agency for exceeding cost thresholds. In contrast, research on organizational change suggests a more realistic window is five to seven years.42

Third, the changes will require hiring new types of personnel such as care coordinators and information technology staff, as well as nurse practitioners and other health professionals who can provide care in collaboration with physicians. We have seen no model of a “flat” accountable care organization—one requiring no increase in numbers or layers of staffing.
Fourth, the organizations will need to ensure that all changes are internally congruent. Changes in the organizations’ infrastructure (adding the infrastructure features and capabilities in Exhibit 3) must be congruent with each another and matched by changes in people’s behavior and attitudes. In this way, the organizations are akin to a sociotechnical system that recognizes the complex interaction among the tasks people perform, the social groups they belong to, and the technology they use. Unfortunately, many organizations do not make the congruent set of changes needed to achieve superior performance when they undertake strategic initiatives.43

Providers’ ability to develop the needed capabilities is also uncertain because of their mediocre track record with strategic change.44 Some promising models of change, such as the application of Lean manufacturing techniques, still await peer-reviewed validation. Perhaps Lean approaches are akin to diet programs: They are good for you but hard to sustain, and the participants who succeed are not a random sample.

**The Achilles’ Heels Of ACOs**

**FOCUS ON PRIMARY CARE PHYSICIANS** Accountable care organizations rest on a foundation of primary care physicians who can coordinate all medical care for high-risk patients in addition to supplying their own services. Primary care providers need to function as gatekeepers for Medicare patients to curb utilization because the organizations are at financial risk.

Because advocates of accountable care organizations assume that primary care will play a critical role, they need to acknowledge the short-age and uneven geographic distribution of primary care providers nationwide. The percentage of primary care providers who accept new patients falls as one moves from the commercially insured population (84 percent) to the Medicare (61 percent) and Medicaid populations (42 percent).45

Physician shortfalls might be alleviated by the use of nonphysician providers, such as registered nurses and nurse practitioners.46 Although there is research supporting such concepts as nurse-led patient-centered medical homes, it is also true that systematic reviews of such substitution for physicians sometimes reveal negative results, including reductions in productivity, patient volume, and practice income.47

One concern is whether asking primary care doctors to coordinate care will require them to reduce the time they spend on direct patient care. A recent study suggested that physicians in the patient-centered medical home would need to work an additional 3.2 weeks per year to coordinate care for patients treated by specialists for seven chronic conditions.48 Another study showed that Swiss primary care providers wanted additional compensation in exchange for the decreased autonomy that they would experience if they collaborated more frequently with office staff and worked with other physicians in patient referrals.49 Another concern is whether primary care providers can accurately identify complex patients in need of coordinated care.50

**PHYSICIAN PRACTICE ORGANIZATION** Larger physician groups deliver care that is higher quality and more efficient, although the causal pathway is not well established.11,51 In contrast, smaller groups are less likely to utilize patient-centered medical home features such as chronic disease registries and nurse case managers.52

Unfortunately, the spread of large multispecialty groups has occurred at a glacial pace and been limited to certain states or regions. California is one of those areas.

The number of physician groups has remained stagnant for decades, as has the percentage of nonfederal physicians in the groups.53 Moreover, at least through 2006, the average size of a physician group practice has increased slowly. But the percentage of doctors in groups with a hundred or more members has remained at 1 percent since the late 1980s.54 Quick change is unlikely.

**OUT-OF-NETWORK UTILIZATION** Under the provisions of the Affordable Care Act, accountable care organizations will assign (“attribute”) patients to primary care providers based on which provider is expected to account for the majority of patients’ evaluation and management visits, according to data on prior utilization. This differs from the integrated delivery network contracting model, in which patients would explicitly be assigned to a physician gatekeeper. However, some patients with chronic conditions receive most of their care from specialists, who may not be accustomed to coordinating care.

This poses a problem for accountable care organizations. The roughly 20 percent of Medicare beneficiaries who have at least five chronic conditions usually seek care from and refer themselves to specialists.14 The opportunity for a primary care physician or a patient-centered medical home to coordinate care may thus be lost. If so, this factor will limit the ability of accountable care organizations to affect a huge portion of Medicare spending. In contrast to the older model, the primary care provider cannot directly control patient use of out-of-network providers but instead must rely on persuasion.

**DISRUPTIVE INNOVATION** Policy makers now...
put a good deal of reliance on “disruptive innovation,” such as retail clinics, to solve health care’s problems. Disruptive innovation offers products that cost much less than, but are more simplified and less technically capable versions of, the products they replace. The evidence is mixed as to whether they provide comparable quality in some dimensions at lower cost. Accountable care organizations may be considered the new disruptor on the block, but it is not clear that they offer a more simplified and lower-cost alternative to traditional models of delivering acute care that consumers would prefer.

Future Directions
What is to be done? First, it is important to realize that the path to knowledge begins with having realistic expectations. In the 1990s the ability of integrated delivery networks to achieve economies of scale and a seamless continuum of care was oversold. Today policy makers need to realistically assess and periodically revisit the promises and premises of accountable care organizations. We suspect that the organizations are not the magic solution (“silver bullet”), but perhaps they can be part of a wider array of efforts (“bronze buckshot”) to tackle the Triple Aim.

We ought to have realistic expectations about our ability to deliver on the Triple Aim. Prior to the publication of an article by Donald Berwick and coauthors in this journal, economists and others commonly referred to inevitable trade-offs between cost, quality, and access—what was then labeled the “iron triangle.” There is still no firm evidence that anyone knows how to achieve the Triple Aim. Recent evidence illustrates one crucial point: Improving quality for some conditions often increases costs. Second, just like the 1990s networks, accountable care organizations need to target specific population segments that would benefit most from coordinated care.

Third, much of the evidence shows that strategic change needs to be carefully implemented. Unfortunately, implementation and execution are poorly understood processes. Providers may need to put greater effort into change management going forward.

Medicare’s need to slow the growth of its payments will surely influence its conduct of the accountable care organization program. We suspect that Medicare will move toward providing what is effectively a budget-determined capitation payment, either explicitly or as an end-of-year adjustment to accumulated fee-for-service payments.

What does that imply for the emergence, performance, and success of accountable care organizations? It requires a reconsideration of our earlier conjecture that the organizations will be more likely to improve quality than to lower costs. With intense financial pressure from Medicare generated by lower Medicare payments, the organizations may be forced to limit costs—and, if they cannot do so by ridding their systems of waste, perhaps to do so by achieving fewer quality improvements.

More generally, Medicare may wish to use accountable care organizations to contain costs. In effect, the organizations will be told, “Here is how much money you will get per patient, and you are not allowed to charge any more; do the best you can with that.”

This draconian incentive system will truly constitute a test of how much waste there is in the system.

The findings in this article were presented at the Malcolm MacEachern Symposium at Northwestern University, in Evanston, Illinois, May 11, 2011. The authors thank John Glaser and Dennis Cortese for their comments on the initial draft of this article, and Jonathan Bor, Sarah Dine, Larry Wheeler, and two anonymous reviewers for their comments on subsequent drafts.

NOTES
7 There was considerable variation in the 1990s health maintenance organization and integrated delivery network models, market penetration, and provider payment methods. Although some health maintenance organization models outperformed others on cost, integrated delivery network models all had disappointing results.
In this month’s *Health Affairs*, Lawton Burns and Mark Pauly offer an analysis and commentary suggesting that today’s accountable care organizations may encounter the same failures that doomed many integrated delivery networks in the 1990s. They sift the evidence and conclude that accountable care organizations will have difficulties similar to those encountered by earlier organizations in such areas as aligning incentives among providers and managing risk.

The authors are also dubious that accountable care organizations will be able to muster enough primary care providers in many parts of the country, and skeptical that doctors will cede authority to others. And although features such as care coordination and information technology may help improve the quality of care provided, the authors see little likelihood that they will lower costs.

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Pauly has made important contributions to the fields of medical economics and health insurance, and he wrote a classic study on the economics of moral hazard that was the first to point out how medical insurance can drive patients’ use of medical services. He has examined national health care reform, the individual insurance market, the effects of poor health on worker productivity, and the market for voluntary health insurance in developing countries. He received a doctorate in economics from the University of Virginia.