ABSTRACT: To address widespread deficiencies in the quality of health care, the authors argue that health care organizations need to be able to make a “business case” for improving quality—a compelling rationale for financial investment in quality improvement programs. The authors’ framework for such a business case is organized around three broad areas: direct financial considerations, strategic considerations, and internal organizational considerations. Within these categories, they offer a total of 10 specific business case arguments, with examples, for investing in quality improvement.

Quality of care has become an issue of paramount importance to the U.S. health care system. In the words of a 2001 report from the Institute of Medicine of the National Academy of Sciences:

The American health care delivery system is in need of fundamental change. . . . Health care today harms too frequently and routinely fails to deliver its potential benefits. . . . Quality problems are everywhere, affecting many patients. Between the health care we have and the care we could have lies not just a gap, but a chasm.

For this fundamental change to take place, health care organizations need to create a convincing “business case” for quality—a compelling rationale for an organization (health care insurers, providers, and state Medicaid agencies, for example) to make a resource investment. The framework described here enables organizations to develop a business case by explicitly recognizing a variety of direct and indirect benefits associated with specific quality improvement initiatives and systematically assessing the argument for them.
This is no easy task. A positive return on investment (ROI), perhaps the most compelling business case for any type of investment, is difficult to document for many quality improvement interventions. Organizations attempting to quantify expected ROI benefits are frequently limited by the fragmented nature of our health care system, financial incentives that are not aligned with quality, and the lack of current health services research findings to support an ROI calculation. Purchasers, insurers, and provider organizations may not possess the required data or the capacity to calculate a true ROI for a specific intervention. Finally, estimating indirect financial costs or savings related to a specific quality intervention can be challenging.

The good news is that it may be getting easier for organizations to construct a business case for quality. The Institute of Medicine’s reports on quality, the Leapfrog Group’s promotion of patient safety in hospitals, and the National Committee for Quality Assurance’s annual state of health care quality report have helped to create a more supportive climate. At the same time, enhanced information technology capabilities improve the ability to measure and document health care quality. As more purchasers and insurers reward organizations for performance, we may approach a “tipping point” that makes the business case convincing for an ever-broader array of quality improvement investments.

At present, however, the business case for quality improvement needs to be thoughtfully and effectively assessed. Organizations that consider a broad range of business case arguments will make more effective use of their limited resources and will close the quality chasm faster.

**A BUSINESS CASE FRAMEWORK**

Practical experience demonstrates that many organizations see and act upon a business case for quality despite the lack of a positive ROI. Consequently, these organizations must be taking other factors into consideration. The framework presented here creates a means to recognize quality’s “soft” benefits: outcomes and consumer satisfaction that are not readily quantifiable and are not typically captured in an ROI calculation. By including nonfinancial, or indirectly financial, considerations in the business case argument, organizations can more accurately gauge the overall value of quality improvement investment for the organization.

The framework described below consists of 10 specific business case arguments that health care purchasers, insurers, and providers should, and often do, consider when determining whether or not to invest in a specific quality improvement initiative. The 10 arguments fall within three categories: direct financial considerations, strategic considerations, and internal organizational considerations.

Organizations weigh business case considerations differently, and not all potential arguments will be relevant for every organization or every initiative. Different organizations may choose to utilize selected components of the business case framework. In addition, some components will be more important than others at certain points in time when constructing a business case argument. Although a positive ROI presents a compelling business case to all organizations, a business case argument pertaining to organizational image, reputation, and product differentiation may be more meaningful in a competitive market than in a noncompetitive market. In addition, in a competitive market, not all organizations can successfully make the same business case. A few of the business case examples described in this paper will be, to varying degrees, more compelling in competitive markets. However, they all have relevance in competitive and noncompetitive markets alike, and most can be successfully applied simultaneously by competing organizations within the same market.

A business case argument is usually more compelling when a quality improvement initiative can be shown to align both with direct financial
considerations and nonfinancial, or indirectly financial, considerations. An organization developing a business case should consider how it aligns with financial, strategic, and internal organizational objectives, as well as the combined strength of these three types of business case arguments.

**Direct Financial Considerations**

Business case arguments can include three types of direct financial considerations, described below in decreasing order of impact. ROI is the most powerful financial argument; the other two are less persuasive but may tip the balance where there is insufficient evidence to document a positive ROI. The direction and magnitude of the financial return, as well as the organization’s ability to calculate such a return with a certain level of confidence, are what distinguish the arguments.

All three can include an estimation of avoided costs and “bankable dollars.” For example, a hospital or medical group calculating the ROI for an investment that will reduce preventable medical errors should consider the legal, marketing, and organizational costs associated with such errors.(Legal costs could include legal fees, settlements, and higher malpractice premiums.) Adverse publicity could result in loss of market share and increased advertising costs. Organizational costs might include reallocation of staff time, less provider time for patient care, and increased staff hiring and training costs related to employee turnover. An organization’s business case argument should attempt to quantify these types of indirect costs.

1. **Return on Investment.** For our purposes, an ROI is evident if an organization realizes a financial return on an investment. The financial return can be realized in the short or longer term, but earlier returns have a higher value to the organization than later returns of the same magnitude. ROI may be realized “as ‘bankable dollars’ (profit), a reduction in losses for a given program or population, or avoided costs.”

How organizations are paid (e.g., per diem, case rate, capitation/premium) and whether they face direct financial incentive payments tied to performance affect the types of quality improvement investments for which a positive ROI is possible. For a medical group paid primarily on a fee-for-service basis, an investment shown to reduce providers’ administrative time could demonstrate a positive ROI only if, within a reasonable time frame, it generates sufficient revenues from additional patient visits to offset the costs of the investment.

A positive ROI can be so convincing that estimates of other business case returns may not be necessary. However, for many interventions a positive ROI is very difficult to document. In fact, it is only possible for quality improvement initiatives that are based on specific interventions known to improve the targeted outcome and for which research has demonstrated cost savings to the investing organization attributable to such outcomes.

Using health services research, a health plan could demonstrate a positive ROI for improved disease management for persons with uncontrolled diabetes. Data from a staff model HMO in Washington state suggest that a sustained reduction in hemoglobin A1c levels among adult diabetic patients with uncontrolled diabetes is associated with significant cost savings within one to two years. This research shows total health care costs from $685 to $950 less each year, on average, for each person in the cohort of improved patients for each of four years after the improvement in the glycemic control. According to related research, a health plan could create an ROI argument for an effective glycemic control program for diabetes patients at a cost that would be below the reduction in health care costs.**

Unfortunately, the type of health services research that quantifies net savings compared to a control group of patients is not readily available for most quality improvement interventions, and
different research articles may present varying evidence regarding the actual ROI. Absent such research, an organization should focus its efforts on identifying the direction and estimated range of the ROI, rather than the precise magnitude.

Health plans frequently have little choice except to base estimates of expected results on data provided in part by potential vendors. ROI estimates from disease management and predictive modeling programs are one example. A leading health plan evaluated (as a quality improvement investment) predictive modeling programs that would identify members in need of its well-developed care management or disease management programs. The plan reviewed the ROI expected from enhancing its ability to promptly identify candidates. Although the health plan could not reasonably estimate the size of the ROI based on the available data, it was confident that the ROI would be positive. That was key to the business argument, and the health plan is now subcontracting for predictive modeling. The plan is also tracking its experience to verify its ROI assumptions and inform future quality improvement investment decisions.

2. Reduced Expenditures or Cost Avoidance. In this second business case argument, an organization refers to well-supported research related to whether targeted quality interventions reduce expenditures or avoid costs. Unlike in a formal ROI argument, however, in a cost-reduction or cost-avoidance argument the organization is not able to definitively identify projected savings in excess of the costs of implementation, whether administrative costs or associated medical expenditures.

A cost avoidance argument has been used by Magellan Behavioral Health, a national managed behavioral health organization, to expand an intensive case management program. Magellan can clearly document to its satisfaction improved outcomes for clients enrolled in the program. Outcome measures demonstrate increased community tenure and improved health status for such clients, compared with clients’ tenure and health status prior to enrollment in the intensive case management program. These positive outcomes have enabled the organization to argue that it expects net savings as a result of reduced utilization and improved quality of care. Due, in part, to the lack of a control group, the insurer is not able to clearly demonstrate a positive ROI based on the incremental costs incurred and savings achieved. Still, Magellan has found that the cost avoidance demonstrated by the intensive case management program is a convincing business case for this quality improvement initiative.

3. Cost. In some cases, an organization may use cost as an argument for investing in quality improvement if it cannot convincingly use ROI or cost effectiveness. With this business case, the organization documents current or projected costs associated with an identified problem. This might be seen as the cost of doing nothing.

A risk-bearing provider organization interested in exploring a business case for reducing obesity might have a difficult time finding data that validate specific nonsurgical interventions to reduce the body-mass index of a population. The organization could use research conducted by the federal Centers for Disease Control and Prevention and others, however, to demonstrate the increasing incidence and costs of obesity. For example:

- Over half of all Americans are overweight or obese, and the prevalence of obesity has increased by 70 percent in the past decade.
- The mean annual health care spending for obese adults is an estimated 37.4 percent more than for persons of normal weight.
- Obesity-associated hospital costs for youths ages 6 to 17 increased an estimated 3.6 times from 1979 to 1999.
- If obesity continues to rise at its current rate, by 2020 about 20 percent of health care dollars
spent on people ages 50 to 69 could be consumed by obesity-related medical problems. Disability rates will increase by 1 percent per year more in the 50-to-69 age group than if there were no further weight gain.\textsuperscript{15}

Data such as these may suggest the importance of undertaking an initiative. For example, a group of county-based Medicaid health plans in California is collaborating on performance incentives for their providers as part of the Local Initiative Rewarding Results Collaborative. The health plans looked at the ROI arguments for a variety of quality improvement topics when evaluating which topics to select for the common performance incentives. Despite the lack of an ROI argument, the health plans initially selected obesity as a quality improvement topic due to the rapidly increasing prevalence of childhood obesity and its effect on the quality of life and cost of care for Medicaid members.\textsuperscript{16} The health plans’ goals included raising provider awareness of childhood overweight and obesity rates and acquiring tools for diagnosing overweight and obese children.\textsuperscript{17}

**Strategic Considerations**

An organization also may weigh strategic considerations related to its external environment and relationships.

4. **Conditions of Participation.** A regulatory or contractual requirement faced by a provider, health plan, or other entity often presents a compelling argument for making an investment of organizational resources. The potential loss of contracts, revenues, or market share related to lack of compliance with mandatory quality measures is just one example of how conditions of participation can create a business case for quality.

In the state of Vermont, Rule 10.000, “Quality Assurance Standards and Consumer Protections for Managed Care Plans,” has created a compelling business case for managed care plans in the state to invest in physician profiling and other quality improvement activities.\textsuperscript{18} If the managed care plans do not implement processes consistent with the state’s requirements, they risk state enforcement action and possible negative publicity.

A health plan might need accreditation from the National Committee for Quality Assurance (NCQA) to compete for an employer’s business—another example of a condition of participation that is part of a business case for quality. In October 2000, HealthNet of California, a health plan offered by members of the Pacific Business Group on Health (PBGH), let its NCQA accreditation lapse. HealthNet notified purchasers that it did not intend to renew its NCQA accreditation. PBGH issued a strong press statement against the plan’s intention, and some PBGH purchasers froze enrollment in HealthNet, communicated the plan’s lack of NCQA accreditation to its employees and the importance of accreditation, and offered additional 2001 health plan options from NCQA accredited plans. HealthNet promptly scheduled an NCQA survey and was accredited again by July 2001. In announcing its NCQA accreditation, Cora Tellez, HealthNet’s president and chief executive officer at the time noted: “As one of California’s leading managed care companies, achieving NCQA accreditation is very important to HealthNet. We’re pleased to have earned NCQA’s highest status designations, which highlight our commitment to quality for our members, physicians, employers, and business partners.”\textsuperscript{20}

Performance to certain quality standards might be required for a hospital to be designated as a center of excellence or be designated in a preferred tier of an insurer’s benefit plan. For years, hospitals seeking to contract with Anthem Blue Cross Blue Shield in Ohio, Kentucky, and Indiana have been required to meet quality standards identified by the insurer as part of its Hospital Quality Program. The standards address a broad range of quality-of-care measures, including clinical outcomes, patient safety, and hospital accreditation and licensure status. Hospitals scoring below Anthem’s minimum requirements must develop and imple-
ment corrective action plans in order to obtain and/or retain a contract with Anthem.\textsuperscript{22}

One state Medicaid agency executive has noted that conditions of federal financial participation create a business case for quality in Medicaid managed care. The executive indicated that in 2003, most of the state’s quality improvement resources were directed toward meeting the federal requirements related to oversight of Medicaid managed care plans as specified in the Balanced Budget Act of 1997. The bulk of regulatory requirements related to quality of Medicaid managed care plans were effective in August 2003.

5. Alignment with Explicit Performance Incentives. Beyond the minimum standards represented by conditions of participation, a growing number of organizations may face positive performance incentives for specific investments. An organization could consider a business case argument for quality improvement on the extent to which the organization is rewarded for such an investment, or the extent to which it could be penalized for lacking one. Rewards and penalties include direct contractual incentives, such as revenues linked to specific performance measures, and indirect incentives, such as a purchaser’s or health plan’s public release of comparative performance information for peer organizations in a given market.

As purchasers and consumers in more markets look for the value-added differences among health plans and providers, specific performance measures used by purchasers and insurers may constitute a business case for quality improvement in these measured areas.

Medical groups in California have explicit financial and nonfinancial incentives that affect the a business case for quality in areas measured, reported, and rewarded by the Pay for Performance (P4P) initiative. The P4P initiative is a collaboration of seven California health plans that have agreed to use common data and performance measures as the basis for their quality improvement incentives for medical groups.\textsuperscript{22} A single survey instrument is used to evaluate patient satisfaction. Also, Health Plan Employer Data and Information Set (HEDIS)-based clinical measures of breast and cervical cancer screening rates, asthma, diabetes, coronary artery disease, and immunizations are used to evaluate performance at the medical group level. Financial incentives vary across the participating health plans, but medical groups are rewarded for investments in information technology as well as for performance on the patient satisfaction survey and the clinical measures.\textsuperscript{22}

As more purchasers and health plans create substantial and explicit financial incentives linked to health plan or provider performance on standardized measures, a variety of health care organizations are able to create a business case for aligning internal and provider incentives with these external purchaser priorities for quality improvement.

6. Image, Reputation, and Product Differentiation. Organizations often recognize that image, reputation, and product differentiation on quality measures directly affect market share and the ability to attract members or patients. The organization with a better image and reputation benefits from increased member or patient volume, as well as an improved ability to recruit and retain high-quality staff and providers. Similarly, the loss of brand identity or reduced image and reputation if there is no investment can be considered as a factor in a business case.

This type of argument depends on the extent of external attention to specific quality measures. Thomas H. Lee, M.D., Network President of Partners Healthcare and CEO of Partners Community HealthCare, noted, “We want to retain our reputation for state-of-the-art care; if there is a successful quality intervention that is well known, we have to be doing it.” Partners is a leading integrated delivery system in Boston.

George Halvorson, chairman and CEO of Kaiser Foundation Health Plan and Kaiser
Foundation Hospitals, argues that, as more purchasers seek evidence of improved value for their health care dollars, leading insurers are already using product differentiation on prominent quality measures as a business case for quality improvement.

In the absence of external accountability to performance measures, organizations can capitalize on image and reputation by effectively disseminating information on superior performance. For example, during the 1990s, the Children’s Hospital and Health Center of San Diego (CHSD) invested in clinical pathways and outcomes management in order to increase market share by demonstrating excellence in clinical outcomes. In addition to improving care, the organization wanted to transform how stakeholders perceived CHSD. It succeeded in both. As the senior director of quality management noted, “There is no one else but Children’s that people now think of for [pediatrics], and it hasn’t always been like that.”

7. Relationship Development with Key Stakeholders. An organization’s desire to develop or strengthen relationships with key stakeholders is often critical and deserving of a business investment. Key stakeholders for a health plan include providers in its network, large purchasers, and consumers. For a Medicaid agency, members of the advocacy community and state legislators also could be key stakeholders.

A prominent hospital-based network devised a business case for a quality improvement investment based on the investment’s popularity with a physician group being courted to practice at the hospital, as well as the opportunity to generate goodwill with these and other physicians. A senior executive of the hospital system noted that this type of investment also strengthens the hospital’s relationship with physicians by sending the message that the hospital cares about physicians and quality of care, not just the bottom line.

The more successful stakeholder relationships, and the stronger business case arguments, involve collaboration (creating new value together), as distinct from mere exchanges (getting something back for what you put in). Nurturing relationships with key stakeholders also can open new opportunities for collaborative alliances that enhance the business case for quality in the longer term.

8. Strategic Positioning. A business case can be based on an organization’s desire to influence future activity or behavior. An organization could predict that the quality initiative will significantly improve the organization’s strategic position in the future, in part by changing the environment in which it operates. A strategic positioning argument in a business case is much more focused on achieving a specific objective than the previous component, relationship development, which is related to a general strengthening of key relationships.

For example, a Medicaid agency might implement a quality improvement initiative on the grounds that it is something in which the state legislature is interested. This investment not only could improve the Medicaid agency’s relationship with the legislature but also potentially avoid or minimize legislative mandates on the topic. One Medicaid agency cited the legislature’s interest in access to dental services as a compelling business case for investing in quality improvement initiatives designed to increase utilization of dental services.

Another example is CHSD’s effort to restructure payment arrangements based on its successful quality improvement initiatives. The hospital pursued a quality improvement investment strategy focused on clinical pathways and outcomes management even though the savings accrued mostly to insurers and other payers. Part of the hospital’s long-term strategy has been to use the outcomes and quality data demonstrating its successes to gain support from stakeholders for new payment methodologies through which the organization would share in the cost savings. The data have reportedly “generated a new kind of dia-
Dialogue, which has opened the door to partnering relationships with diverse stakeholders,...creating a basis for a new business model that repositions CHSD for the twenty-first century.”

**Internal Organizational Considerations**

Interests related to an organization’s internal environment constitute the third set of elements to be considered in assessing a business case.

9. **Relevance to the Organization’s Mission.** An organization may consider a quality improvement investment in light of its relevance to the organization’s mission. An organization might base a business decision partly on the mission of the organization, even when a portion of the mission may not be aligned with organizational financial objectives. For example, a hospital or health plan may choose a specific investment because the initiative aligns with its mission to improve the health status of people in the communities it serves. The larger the impact of the quality improvement initiative in terms of improved medical outcomes, and the greater the certainty of the entity’s ability to achieve the improved outcomes, the stronger the business case will be. Health care organizations make a business case that they have an obligation to these initiatives, sometimes regardless of cost so long as they do not threaten institutionalized viability.

For example, Excellus Health Plan states that its quality management program is intended “to support Excellus Health Plan’s mission by contributing to, and being recognized for, improving the quality of life in the communities in which it serves.” Similarly, a commercial HMO medical director in Massachusetts once stated that his organization was committed to effecting improvements in quality of care for Medicaid enrollees because it was the plan’s stated mission to serve all segments of the community.

Group Health Cooperative sustained its tobacco cessation program despite several years of operating in the red. Cheryl Scott, Group Health’s chief executive officer during difficult financial years, noted the difference between the clear economic case proving that tobacco cessation saved money in the long run and the traditional business case approach of looking to see if the premium decreased as a result of the cessation program.

Louise Liang, chief operating officer and medical director of Group Health from 1997 to 2001, commented on why she thought the cooperative had maintained this program over a difficult time period: “To an amazing degree, because it’s the right thing. This is an example of why Group Health is such a wonderful clinical environment, you would never be asked to do the wrong thing.”

10. **Impact on Internal Culture.** An organization might base a business decision on the message that a particular quality improvement investment sends throughout the organization. In this case, an organization assesses the likelihood that a highly visible quality improvement initiative, or series of initiatives, will motivate staff and providers not only to improve performance in the targeted areas, but also to help create an internal culture that promotes quality and excellence. This internal culture could also be viewed as helping to improve employee and provider morale, thereby increasing staff retention, reducing hiring and retraining costs, and energizing the physician and nurse managers in their roles as champions of the organization’s overall quality improvement initiatives and goals.

Sharp HealthCare in San Diego, an integrated, regional health care delivery system, launched what it refers to as “The Sharp Experience” in 2001, dedicating itself to “transforming the health care experience for employees, physicians, and customers.” According to Michael W. Murphy, the president and CEO, “This focus on purpose, worthwhile work, and making a difference lit a spark within Sharp team members that has led to increased employee, physician, and patient satisfaction, enhanced loyalty, and improved outcomes.”
CONCLUSION

A framework for a systematic assessment of a business case involves financial, strategic, and internal considerations in light of an organization’s mission and objectives. ROI is perhaps the most compelling business case. In some cases, the strength of the ROI argument alone may be sufficient for an organization to make a quality improvement investment decision. In health care, however, the availability of clear, positive ROI evidence is the exception rather than the rule.

The business case framework outlined in this issue brief provides a mechanism for an organization to consider a broad set of factors affecting a business case for quality. Not all factors will be applicable to every organization or to every quality improvement initiative being evaluated. In addition, organizations will weigh the specific factors differently.

Finally, a note regarding the role of health care purchasers: Purchasers have a responsibility for creating business cases for quality. As a condition of participation, they can expect minimum contracting standards and consider only higher threshold preferred providers. Purchasers need to create more financial and nonfinancial incentives for health care organizations to improve the quality of care. At the same time, they would be wise to eliminate incentives that impede quality. Incentives should extend through the entire chain, from purchaser to health plan to hospital and physicians. To enhance the business case for quality, performance incentives need to be meaningful for a broad set of providers across a range of indicators.

NOTES

1 Committee on Quality of Health Care in America, Institute of Medicine, Crossing the Quality Chasm: A New Health System for the Twenty-first Century (Washington D.C.: National Academy Press, 2001).

2 See also Committee on Quality of Health Care in America, Institute of Medicine, To Err Is Human: Building a Safer Health System (Washington, D.C.: National Academy Press, 1999).

3 See http://www.leapfroggroup.org.


10 Personal communications with Christine Wells of Magellan and review of Magellan materials, 28 January 2004.

11 Body-mass index is a height-to-weight ratio. People with a body-mass index of 30 or above are considered obese. Between 25 and 30 is considered overweight.


18 See http://www.bishca.state.vt.us/RegsBulls/hcaregs/INDEX_REGS_HCA.htm.


22 The seven plans are Aetna, Blue Cross of California, Blue Shield of California, Cigna HealthCare of California, Health Net, PacifiCare, and Western Health Advantage (http://www.iha.org), accessed March 2004.


25 Ibid.


27 See footnote 24.

28 Ibid.


31 Ibid.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the valuable assistance of Anne-Marie Audet, M.D., and Stephen Schoenbaum, M.D., of The Commonwealth Fund. The authors also acknowledge the contributions of the following individuals who participated in interviews with the authors during the development of draft versions of this framework:

Harris Berman M.D., Chairman Emeritus, Tufts Health Plan
Donald Berwick M.D., President and CEO, Institute for Healthcare Improvement
Jennifer Daley M.D., Senior Vice President, Clinical Quality and Chief Medical Officer, Tenet Healthcare Corporation
John Folkemer, Medicaid Director, Maryland Department of Health and Mental Hygiene
George Halvorson, Chairman and CEO, Kaiser Foundation Health Plan, Inc., and Kaiser Foundation Hospitals
Roberta Herman M.D., Chief Medical Officer and Senior Vice President, Harvard Pilgrim Health Care, Inc.
Mary Kennedy, Medicaid Director, Minnesota Department of Human Services
Kerry Kilpatrick, Chair and Professor, Department of Health Policy and Administration, School of Public Health, University of North Carolina
Sheila Leatherman, Research Professor, School of Public Health, University of North Carolina
Thomas H. Lee M.D., Network President, Partners Healthcare and CEO, Partners Community HealthCare
Louise Liang M.D., Senior Vice President for Quality and Clinical Systems Support, Kaiser Foundation Health Plan, Inc.
Gail Warden, President Emeritus, Henry Ford Health System
ABOUT THE AUTHORS

Michael Bailit, M.B.A., is president of Bailit Health Purchasing, LLC. For the past 15 years, Mr. Bailit has worked extensively with public agencies, purchaser coalitions, and employers to advance the effectiveness of their health care purchasing activities. He previously served as assistant commissioner for the Massachusetts Division of Medical Assistance and as a benefits manager for Digital Equipment Corporation. He also has experience working in the health insurance industry. Mr. Bailit received a Bachelor of Arts degree from Wesleyan University and a Master of Business Administration degree from the Kellogg Graduate School of Management at Northwestern University.

Mary Beth Dyer, M.P.P., is vice president of Bailit Health Purchasing, LLC. Ms. Dyer has 15 years’ experience in health care policy and management and possesses specialty expertise in the design and implementation of performance incentive systems. Formerly, she worked for the Massachusetts Division of Medical Assistance, United HealthCare Corporation, the U.S. Senate, the Health Care Financing Administration, and Project HOPE. She received a Bachelor of Arts degree from the University of Notre Dame and a Master of Public Policy degree from the John F. Kennedy School of Government at Harvard University.

The Commonwealth Fund is a private foundation supporting independent research on health and social issues. The views presented here are those of the authors and should not be attributed to The Commonwealth Fund or its directors, officers, or staff.