

Paying for Quality in Integrated Health Systems: Concepts, Empirical Evidence, and Lessons from the Field

**Final Project Report to the Industry Advisory Board,
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Executive Summary

Research Questions

This project poses three specific research questions:

- (1) What are the effects of financial incentives on the development and implementation of quality improvement initiatives and care management systems in provider organizations (medical group practices and hospitals)?
- (2) What are the effects of financial incentives on the adoption of specific care management practices by individual physicians?
- (3) Which of the two levels of incentive has the greatest impact on the adoption of quality-related care management practices of individual physicians?

Major Findings

First, both the key informant interviews of hospital senior executives and medical group leaders reveal that financial incentives based on clinical quality and patient satisfaction are at a relatively early stage. The *practice penetration* of quality-based financial incentives is still relatively modest, with approximately 3% of total practice revenues coming from incentive features other than straight fee for service (FFS) or various forms of capitation and less than 3% of the typical primary care physician's total compensation based on any incentive feature (except for individual productivity). Productivity-based incentives are indeed predominant. Our interview data and survey cross-tabulations suggest that there may be a positive association between the use of quality-based financial incentives and the adoption by medical groups of such care management practices as the use of chronic disease registries and systematic assessments of patient health. But these impressions must be validated with larger sample sizes and with analysis of individual physicians' reported use of these evidence-based care management practices and perceptions of their ability to deliver high-quality care.

The available evidence from this study does not imply substantial differences in the implementation of care management practices attributable to organization-level incentives, as compared to incentives applied to individual clinicians. The evidence from other studies, including two recent ones (Escarce et al. 2003; Ettner et al. 2004), suggests that both levels of quality incentives are associated with improved processes of care and that differences associated with both levels of incentive are of roughly comparable magnitude. But more definitive answers will come only from longitudinal, large sample studies capable of distinguishing causation from correlation. Our key informant interview data reveal that *non-financial incentives* based on quality are relatively minimal at this point: neither channeling of enrollees to preferred providers based on clinical quality, nor tiered cost-sharing based on quality (lower co-payment or coinsurance for patients of preferred providers), is prevalent in the study markets. The predominant models of plan payment and individual physician compensation remain productivity and FFS-based.

Using the evidence from this empirical study and the best of the previous literature, we offer a set of *design principles* for quality incentive development and implementation. These principles are intended to assist executives and clinicians as they craft new quality-based contracting arrangements between and within organizations.

Who will use these findings?

The results of this study should be of direct value to medical group and hospital leaders. In particular, the findings of our key informant interviews regarding the significance and particular role of organizational culture, specific aspects of incentive implementation, infrastructure requirements for quality improvement, quality measurement, financial stability, and the place of strategy and organizational structure should be helpful to strategic planning, compensation committees, contracting officers and managed care directors, and to medical and nursing executives involved in the design and implementation of quality improvement and incentive programs.

How will these findings be applied in management and organizations?

We propose that the major lessons of this research are directly applicable to (a) the choice of contracting and payment arrangements between health plans and provider organizations, (b) the design of quality measures and specific forms of incentive contracting by health plans and provider organizations, and (c) the form and pacing of implementation of quality incentives between plans and providers and within provider organizations.

Specific Aims of Project

This study addressed three specific research questions:

- (1) What are the effects of financial incentives on the development and implementation of quality improvement initiatives and care management systems in provider organizations (medical group practices and hospitals)?
- (2) What are the effects of financial incentives on the adoption of specific care management practices by individual physicians?
- (3) Which of the two levels of incentive has the greatest impact on the adoption of quality-related care management practices of individual physicians?
 - Organization-level incentives (e.g., contracts between the group practice or hospital and health plans or other organized purchasers)
 - or**
 - Individual physician-level incentives (e.g., the methods used by the medical group to compensate individual physicians or the methods used by hospitals to compensate hospital-based physicians or physicians with whom the hospital contracts)?

Before discussing our study population, methodology, findings, and managerial implications, we summarize the results of previous research on the effects of financial incentives on the cost, utilization, and quality of health services.

Background and Synthesis of Previous Relevant Studies

Care system studies

Previous studies of “managed care”—a broad term applied to health care delivery and financing arrangements designed to influence the provision of care through a combination of financial incentives, organizational and clinical rules and constraints, and approaches to plan selection of provider panels (e.g., preferred and exclusive provider organizations) —have predominantly focused on differences between HMO and fee for service (FFS) systems. This emphasis is reflected in several major literature syntheses:

- Miller and Luft (1994) reviewed HMO/FFS comparative performance primarily on cost and utilization, updating prior syntheses based on research performed in the 1980s.
- Miller and Luft (1997) focused on relative performance of HMO and FFS systems, including results from the 1980s and early 1990s.
- Hellinger (1998) also published a review of empirical studies of the effect of managed care on quality. His general conclusion concisely illustrates the gaps in existing research: “The findings of the studies reviewed do not provide definitive results about the effect of managed care on quality. Indeed, relatively few studies include data from the 1990s, and little is known about the newer types of health maintenance organizations that invest heavily in information systems and rely on financial incentives to alter practice patterns. Furthermore, managed care is not a uniform method that is applied identically by all health plans, and research studying the different dimensions of managed care also is needed.” (p. 833)
- In a more recent literature review of studies published from 1997-2001, Miller and Luf (2002) conclude that overall quality of care is comparable among HMO and non-HMO plans,

but they also find considerable heterogeneity in quality of care results. The authors comment that the evidence implies wide variation in quality by provider, by type of plan (HMO/non-HMO), and geographic area. The available studies do not shed light on the impact of financial incentives on this variation.

Dudley et al. (1998) also concluded that there has been little research on how incentives for individual providers influence quality and that little is known relative to two specific questions:

- What types of payments increase quality?
- To whom should those payments be made?

The authors then targeted several areas for future research:

1. Study of explicit financial incentives, rather than broad categories such as FFS, salary, and capitation
2. Comparison of different types of HMOs and other forms of health plan and managed care organization
3. Identification of other management capabilities and policies, taking into account their direct effects on quality and their effects through interactions with one another and with financial incentives
4. Specification of appropriate comparison groups and settings (to minimize selection biases and contextual confounding in measurement of effects)
5. Development of better quality measures (e.g., through appropriate weighting schema for individual indicators)
6. Creation of incentives for quality (both direct and indirect—the latter, for example, through risk-adjusted payments)

Among major studies of different care systems (that is, HMO versus FFS), only the Medical Outcomes Study (MOS) examined long term outcomes—finding that 4-year mortality was worse among the frail elderly and low-income persons in HMOs as compared to FFS care systems. But the MOS design did not allow (nor was it intended to allow) the investigators to disentangle the effects of organization-level or individual physician-level incentives.

Studies of incentive effects on physicians' quality-related perceptions

A variety of empirical analyses and policy papers drawing on the CTS Physician Survey of the Center for Studying Health System Change also should inform future research on physician quality incentives (Landon, Reschovsky, Reed, and Blumenthal 2001; Reschovsky, Reed, Blumenthal, and Landon 2001). Landon et al. (2001) found that practice setting was the most consistent predictor of physicians' treatment choices for specific hypothetical clinical vignettes; compared to physicians in solo-practice, those in all other settings reported less likelihood of ordering tests, referral, or treating the presenting symptoms. Practice-level penetration of managed care and financial incentives were minimally and inconsistently associated with reported physician behavior.

Reschovsky et al. (2001) focused on primary care (PCP) and specialty physician perceptions of ability to deliver high-quality care to all their patients. They found that physicians in group practice settings were generally less likely than those in solo or 2-physician practices to express quality concerns. Conversely, higher market area (but not physician practice-level) managed care penetration and a greater number of managed care contracts was significantly associated

with greater quality concern among both PCPs and specialists. Individual physician financial incentives were less consistently significant, but interesting findings did emerge. For example, both productivity- and quality-based incentives among specialists were positively related to their perception of having adequate time to spend with patients. Quality incentives were also positively associated with perceived clinical freedom and ability to maintain continuity in the patient-physician relationship.

Each of the above studies was cross-sectional in nature; and none published results taking explicitly into account the potential confounding of practice-level incentive and organizational structures. Moreover, none measured clinical quality of care for actual patients, but instead these analyses focused on physician *perceptions* of their ability to deliver high-quality care to their patients. These CTS-based studies have, however, advanced significantly the scientific and policy foundation for future research on physician incentives.

Additional studies of physician financial incentives

A modest number of contemporary studies have assessed the effect of explicit financial incentives to physicians for preventive services (c.f., Kouides, Bennett, Lewis et al. 1998; Hillman, Ripley, Goldfarb et al. 1999; Fairbrother, Siegel, Friedman et al. 2001), the findings of which are mixed and generally suggest small or statistically insignificant incentive effects on delivery of preventive services. But except for those prevention incentive studies, there appear to be no peer-reviewed studies of explicit financial incentives for quality.

Except for the CTS-based studies reviewed above, existing empirical studies (c.f., Hillman, Pauly, and Kerstein 1989) and literature syntheses (Hellinger 1998; Dudley, Miller, Korenbrot, and Luft 1998; Gosden, Forland, Kristiansen, et al. 2001; Armour et al. 2001; Goodson, Bierman, Fein et al. 2001) generally do not distinguish the effects of financial incentives that target the physician *organization* from those that are applied directly to the individual *physician*. Physician organizations take multiple forms—g., medical groups, the independent practice associations (IPA), physician-hospital organizations, “wrap-around IPAs” linked to medical groups. Because IPAs include small medical groups as well as solo and two-physician practices, there are potentially three levels of incentive effect: (1) health plan to IPA, (2) IPA to medical group, and (3) medical group to individual physician. Thus, the “cascade” of risk can be filtered through as many as three levels from the point of initial contract between health plan and the organizational intermediary (Rosenthal, Frank, Buchanan, and Epstein 2002).

Two recent studies add to the evidence base on financial incentive effects on the quality of medical care: one on the effect of different methods of physician compensation on process of care for patients with diabetes (Ettner, Thompson, Stevens et al. 2004) and the other on HMO enrollee satisfaction with eye care (Escarce, Kapur, Solomon et al. 2003). Ettner and her colleagues found that the method of physician compensation was associated with processes of care. Specifically, rates of receiving several elements of care for diabetes (frequency of assessment of glycemic control and proteinuria, as well as the frequency of dilated eye exam and foot exam) were predicted to be significantly higher among managed care patients whose physicians were compensated predominantly by direct salary rather than either FFS or capitation. For example, holding other factors constant, the predicted probability of receiving a proteinuria assessment was 83% under direct salary versus 61% under FFS. Second, the study found that

when quality and/or patient satisfaction (performance measures) were factors in physician compensation, patients consistently received better process of care, with the largest differences in influenza immunization and proteinuria assessment. The authors caution that their cross-sectional findings establish only *correlation*, not causation. They also note carefully that the significance of the differences attributed to compensation method is weakened (and sometimes eliminated) when a control variable is included that distinguishes between medical group practices and independent practice associations (IPAs). Moreover, the magnitude of differences associated with the use of quality/patient satisfaction measures in compensation was reduced and their statistical significance disappeared when the IPA/medical group indicator was included in the model. Physician compensation method and the use of performance measures in determining compensation may be a “marker” for certain unobserved differences between the two types of physician organization.

The second recent study (Escarce, Kapur, Solomon et al. 2003) employed a patient survey to collect data on patient characteristics and satisfaction with eye care, coupled with a practice survey to obtain data on practice characteristics. For purposes of our project, the most salient findings from their study were that: (1) treatment in a practice with more than 25% of its revenues from capitation (*external incentives*) and (2) in a group in which providers received more than 25% of their income from bonuses (*internal incentives* generally based on physician productivity) were both associated with lower patient satisfaction with their eye care. The significant differences were large, with odds ratios¹ ranging from 0.31 to 0.53.

There have been no *longitudinal* studies that distinguish the impact of organization-level and physician-level incentives on either the utilization or quality of health services. Rice has called for such research, suggesting that researchers take advantage of natural experiments of variation in incentives across different markets (Rice 1997). Variation in incentives over time *and* across markets would provide an even better set of test conditions for assessing the causal effects of incentives on quality.

The Committee on the Quality of Health Care in America of the Institute of Medicine (2001) recently completed a major study of the quality of care in America, suggesting that a major cause of compromised patient care was “systemic” failure in care delivery and financial incentives in the current environment. Berwick (1996), among others, has applied the principles of systems thinking and quality improvement to frame a portrait of health care systems improvement. But even with these important conceptual contributions, society still lacks credible and robust answers to the question of which provider financial incentives and clinical-managerial-organizational arrangements yield superior performance on quality and cost (Cf., Hillman, Pauly, and Kerstein 1989; Flood et al. 1998; Medical Outcomes Study: Safran et al. 1994; Ware, Bayliss, Rogers, Kosinski, and Tarlov 1996; Safran et al. 2000; RAND Health Insurance Experiment: Ware, Rogers, Davies, et al. 1986; Conrad et al. 1998; Krlewski et al. 2000; Tufano et al. 2001; Zierler et al. 1998).

¹ The odds ratio is the ratio of the likelihood of a high level of satisfaction for the indicated payment arrangement (e.g., > 25% of practice revenues from capitation) divided by the comparable likelihood for practices with other arrangements (e.g., ≤ 25% of practices revenues from capitation).

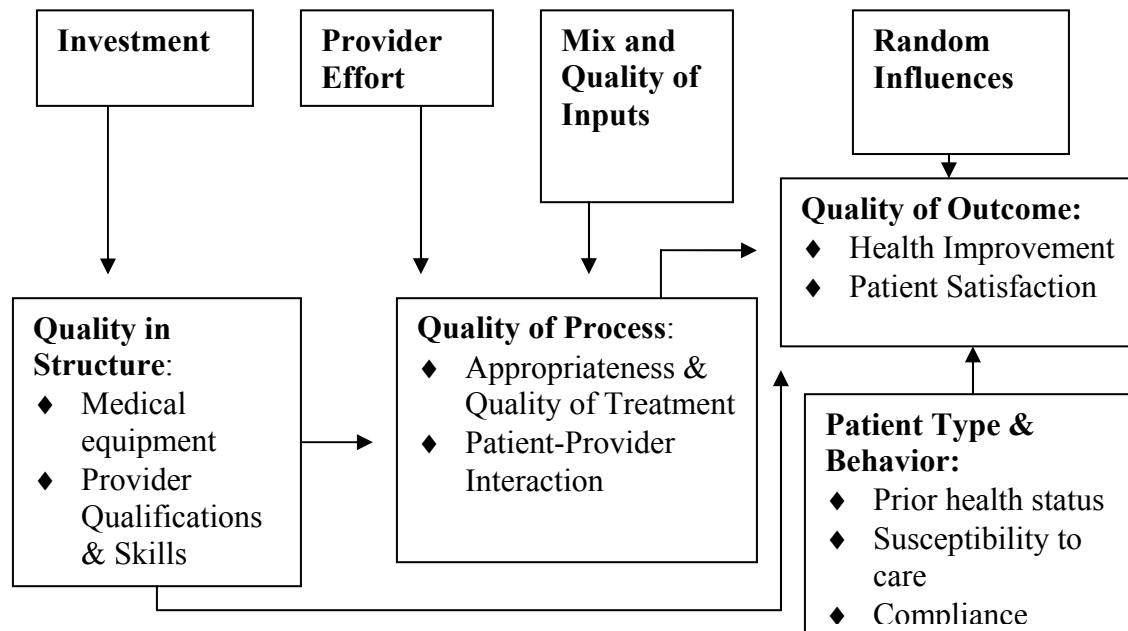
Conceptual Foundations

The conceptual framework for this project is drawn largely from microeconomics and organization theory, with a special emphasis on relationships between “principals” (patients, both as individuals and collectively as society) and their “agents” (doctors and hospitals as providers and health plans as organizations offering protection against the financial risks of health care).

Agency theory (Prendergast 1999) suggests a set of **principles** for analyzing the effects of financial and non-financial incentives on the quality of health care:

Principle 1: The principals’ objective must be clearly defined. For this project, **quality of health services** is the focus. Quality is defined as “the implementation of structures and processes of care that increase the likelihood of positive health outcomes.” Adapting Kuhn (2003; p. 30), we depict the production of quality in Figure 1:

Figure 1: The Production of Quality in Health Services



This figure demonstrates the essential point: In structuring incentives to improve quality, the payer-regulator must consider several dimensions:

(1) **Structural quality**—reflected in physical capital such as medical equipment and in human capital such as provider qualifications and skills—is fixed in the short run and is determined by the long-run investments such as asset acquisitions and medical education, respectively.

(2) **Process quality**, which varies in the short run, is measured as appropriate diagnosis, choice of best treatment package for given diagnosis, application of superior cognitive and physical skill in delivering the treatment package, and satisfying interaction between patient and provider. Process quality will be influenced by structural quality, the provider's level of effort, and the mix and quality of diagnostic and treatment inputs chosen by the provider.

(3) Ultimately, patient health improvement (physical and mental) and patient satisfaction over time will be determined by the levels of structural and process quality, underlying patient characteristics ("type") and behavior, as well as random variation.

Principle 2: Accordingly, if the maximization of patient health improvement and satisfaction is the ultimate objective, then incentives must be structured along several dimensions:

- Rewards for long-run investment in physical and human capital (drivers of structural quality)
- Inducements for provider effort and for choice of the best available quality and mix of diagnostic and treatment inputs (drivers of process quality), given the care susceptibility, health status, and underlying characteristics of the patient
- Incentives for patient compliance with evidence-based treatment regimens

By rewarding each of these dimensions in a "balanced scorecard," proper incentives will reduce the provider's natural tendency to focus on quality areas that are explicitly measured and rewarded, to the detriment of unmeasured aspects of quality.

Similarly, maximization of health is not the only objective, either for the individual patients or society as a whole. Minimization of cost, as borne by the individual patient and by the society, is another important objective. Therefore, optimal payment arrangements will blend rewards for improved quality with incentives for increased provider productivity and reduced resource cost per patient.

Principle 3: To the extent random variation in health outcomes is substantial, incentives that reward positive provider and patient **quality-related behaviors** will out-perform outcomes-based incentives. If outcomes-based payment is used, risk-adjustment is crucial, and **relative performance measures** will be superior to absolute measures as a basis for rewards, particularly in circumstances where providers are subject to the same sources of random variation in health outcomes.

Principle 4: The **size** of incentive is critical, as well as the type of incentive. The key to encouraging improved quality is to **increase the "margin" per unit of quality**. By selectively increasing fees for providers demonstrating superior quality, payers and provider organizations can elicit improved performance. The multi-faceted nature of quality implies that margins be increased simultaneously along several dimensions:

- Carefully targeted **quality infrastructure grants** to raise the return on investment in quality-improving technology by lowering the net capital cost to provider organizations and individual providers
- **Productivity incentives** to increase physician effort per unit of time, which will be reflected in the number of patients served per provider and the quantity of effort per patient
- **Process improvement incentives** to encourage an appropriate quality of effort, as well as quantity

- **Patient satisfaction incentives** to reward attention to high-quality provider-patient interaction

Principle 5: If the provider’s margin per patient is sufficiently positive, mechanisms that channel increased patient volume to providers demonstrating superior quality also constitute a powerful **indirect incentive** for quality improvement. These non-financial, volume-related incentives can be tapped to complement and reinforce the direct quality incentives outlined in the above four principles. Such **quality competition** will be more effective in markets with higher physician density and with broader and deeper dissemination of provider quality information to patients and health plans. Also, factors that lower the individual patient’s costs of switching among providers will increase the effectiveness of quality competition. The basic notion is to increase the **quality-elasticity of demand** facing the individual provider and provider organizations.

Principle 6: High-quality care of patients is a “**team sport,**” not a solo enterprise. Coordination of information and care decisions among primary care providers, specialists, and other health professionals is fundamental to effective care over time for the individual patient, as well as for defined populations. Thus, to the extent feasible and appropriate, incentives should be designed to reward team performance, as well as individual provider quality.

Principle 7: The benefits of monetary incentives and competition as **extrinsic motivators** for quality must be balanced with the costs of potentially diminished **intrinsic**, professional, and social motivation among providers (Frey 1997). This design principle highlights the importance of working directly with providers to structure financial incentives and related quality measures that are aligned with professional norms, values, and the state of the art in clinical knowledge. When alignment between incentive structure and professional norms, values, and clinical evidence base is not sufficient; the role of incentives as behavioral modifiers must not be overblown, at the risk of “crowding out” the intrinsic motivation, and indeed, altruism, that is fundamental to the delivery of health services.

These theoretical principles were used to structure the key informant interviews and mail surveys and in designing our sample selection strategy. These principles also aided the researchers in discerning patterns in the key informant interview data. Now, having described the existing evidence base on quality incentive effects and the conceptual framework for the project, we proceed to outline the study methodology.

Study Population, Sample, and Data Collection Instruments

Ten health systems participated in this study, sponsored by the Center for Health Management Research (CHMR). They were Catholic Health Initiatives (CHI), Exempla Healthcare, Sharp Health Care, Summa Health System, Sutter Health, Swedish Health System, Trinity Health System, Veterans Health Administration Integrated Service Network (VISN) 23, Virginia Mason Health System, and Washington Hospital Healthcare System. Each of these systems, through their representative on the Project Advisory Committee (PAC), recommended medical groups in a designated service area to be approached for participation in this study. Each PAC member also identified one system-affiliated hospital in a designated service area for participation. The designated service areas were San Francisco-Oakland, CA; San Diego, CA; Tacoma, WA;

Seattle, WA; Denver, CO; Akron, OH; Grand Rapids, MI; Minneapolis, MN; and Sioux Falls, SD. This set of potential organizational participants led to a final study sample for key informant interviews of 22 medical group practices and 9 hospitals². In addition, mail surveys were completed by 36 medical group practice administrators, 23 group practice medical directors, and 84 individual physicians in medical group practices.

Methods and Data Analysis

This study employed both qualitative and quantitative methods. Because of the purposive, non-random nature of the samples of medical group practices and hospitals, we do not present inferential statistics (p-values or confidence intervals) in describing our results. Instead, we have attempted to identify qualitative patterns in common themes and concepts emerging from the key informant interview data. Similarly, using the group medical director and practice administrator survey data, we have examined cross-tabulations of care management practices (e.g., the use of patient registries, care teams and case managers, evidence-based guidelines) by external and internal incentive variables to identify associations between quality incentives and care management practices. The project principal investigator, co-principal investigator, and research consultant have prepared written summaries of the key informant interviews and have met throughout the analysis phase to reach agreement on themes and concepts derived from the interviews.

Project Findings

Quality-based incentives at the level of payment between the health plan and provider organization are relatively embryonic in several of our study markets. Even in California, where the Pay for Performance Project has been in place for two years, and in other study markets with high degrees of HMO market penetration, health plan-designated tiered networks based on cost predominate over quality-tiers, with the Leapfrog Group and Premier/CMS incentive programs being notable exceptions. Provider respondents in key informant interviews frequently refer to quality incentives as “weak” or “soft” in their local markets, and they observe that the resource costs of preparing for different health plan incentive programs with different quality metrics are substantial. In two of the market areas, six major health plans have agreed on quality measures as the basis for incentive payments to medical groups, but each plan retains discretion in choosing how these metrics are used and whether other metrics are used along with them, as well as the nature and magnitude of quality incentive payments. In other markets, selected plans have developed embryonic quality incentive programs, often based on HEDIS measures and physician prescribing practices, but their effects have not been formally evaluated yet. In a number of cases, programs described as quality incentive programs by health plans were viewed by provider organizations as cost incentives in quality incentives’ “clothing.”

Discretionary design of individual plan incentive programs potentially attenuates the incentive effects of such quality programs; if specific quality incentives are not sufficiently clear, clinically meaningful, consistent, and simple, medical groups and hospitals are less likely to respond to the incentive “signal” embedded in those incentives. Individual-level quality incentive payments often are implemented first with senior management and then phased in through the ranks of middle management before being applied to the individual clinician. Reliance on intrinsic

² One system’s hospital in their designated service area declined to participate in the senior executive key informant interviews.

motivation—the inherent desire of doctors to do well for their patients—appears to dominate the use of explicit financial incentives for quality in most provider organizations. The predominant view among senior executives and clinicians is that there must be significant “buy-in” among clinicians to the clinical meaningfulness and legitimacy of the quality metrics in order for incentive payments to substantially alter physician behavior.

Physician leadership and the creation of “infrastructure” to support clinical quality are key determinants of the breadth and depth of provider response to quality incentives. The principal roles of leadership and infrastructure in effecting quality improvement are, respectively, to establish the organizational pre-conditions for effective change and to provide quality measures and performance data that are accurate, clear, clinically meaningful, and timely. Put another way, leadership’s job is to create and sustain an organizational culture that demands and supports high levels of clinical quality. The clinical information system must deliver actionable, clinically credible, timely, and transparent data to physicians, nurses, and others engaged in patient care.

Quality incentives should not be viewed in isolation from other attributes or “change levers” of the health system; in fact, the most powerful and sustainable financial and non-financial incentives for quality are those that reinforce the intrinsic motivation and highest professional standards of the clinicians. Several of our executive interviewees pointed to the importance of collaboration between clinicians—doctors, nurses, and other members of the care team—in improving patient health outcomes. Some organizations have developed compensation programs that systematically reward “citizenship” behaviors and overall organizational performance. Fostering internal competitiveness to excel and using recognition with modest or no financial incentives appear to have been successful in a number of organizations. It is the rare medical group or hospital in our sample that provides explicit compensation based on care team performance, even though some stated that clinical care processes and relationships at the “micro-system” or unit level are crucial drivers of quality improvement.

Applications for Management

Several **themes** emerged from our key informant interviews with medical group practice administrators, group medical directors, hospital administrators, chief medical officers, and chief nursing officers. These themes, which were validated through a consensus-building process of the project investigators, fit naturally into the following categories:

- Culture
- Incentives
- Infrastructure
- Quality measurement and data
- Stability
- Sustainability
- Organizational strategy
- Organizational structure

Within these themes, a variety of **concepts** have been identified. We illustrate the application of those concepts by discussing their interpretation and context within the key informant interviews and by documenting the frequency with which each concept is cited by the interviewees.

Insights from Key Informant Interviews

Culture. This theme resonated strongly with hospital and medical group administrators and senior clinical leaders. Based on the interviews, our operational definition of culture encompasses organizational history, community environment, and aspects of leadership, vision, core values, and relationships that shape the way work is done within the organization. The *intrinsic motivation* of clinicians was a central concept. As one hospital and system CEO put it, “The effect on meaning and purpose of the work is invaluable when you take on safety, quality, and patient responsibility comprehensively in an organization.” *Leadership*, characterized by passion and commitment from the top and down through the organization, was another core characteristic identified as a cultural prerequisite for sustained quality improvement (QI). The presence and visibility of physician leaders who function as “quality champions” is crucial to success in QI efforts. The *community environment* sets the context for organizational initiatives, and public expectations and standards for quality generally have not been clearly articulated. One medical leader in Washington State described the problem succinctly, “There is a lack of public expectation and appreciation for quality. Consumers are more likely to make decisions collectively and individually on the basis of cost.” Our key informant interviews with senior administrators and clinical executives suggest, however, that to some extent, *organizational vision* can compensate for these weaknesses in community support for quality improvement.

Teamwork and collaboration appear to constitute key attributes of an organizational “quality culture.” An extended quote from a Midwest-based system executive makes the point: “The barrier we have to overcome is to create a culture where there is a strong belief that the best way to serve the patient is through a very integrated team effort where literally every person that lays hands on the patient and every person who is supporting our caregivers understands the need for outstanding communication, outstanding relationships, and an approach where we can all speak out without reservation about how we can be more effective in our service to the patient, have them safer, more satisfied, and their clinical outcomes better.” Strong *relationships* between nurses and physicians were mentioned frequently as cultural facilitators of quality improvement.

Incentives. The effect of *incentives*—health plan/purchaser-to-provider organization (external) and from the organization to the individual physician (internal)—is, of course, the focus of this project. One thesis that issued from the key informant interviews is that incentive effects can be and are transmitted from the senior leadership through middle management and to the individual clinician. At least three of the ten integrated health systems participating in this study had implemented clinical quality and/or patient satisfaction incentives within internal executive compensation prior to applying quality incentives directly to physicians. This “top-down, trickle-down” phased implementation was viewed as an effective means of establishing the credibility and significance of clinical quality within the organization.

Even though quality incentives from health plans and other purchasers are relatively nascent in most of our study markets, the importance of these *external drivers* was acknowledged by several executives. At a minimum, external incentives must be *aligned* with the quality improvement goals of the medical groups and hospitals. For example, one California medical group administrator noted that, even prior to the Pay for Performance (P4P) initiative launched

statewide in 2002 by six major health plans, certain plans paying capitation to medical groups actually provided infrastructure support for quality improvement, e.g., in the form of \$100,000 grants. Two California group practice medical directors independently pointed out that global capitation aligned the economic interests of medical groups and hospitals—one of them noting that P4P was “building bridges” between physician provider organizations (i.e., IPAs and medical group practices) by rewarding collaboration.

The *size* of the quality incentive was acknowledged to be important by only a minority of the executives and clinical leaders. The principal concern appeared to be that the dollars provided be sufficient to cover the direct and opportunity costs of responding to the incentive, not *size per se*. The *clarity, consistency, simplicity, timeliness, and transparency* of the quality incentive seemed more consequential in the minds of the respondents. For example, several medical groups exploring quality incentives with major health plans stressed that the criteria for quality bonuses were often unclear; the episode grouping methodology (e.g., for Episode Treatment Groups, or ETGs) was typically a “black box;” and incentive payments frequently lag the performance period by 9-12 months. All these departures from clarity, transparency, and immediacy attenuate clinicians’ response to incentives. Similarly, the failure of different health plans to coordinate their quality incentives means that providers face a welter of distinct and potentially conflicting signals from different payers. P4P represents a positive step toward integrated incentives, but by themselves, common quality metrics will not necessarily ‘incentivize’ quality improvement in the face of disparate types and sizes of incentives across the health plans.

In principle, *recognition* by the organization and by peers was perceived to be a positive morale-builder, but interviewees reflected that often the criteria and decision process for offering recognition were not clearly delineated in advance. Thus the recognition served as a retrospective reward but not as a prospective incentive for quality. Another theoretically promising incentive for quality is health plans’ designation of *tiered networks* of medical groups and hospitals, whereby plan subscribers are offered lower co-payments and coinsurance as inducements to choose high-performing providers. At present, the greatest limitation of this approach is that the tiers are typically based on cost rather than quality.

Infrastructure. Well-functioning and integrated administrative, information, and clinical decision support systems reinforce quality improvement in the study systems we observed. *Infrastructure support* was commonly identified as critical to success. Certain features of infrastructure frequently surfaced as significant facilitators of quality improvement: good *information technology (IT)* support, the availability of *accurate, timely data and analytical capacity*, and the presence of an *electronic medical record (EMR)*. The role of the health system itself—in particular, the integration of medical group practices with the management expertise of the hospital—as a major influence in many of the study medical groups and hospitals. For example, the capital resources of a leading hospital were essential for several medical groups seeking to access electronic medical record information. One multi-site group medical director asserted, “Without an EMR, we cannot compete on quality. The EMR is the greatest facilitator; clinical, not billing, data is what we need to effect change.”

Quality measurement and data. The most prominent concept underlying this broad theme was the requirement that quality measures be *transparent, accurate, clinically meaningful, and consistent*. That is, the definition of the measures should be clear; they should be reliable and replicable over time and across different observers; the measures should relate to important and well-defined domains of medical practice; and the metrics should be defined and measured identically across payers, to the maximum extent possible. Interestingly, several interviewees expressed regret that provider organizations had not acted earlier to *initiate* quality incentive and measurement discussions with health plans. The lack of transparency and the adoption of proprietary “black box” software for measuring provider performance were frequently mentioned. One medical group leader in Seattle illustrated this point with the episode of care grouping software. In that case, ambiguities in the definition of the primary care provider for a given patient and incomplete recording of episodes of care combine to compromise the quality of the measures and their credibility among clinicians.

Stability and sustainability. Stability of the provider organization and the *prospect of long run financial viability* seem to be pre-conditions for adoption of quality incentives. For example, one medical group leader stated that only in the last two years, as the organization’s financial position solidified, has the group begun serious consideration of integrating quality improvement initiatives into the local health system. One IPA executive pointed out that the distribution of quality incentive dollars among their providers was possible because of profitability in the prior year. Other interviewees emphasized that QI efforts generally are more sustainable when *focused*, but some leaders do appear capable of creating an internal environment of high energy and high expectations that can sustain a wider and deeper array of quality initiatives at one time. This appears to be the exception, however. The *pace of change* itself can be a barrier to sustainability.

Strategy and organizational structure. Several of the participating health systems have identified quality and patient safety as *strategic priorities*. Accordingly, the implementation of quality initiatives throughout the organization is built into the system’s strategic plan and that of its affiliated health care organizations. This has a double impact: (1) the QI activities tend to be broader in their reach and deeper in potential impact by being highlighted; and (2) by virtue of their potential breadth and depth, those quality initiatives become more visible and credible to clinicians, who ultimately determine their success. *Structural* adjustments are significant, too. For example, multi-specialty and single-specialty medical groups in Seattle, Akron, and California markets explicitly referred to gain-sharing and cost-sharing arrangements that support mutual quality initiatives between affiliated medical groups and system hospitals.

Patterns in the Survey Data from Medical Group Practices:

Plan payment (external) incentives and physician compensation (individual-level). The survey data analysis is being completed for inclusion in the final version of this report, but certain preliminary findings appear noteworthy: Among the 14 medical groups providing sufficiently complete data on both the medical director and practice administrator survey to examine quality incentives and care management practices:

- The average proportion of group practice revenues from health plans based on FFS without added incentive features is 63%; FFS with an incentive feature, 3%; and any form of capitation, 34%.
- 8 of 14 groups had the *potential* to receive bonus payments from health plans, of which 6 were based on quality performance measures and 4 on patient satisfaction.
- For established PCPs in those groups, the average share of the typical physician's compensation based on individual productivity was 77%; guaranteed salary, 9%; equal shares, 3%; resource management, 8%; and other arrangements (including incentive compensation), < 3%.
- For established specialists, the average share was even more heavily weighted toward individual productivity, 84%; guaranteed salary, 5%; equal share, 5%; and resource management, 5%.

Incentives and care management practices. There are suggestions of possible correlation between the financial incentives of the group and care management practices, but the numbers available for analysis are small. Thus, any patterns suggested here will be assessed for robustness in a larger sample: For example,

- Groups with potential bonus incentives from health plans based on patient satisfaction were more likely to conduct regular assessments of patient access for urgent care, compared to those groups not eligible for such bonuses (50% versus 25%).
- Group practices with one or more chronic disease registries had a much smaller share of revenues from health plans based on FFS without incentives than those without registries (53% versus 88%) and a much higher share based on any form of capitation (43% versus 13%).

Besides assessing the robustness of these suggested patterns in a larger sample, additional analyses will examine the association between practicing physicians' perceptions of their ability to deliver high-quality care and the internal and external incentives they face.

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