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Physician Motivation: Listening to What Pay for Performance Programs and Quality Improvement Collaboratives are Telling Us

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In the 15 years or so since the 2001 Institute of Medicine (IOM) report *Crossing the Quality Chasm*,[1] there is limited evidence that Americans have received substantially better health care. The quality improvement (QI) landscape is nevertheless replete with efforts designed to improve quality. The sobering acknowledgement that much has been tried and little has worked suggests that a review of the principal approaches being used—such as pay-for-performance (P4P) programs and large-scale QI collaboratives—is in order. These two approaches rely on divergent assumptions about clinicians' underlying motivation and share an overarching goal—to improve patient outcomes. Frontline clinicians are the protagonists in all endeavors to improve quality. Ultimately, changes in how clinicians deliver care are what drive improvements in performance and patient outcomes.

Motivation is the driving force behind all types of change. American psychologist Frederick Herzberg's seminal work on job enrichment—summarized in his motivation-hygiene theory—identified a dichotomy in how employees are motivated. "Hygiene factors" exist outside an individual and are generally acknowledged to consist of money, workload, working conditions, job hierarchy, and status.[2,3] These factors are external to the nature of the work itself and do not enhance satisfaction; rather, their absence (for example, lack of adequate salary or inadequate working conditions) can promulgate dissatisfaction. Manipulating pay, such as through monetary rewards or punishments, often framed as incentives or disincentives contingent on performance, are examples of attempts to use such extrinsic factors to achieve differences in performance.[4] We use the term *extrinsic motivators* to refer to factors based on rewards or punishments.[5]

In contrast, in Herzberg's theory, "motivators" exist within an individual as the desire to expend effort based on interest in the work being performed.[6] We refer to such factors as

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intrinsic motivators, which consist of the drive for achievement, purpose, autonomy, mastery, responsibility, as well as the desire for growth and learning.[2,6] Assigning responsibility for more difficult tasks, granting additional authority or autonomy, providing direct feedback on performance, cultivating a collegial rather than a competitive atmosphere, and inspiring a collective purpose and vision are all strategies that foster intrinsic motivation.[7]

Extrinsic Motivation to Improve Quality

Health care policies and programs that extrinsically motivate clinicians and provider organizations using financial incentives are prevalent. Financial incentives leverage money as a motivator, as in P4P programs, the most common example, in which payers seek to improve performance and outcomes through financial incentives. The idea is straightforward: linking pay to performance on select process or outcome measures should motivate hospitals leaders and physicians to meet targets to maintain or increase their incomes.[8] The Centers for Medicare & Medicaid Services (CMS) has several monetary-based incentive programs that evaluate physicians' performances for hundreds of measures. [9] CMS also applies financial incentives to Accountable Care Organizations through shared savings programs and payments linked to QI, as well as through financial disincentives that withhold payment to hospitals for preventable patient complications.

Evidence supporting the effectiveness of these "carrot-or-stick" approaches for improving quality is weak. The Premier Hospital Quality Incentives Demonstration, on which Medicare's Value-Based Purchasing is based, did not improve patient outcomes or process measures.[10–12] A P4P program in all National Health Service hospitals in one region of England was associated with a clinically significant reduction in mortality for pneumonia in the first 18 months after implementation,[13] but this benefit did not persist to 42 months.[14] Evaluations of P4P programs in nonhospital settings and other programs specifically targeting physicians have shown mixed results.[15–17] On the other hand, disincentives in the form of reduced payments by CMS for health care–associated infections did not measurably change infection rates.[18] Systematic reviews reveal no consistent evidence that financial incentives targeting physicians or hospitals consistently improve patient outcomes.[19,20]

Some authors have noted that small incentives, complex reward schemes, and inadequate metrics are possible reasons why many P4P programs have not worked.[21] Herzberg's theory suggests that the P4P approach might simply be targeting the incorrect determinants of motivation. The design of P4P programs is based on an economic conceptual model that assumes that clinicians are similar to firms, in that they are mainly motivated by profit.[8] But if the model is wrong—or at least incomplete—then larger incentives, simplified reward schemes, and improved metrics will not necessarily improve performance.

Intrinsic Motivation to Improve Quality

An alternative conceptual model, derived from Herzberg's theory, is one in which clinicians are motivated to improve their patients' health by solving complex and interesting health care issues and working collaboratively with other providers and patients to do so. In that model, clinicians are motivated intrinsically by the cognitive sophistication, open-ended

thinking, and professionalism inherent in the practice of medicine.[5] Herzberg's theory suggests that harnessing these determinants of motivation could be an effective approach for improving performance.

This model also suggests alternative explanations as to why P4P programs have not achieved their intended results. First, their ownership has largely resided with private and public payers (including CMS) rather than with providers, with programs imposed on clinicians rather than led by them. Contingent rewards may be perceived as a form of control that is an affront to clinicians' professional autonomy. Second, rewards may narrow clinicians' focus to quality targets that are incentivized at the expense of other quality issues ("teaching to the test"), regardless of their importance. Third, failure to meet a performance target is not coupled with information about *how* to improve, and the challenging work of QI is delegated to clinicians without providing support or guidance.

In a 2012 survey completed by 13,575 physicians (of more than 630,000 physicians invited), the majority reported that patient relationships (80.2%) and intellectual stimulation (69.7%) —factors related intrinsically to the work itself—were among the two most satisfying characteristics of practicing medicine. [22] Only 11.7% of physicians reported that financial rewards (extrinsic motivators) were among the most satisfying aspects of medical practice.[22] Nevertheless, few top-down policies and programs to improve quality and performance focus on enhancing intrinsic motivators. An alternative, common, and bottom-up approach to QI that has been used in numerous countries—the QI collaborative model—directly involves expert clinicians and relies on peer learning and clinician engagement to implement evidence-based practices. As such, collaboratives are positioned to leverage intrinsic motivators more directly. A recent systematic review concluded that the effectiveness of QI collaboratives is mixed, with some studies demonstrating positive effects, but in limited areas.[23] This owes to the heterogeneity of the collaboratives and the evaluations assessing their effectiveness,[24] many of which used weak study designs that lacked suitable control groups.

Nevertheless, well-designed collaboratives can provide insight into how intrinsic motivators can be leveraged for QI, as illustrated by two quality collaboratives that are well-characterized in the literature—the Keystone intensive care unit (ICU) project and the Door-to-Balloon (D2B): An Alliance for Quality initiative. We selected them on the basis of their embodying a clear interventions grounded in evidence-based practices, being national in scope, and having been recently implemented and evaluated using a variety of study designs (including randomized controlled trials, interrupted time series, and longitudinal analyses) that enhance inference.

The goal of the Keystone ICU project was to decrease the incidence of central line-associated bloodstream infections in ICUs in Michigan.[25] This project implemented a culture-change model, communication tools, and a checklist of key tasks for central line placement. It has been implemented in thousands of hospitals in five countries and has reduced central line-associated bloodstream infections by 40-80%,[25–27] in addition to the economic costs of infections to hospitals.[28] This project achieved its success without financially incentivizing physicians or hospitals. Similarly, the D2B Alliance initiative

involved more than 1,000 hospitals throughout the United States and improved the timeliness of reperfusion therapy for heart attack patients by increasing adherence to key evidence-based practices. D2B time—the time between hospital arrival and reperfusion—is associated with the probability of survival, and yet far too few patients were being treated within the recommended time of 90 minutes.[29] Physicians embraced both of these successful initiatives, which enhanced the various intrinsic motivators of responsibility, mastery, achievement, purpose, autonomy, growth, and learning—key factors identified by Herzberg.

The Keystone ICU project and D2B Alliance initiative increased physician and hospital responsibility for reducing infection rates and D2B times, respectively—not with financial incentives or disincentives but with a motivating goal of improving quality that was perceived as reasonable, ethically justified, and naturally aligned with physicians' intrinsic goals. By using infection rates and D2B times as transparent performance feedback, these initiatives also used mastery as a motivator, in that ICU teams, emergency department staff, and catheterization laboratory staff could see how their efforts affected performance and take pride in their success or redouble their efforts to improve. In D2B Alliance hospitals, fractious tensions between departments were defused by adopting a patient-centric focus that was a uniting guide.[30] In both initiatives, improving quality and delivering excellent patient care—values deeply held by intrinsically motivated clinicians—served as a collective goal, embodied in a patient-centric vision.

In accordance with Herzberg's theory, programs using intrinsic motivation focus on *how* work is performed to enhance individuals' achievement in meeting a goal or accomplishing a task. QI science emphasizes the importance of making it easy to do the right thing. The Keystone ICU project focused on achievement as a motivator by making the task of inserting central lines using evidence-based guidelines easier to accomplish.[25] In both initiatives, opportunities for participating clinicians and hospitals to collaborate with each other and share best practices through peer-to-peer learning networks also enhanced achievement. Those who overcame hurdles during implementation of the initiatives could relay their experiences or strategies to others confronting similar issues. In the D2B Alliance initiative, research institutes, professional societies, health systems, and insurers participated actively with hospitals to help them achieve better performance.[29] Because the vision of these initiatives was collaborative rather than competitive and focused on results rather than efforts, the initiatives fueled a sense of collective achievement. This approach helped clinicians move beyond the mind-set of only being responsible for particular procedures to a more global approach that embraced the wellness of their patients and the success of their hospitals.

Intrinsically motivated clinicians willingly seek to grow in their roles, improve their performance, and increase their capabilities, so a focus on growth and learning was a key component of both initiatives. In the D2B Alliance initiative, participants received an implementation manual detailing how to create change, engender teamwork, develop an action plan, and conduct data monitoring and feedback. Webinars were used to present specific topics (such as sustaining improvement) and as a way for hospitals to share their experiences.[29] In the Keystone ICU project, education and training in the science of safety

were rolled out to participating hospitals during weekly and monthly teleconferences, as well as training with tools for measuring and monitoring infections and safety culture.[25] With these tools, local ICU teams learned to use daily goals sheets to improve clinician-to-clinician communication, standardize infection surveillance, and measure safety culture. This training expanded the teams' capabilities for performance, with many clinicians taking hospital leadership roles in patient safety and quality.

Recommendations to Improve Motivation in Health Care

We have discussed two relatively distinct categories of strategies being used in various countries to improve quality: P4P programs and QI collaboratives. Intense debate surrounds the issue of whether financial incentives should be used to motivate clinicians to improve performance, with some scholars highlighting the substantial limitations of incentives and advocating against their use. [31,32] We have asserted that intrinsic motivators are more closely aligned with the underlying determinants of clinicians' motivation. Nevertheless, the intrinsic motivation of a single clinician is not enough to improve quality—quality deficits and low-value care persist across a health care system of intrinsically motivated clinicians. Therefore, the central question regarding the different approaches to QI is the following: how can intrinsic motivation be better leveraged within these existing approaches? We now respond to this question with five recommendations.

Recommendation 1. Select Quality Issues That Clinicians Care About

Policymakers, payers, and leaders of quality within health systems should select quality issues that are deemed important by clinicians. Herzberg's theory implies that a better understanding of the quality issues that are important to clinicians can help differentiate between the types of interventions that could address them. Too often, the topics selected for improvement are not the ones that clinicians believe are the most significant or pose the greatest risks to their patients. For example, when we recently asked physicians in every department at Johns Hopkins Hospital to list their top five quality or safety concerns, health care-associated infections was the only top-five issue that was also represented by an externally reported measure. Physicians' other concerns were related to specialized staffing of care teams in operating rooms, teamwork and handoff errors, and operational efficiency. Physicians expressed frustration that they were pressured to work on topics that were not their top priorities.

This may occur because the topics of interest to physicians are difficult to quantify with valid metrics or because physicians' opinions have simply not been elicited. Organizations ultimately need to develop a set of shared goals, which will not always reflect the priorities of any single clinician. As such, there should be a legitimate process through which clinical input is obtained and weighed in establishing organizational (and national) QI goals. One approach to begin aligning clinicians' interests with organizational QI goals is to survey clinicians or use focus groups to elicit their priorities. Similarly, for setting a policy agenda, policymakers can more actively partner with clinician professional societies to cull the wisdom of its members. If policymakers, payers, and health system leaders want to motivate

clinicians to improve quality, they should actively seek out clinicians' wisdom in identifying and prioritizing quality issues.

Recommendation 2. Emphasize Patient-Centered Outcomes as the Target

The measures used in QI collaboratives or P4P programs should ideally focus on patient-centered outcomes or processes that are tightly linked to patient-centered outcomes. Growing interest in a migration from process measures to outcome measures is laudable—outcomes are what the American public ultimately cares about. For example, patients care about central-line associated bloodstream infection rates and D2B times to the extent that these measures are related to survival or health-related quality of life. Reductions in central-line infection rates have been linked to substantial reductions in mortality.[33] Similarly, the most recent available evidence suggests that shorter D2B times are associated with lower mortality,[34] although the methodologies used in such assessments have come under criticism.[35,36]

From a motivational standpoint, incentivizing or targeting process measures, especially those that are weakly linked to outcomes, could undermine an intrinsically motivated clinicians' sense of autonomy. In contrast, targeting patient-centered outcomes is more likely to tap into clinicians' desire for responsibility and sense of purpose. This was demonstrated clearly in the Keystone ICU Project, the goal of which was not to use a checklist (process focus) but to reduce infection rates and save lives across Michigan (patient-centric outcomes focus). The latter provides a shared ultimate goal that describes what hospitals in Michigan aspired to achieve. A recent articles that involved an archival study of 151 hospitals in California documented an association between such image-laden visions and higher performance.[37] Patient-centered outcomes lend themselves more naturally to being framed in terms of shared ultimate goals.

Recommendation 3. Lead With Intrinsic Motivators

P4P programs are often implemented with little knowledge of the baseline motivation of the clinicians targeted. Herzberg's theory also suggests that these programs are targeting the wrong underlying factors to drive changes in motivation and subsequent performance. After a quality issue deemed important to clinicians and patient-centered outcomes are identified, we advocate beginning with strategies that employ intrinsic motivators, such as QI interventions or collaboratives. Rigorously designed QI collaboratives can build local capacity for improvement by pulling teams together, culling local wisdom, distilling evidence-based practices, rectifying systems issues, and equipping frontline clinicians with the tools to necessary to improve quality. The Keystone and D2B examples demonstrate how this can be done, with collaborative groups working together to change underlying systems of care. Individual health systems can also implement their own local collaboratives, or "clinical communities," as has been done across Johns Hopkins Medicine.[38,39] These are clinician-led, interdisciplinary groups that focus on improving quality within defined care settings (for example, ICU), across a group of similar providers (hospitalists), or for specific patient populations (congestive heart failure), and that are supported by institutional resources, such as support for project management and data acquisition and analysis. The objective of this recommendation is to promote the consideration and use of bottom-up

strategies that leverage intrinsic motivation and attenuate the unreflective, top-down use of P4P as a fix-all solution.

Recommendation 4. If Using Incentives, Apply Them at the Organizational Level

Incentives play a prominent role in current health care reform efforts in the United States, as stated at the outset of this article, and it is unlikely that P4P will be abandoned in the near future. The question, then, is how to improve the likelihood that incentives will either achieve their intended effects or not introduce negative effects. Incentives may be used more constructively in two ways. First, performance should be measured and nonfinancial or financial incentives should then be applied at the unit, clinic, or organizational level to avoid eroding the intrinsic motivation of individual clinicians.[5,40,41] If misapplied, financial incentives targeting individuals may actually undermine motivation for work that is intrinsically rewarding.[5,6,42] Applying incentives to units, clinics, or hospitals rather than physicians partly obviates this unintended consequence and shifts the improvement focus to the level of the organization, thus promoting team-based care. Such organizational incentives can help hospital leaders to declare and communicate goals, create enabling infrastructure to support the improvement effort, engage clinicians and connect them in peer learning communities, and transparently report performance and create accountability systems.[37,43]

In one single-center study that used team-based financial incentives,[44] physicians reported shifting their practice orientation toward quality, using quality metrics more often, and believing that quality of care and team effectiveness improved. Concurrently, roughly half of the physicians reported greater tension with colleagues and that their satisfaction decreased as a result of the new incentives, despite the fact that majority of those respondents earned more money under the new payment model. This dissatisfaction may have been due in part to perceived reductions in autonomy but might also have reflected the fact that it would have taken a longer period of time for providers to become familiar with and proficient in practicing under the new payment model. The extent to which these results are generalizable or that such a program might influences patient outcomes is unclear, but the role of team-based incentives is one avenue for future research.

Second, incentive schemes should be based on both absolute and relative improved performance. *Absolute performance*, sometimes called “target attainment,” requires setting clear and direct benchmarks for expected performance. *Relative improved performance* focuses on overall system performance by rewarding both low and high performers if they improve relative to their respective past performance. Because absolute performance tends to reward physicians or provider organizations that are already high-performing, whereas improved performance tends to favor low-performers who face fewer diminishing returns to achieving improvement gains, launching P4P programs in terms of both absolute and relative improved performance ensures that each end of the performance spectrum is considered.[45] The impact of different incentive schemes on clinicians’ motivation is also a useful area for future study.

Recommendation 5. Build Capacity for Transdisciplinary Research

Research funding is needed to build capacity for a transdisciplinary approach to implementation science that advances QI by determining how intrinsic and extrinsic motivators drive clinicians' behavior change in health care.

First, support is needed for entities, such as the Armstrong Institute for Patient Safety and Quality at Johns Hopkins, that bring together diverse disciplines—sociology, business, psychology, organizational behavior, health services research, and engineering—to rigorously develop and disseminate QI programs.[43] Mature programs with clear specifications of the target population, intervention components, process and outcome measures, and theory linking the intervention to the outcome should be rolled out nationally. Programs are in need of better design and evaluation. Health care needs many more clinicians and researchers experienced in implementation science and many more transdisciplinary improvement teams to rigorously develop these programs at a large scale.

Second, support is needed to study the implementation of all QI interventions motivating behavior change. Much of the literature on how motivation affects performance comes from fields other than health care—such as education,[4,42] psychology,[46–48] behavioral economics,[49,50] and management[2,51]; health care would benefit from developing its own evidence base about the use of various motivators and their effects on patients' outcomes. For example, in the context of P4P programs, factors such as the ideal size of incentives, criteria for payment, organizational level of accountability, and what processes or outcomes are incentivized vary widely across programs, and little is known about how these design differences affect providers' motivation or behavior. The causal chain or mechanisms through which financial incentives drive improvement remains poorly understood. Understanding the beliefs, norms, and culture surrounding how incentives affect clinicians can provide insights into how and why these incentives succeed or fail. In addition, such research can elucidate ways to enhance intrinsic motivation and whether or how intrinsic and extrinsic motivators could work synergistically. A broad range of disciplines offer valuable perspectives and alternative conceptual models for conducting this research.

Discussion

Without question, improving the quality of health care is a complex undertaking. Being attuned to the strengths and limitations of extrinsic motivators and their possible counterintuitive impact on providers' motivation can help health care leaders and policymakers make informed decisions about when and if they are the appropriate intervention. Financial incentives have a long and complicated causal pathway, motivating hospital executives, who then in turn must motivate the appropriate frontline clinicians who must change their behaviors to realize improvement—as well as the quality management and other administrative staff who work with the clinicians. Failure can occur at any point along this path. P4P programs have an instinctive conceptual appeal but are represent one type of approach that has nevertheless been applied broadly, and in isolation, to many disparate health care processes and outcomes.

We discussed and compared P4P and QI collaboratives because of their broad usage in practice; we recognize that there are other QI strategies that we have not discussed. Our goal was not to provide an exhaustive review of these strategies but rather to illustrate the underlying role of motivation among some of the most common. Our recommendations suggest a more judicious use of P4P, with greater priority placed on strategies that foster the intrinsic motivation of health care professionals. Financial incentives alone are a poor substitute for giving clinicians the tools, knowledge, and training they need to improve quality. Instead, leading with programs that strategically target patient-centered outcomes that clinicians believe are important and that support clinicians with the resources, skills, and time needed to improve should be considered. This entails designing evidence-based QI interventions (led *by* clinicians, *with* clinicians, *for* clinicians) and then disseminating those interventions.

Currently, collaboratives, such as those aimed at reducing harm from ventilator-associated pneumonia[52] and surgical site infection[53] or focusing on improving blood pressure control in ambulatory practices,[54] for example, are increasing in number and scope and are embracing the concept of intrinsic motivation. Such collaboratives do not operate in a vacuum; they occur amidst numerous regulatory pressures and policies, P4P programs, and public reporting requirements. These efforts could all benefit from more accurate measures and coordination so that multiple economic, regulatory, and social levers are pulled synchronously and synergistically. The Keystone ICU project's QI program was successfully implemented in thousands of hospitals in the United States while the CMS policy of nonpayment for central line-associated bloodstream infections was in place. Although evidence suggests this CMS disincentive alone had no measurable effect on infection rates,[18] it may have operated in the background of this QI collaborative as an extrinsic motivator, synergistically spurring interest in participation, but this remains uncertain. The collaborative also partnered with state legislators, Consumers Union, the Leapfrog Group, professional societies, and CMS to exert social pressure for change through public reporting and the media. Likewise, some D2B Alliance hospitals, after achieving substantial success in reducing D2B times, used external market or regulatory pressures, such as public reporting requirements, to sustain gains in performance and combat waning attention to D2B times among staff. In other words, the intrinsic motivation that led to the initial improvements in performance may have been reinforced by public reporting that prompted staff to focus on the role that D2B times had in retaining cardiac market share and maintaining a reputation as a high-quality hospital.[30] Additional research is needed to understand these interactions; opportunities may exist to use extrinsic and intrinsic motivators in mutually reinforcing ways to improve health care quality. As suggested by Herzberg's theory, adequately addressing hygiene factors may defend against dissatisfaction and demotivation, but a separate set of factors—achievement, purpose, autonomy, mastery, responsibility, and the desire for growth and learning—are important for motivating professionals.

Conclusion

Improving the quality of health care in the United States, as elsewhere, remains an arduous journey. Extrinsic motivators alone appear insufficient to improve quality and should supplement, not supplant, intrinsic motivators. Perhaps most important, we need to approach

the difficult work of quality improvement with a different mental model once advocated by Donabedian—that "the secret of quality is love."* We judge each other too often in health care; we adhere to the belief that "bad docs" just need more incentives and "bad insurers" just need more regulation. This approach is counterproductive. Health care needs to align all of its QI efforts toward a common, patient-centric goal of high-value care. We need to measure and coordinate those efforts and pull on all available levers to reach that goal. Achieving important gains in the quality of American health care is within our nation's grasp; doing so begs a fundamental question: are we properly motivated to get there?

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