Technical Review

1. Introduction

Background

Deficiencies in patient safety and quality are rife in the U.S. health care system.[1-3] Although evidence of quality problems has been available for many years, purchaser initiatives to ensure that beneficiaries receive high quality care have become common only in the last few years.[4, 5] As they have begun to pursue or consider quality-based purchasing (QBP), some employers have expressed uncertainty about what information to use to measure quality and what incentives to offer to stimulate performance improvement, and have expressed frustration at the difficulty of implementing QBP.[5] Furthermore, there has been dispute in the literature about the validity of quality measures, especially outcomes indicators, and the potential for chance variation in outcomes to unduly influence reported performance.[6-8] Therefore, despite the release of public reports of providers' outcomes by several states, purchasers have been slow to use outcomes reports to drive QBP policies.[5, 9, 10]

In fact, purchasers have historically focused more on price than quality when making health care purchasing decisions.[4, 11] Recently, however, both private[12, 13] and government purchasers[14] in the United States have committed to improving quality. In addition, the trend of using incentives to stimulate improvement has spread to other nations as well.[15, 16] In the absence of good information about how to proceed with QBP, however, purchasers risk investing time, resources, and good will without a reasonable expectation of achieving a good return.

Over the last several years, several important studies and reviews have been published that offer some insight into how QBP strategies such as offering financial incentives to providers or the provision of performance data to providers can influence quality of care. Unfortunately, many of these studies have examined only one or a small number of factors that could have an impact on performance and there have been no prior attempts to bring all elements together into a single comprehensive description of how to do QBP.

The nomination of QBP for an evidence report was submitted by the Employer Health Care Alliance Cooperative (The Alliance). Through discussions between Agency for Healthcare Research and Quality (AHRQ) and the Alliance and based on a feasibility report prepared by the EPC, AHRQ determined that a comprehensive review of the QBP literature and ongoing research could provide insights about the current state of the art in QBP. In addition, in light of the uncertainty about the value of measurements of providers' outcomes, the Agency determined that the literature review should be supplemented by explicit consideration of the potential validity of outcomes reports and whether risk adjusted outcomes are too severely influenced by chance events to be valid measures used in QBP.

Purpose of This Report

The purpose of this report is to describe and evaluate the evidence regarding the effectiveness and potential of QBP strategies to improve the quality of care provided in the U.S. health care system. For this report, QBP is defined as purchasing approaches that individual employers, employer coalitions, or government programs could plausibly adopt to stimulate the improvement of quality in health care. The issue of *plausible* purchaser adoption is critical. There are many potential approaches to improving the quality of care, but most are beyond the

control of purchasers. For example, the creation of a set of guidelines for the provision of diabetes care or the establishment of a team to make antibiotic recommendations may be highly valuable approaches to improving quality, but are not purchaser functions and would not be strategies purchasers could implement. Rather, the primary issue within the purchaser's purview is the establishment of incentives—for individual providers or for provider organizations such as medical groups and hospitals—that either stimulate or inhibit provider behaviors to improve quality.[17] (Strategies aimed at consumers such as varying copayments based on provider performance have rarely been studied. In developing key questions with AHRQ and the Technical Expert Panel, it was decided to focus on the purchaser-provider relationship.) Therefore, this report addresses the use of QBP to create provider incentives, the scope of which will be described in the next section.

Because QBP is in its infancy, the first objective was to develop a conceptual model of how QBP strategies could be used to create incentives for providers to improve care. The second objective was to identify all the published, peer-reviewed randomized controlled trials of those incentive systems that purchasers could plausibly adopt and to summarize what is known about the relative effectiveness of different QBP strategies, with a focus when necessary on what the conceptual model suggests is missing from extant literature.

Because the feasibility report for this project had shown that the literature was limited but the questions were timely, a third objective was to identify ongoing research that might increase our knowledge. Finally, since one of the main issues purchasers face is whether to use reports of outcomes of care, the fourth objective was to determine whether outcomes reports convey meaningful information or are too influenced by chance events to be useful.

Rationale for Focus on Randomized Controlled Trials

Our focus was on randomized, controlled trials, because non-randomized designs in this domain can be severely confounded. Potential sources of confounding include selection bias in which providers were willing to accept new incentives, regression to the mean (since organizations may have chosen to introduce incentives targeted at problem areas that would have improved anyway), the Hawthorne effect, and other sources of variation in performance over time not related to the incentive.

To illustrate this point, we consider one of the randomized trials we did include, a study by Hillman et al. performed in Philadelphia in 1993-1995.[18] In this study, the intervention group nearly doubled its rates of cancer screening over the course of the study, but the control group more than doubled its rates, leading to the conclusion that the incentive itself had no effect. The authors conclude that the increase in performance for both groups may have been related primarily to local and national efforts to improve screening rates, rather than to the QBP incentive.

Had this study not been had a randomly selected control, one might have concluded that the incentive worked, and actually had a large effect (since screening increased so dramatically). This could even have occurred if the there had been a non-randomly selected control group, say in Pittsburgh, if the main force causing the increase in screening was local initiatives in Philadelphia to improve care.

In fact, to the extent that one studies natural experiments in which a health plan or government program implements a QBP program in one geographic area but not another or with a particular group of providers but not others, selection bias is almost certain to be present and

potentially significant. This is because purchasers will want to use their resources wisely and will consider, if they cannot implement QBP in all areas, the likelihood of success in one area versus another. They would have an incentive, in fact, to choose areas in which they expect success and to avoid areas in which implementation would be difficult or likely to fail.

Furthermore, it is unlikely that purchasers would be willing to make only the QBP intervention the sole change in a given market throughout the course of the study (most of the ongoing research projects are three or more years long, considering the time for project planning to grant submission through project completion). Judgment would be used to decide which interventions to introduce and where. Thus, if purchasers had introduced a QBP program in an area at one point in time because performance was particularly poor in that region, they might also choose at a subsequent period to invest more in provider education in that area than in a control area in which performance was already better (which may have been what was happening in Philadelphia in the mid-1990s).

As this is an early review of QBP, we considered it very important to avoid misleading potential users. Therefore, after discussions with our Technical Expert Panel and AHRQ staff, we focused on randomized controlled trials only.

Types of Incentives

In the United States, the Institute of Medicine (IOM) has made a compelling case that quality and safety of health care needs to be improved, and recommends that purchasers "align financial incentives with care processes based on best practices and the achievement of better patient outcomes".[17] Furthermore, the IOM also argues that "no payment method is neutral" with regard to quality, in that "efforts to improve quality by correcting overuse, underuse, or misuse all have an impact on provider revenues under all forms of payment".

There are many ways in which payments may influence performance. Much of the focus of research to date has been on the relationship between general approaches to payment, such as fee-for-service (FFS) versus capitation.[19, 20] However, the IOM also proposes basing payment on measurable indices of quality.[17] This approach we refer to as *specific performance-based payment incentives* to improve quality. An example might be a payment of $X for every patient with coronary artery disease whose cholesterol is below some target level (although the performance indicator need not be an outcome, it could also be a structural or process measure).

In addition, the IOM also recommends the communication of provider performance data to the general public and to purchasers. This is also an incentive, either simply because providers care about their reputations or because reputation influences the number of patients a provider organization has or the prices it can charge. Although the public release of performance data clearly could have a financial impact, it could also influence providers in other ways, so we hereafter refer to these strategies as *reputational incentives*.

Incentive Theory

The IOM recommendation about financial incentives draws on principal-agent theory, which addresses relationships in which:

- The two parties have differential abilities and it is therefore desirable for the first party to delegate responsibility for performing a function to the second,

- There is asymmetric information between the two parties, and
- The parties have divergent goals.[21, 22]

These criteria are met in health care, in which patients typically do not have the expertise to determine what care they need or the technical quality of the care they receive. Furthermore, in most instances, care is paid for not by the patient directly, but by a health plan or government health care program. Health plans and government purchasers do not have the clinical expertise or detailed information about each patient to make informed clinical decisions, so they delegate the provision of care to clinicians. In addition, health plans and purchasers cannot measure all the actions providers take that may influence quality of care. Finally, while both health plans and providers care about quality of care, physicians may care more about maximizing income than efficiency, while plans may be more concerned with cost control than quality. In situations such as these, the principal (a health plan or government program) may use incentive payments to encourage its agents (providers) to adopt the principal's goals.

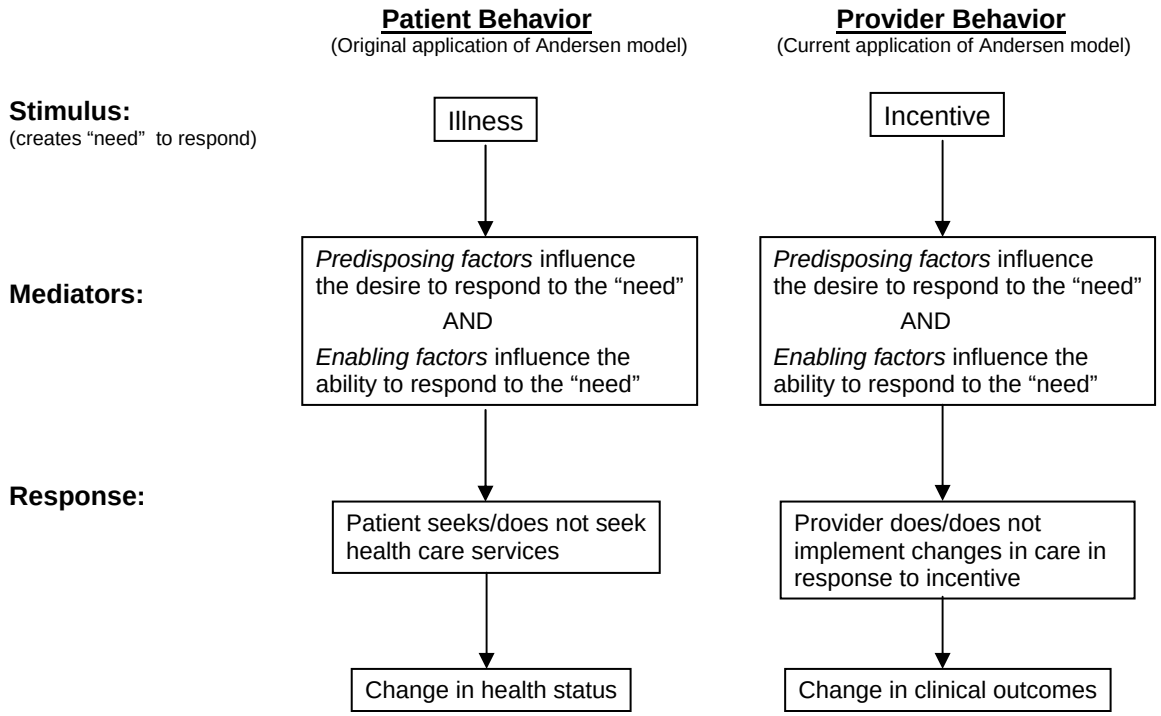
However, other factors besides the relationship between a single principal and its agents may also be critical. The importance of considering the overall financial and nonfinancial milieu in which the agent is acting when designing and implementing financial incentives has been discussed previously,[23, 24] but to our knowledge no conceptual model of the factors influencing the impact of specific incentives on quality has been proposed. Hellinger concludes from a review on the effect of managed care on quality that assessment of any management strategy, which would include incentives, requires detailed information about the characteristics of health plans, providers, and enrollees to draw conclusions.[23] Hutchison et al. point to the importance of considering the context in which financial incentives are designed or implemented to understand their potential effects.[24] The model we propose addresses the reality that the agency relationship between the provider and the health plan or purchaser offering specific incentives occurs in a complex environment in which there are many other potential determinants of provider behavior. Those factors include: the general or predominant way by which the provider is paid, such as FFS, capitation, or salary across all the plans or purchasers with which the provider contracts; the number and character of other incentives; local market factors; organizational characteristics (organizational culture, leadership, etc.); patient characteristics; and physician characteristics.

Since the goal of the provision of QBP incentives is to change provider behavior to improve quality, we believe it is useful to adapt Andersen's Behavioral Model of health care, originally applied to *patients'* behavior in seeking health care services, to *providers'* behavior in deciding to comply (or not) with care according to quality guidelines.[25] The original Andersen model emphasized factors that predispose or enable patients to seek care in response to illness. In economic terms, this is a model of the demand for health care. However, in more general terms, this model offers a fairly flexible approach to placing the behavior of a decisionmaker (the patient) in response to a stimulus (illness) in a broader context (pre-existing factors that predispose or enable a response to the stimulus).

To apply this general approach to providers and QBP, we need only recognize that the provider is a decisionmaker with a stimulus (the incentive the purchaser is offering) who may be more or less predisposed to respond and may encounter have more (or fewer) enabling resources that permit (or inhibit) response. Thus, this application of Andersen's model can be used to address providers' supply of health care and health care improvements (Figure 1). For instance, the demographic characteristics of the individual provider, such as years since the completion of training, may be viewed as predisposing factors toward the provision of specific components of high quality care just as patient demographics have been shown to influence a patient's decision

to access care. Similarly, organizational resources (e.g., of the clinic in which the provider practices) could have an enabling effect on provider behavior just as community resources influence patient actions.

Figure 1: Application of Andersen's model to provider behavior



This model complements and integrates, rather than replaces, the extant economic, psychology, and decision and organizational theory literature on incentives. For instance, principal-agent theory from economics is useful for assessing the tradeoffs between different incentive structures and how these might vary as a function of the health plan's ability to mandate provider behavior or monitor different aspects of provider performance.[21, 22, 26] Principal-agent models emphasize the risk to the plan that a provider might shirk or provide poor quality. Similarly, reinforcement theorists have pointed out the potential impact of a variety of types of reinforcers on behavior, including professional and social reinforcement in addition to economic factors.[27] In an excellent review of the economic and psychological theories of incentives, however, Town et al. point out that the potential for bad provider behavior implied in principal-agent analyses and the need for reinforcement implied in reinforcement theory may be countered by strong psychological forces such as expected regret or chagrin if patients have poor outcomes. [26, 28, 29] Frey and Kuhn make analogous points about intrinsic motivation, professionalism, and altruism.[30, 31]

Each of these factors fits into our model, and the model helps explain their relationship to each other. For instance, expected regret about poor performance, intrinsic motivation, and

altruism all may vary among providers and could influence one's predisposition to respond to an incentive. Similarly, the ability to monitor behavior and the adoption of reinforcement activities vary among plans. To the extent that providers are aware that they are acting on behalf of a plan that is more able to monitor performance or that has previously engaged in significant reinforcement, they may be more predisposed to respond to the next incentive created. Many of the characteristics of the incentive discussed in either principal-agent or reinforcement theory are also key determinants of the strength of the stimulus to which we show a provider responding and depicted as the "need" to respond in Figure 1.

An important rationale for the use of a conceptual model that integrates a broad array of factors is the possibility to identify variables that have not been adequately studied in the empirical literature. Many of the elements of our model have been identified from a review of health services research literature, but there are aspects of incentives that we believe must be considered but that have received little or no attention. In particular, the essence of an incentive is the net additional income (revenues minus costs) achievable by responding to the incentive. Although the cost to the provider of achieving improved quality is intrinsic to the concept of financial incentives (and thus this point is considered, in the theoretical literature, to be too basic to make), to our knowledge it has not previously been addressed in empirical evaluations of incentives. For that reason, we start with a consideration of the characteristics of the incentive itself.

Characteristics of Incentives

This section describes the potential impact of two key aspects of incentives on provider response: the financial and the nonfinancial characteristics of the incentive.

Financial Aspects of the Incentive

Recipient of the incentive. Incentives can be targeted to individual providers or paid to a provider group or organization (e.g., a medical group or hospital).[18, 32-34] Since changes in clinical process depend on the actions of individual providers, it is conceivable that incentives directed at that level could be more effective than incentives directed to the group. On the other hand, to the extent that improvement requires collective action (e.g., investing in an information system is more feasible if all providers in a group support and participate in the investment; a single provider would find this difficult), incentives may be more effective when directed at the group level.

Revenue potential. Specific incentives can offer a potential increase in revenues (a simple reward) or can involve exposure to risk (e.g., a payment intended to cover all costs associated with an episode, as the Medicare program in the United States creates with its diagnosis-related groups prospective payment). The revenue and profit potential of an incentive are also determined by its structure. For instance, lump sum bonuses for reaching a specified target, bonuses that increase as performance improves (graduated bonuses), or additional FFS payments beyond those usually received (enhanced FFS) are all simple rewards that nonetheless can have very different revenue and incentive implications. In addition, revenue available from the incentive will be affected by whether the performance targets are absolute (e.g., achieve 90% compliance with a guideline) or relative to the performance of other providers (e.g., be among

the top 10% of performers). Finally, it is likely that the salience of the incentive to the provider, and hence the likelihood that it will change provider behavior, is determined at least in part by the proportion of the provider's practice to which the incentive applies. The level to which the incentive is directed—to individual providers or the group or both—may also influence salience.

Impact on cost. Net income from an incentive will also be influenced by the costs to the provider of performing the tasks necessary to improve performance. In general, the total costs will include both the direct costs of doing the activity, complying with the protocol or achieving the outcome, plus the opportunity costs of not doing something else. The relationship between direct cost and improving quality is likely to be complicated, with some fixed and some variable costs, and also to differ depending on the aspects of quality to be improved. There may also be significant start-up, training, or investment costs associated with a change in usual processes, especially if this requires designing new approaches that are not already in use elsewhere. Alternatively, especially if the initial investment required is small, increased quality could also reduce costs.

Responses to incentives, then, will reflect judgments about expected revenues and costs. If the cost of doing X exceeds the return from the incentive, then the incentive will likely fail regardless of its absolute size. It also should be noted that providers' responses will depend on their *perception* of the financial impact of the incentive on their income, not the actual impact. Furthermore, when changes involve up-front costs and downstream benefits, the latter are essentially discounted not just by the usual cost of funds, but also by the perceived likelihood that the bonus payment program will be continued in the future. Few people undertake an exhaustive assessment of the real impact of a changing incentive arrangement, and the actual effect may be obscured by other fluctuations and changes. People tend to respond positively to an incentive if they think it will work for them, and resist it if they do not. So it is quite possible for a QBP program to have a different incentive effect than a rigorous financial analysis would suggest, because the object of the incentive has arrived at a different judgment in his/her own particular way.

Nonfinancial Aspects of the Incentive

Perceived attainability. The extent to which clinicians believe that measured performance is within their control— that is, that they can affect the measure upon which the incentive is based—may be important. Thus, a payment to deliver dietary counseling might result in a higher level of provider response than a payment linked to the number of patients who actually have lost weight at one year, because physicians believe they can influence the former more than the latter.[35] Similarly, requiring a very large improvement relative to prior performance may lead physicians to conclude that the chances of being able to receive the incentive are so small as to not be worth the effort.

Domain of performance measured. The diet and weight loss example highlights the importance of the domain in which performance is measured. Options include:

- Structure—for example, assessing the information technology in place and degree of implementation.[36]
- Processes of care (complying with a defined process)—for example, measuring hemoglobin A1c in patients with diabetes, or the adoption and use of systematic patient recall systems.[18, 32-34, 37, 38]

- Outcomes—for example, achieving intermediate outcomes such as blood pressure control[2] or final outcomes, such as low mortality.

In general, it is easier for providers to control structure or processes than outcomes. This may influence their assessment of their ability to improve measured performance, and hence their willingness to respond to an incentive.[5]

Acceptability of the incentive or performance goal. Grumbach et al. found that physicians were less satisfied with their practice if they faced incentives based on financial outcomes and productivity,[39] which is in accordance with the findings of Hadley et al. and Pantilat et al,[40, 41] and this dissatisfaction with the incentive itself might attenuate response. Physicians with incentives linked to quality of care or patient satisfaction were more likely to be satisfied, perhaps because they found these goals more inherently acceptable than "productivity" for its own sake.

Predisposing Factors

Several factors may predispose providers to respond to an incentive when offered. These include at a minimum the general financial characteristics of the environment (the mix of fee-for-service, salary, and capitation and other incentives used across all payors); traits of the provider; and other characteristics of the market (such as community-wide initiatives to improve performance).

General financial characteristics of environment. There are three main methods of provider payment: fee-for-service, salary (or budget, in the case of an institutional provider such as a hospital or medical group), and capitation.* The dominant financial characteristics of the environment can differ for the organization vs. the individual clinician.[18, 38] For instance, a medical group may primarily receive capitation with occasional FFS payments, but choose to pay each individual provider a salary. Thus, the incentive environment can be different at each level, and hence should be measured and reported for both the group and the individual when possible.

In general the financial incentives inherent in these payment systems are:

- Fee-for-service—financially rewards doing more.
- Salary or budget—payment is independent of activity or outcome, so there are incentives to minimize one's time spent working.
- Capitation—financially rewards doing less of those things that are covered under the capitation payment.

Each of these may modify the effect of a specific incentive, particularly through their influences on opportunity cost.

The potential for opportunity cost is greatest in a *FFS* environment. For example, the opportunity cost of doing more immunizations may be foregoing the performance of activities that generate more fees per unit time. In addition, considerations of opportunity cost may not be confined to simply the relative marginal revenue of an immunization versus a consultation. If immunizing a child is a one-time activity that is unlikely to lead to much subsequent repeat business, while seeing a new elderly patient with a chronic health problem may result in many

* These are archetypes, because in practice, a physician rarely, if ever, receives 100 percent of payments in only one of these forms.

further consultations, the provision of immunizations may have an opportunity cost even if the initial fee per unit time is equal to that for the elderly patient's visit.

For a provider paid a *salary* (or an institution receiving a *budget*), the financial opportunity cost of doing one thing over another is non-existent, as revenue is not related to what is done.[42, 43] However, if the new activity adds to the workload without generating more income, it represents a loss of leisure time for individuals or an increase in costs for an institution.

In a *capitated* environment, the opportunity cost is different again – every additional activity is an additional cost, and activities that may attract sicker patients or lead to greater subsequent activity will tend to be avoided, even in the face of a specific incentive, unless the marginal revenue from the incentive outweighs the longer run risk/cost. Therefore, it might be expected that incentives to undertake interventions that prevent complications in the near term (such as seasonal flu immunizations for older people) would be most readily accepted by a capitated provider, while incentives to undertake screening that might lead to identification of the need for further treatment (e.g., performing mammography) might be less effective. Of course, individual providers are rarely paid by capitation; therefore, as with salaried practice, the direct incentives upon the provider may be minimal or non-existent. Even where the provider's payment is based upon the unexpended share of capitation at the end of a period, this attenuates the incentive, since the capitation pool is usually shared across many providers, and, thus, the effects of an individual's practice on his or her payment may be small.

The specific incentive may also be influenced by other financial incentives in place. In addition, it may be related to the proportion of a provider's income that is dependent upon incentives other than the one being studied.[38] On the other hand, there is some evidence that providers do not vary practice style from patient to patient depending on insurance coverage but seem to adapt a style consistent with the dominant form of financial incentive.[44, 45]

Provider characteristics. Characteristics of the individual provider whose performance is being assessed might affect the impact the incentive has on quality. For example, the response to incentives might be expected to vary by provider age, gender, specialty, board-certification, country of graduation, whether full time or part-time, workload or total number of patients in panel, and proportion of patients/occasions of service per week where the incentive being studied is relevant.[18, 24, 38, 43, 46, 47]

In addition to these (relatively) easily observable factors, providers may differ in other ways that would be harder for a purchaser to assess but nonetheless could be important for response to an incentive. For instance, it is likely that the relationship between net additional income from an incentive and a provider's overall income and target income may influence the effectiveness of the incentive. A provider whose income is at or near a preferred income target may be less likely to respond to an incentive of a given amount than a provider who is not yet achieving his or her target income.[48]

A complete review of the many important psychological characteristics of individual providers that may influence the response to incentives—including intrinsic motivation, professionalism, and altruism[28-31] — is beyond the scope of this report. However, a forthcoming paper from Town et al. provides a valuable synthesis.[26]

Market characteristics. Characteristics of the market in which the provider is acting may also be important. For example, community-wide activities may increase provider cooperation and improve performance or lead to established norms—as the literature on small area variance has demonstrated.[49, 50] In addition, market factors such as managed care market share have been shown to influence provider practice patterns.[51] Since market-level phenomena change care, it is

conceivable they could also have an impact on a provider's predisposition to comply with a quality incentive.

Other predisposing factors. Other environmental factors may cause a provider to be more predisposed to accept and work to earn an incentive. These factors could include: trusting that the organization promoting the incentive has patients' and providers' bests interests in mind; believing performance measurement uses accurate, valid data; and having supportive medical leadership.[46]

Enabling Factors

Several factors may enable providers to respond more effectively when an incentive is offered. These may exist at the level of the organization in which the provider practices, or the patients that the provider sees. Enabling factors may also come from external sources—for instance when health plans adopt programs that facilitate providers' efforts to perform better.

Organizational characteristics. Organizational characteristics that may mediate the impact of an incentive on behavior include leadership, organizational culture, the organization of practice (partnership, company), size of practice, number of patients, and proportion of practitioners to whom the incentive is relevant.[18, 34, 38, 43, 44, 46] Other factors that may influence the impact of an incentive on quality are the use of electronic information systems for clinical data management, the implementation of guidelines related to the clinical focus of the incentive, utilization review,[52] peer pressure, educational activities,[53] and prior use of financial penalties for poor performance.[54]

Patient characteristics. Providers' responses to incentives may also be expected to vary according to characteristics of their patients, including purely clinical characteristics such as number of chronic conditions, but also age, gender, education level and insurance status and perhaps race and ethnicity.[18, 24, 43, 46, 55-57] For example, Irish general practitioners' responses to an incentive to limit their prescribing were found to vary according to the age of their patients.[58] In a randomized trial in the US in which physicians received clinical vignettes describing patients either as insured or uninsured, PCPs were more likely to recommend services to insured than to uninsured patients.[45]

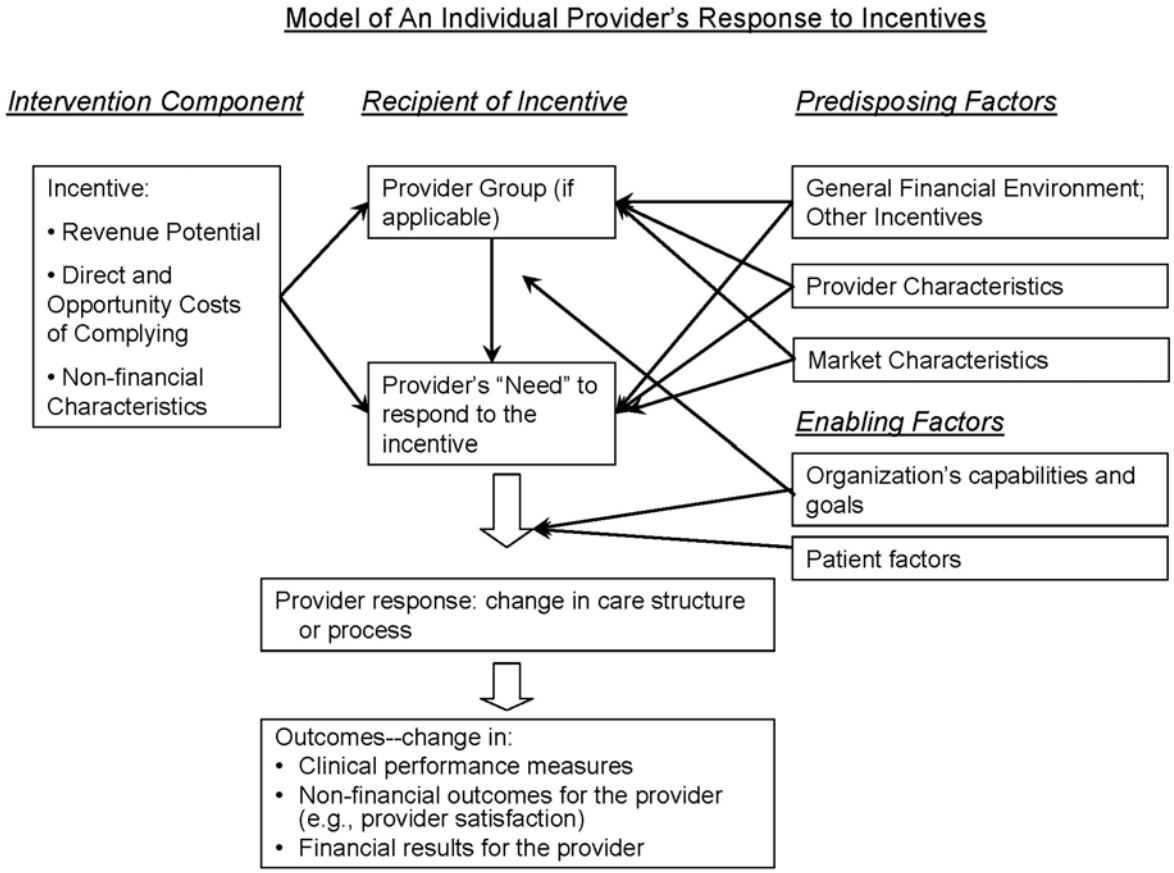
Other factors. Other factors may enable a provider to respond more effectively to an incentive. For instance, timely performance feedback from a health plan may facilitate providers' attempts to improve quality.[18, 32, 33, 35, 37, 38]

Conceptual Models of Individual Provider and Organizational Responses to Incentives

Drawing primarily on the health services research literature, but also on basic economic concepts that the health services literature does not address in research about specific incentives (e.g., the concept of opportunity costs), we propose the conceptual model in Figure 2 to understand the response of individual providers to incentives. In this model, we incorporate the six general determinants of physician behavior we describe above into a format that reflects Andersen's Behavioral Model.[25] Specifically, we propose that the financial and nonfinancial characteristics of an incentive are primary determinants of a provider's "need" to change practice in response to the incentive. This response, however, may be mediated by predisposing factors (e.g., the general

financial environment and other incentives, as well as by provider characteristics and market variables) and by enabling factors at the organizational and patient levels.

Figure 2: Model of an individual provider's response to incentives



In Figure 3, we show the analog of this model we propose should be used to understand how organizations (i.e., hospitals, medical groups) respond to incentives. This model differs from the model for individual providers in that the charter and mission of an organization are the analog of provider characteristics such as intrinsic motivation and influence the organization's predisposition to respond. Furthermore, congruence with organizational goals is no longer an enabling factor, but goal congruence with individual providers or staff is (see Figure 3).

More research will be needed to assess our labeling of factors as "predisposing" or "enabling", and some factors may both predispose and enable. Fortunately, it is not nearly as important to get the labels correct as to identify potential determinants of behavior so that they can be explicitly studied.

Figure 3: Model of an organization's response to incentives