

Financial Incentives for Improving the Quality of Primary Care

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The Cochrane Abstract on the next page is a summary of a review from the Cochrane Library. It is accompanied by an interpretation that will help clinicians put evidence into practice. Dr. Salisbury-Afschar presents a clinical scenario and question based on the Cochrane Abstract, followed by an evidence-based answer and a critique of the review. The practice recommendations in this activity are available at <http://www.cochrane.org/reviews/en/ab008451.html>.



This clinical content conforms to AAFP criteria for evidence-based continuing medical education (EB CME). See CME Quiz on page 683.

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A collection of Cochrane for Clinicians published in AFP is available at <http://www.aafp.org/afp/cochrane>.

Clinical Scenario

You are the medical director of a large primary care practice. The leaders of a major insurance company have noted that rates of cervical cancer screening, mammography, and smoking cessation counseling in your practice are below national averages. They have proposed providing financial incentives to physicians who provide care that is consistent with evidence-based guidelines, and ask you how likely it is that this strategy will improve the quality of care that your physicians provide.

Clinical Question

Do financial incentives improve the quality of health care provided by primary care physicians?

Evidence-Based Answer

Financial incentives are associated with minimal, if any, improvements in quality of care provided by primary care physicians. It is uncertain whether financial incentives are cost-effective relative to other types of quality-improvement interventions. (Strength of Recommendation: C, based on consensus, disease-oriented evidence, usual practice, expert opinion, or case series.)

Practice Pointers

Physicians in the United States traditionally have been paid for volume rather than quality of care. Recently, there has been increasing interest in "paying for performance," or providing financial incentives to reward physicians for achieving preset performance targets. For example, the patient-centered medical home model includes capitation, pay-for-performance, and fee-for-service payments.¹ Despite the increasing

popularity of financial incentives, there is limited rigorous evidence that they actually improve quality of care.

Three randomized controlled trials (RCTs), two controlled before-and-after studies, and two interrupted time series analyses were included in this review.² Five of the seven studies took place in the United States. The included studies assessed a variety of outcomes, from patient-reported measures (i.e., patient satisfaction) to clinical behaviors (i.e., immunization rates or cervical cancer screening) to clinical and physiologic measures (i.e., A1C levels for patients with diabetes mellitus). None of the studies reported morbidity or mortality outcomes. Six of the seven studies reported modest improvements in the quality of care for some of the primary outcomes measured. The seventh study did not identify any improvements in the clinical indicators (i.e., cervical cancer screening or childhood immunization rates), or patient-reported satisfaction measures (i.e., access, trust, coordination of care, referral, and overall satisfaction).³ Six of the seven studies reported on group-based financial incentives as opposed to individual physician incentives.

Each of the studies had significant risk of bias. The directors and administrators of two of the RCTs were not blinded to group allocation, and in the third RCT, the participating physicians were not selected randomly. Although most of the studies showed modest improvements in some of the preset quality measures, the improvements were not consistent among all quality measures, and the cost associated with the financial incentives was often substantial. In one study of pay-for-performance incentives for cervical cancer screening, mammography, and A1C

Cochrane Abstract

Background: The use of blended payment schemes in primary care, including the use of financial incentives to directly reward performance and quality, is increasing in a number of countries. There are many examples in the United States, and the Quality and Outcomes Framework for general practitioners in the United Kingdom is an example of a major system-wide reform. Despite the popularity of these schemes, there currently is little rigorous evidence of their success in improving the quality of primary health care, or of whether such an approach is cost-effective relative to other ways to improve the quality of care.

Objectives: The aim of this review is to examine the effect of changes in the method and level of payment on the quality of care provided by primary care physicians, and to identify: (1) the different types of financial incentives that have improved quality; (2) the characteristics of patient populations for whom quality of care has been improved by financial incentives; and (3) the characteristics of primary care physicians who have responded to financial incentives.

Search Strategy: The authors searched the Cochrane Effective Practice and Organization of Care Trials Register, Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews, Medline, HealthSTAR, EMBASE, CINAHL, PsychLIT, and ECONLIT. Searches of Internet-based economics and health economics working paper collections were also conducted. Finally, studies were identified through the reference lists of retrieved articles, Web sites of key organizations, and from direct contact with key authors in the field. Articles were included if they were published from 2000 to August 2009.

Selection Criteria: The authors selected randomized controlled trials (RCTs), controlled before-and-after studies, and interrupted time series analyses evaluating the impact of different financial interventions on the quality of care delivered by primary care physicians. Quality of care was defined as patient-reported outcome measures, clinical behaviors, and intermediate clinical and physiologic measures.

Data Collection and Analysis: Two review authors independently extracted data and assessed study quality, in consultation with two other review authors where there was disagreement. For each included study, the authors reported the estimated effect sizes and confidence intervals.

Main Results: Seven studies were included in this review. Three of the studies evaluated single-threshold target payments; one examined a fixed fee per patient achieving a specified outcome; one study evaluated payments based on the relative ranking of medical groups' performance (tournament-based pay); one study examined a mix of tournament-

based pay and threshold payments; and one study evaluated changing from a blended-payments scheme to salaried payment. Three cluster RCTs examined smoking cessation; one controlled before-and-after study examined patients' assessment of the quality of care; one controlled before-and-after study examined cervical screening, mammography screening, and A1C level; one interrupted time series analysis focused on four outcomes in diabetes; and one controlled interrupted time series analysis (a difference-in-difference design) examined cervical screening, mammography screening, A1C level, childhood immunization, chlamydia screening, and appropriate asthma medication. Six of the seven studies showed positive but modest effects on quality of care for some primary outcome measures, but not all. One study found no effect on quality of care. Poor study design led to substantial risk of bias in most studies. In particular, none of the studies addressed issues of selection bias as a result of the ability of primary care physicians to select into or out of the incentive scheme or health plan.

Authors' Conclusions: The use of financial incentives to reward primary care physicians for improving the quality of primary health care services is growing. However, there is insufficient evidence to support or not support the use of financial incentives to improve the quality of primary health care. Implementation should proceed with caution, and incentive schemes should be more carefully designed before implementation. In addition to basing incentive design more on theory, a large body of literature discussing experiences with these schemes can be used to draw out a number of lessons that can be learned and that could be used to influence or modify the design of incentive schemes. More rigorous study designs need to be used to account for the selection of physicians into incentive schemes. The use of instrumental variable techniques should be considered to assist with the identification of treatment effects in the presence of selection bias and other sources of unobserved heterogeneity. In randomized trials, care must be taken in using the correct unit of analysis and more attention should be paid to blinding. Studies also should examine the potential unintended consequences of incentive schemes by having a stronger theoretical basis, including a broader range of outcomes, and conducting more extensive subgroup analysis. Studies should more consistently describe (1) the type of payment scheme at baseline or in the control group, (2) how payments to medical groups were used and distributed within the groups, and (3) the size of the new payments as a percentage of total revenue. Further research comparing the relative costs and effects of financial incentives with other behavior change interventions is also required.



These summaries have been derived from Cochrane reviews published in the Cochrane Database of Systematic Reviews in the Cochrane Library. Their content has, as far as possible, been checked with the authors of the original reviews, but the summaries should not be regarded as an official product of the Cochrane Collaboration; minor editing changes have been made to the text (<http://www.cochrane.org>).

testing, the incentivized group achieved a statistically significant increase only in cervical cancer screening rates (5.3 versus 1.7 percent improvement), at a cost of \$3.4 million in bonuses during the first year.⁴

Despite the growing popularity of financial incentives in health care payment models, there is limited evidence that these incentives improve quality of care. In particular, evidence regarding incentives for individual physicians is lacking. In addition to costs, potential harms must be considered. For example, if financial incentives are provided only for certain health indicators, physicians may spend more time focusing on meeting those indicators while paying less attention to other important components of care. ■

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REFERENCES

1. Merrell K, Berenson RA. Structuring payment for medical homes. *Health Aff (Millwood)*. 2010;29(5):852-858.
2. Scott A, Sivey P, Ait Ouakrim D, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. *Cochrane Database Syst Rev*. 2011;(9):CD008451.
3. Gosden T, Sibbald B, Williams J, Petchey R, Leese B. Paying doctors by salary: a controlled study of general practitioner behaviour in England. *Health Policy*. 2003;64(3):415-423.
4. Rosenthal MB, Frank RG, Li Z, Epstein AM. Early experience with pay-for-performance: from concept to practice. *JAMA*. 2005;294(14):1788-1793. ■