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Physician attitudes toward participating in a financial incentive program for LDL reduction are associated with patient outcomes

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1. Introduction

Pay for performance (P4P) programs, in which providers are paid financial incentives for achieving quality goals, have been widely adopted across the U.S. More than 40 private sector P4P programs currently exist.[1] In the public sector, the Centers for Medicare and Medicaid Services has established a Value-Based Purchasing Program for hospitals and physicians for Medicare patients, and more than half of states have implemented P4P in their Medicaid programs.[2]

To date, studies of the impact of P4P on clinical outcomes have revealed mixed results.[3–9] Physicians' attitudes toward P4P programs potentially affect the success of P4P programs,[10–13] yet only a few studies have evaluated the attitudes and experiences of physicians participating in these programs.[14–16]

Concurrently with the growth of P4P programs, there has been increasing interest in paying patients directly to engage in health behaviors such as quitting smoking and taking their medications.[17–19] While studies have assessed patient attitudes about incentives,[20–23] to our knowledge no studies have evaluated how physicians feel about incentives for patients. Physicians' attitudes toward rewarding patients financially could also influence the effect of these incentives in a clinical practice setting.

This study was conducted as part of a multicenter cluster-randomized controlled trial of four financial incentive interventions to reduce low-density lipoprotein cholesterol (LDL-C) with statins among patients with high cardiovascular disease (CVD) risk. The separately published clinical trial found that only financial incentives shared between the physician and the patient were superior to control in improving patient statin adherence (39% vs 27%) and reducing LDL-C at 12 months (−33.6 mg/dL vs −25.1 mg/dL). Notably, improvement relative to control was not observed in the physician incentives only arm (31% statin adherence and −27.9 mg/dL change in LDL-C).[24]

Given the mixed results of this and other P4P programs to date, the present study raises three questions to explore how physician attitudes might influence such programs:

1. How did primary care physicians (PCPs) perceive various components of a financial incentive program before and after participating in the program?
2. Do PCP attitudes about financial incentives differ by physician or practice characteristics?
3. Are PCP attitudes about financial incentives associated with patient clinical outcomes in the setting of this P4P program?

We supplement quantitative analyses of survey data with interviews exploring topics including the saliency of incentives in conversations

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with patients, the effectiveness of incentives in changing patient behavior, and the effect of incentives on the patient-physician relationship.

2. Materials and methods

A detailed description of the main trial is described elsewhere.[24] In brief, PCPs and 1503 of their patients were randomized to one of four arms: physician incentives, patient incentives, shared physician-patient incentives, or control (no financial incentives). In the physician incentives arm, the PCP was eligible to receive a maximum of $1024 per patient over a year (a payment of $256 for each time a patient met the quarterly LDL-C goal). In the patient incentives arm, the patient was eligible to be entered into a daily lottery if s/he took the statin the day before and reached the quarterly LDL-C goal, with a mean expected payout of $1022 per year for perfect adherence. In the shared incentives arm, the physician and the patient were each eligible to receive payouts as described above but at half the expected value. In the control arm, neither the physician nor the patient was eligible for financial incentives based on LDL-C outcomes. In all arms, physicians were compensated for participation via relative value unit credits and patients were compensated via payments totaling $335 each.

We surveyed physicians to examine their perspectives on participating in the financial incentive program, and how these perceptions were associated with their patients' clinical outcomes. We supplemented these quantitative analyses with post-study interviews of a number of physicians from all four arms.

2.1. Study population

Practicing PCPs were recruited from "XX," "YY," and "ZZ" institutions. PCPs were eligible if they had at least five patients aged 18–80 considered to be either "medium-risk" (10-year Framingham Risk Score (FRS)[25] 10–20% with LDL-C ≥140 mg/dl) or "high-risk" (FRS ≥20% or coronary artery disease equivalent[5] with LDL-C ≥120 mg/dl). At the time of study enrollment, clinical guidelines recommended initiation of statins for patients meeting these criteria. Study coordinators met with eligible and interested physicians to describe study procedures, review patient lists, and conduct baseline surveys. Baseline data included physician demographics, years of practice, and annual visit volume.

Participating physicians' patients who met eligibility criteria were sent letters describing the study and offering the option of enrolling online or by phone.

2.2. Physician attitude surveys

Prior to randomization, PCPs were asked to complete a 5-item survey about general agreement with offering financial incentives to physicians or to patients (Appendix A). Three questions inquired about agreement with offering financial incentives to physicians, and were identical to those asked by Young et al. in a survey of physician attitudes regarding P4P programs in the U.S.[11] Two questions inquired about agreement with offering financial incentives to patients and were written to mirror physician questions. Responses were measured on a 5-point scale.

After randomization, PCPs randomized to the physician incentives or shared incentives arms were asked to complete the PAI-26 survey, a validated 26-item instrument for assessing provider attitudes toward various aspects of a P4P program.[10] Wording was modified to reflect a forward-looking perspective. Responses were measured on a 5-point scale, and different subsets of questions were averaged to calculate scores for seven subdimensions of physician attitudes toward pay-for-performance programs: awareness and understanding, clinical relevance, cooperation, concern for unintended consequences, control, financial salience, and impact on clinical behavior. Higher scores reflect more positive attitudes.

At the conclusion of the intervention period (15 months), all PCPs were asked to repeat the 5-item survey on general agreement with offering financial incentives. PCPs in the physician incentives or shared incentives arms were additionally asked to repeat the PAI-26 survey, with wording modified to reflect a backward-looking perspective.

At the end of the intervention, all PCPs were asked how they would distribute a hypothetical $1000 financial reward for reducing and maintaining LDL-C: to the physician, to the patient, or equally shared between the physician and the patient.

2.3. Post-study interviews

At the conclusion of the intervention period, we conducted semi-structured telephone interviews with a purposive targeted sample of PCPs, in order to more deeply explore attitudes captured in the surveys. Our goal was to interview approximately 30 PCPs total across two of the sites ("XX" and "YY") from which more than 90% of patient population were recruited, stratified by study arm and representing diverse practices with high-, medium-, and low-performing patients, based on reduction in LDL-C at 12 months. The target was based on literature suggesting 30 is a reasonable number to achieve saturation.[26,27] We targeted PCPs for interviews in 6 waves, formed as all of a PCP's patients completed the 15-month visit for the study over a 4-month period. A total 13 PCPs from "XX" and 14 PCPs from "YY" were interviewed, including 6 from the patient incentive group, 9 from the physician incentive group, 10 from the shared incentive group, and 2 from the control group.

2.4. Clinical endpoints

We measured patients' LDL-C at baseline and 12 months using full lipid profiles, and calculated a change in LDL-C from baseline to 12 months for each patient. Changes in LDL-C for all of a PCP's enrolled patients were averaged to calculate a mean change in patient LDL-C for each PCP.

2.5. Survey analysis

First, we assessed whether PCP responses to the 5-item general survey and PAI-26 differed across study groups at baseline or between baseline and post-study.

Second, we assessed whether PCP subscores on agreement with offering "incentives to physicians" (defined as a mean score ≥4 for questions 1–3) and "incentives to patients" (defined as a mean score ≥4 for questions 4–5) differed by physician demographic or practice characteristics. We also assessed whether PCP responses to distribution of a hypothetical $1000 financial incentive differed by those same physician characteristics.

Third, we assessed whether the mean change in patient LDL-C or the effect of study arm on clinical outcomes differed by PCP attitudes on financial incentives.

2.6. Interview analysis

Trained interviewers (n=2) conducted open-ended interviews following an interview script developed by the study team, which comprised health economists, physicians, and qualitative researchers.

An independent transcription agency transcribed interview recordings. Transcripts were checked for accuracy, stripped of identifying information, and imported into NVivo 10 for coding and analysis. The team developed a coding scheme, consistent with content analytic

[5] Includes diabetes, peripheral artery disease, ischemic or arteriosclerotic CVD, stroke or transient ischemic attack, or coronary revascularization procedure.