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Patient Incentives to Motivate Doctor Visits and Reduce Hypertension Disparities

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Summary

Nearly one in three adults—or 72 million people—in the United States have high blood pressure, also known as hypertension (HTN) (National Heart, Lung, and Blood Institute, 2009). Yet, despite increased awareness and numerous initiatives, NHANES estimates from 2005–2006 (Ostchega, 2008) suggest that fewer than half (43 percent) of those people have their HTN adequately controlled, defined as less than 140/90 mm Hg in nondiabetic patients (Ong, Cheung, et al., 2007). Regular physician visits are critical to HTN management and provide an opportunity for physicians to evaluate and revise medication regiments and discuss potential lifestyle changes with their patients that may lower their high blood pressure.

Although the use of financial incentives to reward physicians delivering higher-quality care is increasingly common in the United States (Bailit Health Purchasing LLC and Sixth Man Consulting, Inc. 2001; Roski, Jeddloeh, et al., 2003), the use of financial incentives to reward patients for improved management of their chronic conditions is relatively rare. Most research on patient incentives has focused on co-pays or other negative incentives routinely used in health care to discourage overutilization (Brook, Ware, et al., 1984). However, evidence in other arenas suggests that small financial rewards influence consumer behavior, and evidence for the effectiveness of positive incentives to improve chronic care self-management (Jochelson, 2007) and health behaviors is growing (Volpp, John, et al., 2008; Volpp, Troxel, et al., 2009). But few of these efforts have focused specifically on the use of such incentives as a tool to help reduce disparities in care and outcomes among patients belonging to different racial/ethnic or socioeconomic groups.

In 2009, CIGNA was awarded a grant from the Robert Wood Johnson Foundation (RWJF) under the foundation’s Finding Answers: Disparities Research for Change program to examine the extent to which small financial incentives can motivate physician visits and reduce racial/ethnic disparities in HTN. The project was administered as a partnership between CIGNA and the RAND Corporation. The quality improvement initiative was aimed at individuals with HTN in Maryland, Virginia, and Washington, D.C. This 24-month project was designed to address three objectives:

1. To assess whether a one-time $15 patient financial incentive, along with educational materials, would be effective in motivating individuals with HTN to see their personal physician, compared with educational materials only or no intervention (usual care).
2. To determine whether patient incentives encourage the control of or improvement in BP for high-risk individuals relative to educational materials only or no intervention (usual care).
3. To assess whether patient incentives and educational materials are differentially effective across racial/ethnic groups in motivating physician visits and improving BP control and whether these differential effects lead to a reduction in racial/ethnic disparities in HTN.

Eligible members with a previous diagnosis of HTN (n=18,000) were randomized to one of three arms: (1) HTN materials (i.e., an educational letter and pocket blood pressure record) plus an offer of a one-time $15 American Express gift card, contingent on making a physician visit (incentive group, n=6,000); (2) HTN materials only, without an offer of patient incentive (education-only group; n=6,000); or (3) usual care (n=6,000). Receipt of the gift card was contingent on having an appointment with a physician to discuss HTN; the card was mailed to the patient once the appointment had appeared in CIGNA’s claims database. By design, approximately 15 percent of the study population had not had a physician visit in more than a year prior to the launch of the HTN initiative (n=3,076, 17.1 percent). This design feature allowed us to examine whether this initiative was successful in encouraging patients who were not in regular care to seek medical attention for their HTN.

The conceptual framework for this project is based on Andersen’s Behavioral Model (Andersen, 1995), which postulates that people's use of health services is a function of their predisposition to use the services (e.g., demographic factors, aspects of the social structure, and health beliefs), the personal and community resources that enable or impede their use of the services (e.g., availability of health facilities, knowledge of how to access services, and means to get them), and their need for care.

The overall evaluation included a summative evaluation using data from administrative claims databases and medical record reviews and a formative evaluation using feedback from (1) study participants, (2) high-volume physicians, and (3) CIGNA leadership.

**Summative Evaluation**

**Aim 1: To assess whether a $15 patient financial incentive, along with educational materials, is effective in motivating individuals with HTN to see their personal physician, compared with educational materials only or no intervention (usual care)**

Individuals receiving a financial incentive were more likely to have made a physician visit compared with those receiving educational materials only or those receiving usual care, although the results dissipated over time. The initiative did not affect the total number of physician visits over the 12-month period.

Post-hoc analyses of patient subgroups suggested that the initiative may be most beneficial for individuals who had not seen a physician in over a year and those who had a baseline systolic blood pressure (SBP) between 120 and 139 or a diastolic blood pressure (DBP) between 80 and 89. Additional post-hoc analyses limiting the outcome to those physician visits for which HTN was the primary diagnosis also suggest that the initiative was effective at encouraging physician visits.

By three months post-intervention, 33.8 percent of the individuals in the incentive arm had made a physician visit, 32.7 percent of the education-only group had made a visit, and 31.1 percent of those in usual care had made a visit (p<0.01). Within three months, the incentive resulted in a 2.7 percent absolute increase in the number of individuals having a physician visit for HTN compared with those in usual care (p<0.01). By six months post-intervention,
the differences between the groups had diminished, although they remained statistically significant (p=0.04). By 12 months post-intervention, the effect of the intervention on making a physician visit had dissipated.

The initiative had a significant effect on those who had not seen a physician in over a year. Within the first three months, 19.3 percent of individuals in the incentive group had made an appointment compared with 14.7 percent in usual care, an increase of 4.6 percentage points (p<0.01). Although more individuals receiving educational materials had a visit (17.6 percent) than did those in usual care (14.7 percent), this difference was of borderline significance (p=0.07).

Although all individuals had a previous diagnosis of HTN, actual blood pressure at baseline was not known until record reviews were completed at six months because blood pressure is not currently recorded in CIGNA claims data. At baseline, 35.9 percent of the study population had SBP ≥ 140 or DBP ≥ 90; 51.0 percent had SBP between 120 and 139 or DBP between 80 and 89, and 13.0 percent had SBP<120 and DBP<80. Post-hoc analyses suggested that the educational materials may prompt individuals with SBP between 120 and 139 or DBP between 80 and 89 to make a physician visit. By three months, a larger percentage of both the incentive group (33.8 percent) and education-only group (34.0 percent) had made a visit compared with those in usual care (31.1 percent). These differences were statistically significant (p=0.03 and p=0.02, respectively). By six months, the education-only group continued to have a significantly larger percentage of individuals who had made a physician visit compared with those in usual care (53.5 percent versus 50.8 percent, p<0.04). Similarly, at 12 months, a significantly larger percentage of the education-only group had made an appointment relative to those in usual care (67.9 percent versus 64.0 percent, p<0.02). There were no differences between those in the incentive group and those in usual care after three months, or between those in the incentive and education-only groups.

When only visits for which HTN was listed as the primary diagnosis were included, both the incentive and education-only arms had significantly more visits than those in usual care after 12 months of follow-up (p=0.04 and p=0.03, respectively). Both groups had about 2 percent more visits than the usual care group.

**Aim 2: To determine whether educational materials alone or in combination with a small financial incentive encourage the control of or improvement in BP for high-risk individuals**

Although patient incentives and educational materials were not associated with an improvement in BP for the full sample, subsequent post-hoc analyses of subgroups suggested that the initiative may be effective in lowering blood pressure among those with SBP between 120 and 139 or DBP between 80 and 89 specifically; this group should be the focus of future study.

Individuals with SBP between 120 and 139 or DBP between 80 and 89 at baseline demonstrated significant and sustainable reductions in SBP over time. After six months, SBP had decreased an average of 0.5 points more for the incentive group and 0.7 points more for the education-only group relative to those in usual care. After 12 months, SBP had decreased by an average of 3.8 points more for the incentive group and 2.6 points more for the education-only group, relative to those in usual care. Post-hoc analyses stratified by baseline blood pressure suggested that the initiative did not result in an improvement in blood pressure among those with HTN at baseline.
Aim 3: To assess whether patient incentives and educational materials are differentially effective across racial/ethnic groups in motivating physician visits and improving BP control and whether these differential effects lead to a reduction in racial/ethnic disparities in HTN

Formal tests of interaction that compared the effectiveness of the initiative across racial/ethnic groups found no significant differences for either physician visits or reduction in blood pressure, suggesting that the initiative may not contribute to a reduction in racial/ethnic disparities in HTN.

Formative Evaluation

Patients were asked for feedback on each of the three components of the initiative and suggestions for how to improve and refine each component. Suggestions included strengthening the tone of the educational materials because many believed the educational materials were too reserved in tone and failed to express the seriousness of the condition; tying the incentive more closely to the condition, e.g., offering a discount on the purchase of a blood pressure cuff rather than a generic $15 gift card; and customizing initiatives to the stage of illness and whether or not patients are actively engaged in care. Although the same intervention was implemented with all participants in the intervention group, the respondents believed that the letter and educational materials could be tailored to the condition of the individual participant, so that, for example, those with HTN would receive one type of information and those who had gotten their blood pressure under control would receive messages congratulating them and providing information about maintenance.

We also surveyed 24 physicians (29 percent response rate) to assess whether they thought the initiative was useful or helpful to their patients, whether the initiative would result in behavior changes among their patients, and ways in which physicians should be engaged in patient-focused quality improvement initiatives in the future. In general, physicians agreed that the letter, blood pressure record, and financial incentives would encourage their patients to schedule an office visit and keep better track of their blood pressure. Physician recommendations to improve the initiative included tying the incentive to compliance or improvements in blood pressure control, tying the incentive more closely to tools needed to treat hypertension, and providing additional education via phone calls.