Copayment Levels and Medication Adherence
Less Is More

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Statins play a central role in cardiovascular risk reduction. Their benefit has been demonstrated for a broad spectrum of patients, ranging from those without known vascular disease\(^1\) to those who have recently had a myocardial infarction\(^2\) or have undergone coronary artery bypass surgery.\(^3\) Not surprisingly, statins are the most widely sold class of drugs in the United States, accounting for $18.4 billion in sales in 2007.\(^4\)

Despite this, fewer than half of the people who qualify for lipid-modifying treatment receive it.\(^5\) Furthermore, only half of all patients who have been prescribed a statin actually adhere to this therapy. For example, 42\% of Medicare patients enrolled in a pharmacy benefit program were adherent with their prescribed statin 2 years after starting treatment.\(^6\) Statin adherence rates after acute coronary syndrome do not appear to be much better,\(^7\) nor have they improved substantially over time.\(^8\) Not surprisingly, nonadherence is a central reason why many patients do not achieve their low-density lipoprotein goals,\(^5\) and patients who are nonadherent have worse clinical outcomes\(^9\) and higher healthcare costs\(^10\) than their adherent counterparts.

The reasons for statin nonadherence are complex and vary from patient to patient. For some, side effects lead them to a legitimate discontinuation of therapy. Others misunderstand the importance of statin therapy because of the asymptomatic nature of hyperlipidemia, especially when burdened with the complex treatment regimens that many patients with vascular disease receive. Unfortunately, for an increasing number of patients, cost is a substantial barrier to appropriate medication use.

A study in this issue of *Circulation* makes this point clearly.\(^11\) Using a difference-in-difference approach, Doshi et al evaluated the impact of an increase in statin copayments (from $2 to $7 per 30-day prescription) among patients in the Veterans Affairs system. They found that this copayment change was associated with a 7\% greater decline in adherence and a 12\% greater increase in having a 90-day gap in therapy than observed for veterans whose copayments remained unchanged. Most important, these results were observed in all of the subgroups that were evaluated, including patients at high risk of coronary artery disease–related events.

Although Doshi et al\(^11\) studied a population of patients who may be particularly sensitive to relatively small absolute changes in copayment levels, their results are very consistent with those from other healthcare environments\(^10,12–14\) (Table) and with studies evaluating the relationship between high patient cost sharing and nonadherence for other drug classes.\(^15\) Collectively, these data demonstrate that copayments, which are intended to reduce the use of less important or “discretionary” services by making patients responsible for part of their cost, also adversely affect the use of therapies that may be considered “essential.”

These observations lead to a logical strategy: We should reduce (not increase) copayments for this and other evidence-based therapies in high-risk patients. This approach is sometimes known as value- or evidence-based insurance design,\(^16\) because it proposes to base patient copayments on both the efficacy and the cost of a treatment, not just its cost. Of course, deciding what magnitude of efficacy is large, or similarly determining for whom statins might be considered essential, is a matter of some debate. Nevertheless, strategies such as this are part of a larger movement from payers and patients to receive quality and value in health care through a more rational, evidence-based allocation of resources. The selective reduction of copayments for medications such as statins has gained particular attention because the cost savings from clinical events that are prevented by the greater use of effective medications may offset the added costs of assuming patients’ copayments.

Although limited, the existing data provide an estimate of the impact that reducing copayments for statins might have. A prospective study involving 1 large employer found that reducing statin copayments increased adherence by 3 percentage points.\(^17\) An analytic model suggests that eliminating statin copayments for high-risk (higher-value) patients and raising them for lower-risk (lower-value) patients could prevent approximately 80 000 hospitalizations and 30 000 emergency department admissions and save $1 billion per year in the United States.\(^10\) Analyses in post–myocardial infarction patients show similar results.\(^18,19\) More robust data will come for the ongoing Post-MI FREEE trial (Post–Myocardial Infarction Free Rx Event and Economic Evaluation), which is randomizing post–myocardial infarction patients to no copayments or usual insurance coverage for...
statins and other secondary prevention medications, but results from this trial will not be reported for several years.20

While we await better evidence, there are still important lessons to learn from the results of the present study by Doshi et al.11 First, it is important to simply recognize the relationship between cost and nonadherence. This problem is likely to become even more important as the amount of cost sharing faced by patients continues to increase and the economy continues to suffer. These are issues that physicians seldom think about and even less commonly discuss with patients but which clearly confound the clinical objectives that we work hard to achieve and on which, in some cases, our salaries are based. In response, we can educate ourselves about medication costs, we can discuss them with our patients, and we can advocate for the use of equally effective but lower-cost medications when clinically appropriate.

Second, at a macro level, policymakers working for insurers, government payers, and large employers should reconsider efforts to constrain rising costs by raising patient cost sharing for essential medications; these efforts may actually increase overall healthcare costs and therefore frustrate, not further, their intended goals. When setting statin copayments for high-risk patients, less is almost certainly more.

Finally, and perhaps most importantly, the results presented by Doshi et al11 highlight just how common and complex nonadherence is. In this study, rates of nonadherence among veterans without any cost sharing (ie, those who receive their medications for free) were still almost 40%. Said another way, once we have dealt with cost-related underuse, we must still address the numerous other reasons for statin nonadherence. This is not different from the problem that statins themselves are used to treat; they are only part of a multifaceted regimen for cardiovascular risk reduction. The identification of statins has helped stem the tide of cardiovascular morbidity and mortality. Identifying how to improve adherence will no doubt help even more.

Disclosures

Dr Choudhry receives research funds from Aetna, Inc for the Post-MI FREEE trial. He is a consultant to Mercer Health and Benefits Inc.

References

10. Goldman DP, Joyce GF, Karaca-Mandic P. Varying pharmacy benefits for high-risk patients, less is almost certainly more.

Table. Selected Studies Evaluating the Impact of Copayment Differences and Statin Use and Adherence

<table>
<thead>
<tr>
<th>First Author</th>
<th>Study Design</th>
<th>Subjects</th>
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<th>Lower (More Generous)</th>
<th>Statin Use Among Patients With Lower (vs Higher) Copayments</th>
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<td>Gibson13</td>
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<td>$2 Copay</td>
<td>7% Greater decline in statin adherence</td>
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*This study evaluated copayments as a continuous variable and estimated the impact of a $10 copayment differential across the range of observed values. †Copayments were income based.


**Key Words:** Editorials ■ medication compliance ■ drug costs ■ medication adherence ■ statins