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Understanding Primary Nonadherence

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Poor adherence with medications is endemic. Nearly half of all patients prescribed pharmaceutical therapies do not take sufficient doses to experience a therapeutic effect, resulting in higher overall treatment costs for some chronic conditions (Haynes et al, 1996; Goldman et al, 2007). Patients fail to adhere to their medications for numerous reasons. The simplest and most common explanation is that they forget. Other important factors for nonadherence include schedule disruptions, side-effects, out-of-pocket costs, and what is often referred to as symptom management, where patients take higher doses as symptoms increase and fewer doses as symptoms subside.

Although the causes are well understood, improving medication adherence has proven difficult. A 2002 JAMA review, for example, identified 33 interventions designed to improve patient adherence to prescribed medications (McDonald et al, 2002). Even the most successful interventions did not result in large improvements in adherence, and generally relied on complicated, labor-intensive regimens of uncertain effectiveness.

The voluminous research on medication adherence has focused on barriers patients face in taking their medication, so-called secondary nonadherence (Osterberg and Blaschke, 2005). By contrast, the fraction of prescriptions written by a physician that are never filled by the patient, or primary nonadherence, has been largely ignored. This type of nonadherence does not show up in administrative data. In fact, most estimates of primary nonadherence come from patient surveys or from hospitalized patients discharged with an electronically recorded prescription. The findings range from as little as 2% of new prescriptions going unfilled to as many as 30%, making it hard to assess the true extent of the problem.

Fortunately, the growth in electronic prescribing will allow us to answer this question with greater precision over the next few years, and the paper by Liberman and colleagues in this issue is an important first step. Using e-prescribing records from 507 providers linked to claims data, they find that 20 percent of patients under age 65 did not fill an initial prescription for an asthma controller within 6 months and 34% failed to fill an initial prescription for a cholesterol-lowering medication. While one can debate the precision of these estimates and their generalizability across therapeutic classes and patient populations, it is evident that rates of primary non-adherence are much closer to previous upper bound estimates (20% to 30%) than lower bound estimates (2% to 4%). Failure to fill a new prescription was associated with several common factors such as prior use of prescription drugs, out-of-pocket costs, and patient age (better adherence among children), but was uncorrelated with or did not control for other patient and provider characteristics known to affect medication use more generally, such as gender, education, disease severity and the individual clinician.

The results of the study raise a number of important questions. Why do so many patients fail to fill an initial prescription? How consequential are these decisions? And what can we do about it from a policy perspective? Some of the observed non-adherence could reflect a

wait-and-see approach. For example, a physician may prescribe a statin to a patient with marginally high cholesterol in case dietary changes and/or increased exercise are not feasible or prove ineffective in lowering LDL. Another potential reason for primary non-adherence to *chronic* medications is that starting a new treatment regimen is a long-term commitment, from a clinical, behavioral and financial perspective. It requires that the patient understand the nature of the medical problem, is committed to addressing it, and believes the prescribed medication is the most effective way to treat it. Given these obstacles, it is not surprising that such a sizable fraction of patients do not adhere from the start, particularly when the out-of-pocket expense is considerable.

While the adverse effects of poor secondary adherence have been well documented, we know very little about the consequences of primary nonadherence. Reliable estimates must assess the disease severity of patients forgoing initial treatments, what fraction adopt them at a later time as their LDL levels rise, for example, and how many patients are able to change behaviors and reduce their health risk without the use of prescription medications. Nonetheless, the sheer prevalence of primary nonadherence found in this study suggest that a real problem exists and focusing solely on secondary nonadherence may miss an important piece of the puzzle.

On a positive note, addressing primary nonadherence is relatively straightforward. About 95 percent of all prescriptions dispensed in the study sample were filled within two weeks. The increasing use of electronic prescribing will allow pharmacy benefit managers or plan sponsors to contact patients who do not fill an initial prescription in the first 14 days and discuss with them the reasons behind their decision and to intervene when applicable. Similar interventions are now being undertaken to address secondary nonadherence. For example, Medco's Therapeutic Resource Centers (TRCs) use sophisticated computer algorithms to identify gaps in coverage and omissions in treatment (e.g. diabetics not taking a statin) among chronically ill patients. These patients are then contacted by specialist pharmacists and counseled on the benefits of the treatment and the importance of full compliance. While the success of these types of programs have not been documented, it is hard to imagine that such targeted interventions would not be cost-beneficial given the clinical and financial consequences of poor adherence among the chronically ill.

Less pharmaceutical use could come about through three different behavioral pathways: reduced initiation of prescription drug treatment, worse compliance among existing users, or more frequent discontinuation of therapy. Due to data limitations, the majority of research to date has focused on the latter two pathways. Yet, distinguishing between these hypotheses is important because it affects the advice and monitoring that physicians and plans should use to counteract any adverse consequences of plan design changes. Future work is needed to better understand why patients forgo potentially beneficial treatments from the start and the clinical consequences of these decisions. We also need to know how responsive patients are to follow up information and clinical reminders about their primary nonadherence, and how that differs across patients and provider groups.

Citations

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