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HEALTH CARE COMMUNICATION

The Unmet Challenge of Medication Nonadherence

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ABSTRACT

Medication nonadherence for patients with chronic diseases is extremely common, affecting as many as 40% to 50% of patients who are prescribed medications for management of chronic conditions such as diabetes or hypertension. This nonadherence to prescribed treatment is thought to cause at least 100,000 preventable deaths and $100 billion in preventable medical costs per year. Despite this, the medical profession largely ignores medication nonadherence or sees it as a patient problem and not a physician or health system problem. Much of the literature on nonadherence focuses on barriers to adherence, with the assumption that appropriate adherence is the normal course of events and nonadherence is an aberration. This approach minimizes and oversimplifies the problem. It is not easy for humans to change their behavior, even for what many physicians see as a minor change such as taking prescription medications. Improving medication adherence has not been well studied, but a Cochrane review shows that multifactorial interventions are more effective. In at least one integrated health care system, Kaiser Permanente Northern California, a combination of approaches centered on the electronic health record has improved medication adherence rates to above 80%. Using similar elements would be feasible in other health care systems but would require motivation and planning. Effective change will not happen until key players decide to take on this challenge and reimbursement systems are changed to reward health systems that improve medication adherence and chronic disease control.

INTRODUCTION

Despite causing an estimated 125,000 avoidable deaths each year and $100 billion annually in preventable health care costs,[1] medication nonadherence is barely on the radar of most practicing physicians. Adherence rates for most medications for chronic conditions such as diabetes and hypertension usually fall in the 50% to 60% range, even with patients who have good insurance and drug benefits.[2] Medication cost can be a concern for some patients, but most treatment guidelines for chronic conditions use generic medications available at reasonable prices. In most studies, adherence is defined as taking 80% or more of the prescribed medication doses.

Although deaths caused by nonadherence are hard to measure, the estimate of 125,000 deaths per year is widely cited in the literature. Disease-specific meta-analyses validate a significantly increased risk of death in nonadherent patients.[3]

Yet, unlike better-known causes of death such as heart attack or cancer, medication nonadherence is usually invisible to patients, their families, and the medical profession. It does not appear on the death certificate of a patient who has died of a myocardial infarction after not taking his antihypertensive medication or an antiplatelet agent to protect his stent. It is an orphan problem. To my knowledge, no major entity, organization, or group has taken it on as a priority.[4] This topic does not fit into the boundaries of any one discipline. Insurers and health plans have other priorities, and few have addressed this problem in a systematic manner.

Practicing physicians remain largely unaware of this problem. To the extent that they do, they see it as the patient's responsibility to correct this problem. In the pervasive traditional medical model, it is the responsibility of the physician to make an accurate diagnosis followed by an appropriate prescription, with at least some effort at educating and perhaps motivating the patient. Yet when this fails, as it does 40% to 50% of the time, it is seen solely as a patient issue, rather than a system or clinician responsibility. Fee-for-service medicine provides little incentive for individual physicians to address this. The fee-for-service model incentivizes services, not quality or improved outcomes. To the extent that incentives are available with pay-for-quality programs, the amounts involved are too small to motivate busy physicians.

Much of the earlier literature on medication nonadherence focuses on barriers to adherence. This framework has the implicit assumption that adherence is the norm and that when it fails, there must be obstacles that are interfering with the process.[5]

Although there are many potential barriers to appropriate adherence (Sidebar: Potential Barriers to Medication Adherence), I contend that a more realistic perspective is that in changing human behavior, inertia is the rule, and change the exception. Improving adherence requires an active process of behavioral change, which is nearly always a challenge. It requires education, motivation, tools, support, monitoring, and evaluation. This is

Potential Barriers to Medication Adherence

Patient-related barriers:
- Lack of motivation
- Depression
- Denial
- Cognitive impairment
- Drug or alcohol use
- Cultural issues
- Low educational level
- Alternate belief systems

Treatment-related barriers:
- Complexity of treatment
- Side effects (or fear of side effects)
- Inconvenience
- Cost
- Time

Other barriers:
- Poor practitioner-patient relationship
- Asymptomatic disease being treated

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true not just for medication adherence, but for any desirable behavioral changes such as improving nutrition, increasing exercise, or reducing substance abuse, among others. Focusing on barriers, as much of the literature on nonadherence tends to do, distracts us from the reality that adherence rates are very low under almost all circumstances, whether obvious barriers are present or not. For example, look at how hard it is to induce physicians to wash their hands between patients, which might seem to be a minor behavioral modification of proven benefit, but which happens less than half of the time that it should.[6]

The best solutions focus on a systems approach as opposed to repeated exhortations. Doctors are used to medications, understand their role and importance, and tend to minimize the difficulty that many patients have with incorporating regular medication, often with side effects, into their busy lives. Although there are steps that physicians can take to improve adherence, the most effective interventions have resulted from system change and multifaceted strategies.

A SUCCESSFUL APPROACH IN ONE HEALTH CARE SYSTEM

Little research has been done on solutions to the problem of medication nonadherence, and most studies that have been done are of limited interventions, such as pill boxes or smartphone apps, that have minimal efficacy.[7] A Cochrane review[8] of this subject concludes that multifactorial approaches are better, but even these have limited efficacy.[9] This is discouraging and makes the problem seem unsolvable. There have been successes in this arena, but most are of limited generalizability.[8]

In the Kaiser Permanente Northern California system, hypertension control rates exceed 80%,[10] compared with a community control rate of around 65% or less. Kaiser Permanente uses a multifaceted approach that includes the following:

- The electronic health record (EHR) to identify patients at risk: Those with a given diagnosis who have poor control, few visits, or insufficient refills
- Outreach to ensure all patients with hypertension have documentation of blood pressure measurement at least yearly
- Ancillary staff such as medical assistants who can reach out to patients who are nonadherent or who have poor control, and encourage them to make appointments
- Clinical pharmacists who can counsel patients and adjust medications if needed
- Chronic-condition case managers, especially for patients with congestive heart failure and diabetes
- Integrated disease-specific health education classes
- Well-utilized clinical guidelines and algorithms for disease control, emphasizing use of effective generic medications (lowering the cost barrier) when applicable
- Physicians' classes and counseling in improving physician-patient communication and collaboration, which encourages shared decision making.

This approach sounds expensive and complex, and to some extent, it is both. Yet the medical profession thinks it is reasonable to spend $100,000 on a single individual with cancer to extend his/her life for a year. What would it be worth to save 100,000 people from dying each year as a result of not taking their medications?

DISCUSSION: APPROACHES FOR THE FUTURE

One of the first steps in improving medication nonadherence would be to increase public awareness of the magnitude of the problem. Articles are beginning to appear in popular media on this topic.[11] Ideally, patients will learn to insist on effective control of their chronic conditions. It is the patient, after all, who has the most to lose.

Suggestions to helping patients become more adherent to taking their medications include using what is known from the science of human behavioral change to help patients adopt healthier ways of living and form healthy habits. Health care practitioners should use basic motivational interviewing strategies when prescribing medications and confirming compliance. If this is done successfully, patients can become motivated to take their medications and to insist on good control of their chronic condition. To help motivate patients, physicians can study a continuing medical education module on medication adherence, such as from the American Medical Association (see: www.stepsforward.org/Static/images/modules/14/downloadable/Medication_Adherence.pdf).

Studies show a direct relationship between a patient's perception of the need for a given treatment and his/her adherence to this treatment[12,13] and between the patient's sense of empowerment and self-efficacy and his/her medication adherence.[14] In 2010, *The Permanente Journal* published an article I wrote, titled "Working with the Noncompliant Patient," which discusses tools that physicians can use to enhance medication adherence in their patients.[15]

Although there are steps that physicians can take to improve adherence, the most effective interventions have resulted from system change and multifaceted strategies.

Measurements of a medical practice's diabetes and hypertension control are available using Healthcare Effectiveness Data and Information Set (HEDIS) quality measures. These measures could be publicized and could lead to healthy competition between health care organizations, and possibly between clinicians in a given organization. Providing physicians feedback about their own patients' medication adherence has not been found to make a significant improvement, however.[16]

Another idea is to motivate health plans and physicians to take this problem on as a challenge. This could include better reimbursement for better disease control and better outcomes, although the amounts would have to be sufficient to create a powerful incentive.

Disease advocacy organizations such as the American Diabetes Association could make improving medication adherence part of their mission and program. There is no American Medication Nonadherence Association.

Most medical practices in the US are now using an EHR. Although many practices use their EHR mainly for billing and basic medical record functions, most EHR

programs have the potential functionality of enabling practitioners to identify and reach out to patients with poor medication adherence and/or poor disease control. Often, it is the patients with a given diagnosis whom we do not see regularly who are most likely to be nonadherent. In traditional private practice settings, the patient who does not make appointments is most likely to be forgotten.

Many of the components of the Kaiser Permanente Northern California approach could be tailored to practice settings in the fee-for-service world. We cannot depend on individual physicians to manage this given the time demands of busy practices, but even small group practices could implement some of these techniques and use simple historical controls in their own practices to measure success. This would require using other health care workers such as nurses, medical assistants, and case managers or disease management programs when available to do the bulk of the work.

CONCLUSION

Medication nonadherence for patients with chronic conditions remains an unmet challenge to health care practitioners. If it were possible to improve medication adherence by a simple but costly one-time billable procedure, such as implanting an adherence stimulator, there would be a rush to adopt this practice. Because this is not the case, shouldn't we as a profession be willing to develop, to implement, and to evaluate more complex but potentially effective approaches to this widespread and dangerous problem? ❖

Disclosure Statement

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Understanding

To write prescriptions is easy, but to come to an understanding with people is hard.

— Franz Kafka, 1883-1924, German-speaking Bohemian Jewish novelist and short story writer