



## Medication adherence

## Patient-centered priorities for improving medication management and adherence



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## ABSTRACT

**Objective:** The Centers for Education and Research on Therapeutics convened a workshop to examine the scientific evidence on medication adherence interventions from the patient-centered perspective and to explore the potential of patient-centered medication management to improve chronic disease treatment.

**Methods:** Patients, providers, researchers, and other stakeholders ( $N = 28$ ) identified and prioritized ideas for future research and practice. We analyzed stakeholder voting on priorities and reviewed themes in workshop discussions.

**Results:** Ten priority areas emerged. Three areas were highly rated by all stakeholder groups: creating tools and systems to facilitate and evaluate patient-centered medication management plans; developing training on patient-centered prescribing for providers; and increasing patients' knowledge about medication management. However, priorities differed across stakeholder groups. Notably, patients prioritized using peer support to improve medication management while researchers did not.

**Conclusion:** Engaging multiple stakeholders in setting a patient-centered research agenda and broadening the scope of adherence interventions to include other aspects of medication management resulted in priorities outside the traditional scope of adherence research.

**Practice Implications:** Workshop participants recognized the potential benefits of patient-centered medication management but also identified many challenges to implementation that require additional research and innovation.

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## 1. Introduction

More than half of American adults take at least one prescription drug, and 1 of 10 take five or more [1]. As the U.S. population ages and as the number of individuals with multiple chronic conditions increases [2], poor adherence to medication regimens to treat chronic disease will pose a public health challenge of increasing significance. Optimal use of medications to manage chronic conditions can improve patient outcomes and decrease the costs of health care; however, suboptimal medication adherence is pervasive and results in poor health outcomes. An estimated \$105–\$290 billion is spent annually in avoidable health care costs related to poor adherence to medication regimens [3–7]. Reasons for low adherence include poor prescribing practices, as well as patient concerns about cost, bothersome side effects, burdensome regimens, absence of chronic disease symptoms, doubts about effectiveness of medications, and low health literacy [8]. Prior work has shown that 20–30% of prescriptions are never filled. Of those that are filled, about half of medications for chronic disease are not taken as prescribed [9].

The findings on medication adherence are especially disappointing given the vast literature on the topic. Adherence research has largely focused on determinants of successful or unsuccessful medication-taking behavior as well as methods to improve patients' medication taking. Furthermore, previous research has assumed that prescribers' recommendations constitute instructions that patients are simply expected to follow—hence the somewhat paternalistic terms “compliance” and “adherence” that predominate the literature [10]. However, the relatively modest progress on improving medication adherence, despite decades of research on the topic, has led researchers, clinicians, patients and other stakeholders to seek additional perspectives. New opportunities to improve medication management could arise by placing the individual patient in the center of decisions [11–15]. Such patient-centered care “is respectful of and responsive to individual patient preferences, needs, and values, and ensure[s] that patient values guide all clinical decisions” [16]. In the context of medication use, a patient-centered approach suggests that improving medication use is not entirely about getting patients to simply follow a provider's plan, to take more medicines, or to take their medicines more often [17,18]. Instead, efforts should focus on delivering care in a way that incorporates patient beliefs, preferences, goals, practical realities, and concerns into decisions and practices that support appropriate medication prescribing and use [19].

A growing literature explores tailoring medications to patient goals, as well as using shared decision-making in the context of medication therapy for chronic disease [20] to engage patients in prescribing decisions. Two recent systematic reviews of interventions to improve adherence to medications prescribed for chronic conditions found mixed results [21–23]. The most successful interventions were multi-modal, high-intensity, and personalized. The finding that personalized interventions are more effective suggests that patient-centered care may offer a way to further improve medication management. Additional research is needed to determine whether patient-centered medication management can improve health outcomes and whether such management can be accomplished in ways that are feasible, cost-effective, scalable and sustainable.

The potential for patient-centered approaches to improve medication outcomes for people with chronic illness prompted a diverse group of therapeutics researchers funded by the Agency for Healthcare Research and Quality (AHRQ)—the Centers for Education and Research on Therapeutics (CERTs)—to convene a two-day workshop in October, 2012 to evaluate how medication adherence interventions could be more patient-centered. An early decision

was made to engage other key stakeholders to collaboratively identify and prioritize research and practice needs related to medication adherence. Drawing on the scientific literature (Kuntz et al., manuscript submitted for publication along with this manuscript) and their own expertise in health services research, social science, and analytical methods, conference organizers identified a broad scope of activities for consideration that, in addition to medication-taking behavior (the traditional scope of adherence research), included shared decision-making, methods to enhance effective prescribing, and systems for eliciting and acting upon patient feedback about medication taking and treatment goals (see Fig. 1). We refer to this set of activities as patient-centered medication management (PCMM). Next, we convened a workshop at which patients, caregivers, providers, product makers, payers, purchasers of health care, research funders, policymakers, and researchers shared their expertise and perspectives, then collectively identified and prioritized knowledge gaps needing further research and action. This paper reports the key priorities nominated by workshop contributors. We also present themes about PCMM that emerged from qualitative analysis of recordings and transcripts from workshop discussions. Finally, we reflect on our process for engaging diverse stakeholders in shaping patient-centered research.

## 2. Methods

### 2.1. Goal of the workshop

The goal of the workshop was to identify and prioritize opportunities to advance PCMM by convening diverse stakeholders involved in prescribing and/or medication taking.

### 2.2. Pre-workshop activities

The workshop was planned by a steering group composed of 11 CERTs investigators who have worked on medication adherence from a variety of scientific perspectives (medicine, pharmacy, informatics, epidemiology, and social science) as well as two patient representatives who have personal and advocacy experience with arthritis and juvenile diabetes. The steering group developed definitions of PCMM and its components, and used PCMM to guide a literature review as well as the workshop's agenda and prioritization process. The steering group also identified potential workshop participants. In alignment with Concannon's (2012) list of key stakeholders for patient-centered outcomes research, the steering group invited 23 thought leaders representing the following constituencies: patients/patient advocates, caregivers, providers, payers, researchers, funders, product makers, policymakers/consumer advocates, and purchasers of health care. We selected individuals who had been nominated by CERTs researchers from across the United States as experts on patient-centered care and medication management. Fifteen attended the workshop or sent an equally knowledgeable colleague from their organization. In addition, 22 CERTs-affiliated researchers participated in the meeting, including 9 steering group members. Table 1 summarizes self-identified primary stakeholder perspectives (e.g., one workshop attendee identified herself primarily as a researcher, but also as a funder and a patient).

### 2.3. Workshop activities

The workshop combined presentations and group discussions on pre-selected topics, followed by a period of voting to establish research and practice priorities (Fig. 2). We modeled the workshop on approaches to consensus building, data collection, and analysis described elsewhere [24–26]. On the first day of the workshop,

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