

## Personal health record associated with improved medication adherence

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Patients with diabetes who used an online patient portal to refill medications increased their medication adherence and improved their cholesterol levels, according to a new study in the journal *Medical Care*.

Online patient portals allow users to perform tasks such as scheduling appointments, accessing their [health](#) records, viewing their lab test results and emailing their care providers in addition to ordering prescription refills.

The study followed 17,760 [patients](#) with diabetes who received care from Kaiser Permanente in Northern California between January 2006 and December 2010.

Medication non-adherence and poorly controlled cholesterol declined by 6 percent among exclusive users compared to the occasional users or non-users of the online refill function.

In this large sample of patients with diabetes, the average age was 62, and 40 percent were non-white minorities. The patients studied had an average of more than six chronically used medications and 11 outpatient visits per year.

"Medication adherence and other health behaviors are often the hardest things for a health care system to influence," said senior author Andrew J. Karter, PhD, research scientist at the Kaiser Permanente Division of Research in Oakland, Calif. "Offering patients the option of ordering

prescription refills online may create efficiencies for pharmacy operations, convenience for patients, and also improvements in adherence and health."

All patients were registered users of Kaiser Permanente's personal health record, My Health Manager, and had been prescribed cholesterol-lowering medications. The study subjects were divided into three groups based on their use of the portal to order refills of their cholesterol-lowering medications: the control group included those who never used the online refill function; "occasional users," who requested medication refills through the Kaiser Permanente patient portal at least once (but not always); and "exclusive users" who requested all of their refills through the patient portal. The cholesterol-lowering medications studied are widely prescribed for patients with diabetes.

"This research is an important step in understanding the benefits of portals beyond convenience," said lead author Urmimala Sarkar, MD, an assistant professor at University of California San Francisco. "Given the clear connection between [medication adherence](#) and improved health outcomes, this study provides insight into how online portals may improve health outcomes."

Internet-based patient portals, as well as the use of electronic [medical records](#), are becoming increasingly important to health care delivery. The current study provides new evidence that patient portals may help patients adhere to their medications and achieve improved [health outcomes](#).

This study is part of Kaiser Permanente's work to better understand how online patient portals can improve care. Earlier this year Kaiser Permanente researchers found that the use of electronic health records in clinical settings was associated with a decrease in emergency-room visits and hospitalizations for patients with diabetes.

Provided by Kaiser Permanente

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