

# Integrated health care delivery system and electronic health records support medication adherence

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People who receive medical care in an integrated health care system with electronic health records linked to its own pharmacy more often collect their new prescriptions for diabetes, cholesterol and high blood pressure medications than do people who receive care in a non-integrated system, according to a Kaiser Permanente study published online in the *Journal of General Internal Medicine*.

The study of 12,061 men and women in Kaiser Permanente Colorado with newly ordered medications for diabetes, blood pressure and cholesterol found that only 7 percent of the people did not get their new prescriptions for [blood pressure medication](#) filled, 11 percent failed to pick up new prescriptions for diabetes medication, and 13 percent failed to collect new prescriptions for cholesterol-reducing medication.

Previous research of patients in health systems that are not integrated found that primary non-adherence, when new prescriptions are not filled, to be as high as 22 percent. However, primary non-adherence research conducted in non-integrated systems likely overestimates the percentage of patients who do not have their prescriptions filled. This is because, in a non-integrated system, medication orders from one organization must be linked with pharmacy claims from a different organization. Pharmacy claims databases do not include information on patients who never pick up their first prescription, nor do they contain information on patients who paid cash for their prescription, researchers

said.

In contrast, within an integrated health system such as Kaiser Permanente, medication orders can be directly linked to prescriptions filled within the same system, thus including information on patients who do not pick up their first prescription.

"Given that adherence to medications is directly associated with improved [clinical outcomes](#), higher quality of life, and lower [health care costs](#) across many [chronic conditions](#), it is important to examine why some people never start the medications their doctors prescribe," said study lead author Marsha Raebel, PharmD, an investigator in pharmacotherapy with the Kaiser Permanente Colorado Institute for Health Research and with the University of Colorado School of Pharmacy.

"Having electronic health record medication order entry linked to pharmacy dispensing information makes it much easier for clinicians and researchers to identify patients who are not getting their new prescriptions filled," she said. "The next step is to better understand what the barriers are to people picking up the medications their doctors have prescribed to help them manage diabetes and heart disease."

This retrospective, observational study examined pharmacy dispensing records of 12,061 men and women whose average age was 59 for 18 months in 2007 and 2008 to see whether they picked up newly initiated medications for [high blood pressure](#), diabetes and high cholesterol.

"This group of people has historically been ignored because prescriptions were written on a piece of paper. But now that we have [electronic health records](#) with electronic order entry, we can find out patients that did not pick up their first prescription for medications they need," Raebel said. "Now we need to look at how we can reduce the

number of people who do not get their medications."

Provided by Kaiser Permanente

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