

Improving doctor-patient communication yields significant health benefits

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A UCSF research team has developed a simple tool that can improve the effectiveness of communication between doctors and patients about prescribed medications and result in dramatic improvements in health and safety.

The new communication tool involves a computer-generated weekly calendar with color images of the medication to be taken each day, combined with instructions written in English and in a patient's native language if the patient does not speak English. The researchers call it a VMS, for visual medication schedule.

"Improving communication has often been thought of as soft science, but our study shows significant clinical benefits when the information gap between physician and patient is bridged in the right way," says colead investigator Edward Machtinger, MD, assistant professor of medicine and director of the Women's HIV Program at UCSF.

Machtinger and co-lead investigator, Dean Schillinger, MD, associate professor of medicine at UCSF and director of the UCSF Center for Vulnerable Populations at San Francisco General Hospital Medical Center, developed the tool and conducted a study on its effectiveness. Research findings are reported in the October 2007 issue of the "Joint Commission Journal on Quality and Patient Safety," published by *Joint Commission Resources*.

The research team selected patients taking an anticoagulant (clot



preventing or blood thinning) medication for stroke prevention known as warfarin. Most patients in the study suffered from atrial fibrillation, a common heart condition in which the heart pumps irregularly, leading to formation of clots in the heart that travel to the brain and result in stroke.

Atrial fibrillation affects over 2.5 million adults in the US and is responsible for 20 percent of all strokes. Treatment with warfarin, if taken correctly, can reduce the likelihood of stroke by 80 percent.

However, warfarin is a notoriously challenging medication for doctors and patients to manage, and complications from warfarin are the most common cause of adverse medication events in community settings, according to the lead investigators.

In previous studies, Schillinger and Machtinger found that nearly one half of patients on anticoagulants were not taking their medication accurately, but did not realize it. When describing the dose and frequency of the medication, patients and doctor often had two completely different understandings. These misunderstandings were more frequent among patients with limited literary skills, those for whom English was not their first language, and those with memory problems. Patients who had misunderstood their prescriptions were more likely to be under-anticoagulated and at risk for stroke, as well as overanticoagulated and at risk for life-threatening bleeding.

Based on these findings, the researchers developed a three-step communication approach for their current study and selected patients whose lab tests showed that their blood was not in the target range of anticoagulation. The three-step approach involves

1) having the patient describe how much medication he/she is taking and how often (to identify misunderstanding),

2) giving the patient a VMS along with written instructions both in



English and the patient's native language, and 3) asking the patient to "teach back" what he/she has just learned so as to ensure common understanding

The study involved 147 patients, with half of the participants being randomized to receive the VMS along with brief, scripted medication counseling each time they came to clinic over 90 days, in addition to their standard care in an anticoagulation clinic. The other half received standard care, which includes medication counseling using nonstandardized verbal and written instructions.

Study findings showed that the blood anticoagulation status of patients in the VMS group reached the target, safe level almost twice as fast as those patients who were in the standard group -- 28 vs. 42 days. In addition, the researchers found that the effect of the VMS tool was principally among those patients who, at the start of the study, had misunderstood their prescription instructions.

Among this "at-risk" subset of patients, the VMS worked even faster (28 vs. 49 days), presumably by helping to correct the original misunderstanding that led to them initially being out of target range, the researchers say. One notable finding, they add, was that the VMS tool was especially effective among Spanish-speaking patients, again suggesting that the tool is most effective for those with communication barriers.

Miscommunication between doctors and patients with regard to medication is common and often goes unnoticed, according to Schillinger. He and Machtinger began looking at the link between miscommunication and poor health about eight years ago when they realized that miscommunication could be a key, remediable cause of poor health outcomes and medication errors among vulnerable populations of patients.



"It was amazing to us that the final crucial step in a long pipeline of science and disease intervention--communication around the actual taking of medications--was being largely ignored," says Machtinger.

Their previous studies showed that problems at this final step were far more serious than the field had realized. These early studies were among the first to show a direct link between miscommunication and poor health, Schillinger says.

This approach, says Schillinger, provides the clinician with immediate feedback on the patient's understanding of his medication and the opportunity to correct misinformation, along with a visual aid-the takehome calendar and verbal reinforcement.

The idea for the visual part of the communications tool is not novel, the researchers say. For decades, doctors and pharmacists have often taped actual pills to hand-written sheets of paper to help educate their most vulnerable patients. This approach, however, is too time-consuming and impractical to carry out for every patient at every appointment.

The VMS is fast and inexpensive, can be printed in any language, and facilitates communication that happens naturally in the doctor's office, the researchers emphasize, and can be adapted to other clinical settings, including pharmacies.

The next step for the research team is to find ways to integrate the VMS and 3-step approach into everyday practice. "Having health systems adopt this communication tool on a long-term basis for anticoagulant care could translate into lots of strokes being avoided and lots of bleeding being prevented," says Schillinger.

"We hope, in the near future, that all vulnerable patients will have a VMS tacked to the refrigerator so they, and their caregivers, will know



which pills they should be taking and how they should take them," says Machtinger.

In the meantime, the researchers emphasize that patients should be educated about the dangers associated with medication miscommunication and discuss how they are taking their medications with their doctor at every visit. While there are other reasons besides miscommunication that might affect whether a patient takes medication as prescribed, Schillinger believes that "for high-risk medications, we need to focus our energies on implementing standardized visual communication tools that accompany any prescription to ensure safety and quality."

Source: University of California - San Francisco

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