

En español

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More than half of older diabetics lack medicines that protect kidneys and heart, U-M study finds

Even those with clear signs of problems aren't on ACE inhibitors or ARBs. Better effort needed to ensure prescriptions & remove such barriers as high costs

ANN ARBOR, MI – Only 43 percent of older people with diabetes receive medicines that could protect their heart and kidneys, despite the fact that virtually all of them could benefit from those drugs, a new [University of Michigan](#) study finds. And even among those with the most to gain from the medicines, the rate of use barely reaches 53 percent.



The NHANES mobile examination center, where study participants received physical exams and tests, including blood pressure and albuminuria.

The classes of prescription medications, called ACE inhibitors and ARBs for short, have been recommended by national diabetes-treatment guidelines for years, because of the strong evidence that they can prevent heart attacks, strokes, kidney failure and other problems that disproportionately threaten older people who have diabetes. The inexpensive drugs are especially recommended for diabetics who already show signs of heart or kidney damage, or who have high blood pressure.

But the first national study of their actual use in diabetics over age 55 reveals a large gap between what should be and what is.

The study, published in the April issue of the [Journal of General Internal Medicine](#), was conducted by [U-M Medical School](#) researcher Allison Rosen, M.D., Sc.D., using data from the federal [National Health and Nutrition Examination Survey](#) (NHANES).

"These are drugs that we know save lives and save money, and still we're only using them in less than half of the people who could benefit," says Rosen, an assistant professor of internal medicine at U-M who also holds positions at the [U-M School of Public Health](#) and the [VA Ann Arbor Healthcare System](#). "It's especially striking that their rate of use isn't much higher in people most likely to gain – that is, those with multiple clinical indications and risk factors."

Rosen notes that the study did not reveal the reasons that use of the drugs was so low. But she says that lack of awareness among physicians, the cost to patients and lack of effective measures to track and encourage use of the drugs may all contribute.

Last year, Rosen and her colleagues [published a study](#) showing that the Medicare system could actually save money while saving thousands of lives by giving free ACE inhibitors and ARBs to its diabetic participants in an effort to encourage more use of the drugs.

Such a program ultimately would save lives and reduce spending by preventing cardiovascular and kidney-related health complications — and the costly hospitalizations, dialysis sessions, operations and other treatments they would require.

Even if a free-medications program only increased ACE inhibitor and ARB use to 50 percent of patients, the Medicare system would still save money in the long run, the 2005 study found.

The newly published study is based on data from a nationally representative sample of adults over age 55 with diabetes, all of whom underwent a thorough health exam, medication review and interview under the NHANES program.

Rosen assessed the percentage that were using any drug in the ACE or ARB class, and tallied up each person's total number of indications and risk factors that would increase the benefit that they would receive from the drugs.

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Three clinical indications were examined: Cardiovascular disease of any sort including heart failure, history of heart attack or stroke, or clogged coronary arteries; high blood pressure, whether controlled by medication or not; and the presence of protein in the patient's urine, a condition called albuminuria that indicates impaired kidney function.

National guidelines say that any diabetic who has even one of those clinical indications should be taking an ACE inhibitor or ARB, except for a very small number may not be able to take them. Studies also suggest that the drugs are beneficial to diabetics who smoke or have high cholesterol, but who have not yet experienced cardiovascular problems, high blood pressure or kidney problems.

In all, 92 percent of the participants in the new study met at least one of the three clinical guideline indications, and 100 percent either had one of the clinical indications or an additional risk factor for cardiovascular disease. Just over 34 percent had cardiovascular disease, almost 47 percent had albuminuria, and nearly 83 percent had high blood pressure. Nearly 73 percent had high cholesterol and 24 percent smoked.

"In other words, every one of the people in this nationally representative survey probably should have been taking an ACE inhibitor or an ARB, and most weren't," says Rosen. "The more risk factors and indications someone had, the more likely they were to be on one of these drugs, but still, even in people with four or more indications to be treated with these life saving drugs, only 53 percent were on them."

Rosen says she hopes the study results will encourage physicians, insurers, hospitals and others to find new ways to encourage ACE inhibitor and ARB use among people with diabetes. She notes that the current "quality benchmarks" that are used to rate health care providers and health plans do not typically include measurements of ACE and ARB use. They do, however, often include a measure of how often diabetics' receive urine tests — but they do not measure what happens after the results of those tests come back, especially if albuminuria is found.

"The way we're measuring quality in this area is not working," Rosen says. "We need to create incentives and benchmarks that will encourage responsible prescribing of ACE inhibitors and ARBs, while also creating conditions that will lower patients' barriers to using these medications."

In the meantime, she adds, people with diabetes should talk to their physicians about whether they should be taking one or more of the drugs in the ACE inhibitor or ARB classes of drugs. Such drugs are available as generic and brand-name medicines, and can cost less than \$300 a year.

The study was funded by an Agency on Healthcare Research and Quality fellowship that Rosen held while she was at the Harvard University School of Public Health. To read about the ACE/ARB Medicare simulation study, published in the *Annals of Internal Medicine* in July 2005, see www.med.umich.edu/opm/newspage/2005/freemedts.htm. Reference: *Journal of General Internal Medicine*, Vol. 21 Issue 4.

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