

'No clear rationale' for 45% of Medicaid patients' antibiotic prescriptions

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A new Northwestern Medicine study has found alarmingly high rates of inappropriate antibiotic prescribing for patients on Medicaid, the public health insurance program for those with lower incomes.

Using Medicaid insurance claims between 2004 and 2013, the study

evaluated 298 million antibiotic prescriptions filled by 53 million patients on Medicaid, the largest source of health care coverage in the U.S. It found 45% of Medicaid [antibiotics](#) were prescribed without any clear rationale: 17% of antibiotics were prescribed at an office visit during which no infection-related diagnosis was made, and 28% of antibiotic prescriptions were not associated with an office visit at all.

Prior to this study, antibiotic prescribing for Medicaid patients in the U.S. had not been comprehensively measured. It will be published Feb. 3 in the February issue of the journal *Health Affairs*.

The researchers used Medicaid data to determine whether patients made a clinic visit in the seven days prior to filling the antibiotic prescription and, when there was a visit, they checked whether the billing diagnosis specified an infection as the cause for the visit.

Antibiotics treat bacterial infections, and are used to prevent infection in organ transplants, surgery and the treatment of cancer. However, they also expose patients to adverse drug events like nausea, diarrhea—including the life-threatening *Clostridioides difficile*, or "C. diff"—rashes, yeast infections and life-threatening [allergic reactions](#).

"Indiscriminate use of antibiotics is increasing the prevalence of antibiotic-resistant bacteria and rendering them ineffective," said senior study author Dr. Jeffrey Linder, chief of general internal medicine and geriatrics in the department of medicine at Northwestern University Feinberg School of Medicine.

"It's concerning that nearly half of antibiotics are prescribed without a visit or without a clear rationale," Linder said. "We are not keeping track of and do not have a system to ensure high-quality antibiotic prescribing in the U.S."

The study raises questions about the effectiveness of efforts to curb inappropriate antibiotic prescribing. Clinical policies are in place to help decrease the rate of antibiotic prescribing in the U.S., which is about double that of many other countries, but those policies are limited, Linder said.

Ambulatory antibiotic stewardship policies, which focus on prescribing decisions made when patients tell doctors about possible infections, don't capture antibiotics prescribed outside of a doctor visit or without clear indications for use. The study found current ambulatory antibiotic stewardship policies missed 45% of antibiotic prescriptions.

"If we're thinking about how to improve antibiotic use, we need to understand the context in which antibiotics are being prescribed," said lead author Dr. Michael Fischer, a physician in the Brigham's Division of Pharmacoepidemiology and Pharmacoeconomics and an associate professor of Medicine at Harvard Medical School. "If prescribing is taking place outside of an office visit, most of the approaches we're taking to combat antibiotic overuse will miss those completely."

The study authors acknowledge a critical question remains: What occurred clinically in the many cases when [antibiotic prescriptions](#) were dispensed without an office visit?

"Since our analyses were based on claims data, we don't have access to [medical records](#) to determine what interactions took place between patients and prescribing clinicians," Fischer said. "We assume that most of these [prescriptions](#) were associated with a telephone interaction, although some communication may have occurred over email, via web portals or in informal, uncaptured visits. Most of these encounters would be blind spots for the interventions designed to improve antibiotic use."

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