Pharmaceutical companies lose an estimated $188 billion annually in revenues in the U.S. because patients fail to take their prescribed medications, according to a study by consulting firm Capgemini. That’s a massive waste of money for an industry experiencing patent expirations and few breakthrough drugs.

Drug companies have limited direct contact with patients, compared to payers and pharmacists, and have struggled with how and when to intervene to make sure patients take their medications. “In terms of crunching patient data, and from a behavioral standpoint, they’re not advanced,” says Thomas Forissier, an author of the Capgemini study.

Interventions have mostly centered on free drugs, reminders, or lower co-pays. But in Western European countries, such as the Netherlands, where medications are fully covered, adherence is a still a major issue. Research sponsored by Aetna shows that waving drug co-pays for heart attack patients after hospital discharge improved adherence overall from 39% to 44%. The New England Journal of Medicine called the findings sobering “given the low baseline adherence and the small improvement in adherence in what should have been a highly motivated group of patients after myocardial infarction.” Drugs such as statins can keep those patients out of the hospital. “We need serious rethinking about what happens when medication is dispensed,” says Kevin Volpp, who heads the University of Pennsylvania’s Center for Health Incentives and Behavioral Economics, and has written extensively on motivation and medical adherence.

Volpp and behavioral scientists are experimenting with approaches that incorporate incentives which might prod patients to take their medications before they stop. Digital health start-up HealthPrize, which co-authored the Capgemini study, has borrowed some of these approaches that reward patients frequently and in small increments, and is testing them with two pharmaceutical companies. Co-founder and neurosurgeon Katrina Firlik won’t disclose who they are or details, but they focus on acne and hypertension drugs.

HealthPrize recruited patients by tapping pharmaceutical companies’ databases, and linked its site to co-pay cards offered by drug companies through doctors. Patients who respond to reminders receive a variable number of points; they score additionally for engaging in educational quizzes pertaining to their disease. Patients receive the bulk of their points at refill, and rewards are determined by the pharmaceutical company. They can range from an Amazon to an iTunes gift card. Firlik expects results early next year from those pilot programs, as well as return on investment numbers for its customers. HealthPrize has raised $4 million to date from angel investors.

Another start-up RxAnte uses predictive algorithms to help its clients—pharmacy benefit managers and Medicare plans, hone in on patients most
likely to stop taking their prescriptions. “Seventy percent of the time reminders are wasted,” says Joshua Benner, chief executive of RxAnte. “Most interventions don’t work well because of wrong targeting.”

RxAnte has drilled so far through two years of claims data, such as age, sex, race, and clinical history, and assigned individual patients a score which predicts their likelihood of adherence. It is up to the customer to decide whether or how to intervene. Medicare, for example, doesn’t allow rewards in the form of payments. Monitoring patients might be more effective, but being selective keeps costs down. This past September, RxAnte raised $4.5 million from Aberdare Ventures, with West Health Investment Fund.

With Medicare payment reforms and an emphasis on preventive health measures affecting other sectors in health care, pharmaceutical companies are no longer alone in facing poor medication adherence. “The good news for pharmaceutical companies is they’re not the only ones with a stake,” says Benner.

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