

# Researchers develop novel method to identify patterns among patients with multiple chronic conditions

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A study published this month in *BMJ Open* by researchers at Icahn School of Medicine at Mount Sinai proposes a novel method for identifying patterns in the frequency and cost of multiple chronic conditions (MCC).

Researchers examined Medicaid claims data for 190,000 patients in the Mount Sinai Health System between 2012 and 2014. In this cohort, 61 percent of patients had MCC—the presence of two or more [chronic conditions](#) in one individual—a level far higher than in the U.S. [general population](#) (42 percent).

Using a segmented methodology, the study found that [high blood pressure](#), high cholesterol, and diabetes were the most common triplet of chronic conditions, and women aged 50 to 65 with high blood pressure and high cholesterol were the costliest segment overall. The most surprisingly common disease pair, relative to expectations, was lung disease and heart attacks. The study found that patients living in lower-income areas developed a second chronic condition 15 years earlier, on average, than their counterparts in higher-income areas.

By shedding light on several unexpected disease clusters and their costs, this work could inform new approaches for managing chronic conditions. The research was made possible with support from Teva Pharmaceutical Industries Ltd.

"This work shows the disproportionate effects of MCC on [vulnerable populations](#)—almost two-thirds of these patients had MCC, and over half developed their second condition by age 35," said Usnish Majumdar, the study's lead author and a fourth-year medical student at the Icahn School of Medicine. "This helps us develop primary care programs with our partners to treat patients with MCC. It also provides an analytical method for health systems worldwide to track chronic condition patterns in their own settings—and design interventions to address their local needs."

Chronic conditions are the leading cause of death and disability in the United States and globally, and it is increasingly common for adults to live with more than one condition. Recognizing the growing threat of MCC, Teva and the Arnhold Institute for Global Health at Mount Sinai joined forces in 2017 to study MCC in low-resource settings. The partnership aims to understand the patient population, inform population health priorities, educate and empower patients to improve self-management, and disseminate interventions to [low-resource settings](#) around the world.

In addition to developing this analytic method, the research team at the Arnhold Institute has partnered with Teva to implement a peer-led behavior change program that helps New Yorkers with MCC track their medications, change their lifestyles, and control their conditions. The Arnhold team is also developing similar care models for patients with chronic conditions worldwide, beginning in northern Ghana.

Provided by The Mount Sinai Hospital

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