

# Researchers find technology solutions to health care costs

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New developments in technology may provide tools to help patients and

health care providers make cost-informed decisions and connect patients to additional resources if they cannot afford their prescribed medications, say University of Michigan researchers.

A pair of new U-M studies uncovers the barriers that both patients and providers face in understanding the costs for prescription medications and [medical tests](#). Health care costs in the United States are continuing to creep upwards, with out-of-pocket spending for patients increasing about 5% in 2019 alone.

Additionally, costs are a major barrier to people taking their medications as prescribed, and high out-of-pocket costs are associated with prescription abandonment at the pharmacy. These issues are more pronounced in people with [chronic illnesses](#) such as diabetes and high blood pressure.

This struggle is familiar to many families, including Tiffany Veinot, associate dean and professor at the U-M School of Information.

"When I was young, I had a family member who couldn't get medications for months for a progressive health condition because of [financial difficulties](#)," she said. "He suffered greatly."

Veinot has spent her career working in [health informatics](#) and health equity. But this [personal connection](#) spurred her new research into how health care practitioners can address affordability issues for patients—and how patients can have more information about costs and have more input into cost-related decisions.

The U-M scholars teamed up with researchers at the Health Services and Informatics Lab at the Parkview Mirro Center for Research and Innovation. The Mirro Center is part of Parkview Health, a health care system serving northeast Indiana and northwest Ohio, which also funded

U-M students to work on the project.

The research team, which also included U-M doctoral students Olivia Richards and Karalyn Kiessling, doctoral graduate Bradley Iott, and Parkview staff looked at how out-of-pocket costs were communicated, both from the [health care provider](#) and patient side. Their research is published in the Journal of American Medical Informatics Association and JAMIA Open.

Parkview sought to improve their responses to social needs—such as issues with financial challenges, food security or transportation or social support networks—that affect patient well-being, Veinot said.

In interviews with patients and [health care providers](#), the research team asked what sorts of conversations were happening between providers and patients around the costs of medications and tests, particularly while still in the office. Specifically, they wanted to understand the barriers to having these open discussions.

"Cost conversations don't necessarily happen and we were trying to understand why," said Richards, who worked with patient interview data.

The interviewers asked patients if they were willing to share [personal information](#) with their providers regarding issues like income troubles or medical debt, which can affect their ability to pay for care.

These in-depth conversations do take place in some settings, but currently they tend to be reserved for serious illnesses like cancer, said Kiessling, who worked on the topic from the providers perspective.

"You might have that conversation more about a chronic illness like diabetes as well because treatment is expensive," she said, adding that there is a desire from both patients and providers to have these

conversations more often.

The researchers uncovered that patients were willing to share information on their social needs, but often felt like cost conversations weren't always happening at the right time.

"Patients would look up at the clock, and think "I don't think there's time for me to explain that I had a death in my family, I had to take four buses to get here, I don't know if I can come back in two weeks," or whatever the situation might be," Richards said.

In addition to a lack of conversation, patients often faced a "cascade of work" on their part to address financial hardships once they got a prescription. Richards described a litany of tasks ranging from traveling on multiple buses to the pharmacy, to having circular conversations between pharmacies, insurers, and physicians.

"There's harm being caused by the way the system works right now. It's not really designed in a patient-centered way," said Veinot, adding that there is an intense social cost for some patients. "It can be very embarrassing for people to get to the pharmacy, and then suddenly they have to refuse a prescription because they can't afford it."

Practitioners also struggled with a lack of information and communication about potential hardships. Even when [social needs](#) information was collected, it wasn't always available for practitioners to access.

Kiessling said that there are issues with the information being buried in the health records, permission problems with software and lack of information sharing within a health system. There was also a general lack of information on medical costs for providers that was accurate, and tailored to a specific patients' insurance plan and other financial

considerations.

Veinot said providing clear costs for medicine and testing could be tackled from a policy angle or an information-sharing system or both. New laws could make [health care costs](#) more transparent, but changing policy requires political will and can take years. She said focusing on improving information tools that help bridge the information gap may help to address this problem in the present, even as policy change is sought.

"Technology can act as a bridge to assist in this process," Kiessling said.

They are looking at information-based tools that would identify patients facing affordability challenges, provide cost comparisons for providers and [patients](#), streamline medication assistance referral systems, and provide decision aids to facilitate cost conversations.

**More information:** Olivia K Richards et al, "It's a mess sometimes": patient perspectives on provider responses to healthcare costs, and how informatics interventions can help support cost-sensitive care decisions, *Journal of the American Medical Informatics Association* (2022). [DOI: 10.1093/jamia/ocac010](#)

Karalyn A Kiessling et al, Health informatics interventions to minimize out-of-pocket medication costs for patients: what providers want, *JAMIA Open* (2022). [DOI: 10.1093/jamiaopen/ooac007](#)

Provided by University of Michigan

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