

Researchers use data to look 'upstream' to see what makes patients sick

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Researchers at IUPUI and the Regenstrief Institute have successfully used data to predict primary care patients' needs for social service referrals, a finding that may potentially help shift the focus of health care from caring for ill people to preventing patients from getting sick.

Using data from 48 socioeconomic and [public health](#) indicators, researchers were able to look "upstream" to determine which conditions or circumstances led to a patient becoming ill and needed to be addressed through referrals to prevent the patient from becoming ill again.

The conditions that most affect health are the physical, economic and social environment in which people are born, live and work, as well as their personal behaviors.

The study, "Assessing the capacity for social determinants of health data to augment predictive models identifying patients in need of wraparound social services," was published in the *Journal of the American Medical Informatics Association*.

The ability to predict the need for referrals stems from an unprecedented and ever-increasing availability of diverse data sources and has the potential to improve health services delivery and health system performance, said Paul K. Halverson, founding dean of the Richard M. Fairbanks School of Public Health at IUPUI and one of the project's researchers.

The research comes at a time when financial incentives for [health care](#) are moving from payments for services to payments for keeping patients healthy.

"There is a recognition by most medical providers that we just can't keep our approach focused on illness care," Halverson said. "Prevention as a primary strategy helps us address some of the real drivers of poor health and, hopefully, make a difference early on."

"We increasingly recognize that many—and perhaps most—factors influencing health outcomes are found outside of the [health](#) system and relate to such universal themes as food availability, adequate housing and reliable transportation," said Dr. Shaun Grannis, director of the Regenstrief Institute's Center for Biomedical Informatics and a co-author of the study. "This early and innovative work helps inform the pathway toward more effectively leveraging these types of data."

The study indicates that it is possible to accurately predict a need for various social services using a range of readily available clinical and community data, said Joshua Vest, another researcher who worked on the study and an associate professor and director for the Center for Health Policy in the Fairbanks School of Public Health. Vest is also a Regenstrief Institute investigator.

By addressing [social services](#) needs through referrals, the hope is that [patients](#) will avoid not only costly hospitalizations in the future but perhaps unnecessary emergency department visits. The researchers not only identified the need for referrals but identified the best skilled professional who could assist the patient, Vest said.

More information: Suranga N Kasthurirathne et al. Assessing the capacity of social determinants of health data to augment predictive models identifying patients in need of wraparound social services,

Journal of the American Medical Informatics Association (2017). [DOI: 10.1093/jamia/ocx130](https://doi.org/10.1093/jamia/ocx130)

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