



# Using Big Data to Improve Safety for Urgent Care Patients

*Massive Intermountain Healthcare Study Examines Age and Vital Signs to Predict Risk at Urgent Care Clinics*

SALT LAKE CITY, UTAH, USA, August 16, 2016 /EINPresswire.com/ -- Urgent care is a rapidly growing way of providing healthcare, but there has been very little research about outcomes after urgent care visits — about what constitutes safe, effective urgent care.

A recent [Intermountain Healthcare](#) study, one of the largest of its kind, examined 1.7 million adult patient visits to 28 Intermountain InstaCare (urgent care) clinics over six years.

The study, led by James Hart, MD, Intermountain InstaCare, and Mike Woodruff, MD, Director of Emergency Department Quality for Intermountain's Central Region, discovered distinct relationships between heart rate, systolic blood pressure, and the risk of adverse short-term outcomes after an urgent care visit. The risks were most pronounced in older age groups. Further, they found that blood pressure ranges traditionally considered "normal" may not be a good fit for patients visiting an urgent care clinic.

The original research paper can be viewed online in the [Western Journal of Emergency Medicine](#).

"Since more patients are coming to the urgent care clinic for all kinds of complaints, our aim is to develop tools to ensure that patients get the right kind of care to match the severity of their illness," says Dr. Hart. "To begin, we examined short-term outcomes that seemed to represent a worsening of the patient's condition after an InstaCare visit." The researchers hypothesized that a patient's age and vital signs might help predict clinical deterioration.

"We were surprised to find that the blood pressures recorded at InstaCare visits were markedly higher than what would traditionally be considered "normal", particularly for older patients," says Dr. Woodruff. Further, it was relatively lower, not higher blood pressures that were associated with increasing risk of adverse short-term outcomes. This was surprising, given that most of outpatient medical literature is focused on the perils of high blood pressure, not low blood pressure, and certainly not "low normal."

"Large datasets give us the ability to see patterns and identify trends that would otherwise be invisible," says Dr. Hart. "For example, adult heart rate and blood pressure ranges for normal or critical values have not really changed in outpatient medicine for the last 100+ years. Nor have adult patients been grouped into categories other than 'old' or 'not old.'" By using such a large dataset, the team was able to visualize patterns related to age, heart rate, and systolic blood pressure that have been elusive to date. Specifically, they found that advancing age, higher heart rate, and lower blood pressure were associated with short-term adverse outcomes.

Drs. Hart and Woodruff have been working in patient safety and quality improvement in their respective clinical fields, but it wasn't until the two crossed paths at Intermountain Medical Center that they started working on ways to improve the coordination of patient care between emergency

departments and InstaCare clinics. “We share a particular fascination with the prognostic value of abnormal vital signs,” says Dr. Woodruff. “We’re kind of nerds when it comes to this kind of data.” They were fortunate to be supported by a talented team with diverse backgrounds in ambulatory care, quality, and research statistics.

Drs. Hart and Woodruff are working to operationalize this new understanding by educating providers and developing tools to help clinicians more accurately estimate patient risk at the point of care. “As healthcare technology matures, we have a vision of bringing intelligent analysis of patient-specific data to the right provider at the right time, to model risk and predict patient outcomes.”

Intermountain Healthcare is a Utah-based, not-for-profit system of 22 hospitals, 185 clinics, a Medical Group with some 1,300 employed physicians, a health plans division called SelectHealth, and other health services. Helping people live the healthiest lives possible, Intermountain is widely recognized as a leader in transforming healthcare through high quality and sustainable costs.

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