BROADCAST: Emergency department overcrowding: Can AI, predictive modeling and simulation fix the problem?
Jump ARCHES research tackles persistent problem

Who hasn't experienced a long wait in a hospital emergency room? It's a persistent problem and research shows patient congestion is one of the main factors threatening efficiency, safety and quality of care.
At Peoria, Illinois-based OSF HealthCare, researchers at Jump Simulation & Education Center are working with collaborators at the University of Illinois, Urbana-Champaign to fix the problem … using a $100,000 grant from what's known as the Jump ARCHES fund.

Co-lead researcher Dr. William Bond, an OSF emergency department physician, says the research team will build predictive models using historic trends and de-identified electronic medical records. They'll also use a simulation technique that can look at several factors at the same time …

"This will give us the tools to practice those 'what if' scenarios without spending a lot of resources building a new area of emergency department to find that that wasn't the right thing to do." (:12)

TAG: For example, Dr. Bond says fixes could include adding additional staffing for initial assessment and ordering tests to speed time to treatment, one of the most significant metrics that will improve patient and provider satisfaction.

Alternative media clip for another version

Dr. William Bond, an emergency department physician who leads the Simulation Lab at the Jump Simulation & Education Center in Peoria says researchers acknowledge that patients are in pain and miserable when they come to a hospital emergency department.

"To acknowledge that suffering, to use compassion, which is part of us at OSF HealthCare, and to address those needs as quickly as we can; to acknowledge that timeliness is part of the quality of care, and we really want to have as timely of care as we possibly can for our emergency department patients." (:19)

TAG: Dr. Bond says other researchers have attempted to address this issue, but today's modern data approaches and new ways of simulating scenarios should advance efforts to reduce emergency department wait times**.**

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New data approaches and the ability to simulate real life scenarios without having to practice them in real life will help researchers tackle the persistent problem of waiting hours in hospital emergency department waiting rooms. Dr. William Bond says researchers from OSF HealthCare Innovation, and the University of Illinois Urbana-Champaign will use historical data and de-identified emergency medical records to develop predictive models.

"***We can say that based on past and current data inputs, here's where we think we'll be in the next 12, 24, to 72 hours in the emergency department … and of course, the further out you go in time, just as with weather forecasting, the more the uncertainty grows." (:21)***

Dr. Bond says ultimately researchers hope to come up with the most effective interventions that reasonably distribute resources to have the biggest impact.