

## **BROADCAST-OSF Innovation research shows promise for digitized neuro exams**

New research from OSF HealthCare and engineers at the University of Illinois Urbana-Champaign could lead to a better way for physicians to triage and care for patients with neurological symptoms regardless of exam location.

Dr. Chris Zallek, a neurologist and lead investigator at the [NeuroHealth Lab](#) at OSF Jump Simulation and Education Center, says the average wait time to see a neurologist is a month, and in some places across the country, there are “neurology deserts” where people have to travel great distances to get a diagnosis and treatment.

With not enough neurologists to meet a growing population of patients over 55, Dr. Zallek says the research team has developed a vision-based, digitized platform that can quickly evaluate whether someone needs to be seen by a specialist. The research team is using machine learning to support the platform where the video-recorded exams are reviewed. The digitized neurologic exam (DNE) can be used anywhere, so Dr. Zallek thinks it could eventually help make sure individuals are evaluated more quickly and then once diagnosed with a neurological condition, get them more fully evaluated for ongoing treatment and care.

**“This will hopefully help with the triage of the patients. We want to see all patients but there are some patients that need to be seen sooner rather than later. If we have tools helping us to say okay, this person, we need to get them in a little more quickly, or at least meet with them via tele neurology, it is an opportunity to improve care.” (:24)**

The research, funded through a [Jump ARCHES](#) grant to address rural health care challenges, found the exam – with four, specific directions that measure strength, balance, coordination and movement – had between 80-90% accuracy in detecting differences between normal and simulated impairment among 21 volunteers in a simulation.

The team’s next step will be to evaluate the exam on 100 patients who have already been diagnosed with a neurological condition and demonstrating abnormal exam findings. New care paths will also need to be tested to learn how these digitized tools can best help medical teams care for patients.

Dr. Zallek says other health systems are working on similar efforts and he’s excited about the potential to have additional partners to share research and collaborate.

**“It would be great if one of the outcomes from the publication was collaboration with other institutions that are working on similar problems with similar solutions. In the end, we're all trying to help care for patients better. And what we'd like to do is get tools out into the clinical workflows as soon as we can, when they're ready, to improve patient care and lower the cost of health care.” (:27)**