THE PARTNERSHIP

Since 2016, Indiana University Health (IU Health), Regenstrief Institute and the Indiana Health Information Exchange (IHIE) have been collaborating on a shared vision to improve healthcare delivery and patient outcomes in Indiana.

Goal

• To streamline electronic access to relevant patient health data to allow emergency department clinicians to save time and improve critical care decision-making

Opportunity

• To develop an app compatible with multiple electronic health record (EHR) systems to retrieve and home in on the information most relevant to the presenting clinical condition

Project

When an emergency department clinician first sees a patient, they see only a limited snapshot based on the immediate clinical presentation. They often have little or no time to dig into the patient’s often vast health history.

IU Health, Regenstrief and IHIE knew the key was to integrate selected information from IHIE directly into the EHR. Years ago, this would have been a difficult proposition, but with the advent of the HL7® Fast Healthcare Interoperability Resources (FHIR®) standard, the partners were able to create a versatile tool that can live in different EHRs, including Cerner and Epic.

The pilot test was built around what clinicians said was the No. 1 chief complaint—chest pain. For this use case, the app allowed a physician to almost instantly access a patient’s last EKG, cardiology note, discharge summary, cardiac catheterization report, echocardiogram, stress echocardiogram and nuclear medicine study.
Progress

IU Health, Regenstrief and IHIE conducted an initial evaluation study in a laboratory environment and found that for chest pain, the early version of the app reduced the number of mouse clicks from 50 to 6, and search time from 3 minutes to 10 seconds. The response rate is now down to 4 or 5 seconds and about 3 clicks.

Over the course of the development, the team has improved functionality and added features, including lab results, single sign-on and support for multiple conditions as noted below:

- Chest pain
- Abdominal pain
- Headache
- Weakness and dizziness
- Back pain
- Pregnancy
- Heartbeat irregularities
- Trouble breathing

The FHIR standard, in many ways, was the key to all of this. It allowed the team to build an application that could seamlessly integrate with EHRs. In fact, it integrates so well from a visual and functional perspective that most clinicians are not even aware that they are dealing with a separate application.

The app has been in use in the emergency department at IU Health Methodist for about two years. Its use has expanded to include about a dozen hospitals, and the list continues to grow.

Researchers hope widespread use of the app will improve patients’ outcomes as well as reduce costs, time and inconvenience by eliminating unnecessary tests and preventing readmissions to the hospital.