Emergency EMR created in a week to respond to COVID-19 crisis

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"We learned valuable lessons that can be applied to future emergencies. This shows the **value of open source** and how it can lead to global goods that can benefit us in the United States."

— BURKE MAMLIN, MD

Regenstrief Institute

A team from Regenstrief Institute leveraged OpenMRS, a global open-source EMR, to create -- in a week -- an emergency EMR for first responders preparing for a possible influx of COVID-19 patients. Lessons learned can be applied to future health crises. Credit: Regenstrief Institute

A team from Regenstrief Institute leveraged OpenMRS, a global open-

source electronic medical record (EMR), to create an emergency EMR for Indianapolis first responders preparing for a possible influx of COVID-19 patients. This process was completed in a week to allow Indianapolis Emergency Medical Services (IEMS) to register patients, collect basic clinical information, and send these encounters to Indiana's health information exchange, a crucial element to help the response to the COVID-19 pandemic.

IEMS asked Regenstrief research scientists for help as they made plans to create a triage center to treat patients in case the [health](#) system in Indianapolis became overwhelmed with COVID-19 patients. IEMS needed a faster, easier way to collected patient information and to send these data to the Indiana Network for Patient Care (INPC), which is managed by the Indiana Health Information Exchange (IHIE). This way patient records would be accessible to health systems and doctors during future visits.

Most EMRs are from large software vendors and vary by health systems. IEMS did not have access to one.

"Our entire team jumped into action, employing the open source system available in OpenMRS," said Jonathan J. Dick, M.D., a project leader and member of Regenstrief's Global Health Informatics program. "We worked with IHIE and IEMS to create forms to enter relevant COVID-19 data into the INPC. Within one week, we were prepared to make the interface live. Thankfully, we never needed to break the glass because the healthcare systems in the state did not become overwhelmed."

This work demonstrates that it is possible to leverage existing tools to create EMRs in emergency situations to improve crisis response.

"We learned valuable lessons from this experience that can be applied to

future emergencies. This system can be adapted to work in other states or even countries, and it can be done very quickly," said Burke Mamlin, M.D., a project leader and member of Regenstrief's Global Health Informatics program. "This shows the value of open source and how it can lead to global goods that can benefit us in the United States."

Regenstrief Institute helped to found OpenMRS, which is used to build and manage health systems in underserved countries. The institute continues to be a leader in the worldwide volunteer network, helping with technical direction, implementation and innovation.

The process of creating the EMR was laid out in the peer-reviewed paper "OpenMRS as an Emergency EMR—How we used a Global Good to create an Emergency EMR in a Week" published in the International Journal of Medical Informatics online ahead of print.

In addition to Dr. Mamlin and Dr. Dick, other authors on the paper are Jennifer E. Shivers, MFA, of Regenstrief Institute and Nancy K. Glober, M.D., of Indiana University School of Medicine.

About Regenstrief Institute Founded in 1969 in Indianapolis, the Regenstrief Institute is a local, national and global leader dedicated to a world where better information empowers people to end disease and realize true health. A key research partner to Indiana University, Regenstrief and its research scientists are responsible for a growing number of major healthcare innovations and studies. Examples range from the development of global health information technology standards that enable the use and interoperability of electronic health records to improving patient-physician communications, to creating models of care that inform practice and improve the lives of patients around the globe.

Sam Regenstrief, a nationally successful entrepreneur from Connersville, Indiana, founded the institute with the goal of making healthcare more

efficient and accessible for everyone. His vision continues to guide the institute's research mission.

About OpenMRS OpenMRS is a platform that countries and implementers use to create a customized EMR system in response to actual needs on the ground. OpenMRS is also a global community of contributors who build and maintain the OpenMRS platform and other, foundational OpenMRS technical products. The OpenMRS community brings together a diverse group of individuals with expertise in healthcare, global health, software development, quality assurance, and implementation. These contributors bring a wide range of skill sets together and work collaboratively to build and maintain a robust, electronic medical record system platform.

More information: Burke W. Mamlin et al, OpenMRS as an emergency EMR—How we used a global good to create an emergency EMR in a week, *International Journal of Medical Informatics* (2021). DOI: 10.1016/j.ijmedinf.2021.104433

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