

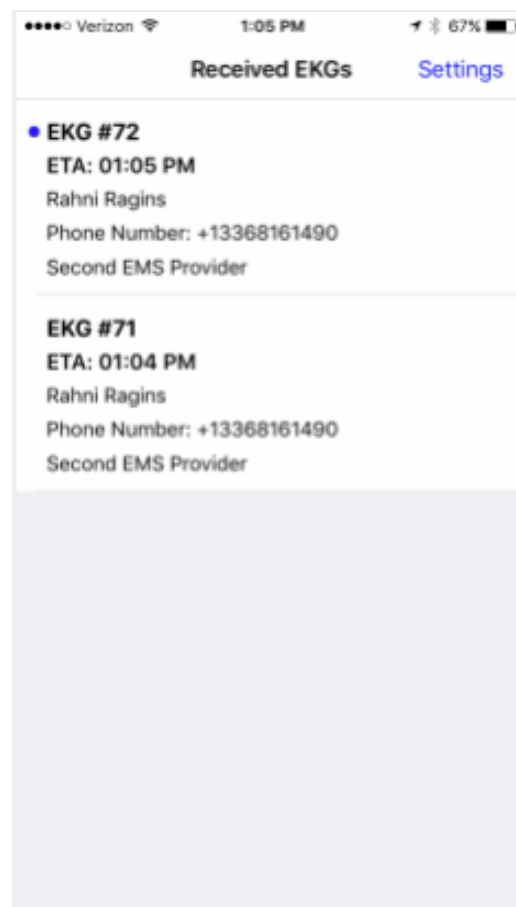
STEMI Xpress: A mobile application to enable HIPAA-compliant sharing of ECG data between emergency medical service and STEMI evaluation team

Unmet Need

ST-segment elevation myocardial infarction (STEMI) is the most severe type of heart attack caused by complete blockage of a heart artery. As such medical guidelines for the management of STEMI mandate primary percutaneous coronary intervention within a short time window. While STEMI is a diagnosis made primarily on the characteristics of an electrocardiogram, when deciding whether to activate the cardiac catheterization lab, providers do not have this data available in a timely, secure manner. At Duke, approximately 2000 false activations occurred from 2011-2016. False activation of the cardiac catheterization laboratory results in increased costs, decreased catheterization laboratory availability for true myocardial infarctions, and decreased staff resiliency and morale. In the era of camera phones, others have proposed obtaining a digital picture of the pre-hospital electrocardiograms and transmitting the picture via text or email to the hospital. These efforts have largely stalled given concerns around privacy, regulatory compliance, and reliability.

Technology

Researchers at Duke have developed a smartphone application to improve the efficiency of patients undergoing STEMI evaluation. The application is called STEMI Xpress and offers more accurate activation of the cardiac catheterization laboratory in the evaluation and management of patients with cardiac infarction. The technology enables an emergency medical service technician to securely, rapidly, and transiently transmit pre-hospital electrocardiograms to triaging providers, incorporating compliance, encryption, and autodeletion throughout to ensure privacy and security. The technology could help reduce false activations of the cardiac catheterization lab to benefit patients and providers. The software has been developed and field tested.



Duke File (IDF)

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Inventor(s)

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Links

- [From the lab of Dr. Manesh Patel](#)



Advantages

- Improves existing STEMI activation clinical workflow with minimal barrier for adoption of technology
- Secure transmission of pre-hospital electrocardiograms
- Protects patient data while streamlining medical decision making and reducing costs

Publications

- [PCT app \(US2018/045352\)](#)

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