



2021 LEAD Capstone Poster Session

**A Modern Strategy to Assess and Manage Patients
with Chest Pain in the Emergency Department**

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Abstract

- **Objective:**
 - Develop an Artificial Intelligence (AI) algorithm to automate risk stratification of patients presenting to the emergency department with chest pain
- **Plan:**
 - Create a protocol that utilizes prior history and current data to predict MACE in patients
 - Collaborate with the UTSW MAIA lab to utilize this protocol and create an algorithm that can be used in real-time assessment of patients
- **Significance:**
 - Improve throughput, reduce over-testing, and provide proper disposition of patients without increasing risk of cardiac events



Objectives

- Utilize AI to import and incorporate prior cardiac testing results into evaluation of ED patients
- Automate risk prediction using validated scoring tools
- Standardize disposition of patients based on previous and current ED data



Background Information

- Chest pain is the most frequent CC in the ED
- 95% of chest pain is non-cardiac, 14% admission rate
- Significant inter-provider variability in management of patients with negative ED workup
- Difficult and time-consuming process to find relevant information in EMR



Specific Aims

- Expedite chart review and improve data organization
- Improve door-to-dispo time in ED chest pain patients
- Streamline disposition of patients with negative workup



Project Plan

- Use existing risk prediction tools and data to develop a protocol
- Collaborate with UTSW MAIA lab to develop an algorithm based on the protocol
- Assess the algorithm using cross-sectional data
- Develop a real-time decisional support tool utilizing past and live data in evaluation and disposition patients presenting with chest pain



Application of What You Learned at LEAD

- Prioritizing stakeholder interests
- Increasing collaborative efforts between multiple departments
- Creating opportunities for shared benefit
- Understanding sources of revenue and resources required to support research



Proposed Budget

- No initial budget needed in development of protocol
- Assessment of MAIA needs and potential costs with algorithm development
- In research phase, will need to provide clinical buydown to informatics team member and clinical researcher



Innovation and Significance

- Utilization of new technology to find and interpret data more rapidly than current clinical capabilities.
- Reducing door-to-dispo times will allow more patients to be seen, decrease LWBS%, and ultimately generating more revenue for the department.
- Standardizing disposition of patients will allow clinicians to follow clinical guidelines while reducing stress and concern of medicolegal liability.



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