Background: Patients enter the University of Utah Emergency Department (ED) on a daily basis for the treatment of chest pain. While these patients are in the ED, physicians must determine if the patient is experiencing an acute coronary syndrome (ACS or heart attack) or a blood clot in the lungs (pulmonary embolism or PE). This determination is necessary so the best care possible can be administered. The current scoring system used to determine cardiac risk is difficult and imperfect. It is valuable to develop a new scoring system that is both sensitive and specific so appropriate treatment can be administered.

Objectives: The objective of this study is to gather data for the development of a new cardiac risk stratification system that accurately determines which factors may increase the risk of ACS and PE; to help select patients appropriate for additional testing to rule in or out these conditions in patients presenting to the ED with chest pain.

Methods: Information is first gathered from the patient through a questionnaire administered while they are in the ED. This questionnaire includes questions about symptoms as well as medical and family history. After the patient leaves the ED, vital signs, lab results, imaging results and medication information from the patient’s ED visit is gathered through the hospital database. A month later, a follow-up survey is administered by telephone. Data is then entered into a database (REDCap electronic data capture tools) for analysis.

Results: We are still gathering data for this study. Previous analysis related to this data set has focused just on emergency department patients with chest pain who were evaluated in the Emergency Department Observation Unit (EDOU). This analysis demonstrated that a revised, simplified scoring system performed as effectively as a traditional scoring system in the evaluation of ACS risk in patients. The additional data being gathered focuses on all patients presenting to the emergency department with chest pain rather than only those evaluated in the EDOU, providing a larger population of patients to study and evaluate with the use of a new cardiac risk stratification system. More recent data analysis shows a strong correlation between ACS or PE diagnosis and an elevated blood pressure, cholesterol or first-degree relatives with heart disease. Almost 50% of patients diagnosed with ACS or PE demonstrated an elevated blood pressure. Approximately 39% of these diagnosed patients had elevated cholesterol and close to 47% had a first-degree relative with heart disease. Each of these elements are accounted for in the new scoring system. Other significant elements include congestive heart disease, age, diabetes, current cigarette smokers and first-degree relatives with a clot in the legs or lungs.

Conclusion: We have found that patients presenting to the ED with chest pain can be evaluated through simpler risk stratification methods that can better determine diagnosis and necessary treatment for improved patient outcome.