Lifenet (STEMI Alert): Reduction Of Door-To-Balloon Times

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IDENTIFICATION:

Heart attacks remain a leading cause of death in the United States. Each year a half million Americans experience ST-segment elevation myocardial infarction (STEMI). One third will die within 24 hours of onset if not treated with Percutaneous Coronary Intervention (PCI). The reality is that fewer than 25 percent of U.S. hospitals have the ability to perform PCI. In hospitals with cath labs, less than 40 percent of patients receive PCI within 90-minute door-to-balloon time, as recommended by the American College of Cardiology (ACC) and American Heart Association (AHA). Mortality for Acute Coronary Syndrome (ACS) has been shown to increase 40 percent from 90 to 120 minutes.

The desired goal was to shorten the length of time from door-to-balloon time for patients that were having acute coronary infarctions. Franklin Square Hospital (FSH) was following data on patients that walked into the ED and were called in by EMS providers utilizing Lifenet. Lifenet is a means for sharing critical information from pre-hospital, emergency room and PCI treatment teams.

The baseline data at this time is still being collected and audited. From November to December 2009, walk-in time for door-to-balloon inflation is a medium average of 83 minutes.

Lifenet was implemented in November 2009 in Franklin Square’s Emergency Department. Data is still be collected to evaluate its efficacy.

PROCESS:

The process was two fold: to identify patients in need for cardiac intervention as soon as possible and to decrease the delay in time activating the C-port (cath lab team) team. Early identification leads to immediate access of the C-port team and a decrease delay in intervention. Ultimately, the goal is to restore blood flow to the heart.

This was a collaborative effort between multi-disciplinary committees to “brain-storm” solutions to decrease wait times for patient flow to the cath lab. The Emergency Department, EMS, and the Cardiology team formed a task force to improve outcomes for these patients. Early identification is the key. Lifenet provides the ability to share ECG data and alert the people who
need to know – whether it is from paramedics in the field to a hospital Emergency Department, or the Emergency Department to the cardiologist (C-port team).

**SOLUTION:**

Franklin Square Hospital purchased the software and modems for Lifenet. All Emergency Room charge nurses were trained by our Emergency Preparedness Coordinator via hands-on demonstration technique on how to manage and receive an ECG from the field. The charge nurses then trained the remainder of the ED staff on how to use Lifenet. The hospital partnered with EMS to have equipment installed in the Emergency Department.

Continuous audits are conducted to monitor door-to-balloon time. The Primary Angioplasty Team, consisting of an EMS coordinator, ICU staff, ED educators, Cardiologists, ED Director, ED attendings and the Director of Cardiopulmonary Service Line meet regularly to review cases that fall outside of the 90 minute expected standard door-to-balloon time. Continuous education and training is given to the ED staff to continuously improve and strive for minimal door-to-balloon times. “Time is muscle”. To ensure that results are sustained over time, ongoing education regarding Lifenet for staff is provided. In addition, training for new hires to the ED is a priority.

**OUTCOMES:**

The Lifenet to balloon-time is a median average of 66 minutes, compared to the median average of 83 minutes from walk-ins. Charts will be provided on our storyboard with the most recent data to support our first four months utilizing Lifenet.