Door to Electrocardiogram (ECG) Time Improvement Utilizing the First Nurse Role
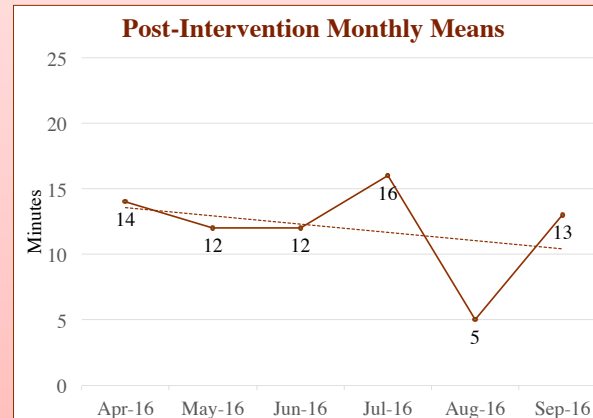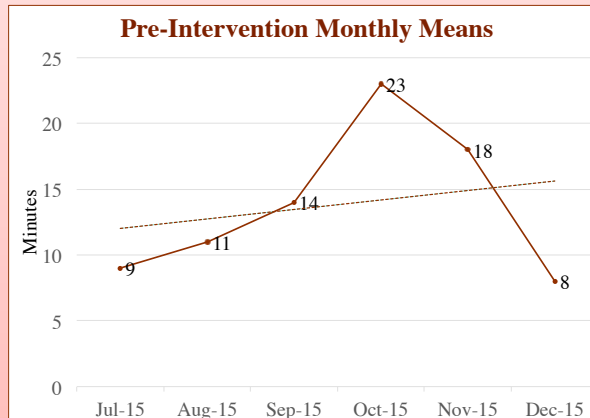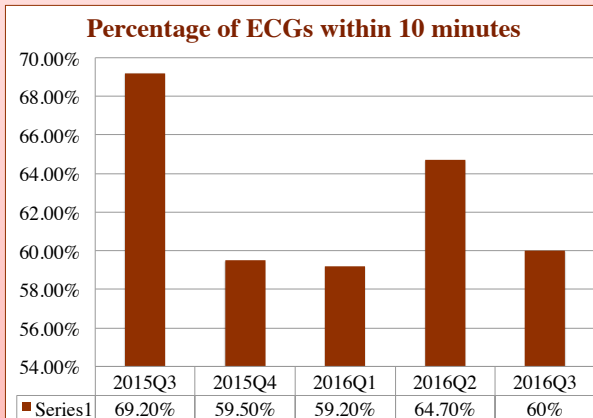
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Clinical Problem: Patients presenting with symptoms suggestive of an acute coronary event need rapid evaluation to determine if they are having a myocardial infarction (MI). The first line of diagnostic testing for patients presenting with these symptoms is an ECG and the national recommendation is for the initial ECG to occur within 10 minutes of arrival (ACC/AHA guidelines, 2004). A time delay in acquiring a diagnostic ECG could lead to increased tissue damage of the heart muscle and a decreased quality of life if the patient is suffering from a MI (NHLBI, 2015).

Purpose: This quality improvement project sought to determine if training and guideline implementation for the first nurse role (nurse stationed in the ED waiting room) could improve acquisition times of the ECG for patients presenting with symptoms suggestive of a heart attack.

Methods: This project compared door (arrival at the ED) to ECG times for patients reported to the ACTION registry before and after first nurse training. The intervention for this project was to provide education to the RNs assigned to the first nurse role that included the importance of remaining in the lobby of the emergency department and how the position can affect patient outcomes. Education was completed through presentations at staff meetings as well as direct observations of work with real time feedback.

Analysis: The project compared data from a pre-intervention period of 6 months with a post intervention period of 6 months. Data were compared utilizing the data analysis tool pack in Excel. Monthly means were also calculated utilizing Excel and graphed with a trendline for additional data comparison.

Percentage of ECGs within 10 minutes

	2015Q3	2015Q4	2016Q1	2016Q2	2016Q3
Series1	69.20%	59.50%	59.20%	64.70%	60%

Pre-Intervention Monthly Means

(Minutes) Jul-15: 9, Aug-15: 11, Sep-15: 14, Oct-15: 23, Nov-15: 18, Dec-15: 8

Post-Intervention Monthly Means

(Minutes) Apr-16: 14, May-16: 12, Jun-16: 12, Jul-16: 16, Aug-16: 5, Sep-16: 13

Results & Conclusion: Door-to-ECG mean times were compared before and after intervention utilizing a 2 sample t-test and the results did not show statistical significance (p=0.711). However, there was support for the intervention when a comparison was made utilizing data sorted by month. When graphed, the monthly means pre-intervention show a trend line of increasing door-to-ECG times. The post-intervention monthly mean graph shows a decreasing trend line in support of improvement in this metric.

Impact & Recommendations: This project provided support for the importance of the first nurse role in caring for heart attack patients. It also began discussions for how this role impacts other emergent conditions as well. It is recommended that investigation continue into the positive impact the first nurse role can have on improving patient care. It is recommended that the project education intervention be expanded to review the importance of a first nurse in the waiting room in all patients' visits, especially emergent conditions like stroke or sepsis. It is also recommended that an expansion of data review should include those emergent conditions and the relationship to the first nurse role.