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INTRODUCTION

This project was undertaken in an emergency department (ED) at a tertiary care center with greater than 80,000 annual visits. Our institution's low risk chest pain (LRCP) pathway, compliant with AHA recommendations, enables the treating provider to schedule patients for outpatient stress testing and follow-up. To meet criteria for the new pathway, patients should be low risk by HEART score and have a normal delta troponin value drawn either three hours after an initial normal troponin or a single normal troponin if the onset of symptoms occurred greater than six hours prior to arrival. The previous LRCP pathway required using the TIMI score in conjunction with a normal troponin drawn six hours after onset of symptoms to identify low risk patients. We anticipated that implementation of the HEART pathway would lead to decreased ED length of stay (LOS) for this patient population.

OBJECTIVE

We sought to determine if a quality improvement project aimed at decreasing emergency department (ED) length of stay (LOS) for patients with low risk chest pain (LRCP) did indeed decrease ED LOS.

METHODS

We retrospectively reviewed charts for all patients enrolled in our LRCP pathway from 7/1/15-6/30/16 where the TIMI score was used and from 8/1/16-7/30/17 where the HEART score was used. We collected data related to ED LOS, abnormal stress test rate, and no show rate in follow-up. We also determined the frequency that abnormal stress tests lead to coronary artery bypass graft (CABG) or cardiac stenting. Median LOS were compared between groups using Kruskal-Wallis non-parametric testing. Abnormal stress test rate and no show rates between the groups were compared using a Chi-squared test.

RESULTS

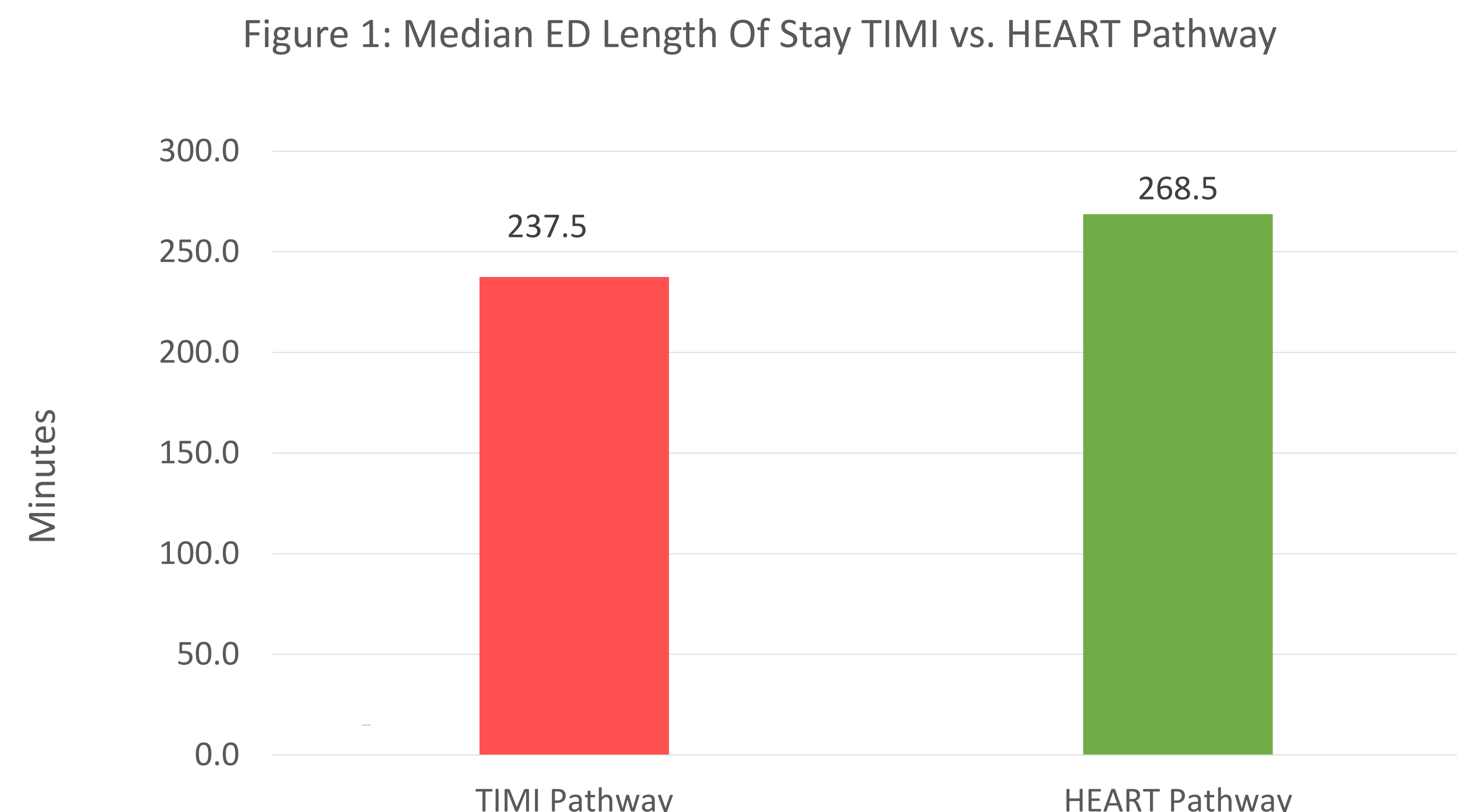


Figure 1. Median ED length of stay in TIMI Pathway versus HEART Pathway for patients who presented with LRCP to the ED.

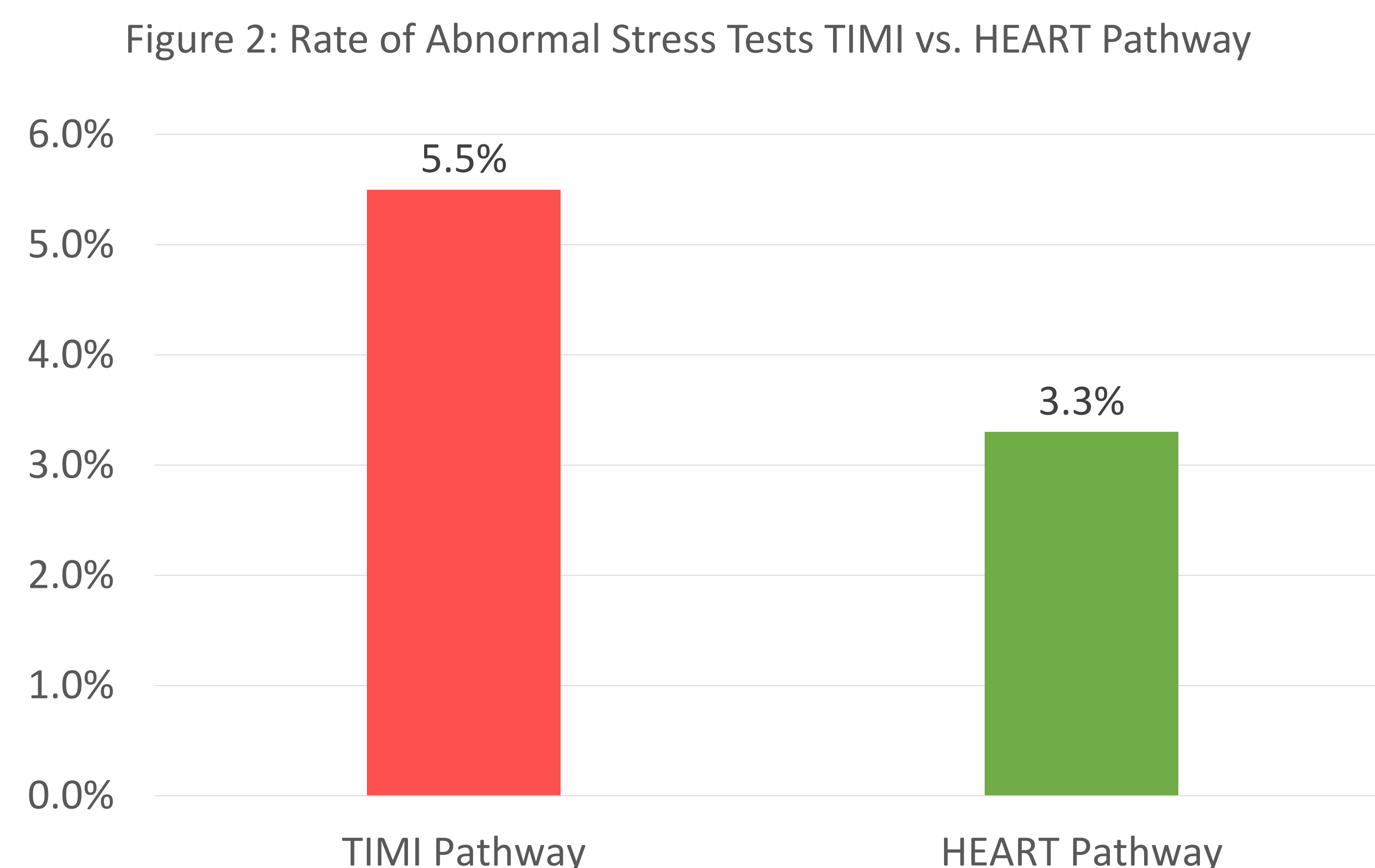


Figure 2. Abnormal stress test rate (%) in the TIMI Pathway versus the HEART Pathway for patients who presented with LRCP.

RESULTS

There were 604 patients enrolled in the TIMI pathway and 424 patients enrolled in the HEART pathway. Median ED LOS in the TIMI pathway was 237.5 minutes vs 268.5 minutes in the HEART pathway ($p=0.07$). Patients in the TIMI pathway had an abnormal stress test rate of 5.5% and in the HEART pathway the abnormal stress test rate was 3.3% ($p = 0.10$). 1.3% of patients in TIMI pathway went on to CABG or stenting vs 0.5% in the HEART pathway ($p=0.20$). The no show rate for follow-up in the TIMI pathway was 20.2% vs 22.0% in the HEART pathway ($p = 0.50$).

CONCLUSION

Implementing a new LRCP pathway did not decrease the ED LOS at our institution. However, this study did not adjust for other factors related to length of stay. There were non-statistically significant differences in the abnormal stress test rate and no show rate between these two processes.

LIMITATIONS

Our LRCP pathway functions as a suggested guideline for management and we are unable to account for individual provider compliance. Moreover, ED LOS is impacted by multiple factors that we were unable to control for including increasing patient volume over the study period, lab turnaround times, and boarding/prolonged ED stays. Finally, our results may not be generalizable to settings where expedited outpatient stress testing is unavailable.