# STOP STEMI©: A Novel Medical Application to Improve the Coordination of STEMI Care: A Brief Report on Door-to-Balloon Times (D2B) After Initiating the Application.

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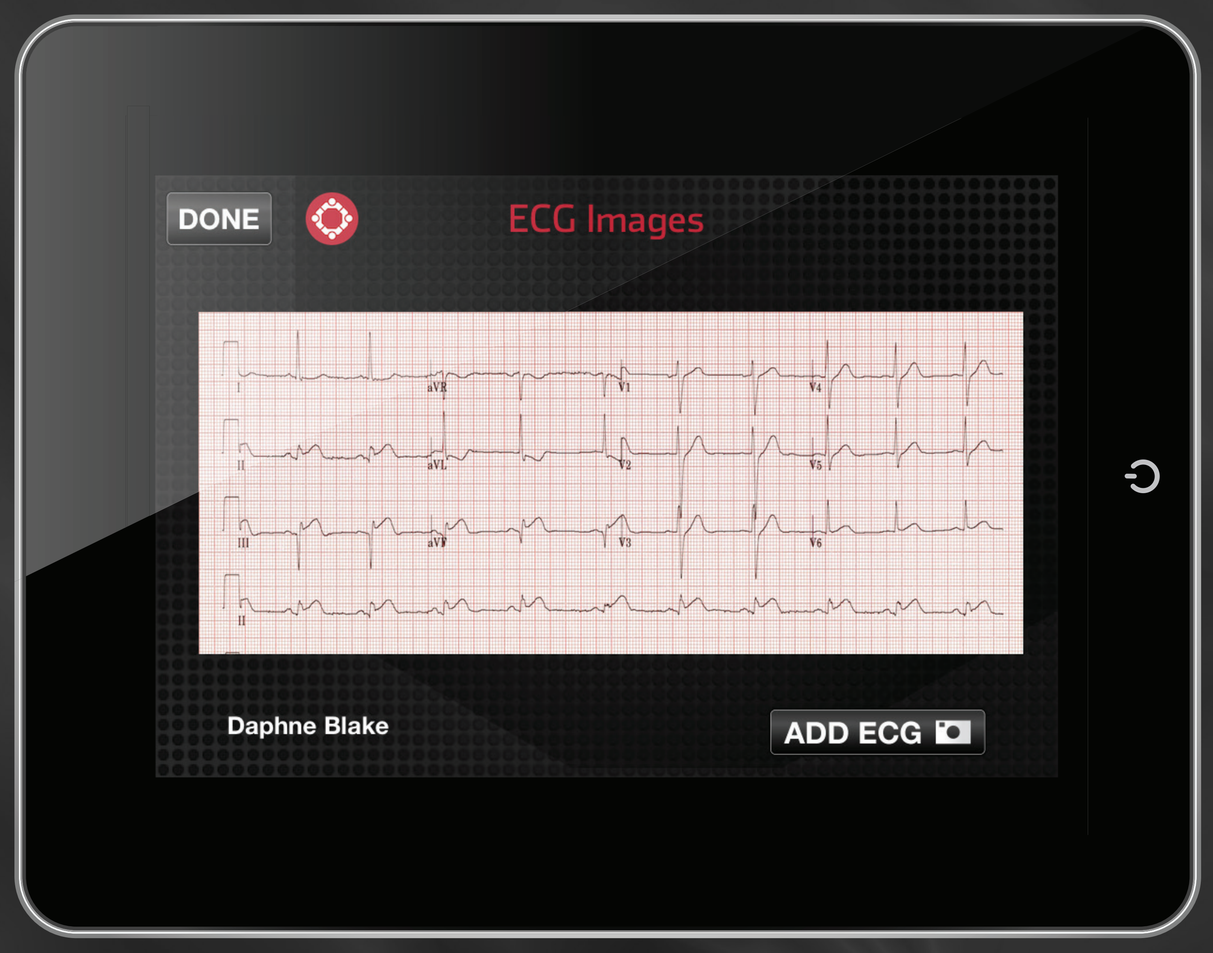
## Take Home Points

**27%**
DOOR-TO-BALLOON IMPROVEMENT FOR CMS CASES

**58%**
IMPROVEMENT IN D2B < 60 MINUTES




## Background/Objectives

A recent study suggested some delay in D2B times for off-hour patients arriving with STEMI and that the delay may be associated with higher risk of mortality (1). The objective of our study was to evaluate the effect of the STOP STEMI© medical application on door- to- balloon (D2B) time in patients arriving to our emergency department with an acute ST Elevation Myocardial Infarction (STEMI) during off hours (between 5pm-8am and weekends). STOP STEMI© is a novel medical application developed by physicians to improve the coordination and communication tasks essential to rapid assessment and care of patients suffering from a STEMI and has been demonstrated in earlier study to decrease D2B times by 22% in patients with STEMI (2).

## Methods

We conducted a retrospective before and after review of the Good Shepherd Health System STEMI quality assurance/improvement dashboard for a 10- month period between November 2012 and September 2013 (4 months prior to STOP STEMI© and 6 months after). Data was collected using a standard data collection form and entered on the dashboard by a STEMI coordinator blinded to study objectives. We calculated the average D2B times before and after initiation of STOP STEMI© for all cases arriving during off hours along with improvement in the benchmarks of D2B<90 min and D2B<60 minutes. A sub group analysis of Center for Medicare and Medicaid services (CMS) reportable cases was conducted to evaluate these benchmarks in the subset of patients meeting criteria for CMS reporting by our facility.


## Results

During the study period we received 155 STEMI patients, average 0.5 patients per day. 112 underwent percutaneous coronary intervention (PCI), 37 pre-STOP STEMI© and 75 post-STOP STEMI©. During off-hour study parameters there were 23 cases pre-STOP STEMI©, and 52 cases post-STOP STEMI©. Mean D2B for the off hours cases improved 103 minutes to 93 minutes post-app, representing a 10 minute (9.54%) improvement in the benchmark. Further we observed improvement in the <90min benchmark 15/23 (65%) to 35/52 (67%) after the app and improved <60 min-utes benchmark 5/23 (21%) to 26/52 (50%), a 58% improvement in this benchmark.
In the subgroup of CMS reportable cases arriving off hour (13 pre app and 29 post app) we observed a decrease in D2B of 21 minutes (75-54 minutes), a 27% improvement after the app.

## Conclusion

In this cohort of patients arriving during off hours, the utilization of STOP STEMI© decreased the average door to balloon times by 10% in patients with acute STEMI arriving at our emergency department. This effect was magnified when looking at the subset of all STEMI cases reportable to CMS. Further, we observed modest improvements in the less than 60 min D2B in patients arriving off-hour.

## References

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