

STEMI Care Improvement Strategies: Rural Missouri Hospital

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Background

Cox Monett Hospital (CM) is a 25-bed Critical Access Hospital with a 10-bed Emergency Department (ED) located in Southwest Missouri. The ED is staffed with Emergency board certified physicians, advanced practice providers, registered nurses and clinical support staff. CMH is designated by the Missouri Department of Health and Senior Services as a Level III STEMI Center that cares for approximately 10-15 ST-Elevation Myocardial Infarction (STEMI) patients annually. They became familiar with the American Heart Association's Get With The Guidelines[®] (GWTG) programs through participation in the GWTG-Stroke Registry in 2016. A focus on STEMI care coordination and data collection began in 2020 which led to enrollment in the GWTG-Coronary Artery Disease (CAD) registry in 2022. CMH has reported 21 STEMI patients to date to the GWTG-CAD Registry.

Objective

To improve the timely acquisition of ECG after ED arrival to align with national guidelinebased recommendation of within 10 minutes of arrival, and thrombolytic therapy administration within 30 min of arrival for STEMI patients presenting directly.

Methods

A multidisciplinary advisory team comprised of CMH Medical Director, Time Critical Diagnosis (TCD) Coordinator, STEMI Coordinator and Cardiologists from CoxHealth Medical Center South (CHMCS), CHMCS cardiologists, CMH ED Director, and CMHMC Service Line Director was developed to determine if a thrombolytic vs. Primary PCI reperfusion strategy should be first line for STEMI patients being cared for at CMH. With the distance to the nearest PCI center of 42 miles, and an estimated transport time of 55 minutes, a Door to PCI time of \leq 90 minutes could not be consistently guaranteed. Given the distance and travel time, a thrombolytic pathway was selected as the first line of reperfusion. A protocol with the goal of arrival to thrombolytic administration ≤ 30 minutes combined with urgent parallel initiation of transfer for PCI began in January of 2020. Baseline data collection from 2020 to June of 2022 took place through an internal review process utilizing data abstractions via a spreadsheet. Beginning in July of 2022 a standardized data collection and reporting through the GWTG-CAD registry took place. Barrier analysis revealed staffing and education gaps, extended air ambulance wait times due off-site air services, reluctance by providers to choose thrombolytics over transfer for Primary PCI, unreliable STEMI patient acceptance, and lack of receiving center catheter lab availability.

Discussions addressing these barriers with the CHMCS STEMI coordinator and cardiology providers to clarify transport times and the factors that influenced the recommendation of reperfusion with a thrombolytics as primary therapy unless thrombolytics were contraindicated. CHMCS Cardiology providers and CMH providers were convened to address questions and concerns. A multidisciplinary quarterly data review and STEMI transfer audit process including staff feedback, provider education, & direct case level follow up were encouraged.









Disclaimer: The authors identified above are part of Cox Monett Hospital and the Rural Health Care Outcomes Accelerator Program. This content reflects their own independent analysis of data gathered using the AHA Get With The Guidelines[®] (GWTG) IQVIA Registry Platform and does not represent findings from the AHA Get With The Guidelines[®] national program.



STEMI Patients Receiving Thrombolytic Therapy within 30 Minutes of ED Arrival²

Methods (continued)

The data review process and analysis revealed that the ECG acquisition after ED arrival were achieving the AHA recommended guidelines of ECGs obtained within 10 minutes of hospital arrival if no pre-hospital ECG was obtained. The biggest factor that contributed to obtaining the initial ECG was ED staff care prioritization. The acquisition and interpretation of the ECG was found to be an integral indicator to the downstream care of STEMI patients who required additional time for transfer to a PCI center from CMH. Faster ECG acquisition was quickly found to relate to earlier transfer initiation and thrombolytic consideration. Due to this association the multidisciplinary team set an internal arrival to ECG goal of 7 minutes, in hopes a more stringent goal would increase the compliance of reperfusion therapy. All ED staff were educated on the guidelines for the expected completion time Reinforcement activities included tracking and sharing STEMI and NSTEMI patient time to ECG audits, reporting excessive fallouts, and reporting quarterly findings at multidisciplinary meetings. Results In 2021, the CMH Door to ECG average time was 12 minutes, year to date in 2024 this time has been reduced to 4.5 minutes demonstrating a 63% improvement.^{2,3.} The thrombolytic therapy administration within 30 minutes of arrival decreased from 52 minutes in 2020 to 18 minutes in 2024 and the number of patients referred for primary Conclusions

PCI decreased from 15 in 2020 to 1 in 2024.^{2,3}

CMH's multistep, collaborative, and multidisciplinary approach to process improvement successfully allowed improvement in compliance with the national guideline recommendations for STEMI reperfusion. The care team was able to successfully improve several internal processes impacting door to ECG within 10 minutes and thrombolytic administration within 30 minutes of arrival allowing them to reduce noncompliance to arrival at first facility to Primary PCI goal of 120 minutes.

References

- 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines Originally published17 Dec 2012 https://doi.org/10.1161/CIR.0b013e3182742cf6 Circulation. 2013;127:e362-e425 p. e370)
- 2. Get With the Guidelines- Coronary Artery Disease, Cox Monett Hospital, Rural Achievement Measures
- Cox Monett Hospital STEMI Database 2020-2022 3.

