

# Learning from the Past; Improving the Future

*Aprendiendo del pasado; mejorando el futuro*

VENU MENON<sup>1</sup>

Primary percutaneous intervention (PCI) is the reperfusion modality of choice in the setting of ST elevation myocardial infarction and has been proven to reliably restore patency of the infarct related artery, limit infarct size and save lives.<sup>(1)</sup> The benefit of PCI in the setting of STEMI is however time dependent. Consequently, current ESC and ACC/AHA guidelines recommend a door to balloon time of < 90 minutes in patients initially presenting to the primary PCI center and a more liberal < 120 minutes from first medical contact for those requiring transfer. <sup>(2, 3)</sup> The adoption of this resource intensive approach on a national, statewide or citywide approach requires political, economic and public support along with the creation of regional systems of STEMI care with intense coordination amongst various stake holders including pre hospital ambulance, emergency room and cardiovascular personnel. This coordinated approach has now been successfully utilized over the past two decades to reduce the overall morbidity and mortality from STEMI in the Unites States, Canada and Europe. <sup>(4)</sup>

Adoption of this proven STEMI strategy on a national scale has however proven challenging in resource strapped settings due to lack of infrastructure, health care personnel, and a number of other socio-economic factors. Despite multiple barriers, pockets of excellence have however emerged, often a testimony to individual physician and institutional leadership at the local/regional level. <sup>(5, 6)</sup> Each of these successes are worthy of celebration and have the potential to inspire and favorably influence others in a similar environment to enhance the delivery of STEMI care in their community. In this issue of the journal, Furmento and colleagues report on their success in creating a viable STEMI program by adopting well recognized principles of STEMI care delivery and tweaking it for local success. <sup>(7)</sup> By creating a prospective registry and adopting metrics of care deliver, the investigators were able to measure, modify and report on their findings. Despite the COVID-19 epidemic, their protocol guided care enabled the authors to deliver timely PCI as recommended by the guidelines for patients presenting with STEMI to their institution. Despite a decrease in prehospital activation and ED bypass

likely due to the COVID-19 pandemic, no detrimental effects on time to PCI were noted.

Where should the investigators go from here? Despite timely door to balloon time, the real world benefits of PCI are dependent on the total ischemic time. As a result, future studies should elaborate on time from symptom onset to first medical contact and show favorably trends with this metric. The investigators should also be encouraged to report on the short- and long-term outcomes in this population. Finally, lessons from this registry should help foster collaboration with other local and regional institutions to create an ever-expansive reliable STEMI network.

## REFERENCES

1. Keeley EC, Boura JA, Grines CL. Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. *Lancet*. 2003;361:13-20. [https://doi.org/10.1016/S0140-6736\(03\)12113-7](https://doi.org/10.1016/S0140-6736(03)12113-7)
2. Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J*. 2018;39:119-77. <https://doi.org/10.1093/eurheartj/ehx393>
3. O'Gara PT, Kushner FG, Ascheim DD, Casey DE, Jr., Chung MK, de Lemos JA, et al. 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. *J Am Coll Cardiol* 2013;61:e78-e140.
4. Jacobs AK, Ali MJ, Best PJ, Bieniarz MC, Bufalino VJ, French WJ, et al. Systems of Care for ST-Segment-Elevation Myocardial Infarction: A Policy Statement From the American Heart Association. *Circulation* 2021;144:e310-e27. <https://doi.org/10.1161/CIR.0000000000001025>
5. Mohan VN, Alexander T, Muraleedharan VR, Mulasari A, Narula J, Khot UN, et al. Economic and Societal Impact of a Systems-of-Care Approach for STEMI Management in Low and Middle-Income Countries: Insights from the TN STEMI Program. *Ann Glob Health* 2019;85:122. <https://doi.org/10.5334/aogh.2508>
6. Alexander T, Mulasari AS, Joseph G, Kannan K, Veerasekar G, Victor SM, et al. A System of Care for Patients With ST-Segment Elevation Myocardial Infarction in India: The Tamil Nadu-ST-Segment Elevation Myocardial Infarction Program. *JAMA Cardiol* 2017;2:498-505. <https://doi.org/10.1001/jamacardio.2016.5977>
7. Furmento J, Candiello A, Masclo P, Lamelas P, Chapman J, Sigal J, et al. Optimization of Door-to-Balloon Time Implementing a Process Improvement Program. Results after 5 Years. *Argent J Cardiol* 2023;91:135-139. <http://dx.doi.org/10.7775/rac.v91.i2.20614>

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Address for reprints: Venu Menom. Cleveland, Ohio 44195

<sup>1</sup>Director Cardiac ICU. Cleveland Clinic