

Clinical Summary

Integration of pre-hospital electrocardiograms and ST-elevation myocardial infarction receiving center (SRC) networks

Rokos IC, French WJ, Koenig WJ, et al. *Journal of the American College of Cardiology Interventions*. 2009;2:339–46.

Purpose:

This study evaluates the rate of timely (≤ 90 minutes) reperfusion with primary percutaneous coronary intervention (PPCI) for STEMI patients in STEMI Regional Center (SRC) networks across the US. (The American College of Cardiology Door-to-Balloon (DTB) Alliance target is $>75\%$ rate of D2B ≤ 90 minutes).

Methods:

- The data consisted of a pooled analysis of prospective, observational registries at 10 SRC networks consisting of 72 hospitals.
- Data were collected on consecutive patients with a diagnosis of pre-hospital STEMI.
- Patients received pre-hospital ECG, were transported to a designated SRC, and treated with PPCI.
- Both DTB time and EMS-to-balloon time (E2B) were recorded.

Results:

- There were 2,712 patients diagnosed with pre-hospital STEMI.
- 76% of patients (2,053) undergoing PPCI had a D2B ≤ 90 minutes.
- A secondary analysis of the PPCI patients demonstrated that 50% had D2B ≤ 60 minutes, 25% had D2B ≤ 45 minutes, and 8% had D2B ≤ 30 minutes.
- The E2B times were determined in 762 of the 2,053 patients (37%) undergoing PPCI. The rate of E2B times ≤ 90 minutes was 68%.

Conclusion:

- The 10 SRCs participating in this study demonstrated a combined 86% rate of D2B ≤ 90 minutes.
- All regions surpassed the American College of Cardiology D2B Alliance benchmark.
- In areas with regional SRC networks, EMS provides entire communities with timely access to quality STEMI care.
- True E2B time should be measured from time of dispatch.
- STEMI activation might be further enhanced by wireless transmission of pre-hospital ECGs with physician interpretation.

Physio-Control Discussion Points:

This study highlights the benefits of integrating the pre-hospital 12-lead ECG into regional STEMI networks in order to speed time to primary PCI. Physio-Control, through the LIFENET[®] System, provides a unique tool set to establish and manage regional STEMI networks, connecting field teams with hospital care teams for alerting and data sharing. The LIFENET System is designed to help EMS teams start the clock earlier and improve E2B times by providing alerts to hospital care team members and providing critical patient data while the ambulance is enroute. This allows teams to share data, prepare for the patient, consult with other physicians when necessary and route the patient to the right facility, allowing the patient to move more quickly into and through the care process.

For further information, please contact your local Physio-Control representative at 800.442.1142 or visit our website at www.physio-control.com



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