

Increasing EMS Pre-Notification Results in Faster Alteplase Administration and Increased Treatment Rates

Nicole Bennett, MS, RN, ACNS-BC, APNP, CNRN, SCRNP, Stroke Program Coordinator, University of Wisconsin Hospital & Clinics;
Dot Bluma, BSN, RN, CPHQ, Stroke Project Specialist, Wisconsin Coverdell Stroke Program, MetaStar;
Jessica Link, MPH, MCHES, Program Director, Wisconsin Coverdell Stroke Program, Wisconsin Department of Health Services

Background

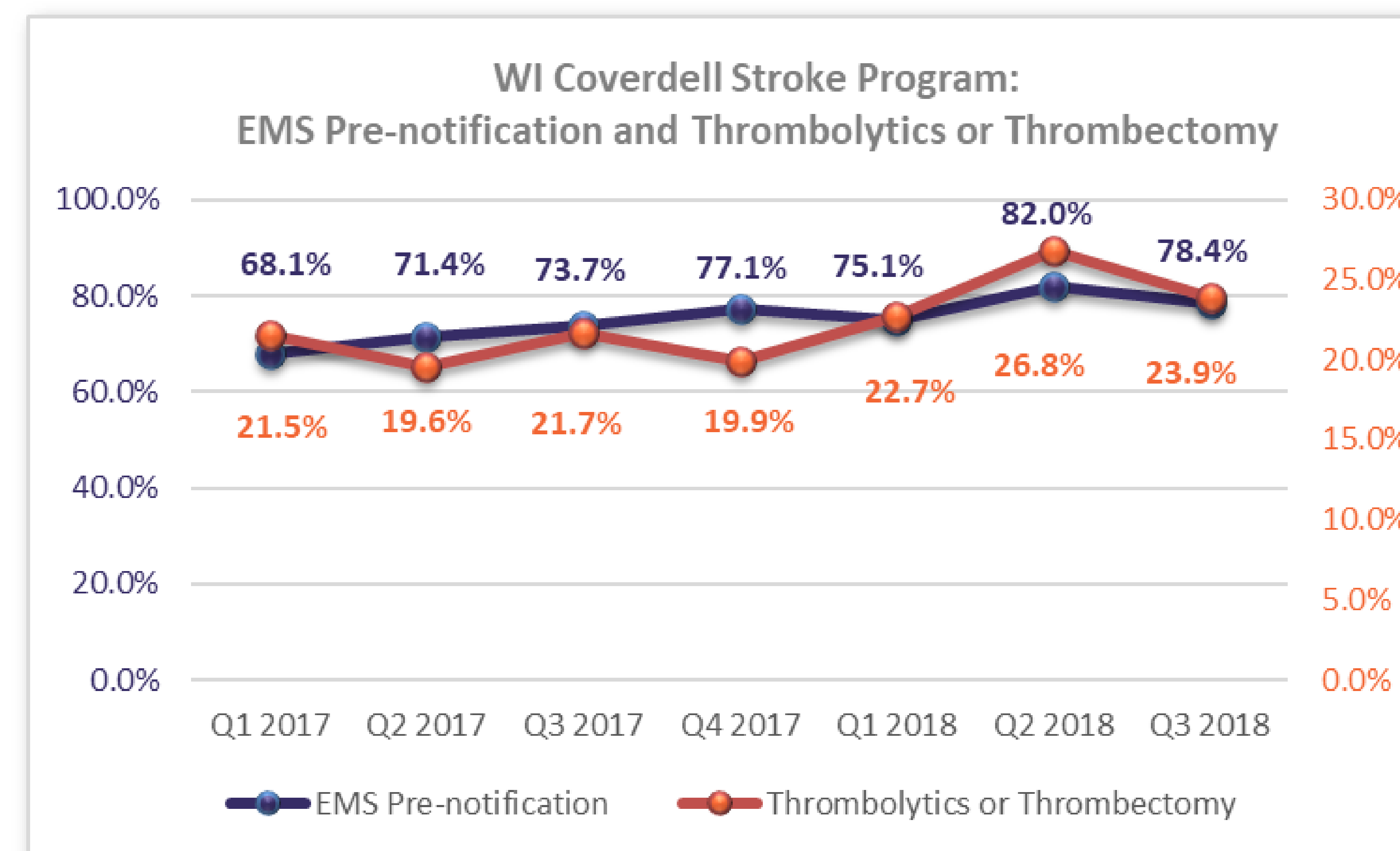
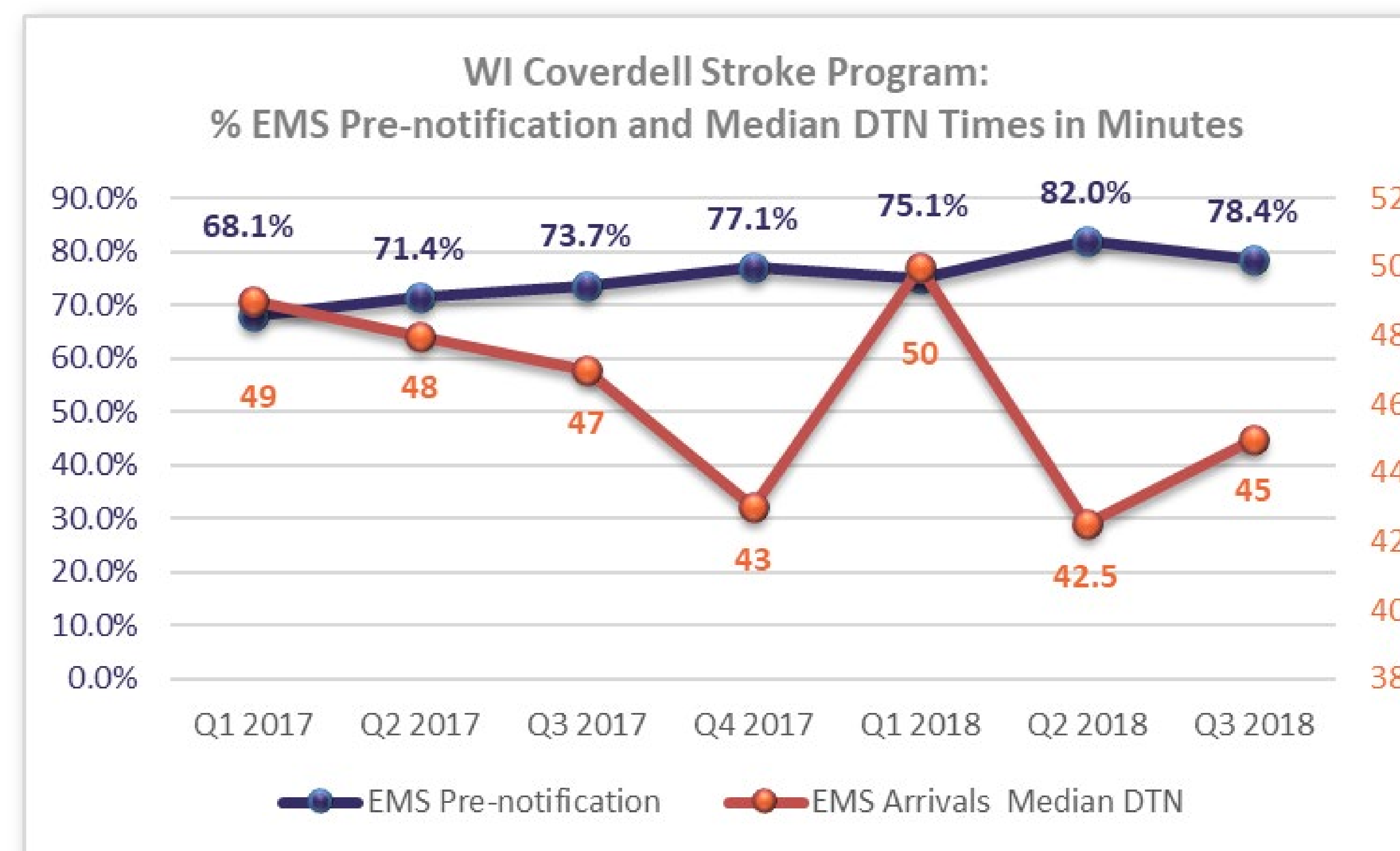
Emergency Medical Services (EMS) pre-notification of a suspected acute stroke patient assists the hospital in mobilizing the appropriate personnel and resources before the patient arrives. This increases the probability of acute stroke treatment with thrombolytic therapy (IV/IA alteplase) and/or mechanical thrombectomy. The Wisconsin Coverdell Stroke Program (Coverdell) performed a multi-quarter analysis of the successes and barriers hospitals were experiencing with EMS pre-notification, with an overarching goal to increase this percentage to >80%.

Methods

Coverdell's 66 participating hospitals represent 78% of annual stroke admissions to Wisconsin hospitals. Coverdell hospitals participate in the quarterly Coverdell Learning Collaborative (CLC) where they review several aggregated data points. Of these, EMS pre-notification times are analyzed and discussed. Stroke coordinators at hospitals performing at a high level shared with the CLC their performance improvement activities and best practices related to EMS pre-notification. Methods used consisted of:

- Educating and training EMS on improving pre-arrival notification by communicating in plain language stroke symptoms or verbalizing a "possible stroke."
- Educating and training emergency department caregivers on where to document the EMS pre-arrival report in the EHR.
- Educating the stroke data abstractor on locating the EMS pre-hospital report in the Electronic Health Record.

Results



This GetWithThe Guidelines® Aggregate Data report was generated using the IQVIA PMT® system. Copy or distribution of the GetWithThe Guidelines® Aggregate Data is prohibited without the prior written consent of the American Heart Association and IQVIA. Powered by IQVIA, Cambridge, MA.

The Wisconsin Department of Health Services collaborates with MetaStar Inc. to provide the Wisconsin Coverdell Stroke Program. The program is supported by the Grant or Cooperative Agreement Number, DP006074, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services. For more information on the Coverdell Program visit www.coverdellwi.org

Findings

In analyzing quarterly data from Q1 2017 to Q3 2018, our multi-disciplinary approach demonstrates impressive results:

- EMS pre-notification rose from 68.1% to 78.4%, with 82% reached in Q2 2018.
- The median Door to Needle (DTN) time for those arriving by EMS decreased from 49 to 45 minutes, with the lowest median time in Q2 2018 of 42.5 minutes.
- Stroke treatment with thrombolytics and/or thrombectomy increased from 21.5% to the highest in Q2 2018 at 26.8%.

Conclusions

A multi-faceted approach focused on improving communication between EMS and hospitals by pre-notification of a suspected stroke patient's arrival has led to remarkable improvements in Coverdell's outcome data.

The Coverdell Learning Collaborative provides a collegial environment in which peers are encouraged to share experiences, successes and barriers to implementing best practices, with a priority on improving the outcomes for stroke patients in the state of Wisconsin.

References

Adeoye, O, et al. 2019 Recommendations for the Establishment of Stroke Systems of Care: A 2019 Update A Policy Statement From the American Stroke Association

Powers, J, et al. 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association.