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From “Drip & Ship” to “Give & Go”: Transitioning from Alteplase to Tenecteplase for Acute Ischemic Stroke

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Introduction

Stroke is the leading cause of disability among adults and fifth leading cause of death in the United States. The goals of treatment include reducing neurologic injury in order to reduce mortality and long-term disability. Ischemic stroke patients presenting within 24 hours of symptom onset should be evaluated for pharmacologic and mechanical reperfusion therapy. Pharmacologic treatment options identified in the current guidelines recommend intravenous alteplase if a patient meets eligibility criteria. For the first time, the 2019 guidelines identified the option to choose tenecteplase over alteplase in patients eligible to receive mechanical thrombectomy. Based on available studies, tenecteplase appears to have similar efficacy and safety, and may be more efficacious than alteplase for patients with large vessel occlusion eligible for IV thrombolysis and mechanical thrombectomy. Additional benefits of using tenecteplase include cost savings, a faster time to reconstitute and a shorter time to administer (5 seconds vs. 1 minute bolus with 1 hour infusion). By being able to administer the drug more quickly with no infusion, faster patient transport from a satellite site or hospital emergency department to a comprehensive stroke center can occur.

Purpose

The Henry Ford Health Stroke Council approved an initiative to assemble a multidisciplinary workgroup to review the literature and develop and execute a workplan for transitioning to tenecteplase (TNK) for acute ischemic stroke (AIS) across the organization (all five hospitals and five satellite emergency departments).

Organizational Goal

The goal was a successful transition from alteplase to tenecteplase across the organization on June 28, 2023, as evidenced by decreased door to needle times, decreased door in-door out times, equal outcomes, similar or lower complication rates, and decreased costs.

The Multidisciplinary Team

Kelly Ashcraft, MSN, RN, AGCNS-BC, TCRN, CEN	Clinical Nurse Specialist, Emergency Room
Megan Brady, MPH, MSW	Stroke Program Manger
Alex Bou Chebl, MD, FSVIN	Stroke Program Director
Lori Doyle, MBA, RRT	IT Program Manager
Lisa Cohen, MS, APRN, CCRN-K, CNRN	Clinical Nurse Specialist, Neuroscience
Maribeth Coulombe, JD	Senior Council
Jonathan Frankel	Principal Management Engineer
Davey Gutenschwager, PharmD	Pharmacy Resident
Mathew Jones, PharmD, BCPS, BCCCP	Pharmacy Specialist
Rebecca Lenz, BSN, RN	Director, Emergency Services
Christopher Lewandowski, MD	Executive Vice Chair, Emergency Medicine

Methods

One year before the planned practice change, the multidisciplinary team began meeting monthly. A workplan was developed with 32 "buckets" identified to be addressed for a successful transition to tenecteplase. An "owner" was assigned to buckets within their scope of practice. The buckets included tasks in these main categories: approvals required from system councils/committees, communications to various affected groups, legal/risk review, Epic builds needed, education and training plan development for nurses, providers, pharmacists and EMS partners, policy/document revisions, and the repackaging plan for a TNK kit. At every meeting, owners reported out completed tasks and barriers encountered in each bucket. Activities accomplished included:

- Approval obtained from the ED Pharmacy Taskforce, Anticoagulation Subcommittee, System Drug Use Policy Committee, ED Clinical Council, Medication Management Committee, HF Stroke Council, System Nurse Practice and HFH Combined Nurse Education Council
- Epic builds created for TNK in templates, MAR and order sets
- Review and update of all policies and documents for verbiage containing alteplase and/or r-tPA
- Design, development, and deployment of the TNK kit with dosing card
- Competency Skill Checklists developed for Preparation and Administration of Tenecteplase
- HF University education/training module developed for nurses and pharmacists and a video for neurology and ED residents
- Communications with resource list emailed to all Henry Ford Health neurology, emergency medicine and hospitalist providers
- OneHenry page created for compiling TNK Transition resources and information

Conclusions

On June 28, 2023, at 8:00 am, the change from alteplase to tenecteplase for AIS occurred across Henry Ford Health. The first dose of TNK was given that evening at Henry Ford Jackson ED, with Henry Ford Wyandotte ED coming in second the next day. Overall, the transition was incredibly smooth. Preparation and participation from all areas in the planning and rollout were keys to this successful change in practice.

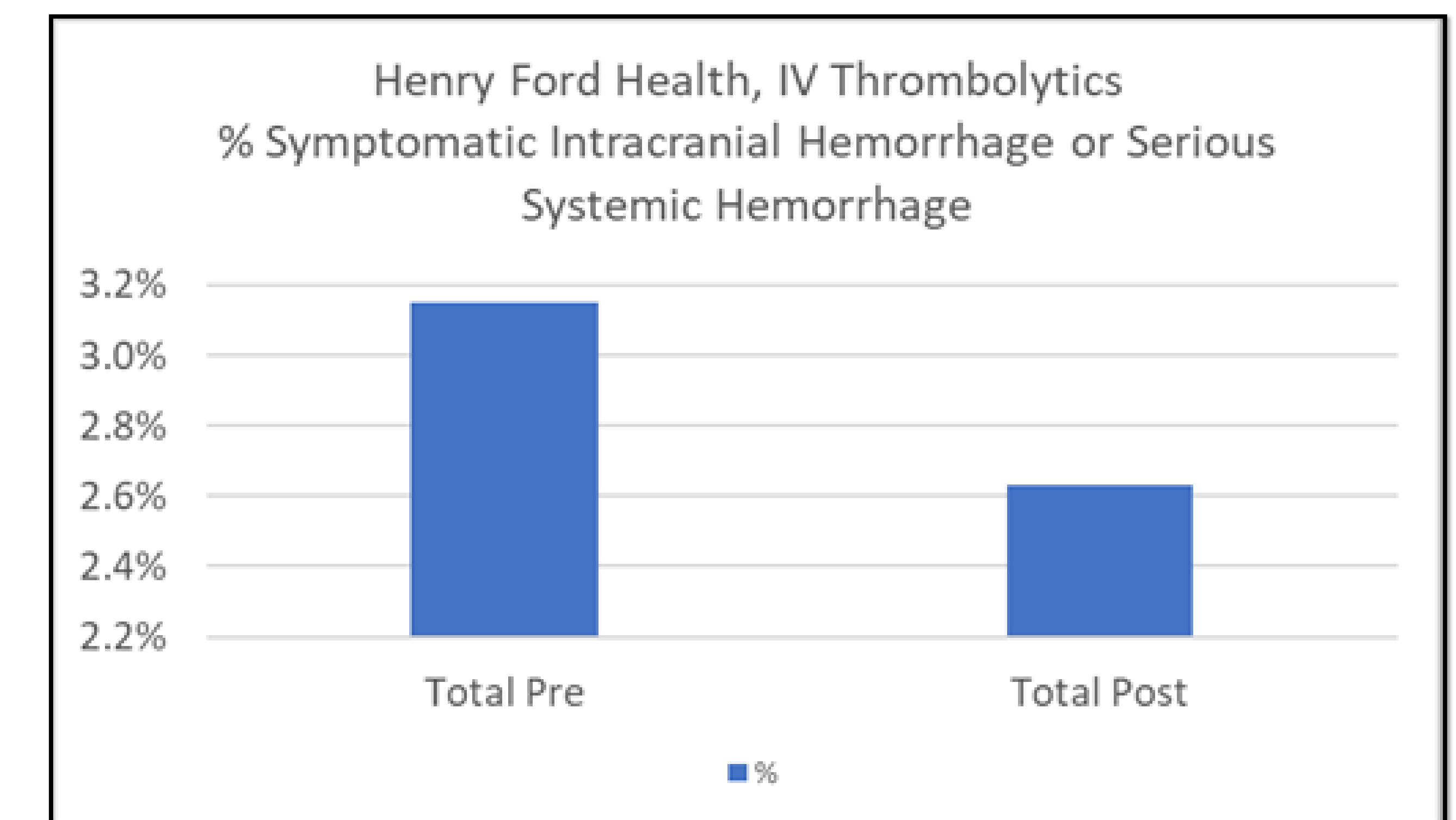
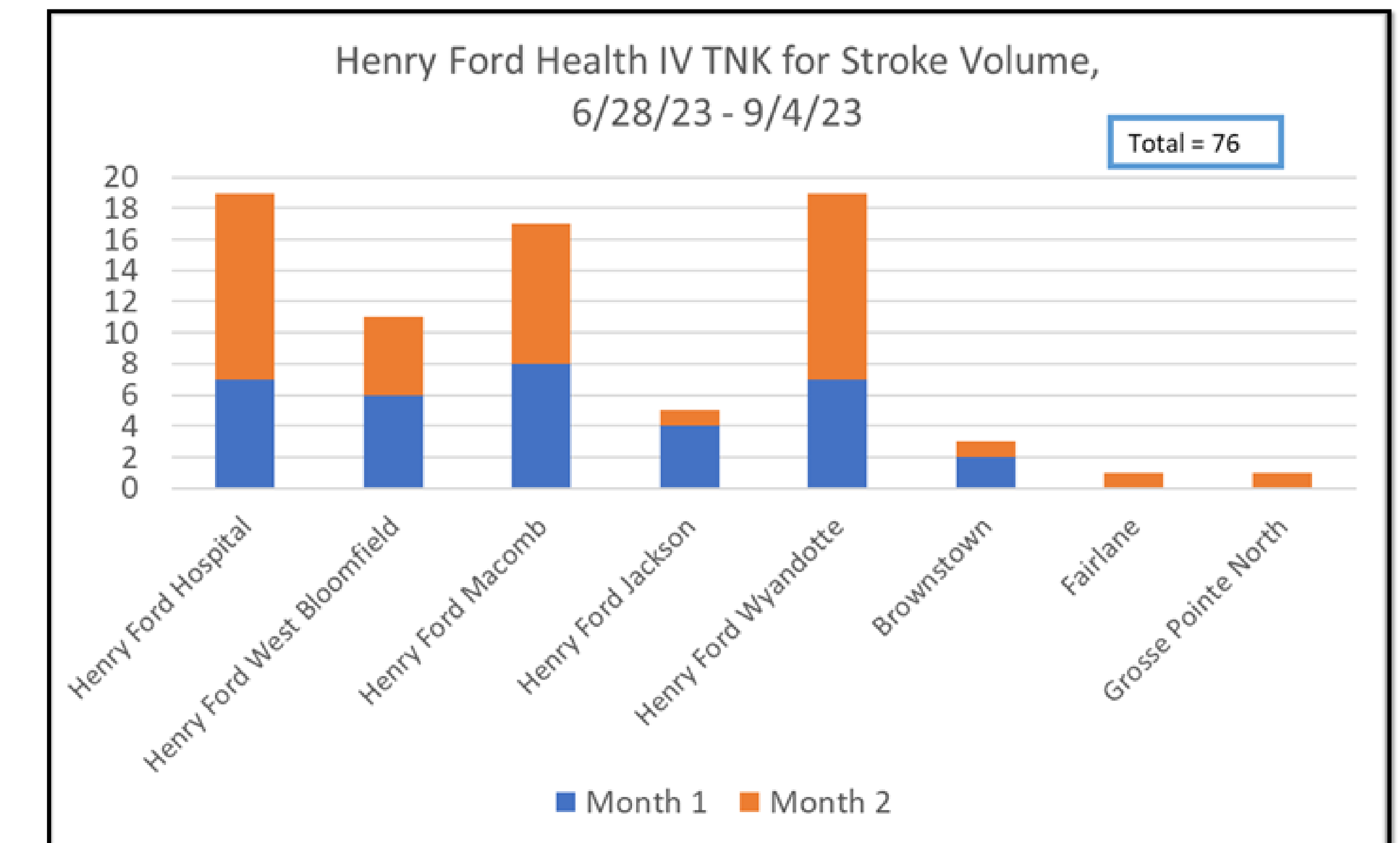
We will continue to track the data in several areas. Some of the trends we have already observed:

- \$159,372 cost savings in first 2 months - projections at this rate would be a cost savings of \$956,232 over 12 months
- An increase in revascularization in patients with large vessel occlusions (LVO) who received TNK therefore not requiring thrombectomy
- Faster Door In-Door Out times for patients transferred for thrombectomy post IV TNK administration

Acknowledgements

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TNK First 2 Months



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