

Introduction

Neurointervention for ischemic stroke is a complex treatment with multiple models of service delivery.

- The ‘mothership’ model involves direct EMS transport to a Comprehensive Stroke Center (CSC) for IV-tPA and neurointervention.
- The ‘drip-and-ship’ model involves transport to a nearby peripheral hospital for IV-tPA before transfer to a CSC for neurointervention.
- A concern about mothership is that bypassing peripheral hospitals may delay time to IV-tPA, whereas drip-and-ship may delay time to endovascular treatment. [1]

In this abstract, we describe a ‘trip-and-treat’ model that may minimize both these risks.

- In trip-and-treat, a mobile neurointerventional team (MNT) is shared between a CSC and several primary stroke centers with interventional capacity (PSCI).
- The MNT travels to the PSCI in the event of a stroke. Patients who present to the PSCI therefore remain at the PSCI for treatment by the MNT instead of being transferred to a CSC.

Our Aim

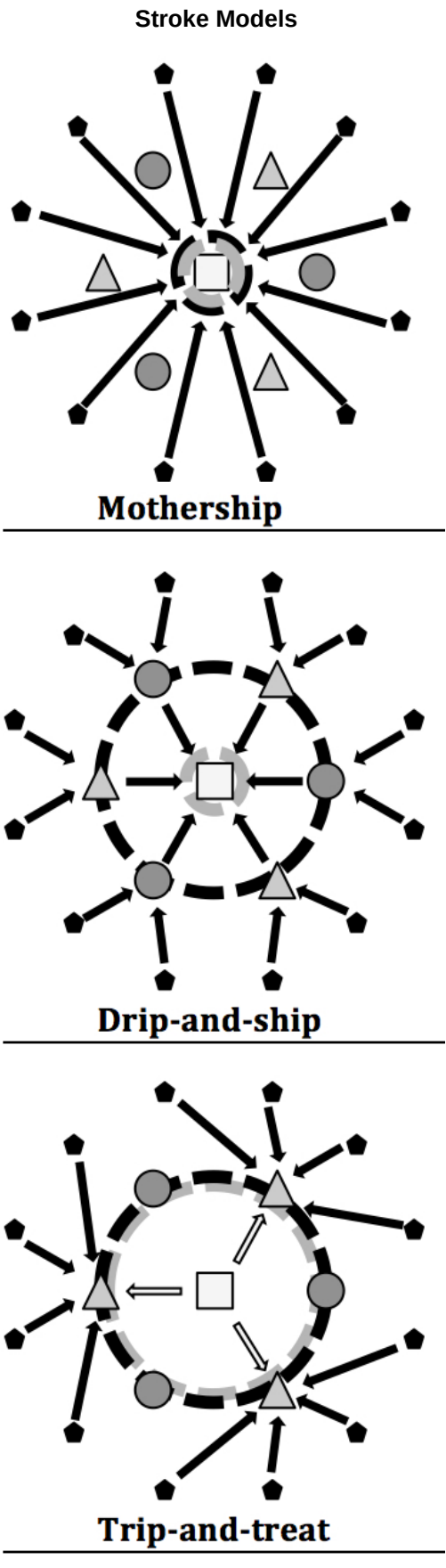
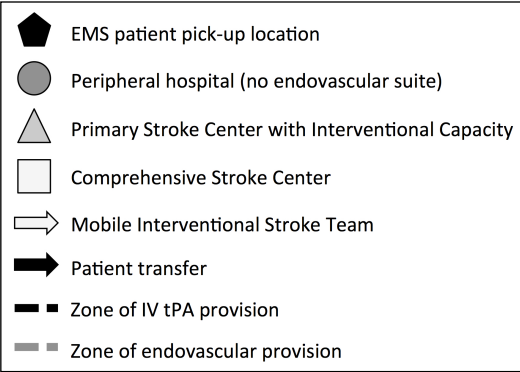
To assess the efficacy of mothership, drip-and-ship, and trip-and-treat stroke models.

Methods

We performed a retrospective and prospective analysis on 114 stroke patients who received endovascular treatment for acute stroke at a Manhattan-based hospital system. Of these patients:

- 12% (n=14) were treated in mothership
- 54% (n=61) in drip-and-ship
- 34% (n=39) in trip-and-treat.

Symptom-to-puncture was defined as time from discovery of stroke symptoms to arterial puncture. Change in NIHSS was defined from hospital admission to discharge.



Results

- Symptom-to-puncture time was 210±72 minutes for mothership, 292±86 minutes for drip-and-ship, and 211±69 minutes for trip-and-treat.
- Mothership and trip-and-treat both had faster treatment times than drip-and-ship (P=0.0019, P<0.0001).
- There was no difference in treatment time between mothership and trip-and-treat (P=0.9978).
- There was no significant difference in time to IV-tPA between the three protocols (P=0.7328).
- Change in NIHSS was -10.4 for trip-and-treat and -2.4 for drip-and-ship (P=0.0179).

References

1. Appireddy R, Zerna C, Menon BK, Goyal M. Endovascular interventions in acute ischemic stroke: Recent evidence, current challenges, and future prospects. Curr Atheroscler Rep. 2016;18:40

Conclusions

- Trip-and-treat is superior to drip-and-ship for endovascular treatment times and clinical outcomes.
- Limitations include patients were not randomized to drip-and-ship and trip-and-treat groups. Furthermore, delays in the drip-and-ship model may be caused by inefficiencies in the interhospital transfer system specific to this hospital network.
- Future studies should compare the drip-and-ship and trip-and-treat models prospectively.