Intermountain Stroke TeleHealth Service Outperformed a For-Profit Service in Response Times and Times to Treatment

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BACKGROUND

Time is brain: Rapid implementation of stroke treatment is key to improving chances of a better patient outcome. The AHA recommends more than 50% of patients have a DTN time of less than 60m.

Beginning in January 2014, a 245-bed Intermountain Healthcare primary stroke center designated hospital started using a for-profit telestroke service, (Specialists-on-Call, SOC). In April 2015, Intermountain implemented its own centralized, internal Stoke TeleHealth service to provide coverage at this primary stroke center and 17 other sites by the end of 2016. Intermountain uses employed physicians answering stroke calls directly; the SOC model used an intermediary technician before connecting to the physician.

METHODS

Patients treated during the 15-month SOC era from Jan 2014 – Mar 2015 were compared to those patients treated via the Intermountain Stroke TeleHealth service during the 28-month period from Apr 2015 – Jul 2017. The Intermountain Healthcare enterprise data warehouse and SOC summary reports provided the data for analysis. Wilcoxon-Mann-Whitney test was used to compare response times and DTN time.

RESULTS

The Intermountain median physician response time of 2m (n=219) is significantly lower than SOC median physician response time of 24.5m (n=102; p<0.0001). The rate of patients seen on camera was 92% for SOC versus 70% for Intermountain.

Since implementing the Intermountain service the median DTN time 59m (n=51) as compared to SOC median DTN time 94m (n=32; p<0.0001). This represents a statistically significant improvement in times to treatment.

The door to CT time was lower after implementing the Intermountain service suggesting a parallel change in ER processes of care. We believe this was a result of the telehealth roll-out process which included staff stroke education and rebuilding trust that telestroke services could assist in meeting national quality standards.

Implementing an internal telestroke service enabled this facility to reach the goal of having greater than 50% DTN time ≤60m.

LIMITATIONS

Results are limited due to lack of randomization and having a single facility. Results may not be generalizable.

CONCLUSIONS

The Intermountain Stroke TeleHealth service outperformed SOC in physician response time and times to treatment. For healthcare systems that have the resources and expertise, an internal telestroke service may result in faster times to treatment and ultimately better patient outcomes.