Reported Pandemic-related Care Avoidance Not Seen in a Rural Emergency TeleNeurology Service

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Dartmouth-Hitchcock

INTRODUCTION

Telestroke services have become increasingly common within the practice of emergency medicine. The Dartmouth-Hitchcock (D-H) TeleNeurology service, which includes telestroke, serves rural hospitals in New Hampshire (NH) and Vermont (VT). The service includes 24/7 live interactive video evaluations and management recommendations for Emergency Department (ED) patients. Due to the COVID-19 pandemic, there have been reports of decreases in overall ED volumes and in the utilization of telestroke services. This is believed to be a consequence of patient's preference to avoid COVID exposure, prioritizing perceived safety over what they believe to be transient or insignificant symptoms. However, no literature has specifically evaluated the impact of the pandemic on TeleNeurology among rural EDs.

HYPOTHESIS

We hypothesize that the COVID-19 pandemic has resulted in a decrease in overall utilization of the D-H TeleNeurology service as well as in associated clinical measures.

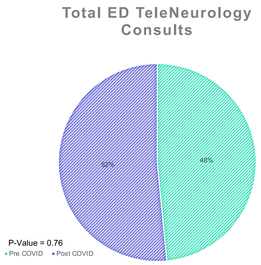
METHODS

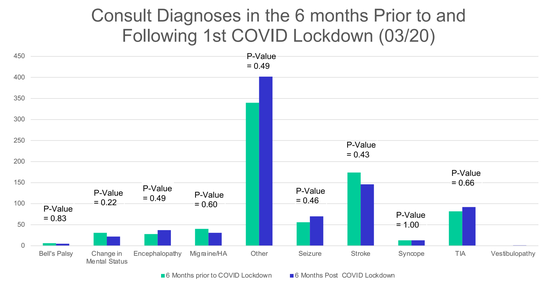
A retrospective chart review was performed of patients undergoing a D-H TeleNeurology consultation 6 months pre- (n=770) and post- (n=890) the first national U.S. pandemic hospital closure (estimated as March 15, 2020). Chart analysis was accomplished via the "SOC Telemed" online service. This platform is the primary means of communication and charting between remote providers and one of the DHMC affiliated regional hospitals.

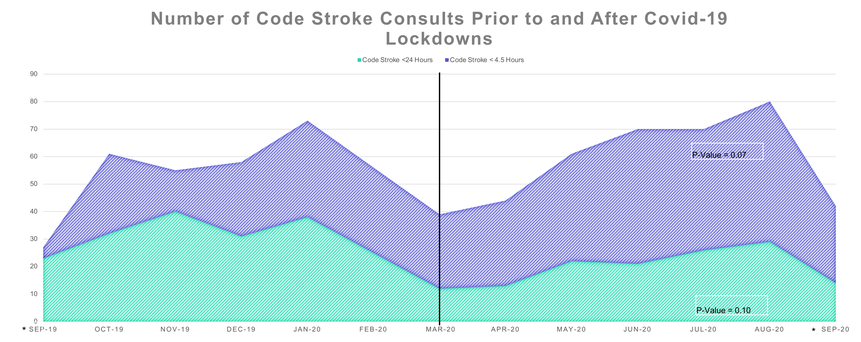
Variables analyzed include patient volume, reason for consultation, provider diagnosis, disposition recommendations, and tPA administration by month. The data prior to the COVID lockdowns was compared to that after the lockdown. Two-tailed, unequal variance, unpaired t-tests were performed on each of these variables. Standard deviation was based on the sample. The alpha value was set to 0.05 for statistical significance. Data was analyzed on both STATA 15.0 and Microsoft.

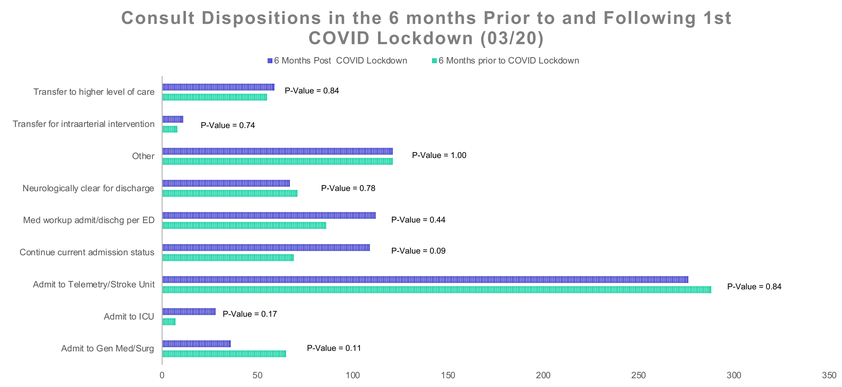
Charts were excluded from this study if their chart was a duplicate or if the TeleNeurology consult was cancelled or dismissed prior to staff arrival.

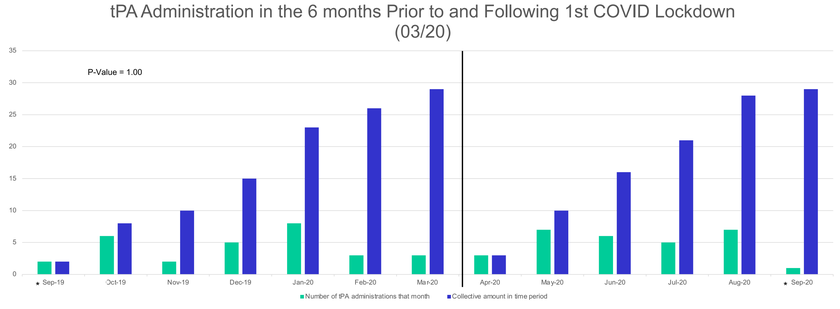
RESULTS











* Note: The months of 09/19 and 09/20, only half of the month's data was collected. Enough to ensure a 6 -month window pre- and post- the first nationwide lockdown

RESULTS (CONT.)

No statistical difference was found between any of the variables analyzed when comparing pre- and post- pandemic TeleNeurology consultations. Specifically, there was no difference in overall utilization of the service (770 vs. 890, p=0.76), in the rate of stroke diagnoses within 4.5 hours, (157 vs. 253, p=0.07) or 24 hours (196 vs. 130, p=0.10), in the rate of recommended hospital admission (360 vs. 340, p=0.78), nor in tPA administration rates (29 vs 29, p=1.00).

CONCLUSION AND DISCUSSION

The current pandemic did not result in a significant change in utilization of a rural emergency TeleNeurology service.

Potential explanations for this include:

1. Lower levels of reluctance to seek in-person ED care in NH and VT during the pandemic vs. states more substantially impacted by COVID-19.
2. The exponential increase in telehealth utilization during the pandemic may have offset any decreases in ED volumes, and
3. Relatively low ED patient census in rural hospitals and waiting rooms may have reduced concerns over social distancing and patient-to-patient transmission.

Limitations to our study include:

1. Reporting completed by providers provides innate possibility for charting errors. This is further complicated by the presence of an "Other" category for both diagnosis and disposition. This catch-all category makes it challenging to fully extrapolate the significance of the current data.
2. The uneven distribution of dates, where two months both in the "prior to" and "following" data sets only collect 15 days worth of data, is sub-optimal. However, it is equivalent across the comparison groups.
3. The narrow time window that was set by the start of the chart review and analysis limits the power of the study

FUTURE DIRECTIONS

Future larger studies, both with and without the involvement of TeleNeurology, should both evaluate additional rural emergency TeleNeurology services and involve more direct comparisons to their urban-based counterparts. Further, an analysis on how reported decreases on overall ED visits nationwide affected time-sensitive neurovascular interventions is warranted.