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BEFAST Assessment in a Rural Community Hospital – the BIRCH Study

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Introduction

- Regional disparities in stroke treatment are well known
- BEFAST has been implemented nationally in acute stroke protocols
- Utilization of BEFAST in the rural Emergency Department (ED) is not well studied
- In February 2022 a new stroke protocol with BEFAST embedded was implemented in the ED at a small rural hospital in Maine

Methods

- Performed a retrospective chart review
- Subjects: all patients seen in the ED with a diagnosis of stroke, dizziness, vertigo, imbalance, lightheadedness or visual disturbance
- Compared 6 months before implementation with 6 months after implementation of new stroke protocol
- Primary outcomes:
    - Tool utilization
    - Activation of stroke order set
- Secondary outcomes:
    - Treatment with tenecteplase
    - Door to needle time
    - Door to transfer time

Results

- BEFAST appropriate patients: 151 pre-implementation / 210 post-implementation
- BEFAST tool utilization: 54% (n=81) pre-implementation / 77% (n=161) in the post-implementation cohort (p<0.01)
- Acute stroke order set activated: 37% (n=30) pre-implementation / 47% (n=76) post- implementation (p<0.01)
- TNK treatment: 5 patients pre-implementation / 4 patients post-implementation
- Median time door to needle: 65.6 minutes pre-implementation / 60.5 minutes post-implementation
- Median door to transfer times: 214 minutes pre-implementation / 141 minutes post-implementation

Discussion

BEFAST can be successfully utilized in the rural ED. Utilization does not always result in activation of the acute stroke order set. Reasons for failure to activate the acute stroke order set in the rural ED need to be elucidated.

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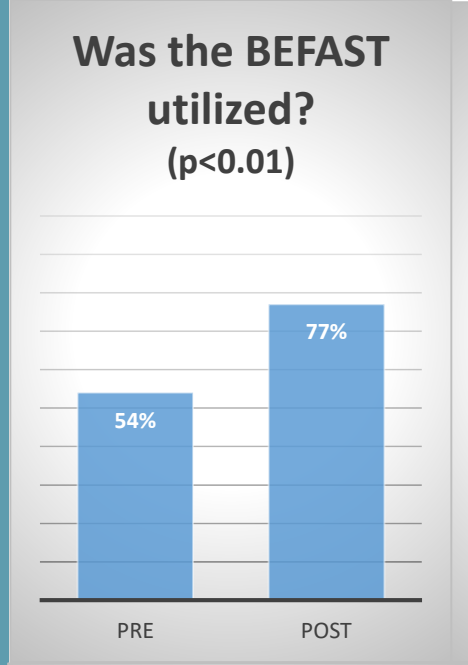
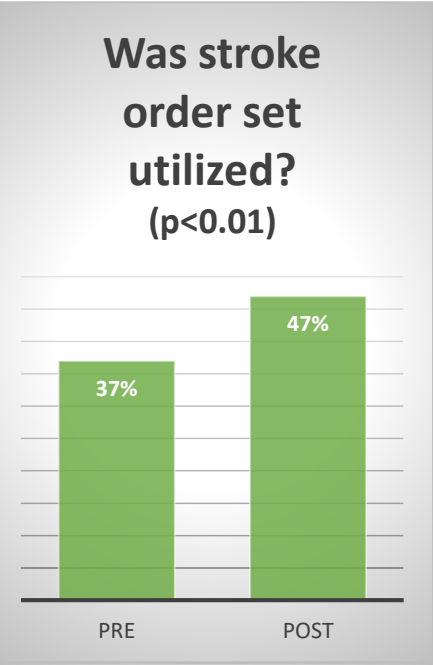
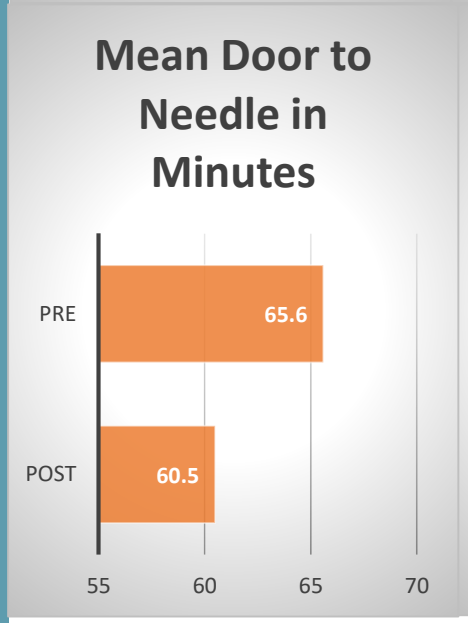
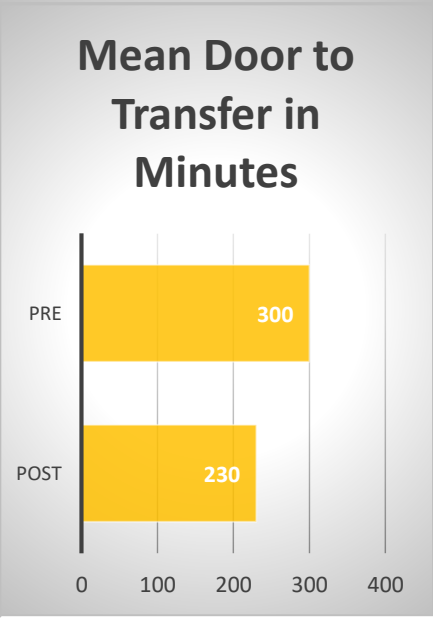
ED utilization of BEFAST increased rapid stroke assessment









Acknowledgements: This study was reviewed and approved by the MaineHealth Institutional Review Board.

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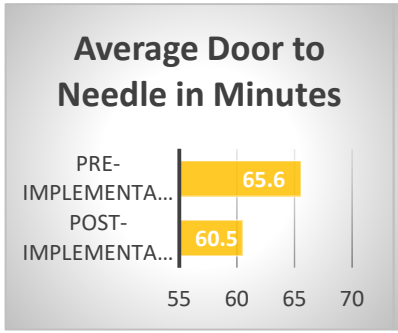
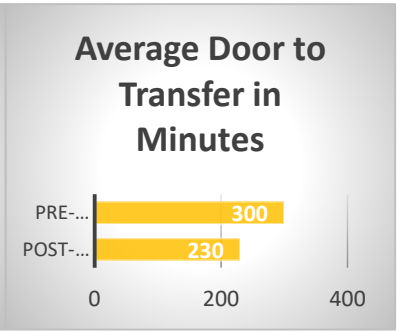
BACKGROUND

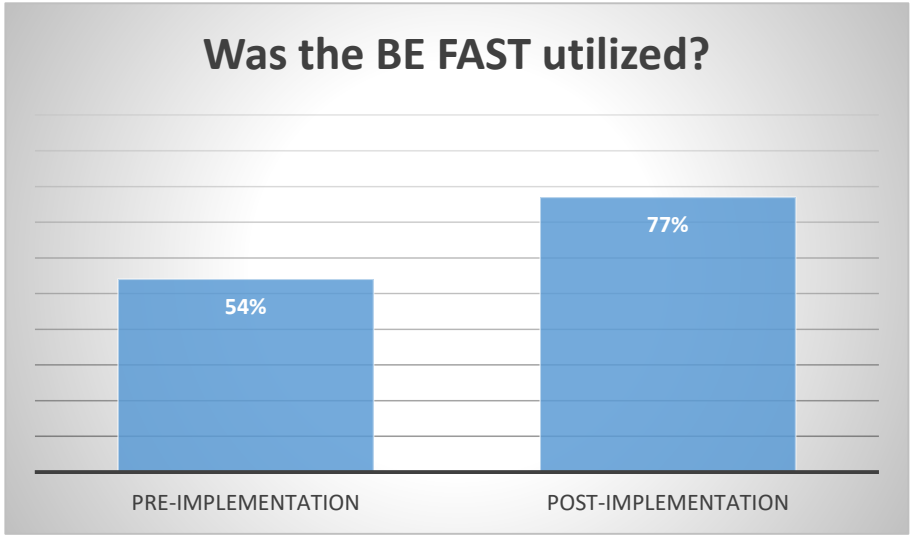
There are known regional disparities in treatment rates with thrombolysis and thrombectomy for acute ischemic stroke. BE FAST has been implemented in acute stroke protocols to aid in recognition of signs of stroke, but its utility in a rural ED is not well known. In February 2022 the acute stroke protocol was updated to include the BE FAST screening tool.

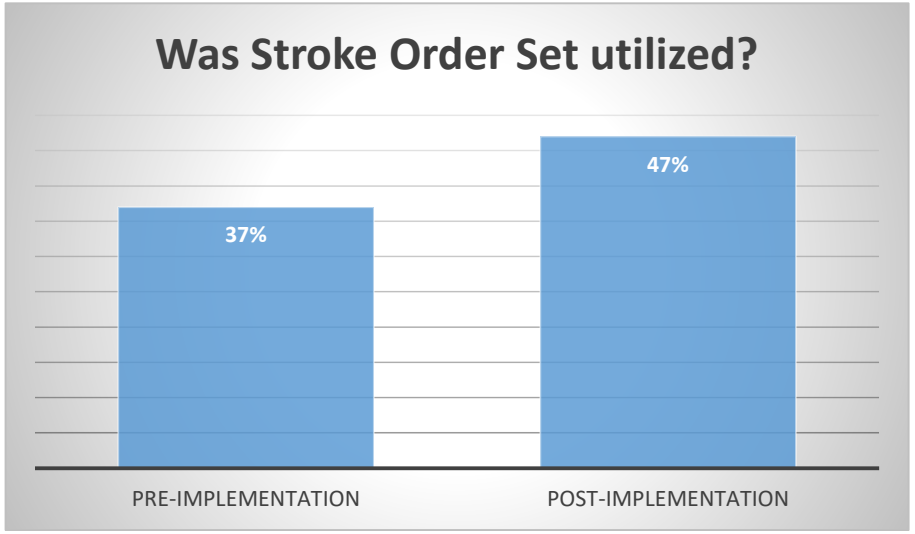
METHODS

A retrospective chart review was conducted on all patients with an ED diagnosis of stroke, dizziness, vertigo, imbalance, lightheadedness or visual disturbance for six months before and after BE FAST stroke protocol implementation. Primary outcomes included appropriateness of tool utilization and subsequent activation of the acute stroke order set. Secondary outcomes were treatment with tenecteplase and thrombectomy, door to needle time, and door to transfer time. Pre- and post-implementation cohorts were compared.









RESULTS

In the pre- and post-implementation cohorts there were 151 and 210 patients for whom a BEFAST was appropriate. BEFAST was utilized in 54% (n=81) in the pre-implementation cohort and 77% (n=161) in the post-implementation cohort ($p<0.01$). The acute stroke order set was activated by the ED in 37% (n=30) Pre-implementation and 47% (n=76) Post- implementation ($p<0.01$). Five patients were treated with tenecteplase, thrombectomy or both in the pre-implementation cohort and 5 post-implementation. Median time door to needle was 44 minutes pre-implementation and 58.5 minutes post-implementation. Median door to transfer times were 214 minutes and 141 minutes respectively.

CONCLUSIONS

Although BEFAST can be successfully utilized in the rural hospital emergency department, utilization does not always result in activation of the acute stroke order set. Reasons for failure to activate the acute stroke order set in the rural ED need to be elucidated.

Take a picture to download the full poster

Acknowledgements: Dr. L. Stein is supported by American Heart Association Grant #857015/Stein/2021