***Novel Stroke Cards for Neurology Clerkship Students Improves Medical Education***

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***Background:***

Stroke remains a leading cause of death worldwide despite the development of vital therapies.[1] Stroke education remains a critical component of medical education for all medical students regardless of their intended specialty.[2] The acquisition of this knowledge has transitioned to competency-based learning, requiring faculty to assess if trainees have obtained critical knowledge.[3] For neurology, trainees benefit from in-person education with the incorporation of problem-based learning.[4] Although stroke education varies by institution, part of the intended learning occurs during a stroke code through observation of the team’s actions and evaluation of the patient.[5] However, many trainees do not have the opportunity to ask questions during an acute stroke to solidify their understanding in the moment. We hypothesize that implementing stroke cards with standard questions for trainees to answer during a stroke code will improve knowledge acquisition by replacing passive learning with active learning.

***Methods:***

Second-year medical students (n=149) rotating on their Neurology clerkship at the University of Michigan from 2019-2021 completed two paired pre- and post- rotation surveys. Each survey had 14-questions administered through QualtricsXM® prior to the start of their rotation and at the end of their four-week rotation. The survey consisted of four confidence-based questions (e.g., How confident do you feel treating a stroke?), nine knowledge-based questions (e.g., What are the two treatments for stroke?), and one question on how many stroke codes the students observed. All surveys were anonymized and paired with a unique identifier.

Phase I (December 2019 - October 2020) students served as the control arm. Phase II (October 2020 – May 2021) students served as the intervention arm and the stroke card was implemented during this time. The data was analyzed in IBM® SPSS® Statistics 28 software and a power analysis was performed on all questions. For the confidence questions, a value was assigned for each level of confidence, and McNemar’s test was performed. For the knowledge-based questions, Fisher’s exact test was performed.

***Results:***

All the students in Phase I and Phase II showed improvement in their confidence level for assessing and treating acute strokes. When comparing the pre-clerkship survey to the post-clerkship survey in phase I, students showed improved understanding of stroke symptoms (p<0.001), treatment with tissue plasminogen activator (tPA) and thrombectomy (p<0.001), and understanding the definition of a patient’s last known well (p<0.065). Preliminary data comparing phase I to phase II post clerkship surveys, the stroke card intervention was not associated with a significant difference in perceived confidence for stroke management among students. However, the students did demonstrate an increase in knowledge regarding treatment timing (p<0.033) in the intervention phase.

***Conclusions/Future Work:*** The stroke education card implemented during the neurology clerkship for medical students improves understanding of stroke management. The implementation of stoke cards for students to follow during a stroke code allows for students to solidify their understanding actively during an otherwise passive observation of an acute stroke code. The cards improved knowledge on when IV tPA and thrombectomy can be used. Future work will consist of gathering the remaining student surveys from the intervention arm to assess the effectiveness of the stroke card for more students.

*References:*

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