

ABSTRACT

Every minute that a patient is without treatment during a large-vessel occlusive (LVO) stroke means more disability, less independence, and lower quality of life.¹ Incorporating a field assessment tool for emergency medical services (EMS) to use during the assessment of a stroke is vital to identifying the LVO stroke quickly and correctly.² As of today, a universal prehospital stroke scale has not been identified for use by EMS to aid in assessment and identification of LVO strokes.³ Without correct prehospital identification, early hospital notification and rapid transportation to the appropriate stroke-receiving facility is not optimal and does not follow the current standard of care for patients experiencing an LVO stroke.² Educating EMS agencies regarding LVO strokes along with providing a field assessment tool will decrease delays to treatment; thus, maximizing improved stroke outcomes for LVO stroke patients.²

PICO QUESTION

How does training EMS personnel using an LVO assessment tool improve the rapid clinical identification of adult clients with LVO strokes as compared to the current standard of care?

LITERATURE REVIEW

Assessment tools are used in the prehospital setting for LVO strokes, as well as the evaluation of their effectiveness in order to educate the EMS professionals on their use for rapid identification and expeditious transport to stroke-receiving hospitals. While larger prospective studies are being performed worldwide, the C-STAT LVO tool can be used to bridge the gap, allowing EMS to triage LVO stroke patients effectively and efficiently.⁴

- Current prehospital recognition of large-vessel occlusion strokes.
- EMS challenges and barriers in LVO stroke recognition
- Available prehospital assessment tools for LVO identification
- C-STAT tool for LVO assessment by EMS.

INCORPORATING A LARGE-VESSEL OCCLUSION TOOL FOR EARLY IDENTIFICATION OF STROKE

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PROJECT METHODOLOGY

By following a consistent evidence-based process and implementation timeline, the project to incorporate the C-STAT LVO stroke assessment tool can be achieved using the appropriate personnel, education program, training, and feedback from providers and patients. The cost of implementing the project can be mitigated by proper use of materials and personnel, as well as timely feedback to all entities involved. The ability to improve the assessment, recognition, and treatment of LVO stroke patients is the desired goal of this project, especially with the advent of new treatments that can decrease disability and avoid death in this patient demographic.

Project Plan: After completing the literature review, the C-STAT LVO assessment tool was chosen. Training will then be undertaken with EMS and Emergency Department personnel to effectively implement the C-STAT assessment tool.

Project Implementation:

1. Choose an LVO assessment tool (C-STAT).
2. Obtain approval from EMS medical control and Emergency Department management to teach and implement the C-STAT LVO assessment tool.
3. Create training to include video, PowerPoints, and hands-on simulations on how to perform the C-STAT, why we are using the C-STAT, and how to report on a positive LVO stroke.
4. Create tracking sheets to follow all stroke patients transported to the Emergency Department over a specified time frame.
5. Evaluate if the C-STAT LVO assessment tool helped with the rapid clinical identification of an LVO stroke and allowed early notification to the receiving emergency department.

Plan for evaluation of project.

This project will be evaluated on an ongoing basis, as well as during the data analysis phase. The ongoing evaluation that will be performed by the Stroke Coordinator who will identify if the various interdisciplinary teams are using the tools and if the education provided is effective and efficient. The end-of-project evaluation will include data analysis and synopsis. This synopsis will help determine if the project met the objective of decreasing door-to-treatment times in LVO stroke patients by using C-STAT identification, which is recorded in the prehospital report by EMS.

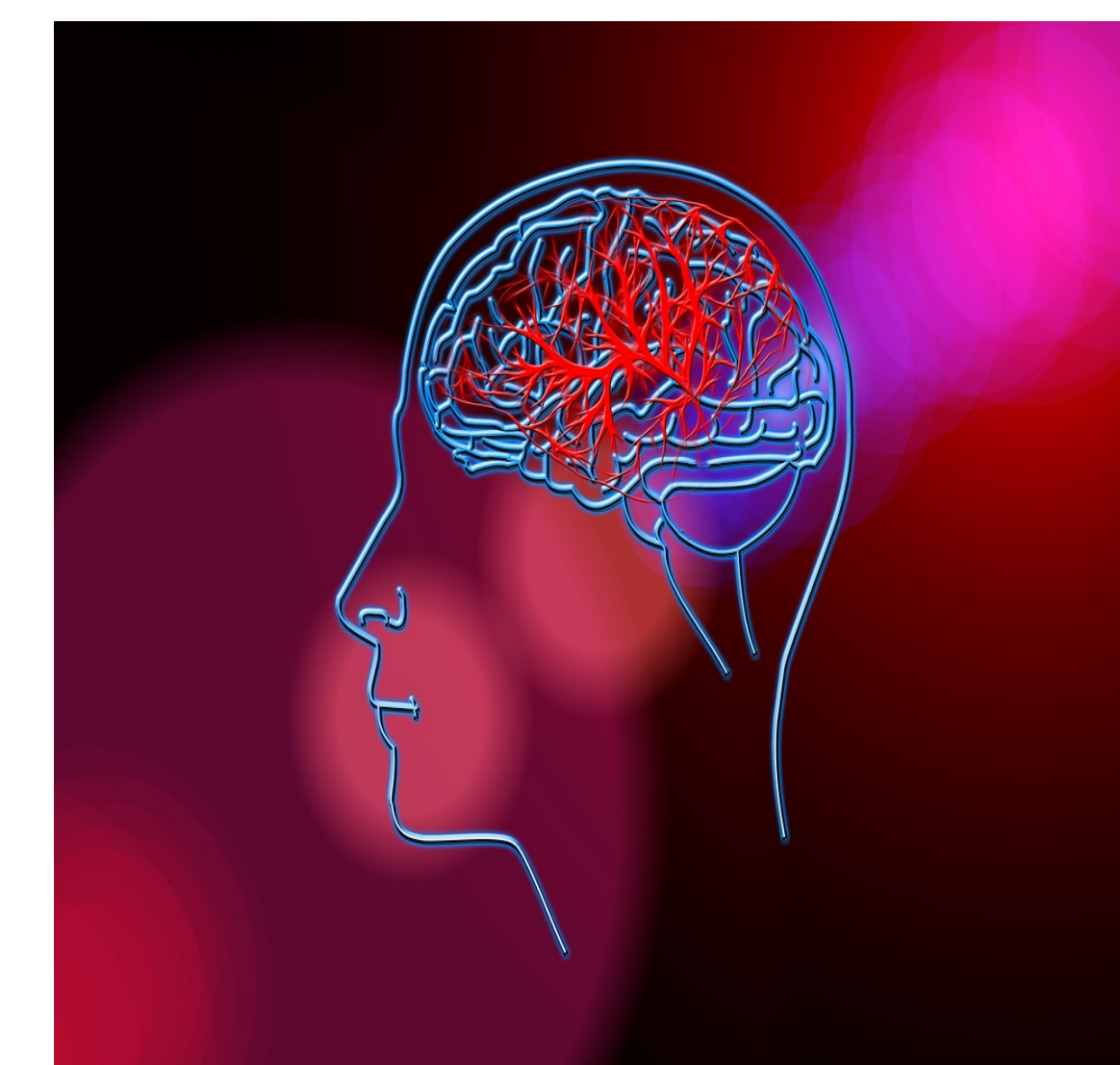
- ❖ Evaluation of learning form to be completed by EMS before and after the Stroke and C-STAT education PowerPoint.
- ❖ EMS report sheet to be used by the Emergency Department at Logan Regional Hospital to document when C-STAT tool is listed as positive or negative in prehospital report.
- ❖ Code Stroke data reporting sheets completed by unit clerk in the Emergency Department, recording all pertinent time data.
- ❖ Stroke evaluation and feedback forms to be given to nurses, clerks, and EMS personnel to improve use of the C-STAT tool. This evaluation and feedback will be performed by the Stroke Coordinator.



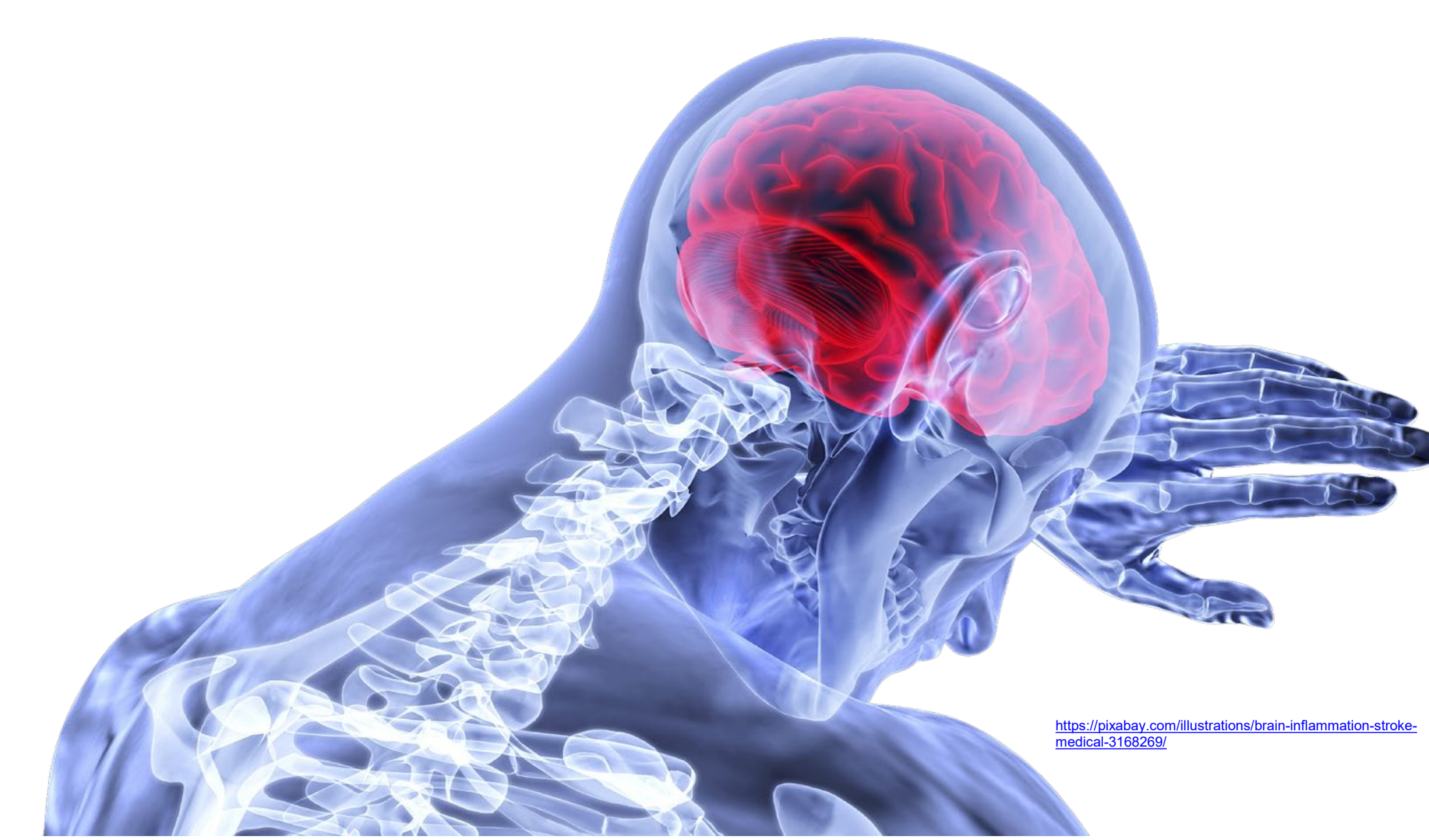
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FRAMEWORK

The JHNEBP model was chosen to serve as a guide for the design, implementation, evaluation, and dissemination of a new LVO stroke standard of care. The three main steps of the JHNEBP model include the following:⁵

- **Forming the practice questions:** How to incorporate an LVO assessment tool into an LVO stroke protocol?
- **Researching the evidence to answer the question:** Which LVO tool is most effective?
- **Translating the evidence into a new change in practice:** Educating EMS and ER personnel to facilitate faster LVO treatment.

CONCLUSIONS

Stroke treatments are rapidly evolving, providing better outcomes for patients that include less disability and less mortality due to LVO strokes. This project's goal was to help solidify the stroke chain of survival for patients experiencing this life-changing medical emergency by focusing on providing a quick, efficient, and easy LVO assessment tool for EMS prehospital providers to use. After extensive research into the existing LVO assessment tools and barriers to patient assessment by EMS providers, this project identified the C-STAT tool as the current tool of choice to facilitate LVO stroke identification, which will ultimately expedite definitive LVO stroke treatment.

REFERENCES

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