

# The Crucial Role of Emergency Stroke Observational Units

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Stroke is a leading cause of disability and death worldwide. Rapid and effective intervention is critical to improving outcomes for stroke patients, making the need for specialized care units, such as Emergency Stroke Observational Units (ESOU), more vital than ever.<sup>1</sup> Sometimes there is extensive differential diagnosis that can be some signs of stroke, such as vertigo.<sup>2</sup>

ESOUs are dedicated spaces within hospitals designed to provide immediate and specialized care to stroke patients. These units are staffed by multidisciplinary teams of healthcare professionals, including neurologists, nurses, and rehabilitation specialists, all trained in stroke management.<sup>3</sup> The primary goal of an ESOU is to ensure that patients receive prompt and precise treatment, which is crucial given the time-sensitive nature of stroke intervention.<sup>3</sup>

## Rapid Diagnosis and Treatment

One of the key advantages of ESOUs is their ability to perform rapid and accurate diagnoses. Using advanced imaging technologies, such as computed tomography scans and magnetic resonance imaging, clinicians can quickly determine the type and severity of the stroke.<sup>4</sup> This enables the initiation of appropriate treatments, such as thrombolysis for ischemic strokes, within the critical therapeutic window. Research has consistently shown that faster treatment leads to better outcomes, reducing the extent of brain damage and improving the chances of recovery.<sup>5</sup>

## Continuous Monitoring and Management

Moreover, ESOUs are equipped with continuous monitoring of patients during the acute phase of a stroke. This constant surveillance allows for the immediate detection and management of complications, such as increased intracranial pressure or recurrent strokes.<sup>6</sup> The

presence of specialized staff ensures that any changes in the patient's condition are promptly addressed, minimizing the risk of deterioration.

## Early Rehabilitation and Prevention of Complications

In addition to acute care, ESOUs play a significant role in the early stages of rehabilitation. Early mobilization and physical therapy are initiated within these units to prevent secondary complications such as deep vein thrombosis and pneumonia. By starting rehabilitation early, patients are more likely to regain their functional abilities and achieve a better quality of life post-stroke.<sup>7</sup>

## Efficiency and Resource Optimization

The establishment of ESOUs also contributes to the overall efficiency of the healthcare system. By concentrating stroke care in a specialized unit, hospitals can streamline their resources and reduce the burden on general emergency departments. This specialized focus leads to improved outcomes not only for stroke patients but also for other emergency cases that require immediate attention.<sup>8</sup>

## Challenges and Investment

However, the implementation of ESOUs requires significant investment in infrastructure, training, and continuous education of healthcare professionals. It also necessitates a coordinated effort among various departments within the hospital to ensure seamless patient care.<sup>9</sup> Despite these challenges, the benefits of ESOUs far outweigh the costs, as evidenced by improved patient outcomes, reduced long-term disability, and overall healthcare savings.<sup>10</sup>

## Conclusion

In general, ESOUs are indispensable in the fight against



stroke. They represent a critical advancement in the delivery of stroke care, providing rapid diagnosis, effective treatment, and early rehabilitation. As stroke continues to be a major public health issue, the expansion and support of ESOU's should be a priority for healthcare systems worldwide. Investing in these units is not only a step toward better stroke outcomes but also a commitment to improving the quality of life for countless individuals affected by this debilitating condition.<sup>11,12</sup>

#### Ethical approval

Not applicable.

#### Conflict of interests

None declared.

#### References

1. Poureskandari M, Ala A, Habibollahi P, Shams Vahdati S. Vertigo as a problem in the emergency department. *Int J Aging*. 2023;1(1):e17. doi: [10.34172/ija.2023.e17](https://doi.org/10.34172/ija.2023.e17).
2. Poureskandari M, Sadeghi-Hokmabadi E, Ala A, Tayyari K, Shams Vahdati S. Studying the affecting factors in patient workflow and outcome of patients with stroke diagnosis in the emergency department. *Int J Aging*. 2023;1(1):e13. doi: [10.34172/ija.2023.e13](https://doi.org/10.34172/ija.2023.e13).
3. Tamm A, Siddiqui M, Shuaib A, Butcher K, Jassal R, Muratoglu M, et al. Impact of stroke care unit on patient outcomes in a community hospital. *Stroke* 2014;45(1):211-6. doi: [10.1161/strokeaha.113.002504](https://doi.org/10.1161/strokeaha.113.002504).
4. Brooks G, Meyer L. New Advances in Diagnostic Radiology for Ischemic Stroke. *J Clin Med*. 2023;12(19). doi: [10.3390/jcm12196375](https://doi.org/10.3390/jcm12196375).
5. Wardlaw JM, Murray V, Berge E, del Zoppo GJ. Thrombolysis for acute ischaemic stroke. *Cochrane Database Syst Rev*. 2014;2014(7):CD000213. doi: [10.1002/14651858.CD000213.pub3](https://doi.org/10.1002/14651858.CD000213.pub3).
6. Adams HP Jr, del Zoppo G, Alberts MJ, Bhatt DL, Brass L, Furlan A, et al. Guidelines for the early management of adults with ischemic stroke: a guideline from the American Heart Association/American Stroke Association Stroke Council, Clinical Cardiology Council, Cardiovascular Radiology and Intervention Council, and the Atherosclerotic Peripheral Vascular Disease and Quality of Care Outcomes in Research Interdisciplinary Working Groups: the American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists. *Stroke*. 2007;38(5):1655-711. doi: [10.1161/strokeaha.107.181486](https://doi.org/10.1161/strokeaha.107.181486).
7. Langhorne P, Taylor G, Murray G, Dennis M, Anderson C, Bautz-Holter E, et al. Early supported discharge services for stroke patients: a meta-analysis of individual patients' data. *Lancet*. 2005;365(9458):501-6. doi: [10.1016/s0140-6736\(05\)17868-4](https://doi.org/10.1016/s0140-6736(05)17868-4).
8. Kunz A, Ebinger M, Geisler F, Rozanski M, Waldschmidt C, Weber JE, et al. Functional outcomes of pre-hospital thrombolysis in a mobile stroke treatment unit compared with conventional care: an observational registry study. *The Lancet Neurology*. 2016;15(10):1035-43. doi: [10.1016/S1474-4422\(16\)30129-6](https://doi.org/10.1016/S1474-4422(16)30129-6).
9. van Exel NJ, Koopmanschap MA, Scholte op Reimer W, Niessen LW, Huijsman R. Cost-effectiveness of integrated stroke services. *Qjm*. 2005;98(6):415-25. doi: [10.1093/qjmed/hci065](https://doi.org/10.1093/qjmed/hci065).
10. Kwan J, Hand P, Sandercock P. Improving the efficiency of delivery of thrombolysis for acute stroke: a systematic review. *Qjm*. 2004;97(5):273-9. doi: [10.1093/qjmed/hch054](https://doi.org/10.1093/qjmed/hch054).
11. American Stroke Association. *Stroke Treatment: The Importance of Speed*. American Stroke Association; 2021.
12. European Stroke Organisation (ESO). *Guidelines for Stroke Management*. ESO; 2021.