



Improving emergency department management of acute stroke by preventing early complications

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Evidence-Practice Gap

- Each year 48,000 Australians have a stroke. Of those who survive the initial stroke event, 9,000 die within one month, one third die within 12 months.
- Stroke is a leading cause of disability in Australia.
- Best evidence indicates that preventing complications within the first 24-48 hours is an important part of managing acute stroke and decreasing stroke-related mortality. In the current climate of prolonged emergency department (ED) stays, these aspects of stroke management are now the responsibility of ED medical and nursing staff. Significant practice gaps are evident in hospitals, particularly in EDs that do not have a specialist stroke unit.
- In 2006, the Institute for Clinical Systems Improvement (ICSI) released the Health Care Guideline: Diagnosis and Initial Treatment of Ischemic Stroke. The ICSI guideline aims to “increase the percentage of patients who receive appropriate management for prevention of complications within the initial 24-48 hours of diagnosis of ischemic stroke”.

Project aim

This project aimed to improve ED management of acute stroke by using evidence to prevent early complications. The project focused on adapting the ICSI guideline for local use in the ED at The Northern Hospital.

Key findings

The results achieved following implementation of the ICSI guideline included:

- A significant shift in triage decision making
 - 21.4% increase in ATS category 2
 - 15.6% decrease in ATS category 4
- An increased frequency of repeated assessments of respiratory rate ($p=0.009$), heart rate ($p=0.022$), blood pressure ($p=0.032$), and oxygen saturation ($p=0.001$)
- Improved risk management
 - 13.8% increase in documentation of nil orally status
 - 41.3% increase in swallow assessment prior to oral intake
 - 28.8% increase in documentation of pressure area interventions
- Improved assessment by speech pathology
 - 6.1% increase in assessment by speech pathology in ED
 - 93.5 minute decrease in overall time to speech pathology assessment

Implications for clinical practice

- Having a project mentor is important when undertaking a clinical research project as a sole investigator.
- Practice change is more likely to be supported when staff are regularly involved in education programs, particularly for nursing staff.
- Concurrent Government policy that supports project recommendations can assist with implementing change. During this project, the Victorian Department of Human Services released its Stroke Care Strategy for Victoria.
- Communication strategies should be designed to support shift working patterns of busy ED staff and to sustain momentum. Strategies include group emails and opportunities for discussion.
- Ongoing education programs help to maintain momentum and encourage staff to continue to improve patient care in the ED.
- The implementation of user-friendly guidelines can be effective in bringing about practice change. Regular, in-service guideline familiarisation sessions create opportunities for learning and discussion.
- Regular feedback about improvements in practice is welcomed by staff.

Planning and implementation

Funding for the project provided non-clinical time to liaise with other staff, and to develop and deliver tutorials that supported guideline implementation.

- 104 patients were recruited to the study: 63 in the pre-test group and 41 in the post-test group. There were no significant differences in the gender or age distribution of both groups, in the proportion of patients arriving by ambulance, or in the proportion of patients who required interpreting services.
- The evidence presented in the ICSI Guideline (2006) was reviewed and augmented with evidence-based recommendations from other key documents related to stroke management including the National Stroke Foundation Guidelines (2003), Department of Human Services: Stroke Care Strategy for Victoria (2007), and local policies that supported the ICSI recommendations.
- A number of strategies were employed to encourage stakeholder engagement. These included guideline adaptation with practice recommendations, cross-departmental tutorials, and clinical champions (the project team).
- A pre-test/post-test method was used to monitor practice change as a result of implementation of the adapted guideline into the clinical area. An audit of medical records was carried out to collect data.
- The guideline was made available electronically within the ED to maintain a sustainable and ongoing improvement in the management of acute stroke. On-line associated programs have been made available from all ED computers, and the stroke guideline is now included in the induction of all new nursing staff.

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The National Health and Medical Research Council (NHMRC) is Australia's peak body for supporting health and medical research. As part of the NHMRC, the National Institute of Clinical Studies (NICS) works to improve health care by getting the best available evidence from health and medical research into everyday practice.