Optimisation of acute stroke care services: Is it cost-effective?

The cost effectiveness of increasing thrombolysis rates to treat acute stroke

Background

- **Stroke** is a leading cause of morbidity and mortality worldwide, with an estimated 5.7 million deaths and 50 million disability-adjusted life years lost every year, with many patients requiring long-term care.

- **Thrombolysis** in acute stroke is an effective treatment up to 4.5 hours after onset, but relies on early recognition, prompt arrival in hospital and timely brain scanning.

- **Delays** at any stage of the pathway reduce the proportion of patients that receive thrombolysis.

- **Efforts to expedite** the acute stroke care pathway have been made, but it is unclear whether these strategies are cost-effective and/or beneficial to patient outcomes.

- This study aimed to establish the **cost-effectiveness** and potential implementation costs of increasing thrombolysis rates through a series of interventions designed to optimise the...
Findings:
A series of strategies to reduce delay in receiving thrombolysis were analysed for their cost-effectiveness by examining the cost of the strategy per quality-adjusted life year (QALY) gained.

- The strategies included more timely referrals and CT scans, and it was found that all the intervention strategies were cost-effective because of a reduction in dependency after stroke and subsequent reduction in long-term care costs.

- The largest cost reduction was the strategy of immediate CT scan upon arrival, with a saving of US$75,000 and an additional 5.4 QALYs per 100,000 population.

- The most achievable strategy with the largest potential benefit was that of better recording of stroke symptom onset time. This resulted in 3.3 additional QALYs and a cost saving of US$46,000 per 100,000 population.

- An enhanced electronic pro forma has been developed for use by all paramedics in the West Midlands Ambulance Service to include ‘time of onset’ in the Face Arm Speech Test (FAST) – an assessment tool used to improve paramedic recognition of suspected stroke to both improve reporting rates and to facilitate more efficient in-hospital care.

Reference:

Recommendations for practice
A variety of interventions to increase thrombolysis rates for acute stroke in clinical practice would be cost-effective, and significant investment in implementation could be quickly repaid due to reduced dependency of stroke patients after timely intervention.

What is NIHR CLAHRC West Midlands?
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