

Cost burden and cost-effective analysis of the nationwide implementation of the Quality in Acute Stroke Care protocol in Australia

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Background: The Quality in Acute Stroke Care (QASC) protocol is a multidisciplinary approach to implement evidence-based treatment after acute stroke that reduces death and disability.

Aim: This study sought to evaluate the cost-effectiveness of implementing the QASC protocol across Australia, from a healthcare and a societal perspective.

Methods: A decision-analytic model was constructed to reflect one-year outcomes post-stroke, aligned with the stroke severity categories of the modified Rankin scale (mRS). Decision analysis compared outcomes following implementation of the QASC protocol versus no implementation. Population data were extracted from Australian databases and data inputs regarding stroke incidence, costs, and utilities were drawn from published sources. The analysis assumed a progressive uptake and efficacy of the QASC protocol over five years. Health benefits and costs were discounted

by 5% annually. The cost of each year lived by an Australian, from a societal perspective, was based on the Australian Government's "value of statistical life year" (AUD 213,000).

Results: Over five years, the model predicted 263,722 strokes among the Australian population. The implementation of the QASC protocol was predicted to prevent 1,154 deaths and yield a gain of 876 years of life (0.003 per stroke), and 3,180 quality-adjusted life years (QALYs) (0.012 per stroke). There was an estimated net saving of AUD 65.2 million in healthcare costs (AUD 247 per stroke) and AUD 251.7 million in societal costs (AUD 955 per stroke).

Conclusions: Implementation of the QASC protocol in Australia represents both a dominant (cost-saving) strategy, from a healthcare and a societal perspective.

