

# Mobile stroke unit in the UK healthcare system: avoidance of unnecessary accident and emergency admissions

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## Abstract

**Aims:** The aim of the study was to explore the benefit of a mobile stroke unit (MSU) in the UK National Health Service (NHS) for reduction of hospital admissions.

**Methods:** Prospective cohort audit observation with dispatch of the MSU in the East of England Ambulance Service was conducted. Emergency patients categorised as code stroke and headache were included from 5 June to 18 December 2018. Rate of avoided admission to the accident and emergency (A&E) department, rate of admission directly to target ward and stroke management metrics were assessed.

**Results:** In 116 MSU-treated patients, the following diagnoses were made: acute stroke,  $n = 33$  (28.4%); transient ischaemic attacks,  $n = 13$  (11.2%); stroke mimics,  $n = 32$  (27.6%); and other conditions,  $n = 38$  (32.8%). Pre-hospital thrombolysis was administered to eight of 28 (28.6%) ischaemic stroke patients. Pre-hospital diagnosis avoided hospital admission for 29 (25.0%) patients. As hospital treatment was indicated, 35 (30.2%) patients were directly triaged to the stroke unit, one patient (0.9%) even directly to the catheter laboratory. Thus, only 50 (43.1%) patients required transfer to the A&E department. Moreover, the MSU enabled thrombolysis with a median dispatch-to-needle time of 42 mins (interquartile range, 40–60).

**Conclusion:** This first deployment of an MSU in the UK NHS demonstrated improved triage decision-making for or against hospital admission and admission to the appropriate target ward, thereby reducing pressure on strained A&E departments.

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