

Secondary Transfers by Helicopter Emergency Services for Thrombectomy in Rural England: A Feasibility Study

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Background and Aims: England has 10 small (serving population < 200,000) and remote hospitals with Hyper-Acute Stroke Units (HASU's) and transfer via Ground Based Ambulance (GBA) to thrombectomy centres exceeding 60 minutes, where it is cost effective to provide secondary transfer via Helicopter Emergency Services (HEMS)¹. HEMS would increase thrombectomy provision to eligible patients and improve time to treatment with potential to decrease stroke-related disability. We identified characteristics of HEMS relevant to their utilisation to improve thrombectomy provision for these geographical areas.

Method: HEMS covering 9 identified "small and remote" hospitals were asked to complete an online survey. Descriptive analysis was undertaken to assess operations, existing service provision; willingness to provide secondary transfers for thrombectomy and changes necessary to implement this development.

Results: Responses received from 7/8 HEMS. All are willing to provide secondary transfers. Services had a median of two helicopters (range 1-3). HEMS operate median 16h per day (0700-2115), with extensions to operational hours planned in 2018 for 2/7. Mean response time from notification to take-off is 4.5 minutes and the cost per mission is £2900 (range £2500-£3000). However, to deliver transfer for thrombectomy robustly, 3/7 HEMS indicated additional funding and/or organisational changes would be required.

Conclusion: HEMS respondents considered use of HEMS for secondary transfers for thrombectomy from remote locations in England appropriate and deliverable. Use of HEMS would facilitate increased thrombectomy provision to eligible patients and improve equity of access to small, remote populations. However additional funding and organisation changes were considered necessary to deliver robust HEMS thrombectomy transfer provision.

1. Flynn D, Coughlan D, McMeekin P, Ford GA, Craig D, Rice S, Burgess D, Balami J, Mawson A, Lumley H, White, P. Secondary Transfer of Stroke Patients for Thrombectomy by Air Ambulance in England: A Cost-effectiveness Analysis. *European Stroke Journal*. 2018; 3(1S): 11.