

Northumbria Research Link

Citation: Lumley, H., Flynn, Darren, Coughlan, D., McMeekin, Peter, Ford, Gary, Craig, Dawn, Rice, S., Burgess, D., Balami, Joyce, Mawson, A. and White, P. M (2018) Secondary Transfers by Helicopter Emergency Services for Thrombectomy in Rural England: a Feasibility Study. *International Journal of Stroke*, 13 (3suppl). pp. 10-65. ISSN 1747-4930

Published by: SAGE

URL: <https://doi.org/10.1177/1747493018801108>
<<https://doi.org/10.1177/1747493018801108>>

This version was downloaded from Northumbria Research Link:
<http://nrl.northumbria.ac.uk/id/eprint/48468/>

Northumbria University has developed Northumbria Research Link (NRL) to enable users to access the University's research output. Copyright © and moral rights for items on NRL are retained by the individual author(s) and/or other copyright owners. Single copies of full items can be reproduced, displayed or performed, and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided the authors, title and full bibliographic details are given, as well as a hyperlink and/or URL to the original metadata page. The content must not be changed in any way. Full items must not be sold commercially in any format or medium without formal permission of the copyright holder. The full policy is available online: <http://nrl.northumbria.ac.uk/policies.html>

This document may differ from the final, published version of the research and has been made available online in accordance with publisher policies. To read and/or cite from the published version of the research, please visit the publisher's website (a subscription may be required.)

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

H. Lumley¹, D. Flynn², D. Coughlan², P. McMeekin³, G.A. Ford¹, D. Craig², S. Rice², D. Burgess⁴, J. Balami⁵, A. Mawson⁶ and P. White¹

¹Newcastle University, Institute of Neuroscience Stroke Research Group, Newcastle upon Tyne, United Kingdom; ²Newcastle University, Institute of Health and Society, Newcastle upon Tyne, United Kingdom; ³Northumbria University, School of Health-Community and Education Studies, Newcastle upon Tyne, United Kingdom; ⁴Clinical Research Network North East and North Cumbria, North East and North Cumbria Stroke Patient & Carer Panel, Newcastle upon Tyne, United Kingdom; ⁵University of Oxford, Centre for Evidence Based Medicine, Oxford, United Kingdom; ⁶Great North Air Ambulance, Northumberland Wing-The Imperial Centre, Darlington, United Kingdom

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.