

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](#). *In: European Stroke Organisation Conference. 2018, Gothenburg, Sweden: European Stroke Journal.*

Copyright:

This is the authors' accepted manuscript of an article that has been published in its final definitive form by SAGE Publishing, 2018

DOI link to article:

<https://doi.org/10.1177/2396987318770127>

Date deposited:

23/05/2018

Scientific Communications -Service Organisation

AS24-032

BETWEEN-CENTER AND BETWEEN-COUNTRY DIFFERENCES IN OUTCOME AFTER ANEURYSMAL SUBARACHNOID HEMORRHAGE IN THE SUBARACHNOID HEMORRHAGE INTERNATIONAL TRIALISTS (SAHIT) REPOSITORY**S. Dijkland¹, B. Jaja², M. van der Jagt³, B. Roozenbeek⁴, E. Steyerberg^{1,5}, D. Dippel⁴, R.L. Macdonald⁶, H. Lingsma¹**; on behalf of the SAHIT collaborators¹Erasmus University Medical Center, Public Health, Rotterdam, The Netherlands; ²Li Ka Shing Knowledge Institute- St. Michael's Hospital- University of Toronto, Neuroscience Research Program, Toronto, Canada; ³Erasmus University Medical Center, Intensive Care, Rotterdam, The Netherlands; ⁴Erasmus University Medical Center, Neurology, Rotterdam, The Netherlands; ⁵Leiden University Medical Center, Biomedical Data Sciences, Leiden, The Netherlands; ⁶Keenan Research Center- Li Ka Shing Knowledge Institute- St. Michael's Hospital- University of Toronto, Surgery, Toronto, Canada**Background and Aims:** Differences in outcome among different settings are common in many diseases and may reflect differences in quality of care. We aimed to quantify between-center and between-country differences in outcome after aneurysmal subarachnoid hemorrhage (aSAH).**Method:** We analyzed data from 5530 aSAH patients from three randomized clinical trials including 170 centers and 22 countries. We used random-effects logistic regression adjusted for patient characteristics to estimate between-center and between-country differences in unfavorable outcome, defined as Glasgow Outcome Scale 1–3 (severe disability, vegetative state or death) or modified Rankin Scale 4–6 (moderately severe disability, severe disability or death) at three months. Between-center and between-country differences were quantified with the median odds ratio (MOR), which is based on the variance of the random effects and can be interpreted as the odds ratio for unfavorable outcome between two randomly selected centers or countries. We analyzed the total database and performed subgroup analysis stratified for continent (Europe, North America and Oceania).**Results:** The proportion of patients with unfavorable outcome was 27%. We found substantial between-center differences (MOR = 1.26), which were not explained by patient characteristics (adjusted MOR = 1.30). Between-country differences were also found (adjusted MOR = 1.41). Between-center differences were absent in Oceania and North America (adjusted MOR = 1.00), but were present in Europe (adjusted MOR = 1.51).**Conclusion:** Outcome after aSAH differs between centers and countries, especially in Europe. Since these differences could not be explained by patient characteristics, future research should focus on explanations regarding differential treatment policies and quality of care.**Trial registration number:** N/A

AS12-071

SECONDARY TRANSFER OF STROKE PATIENTS FOR THROMBECTOMY BY AIR AMBULANCE IN ENGLAND: A COST-EFFECTIVENESS ANALYSIS**D. Flynn¹, D. Coughlan¹, P. McMeekin², G.A. Ford³, D. Craig¹, S. Rice¹, D. Burgess⁴, J. Balami⁵, A. Mawson⁶, H. Lumley³ and P. White³**¹Newcastle University, Institute of Health and Society, Newcastle upon Tyne, United Kingdom; ²Northumbria University, School of Health-Community and Education Studies, Newcastle upon Tyne, United Kingdom; ³Newcastle University, Institute of Neuroscience Stroke Research Group, 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:** Helicopter Emergency Medical Services (HEMS) for secondary transfer of stroke patients eligible for thrombectomy could have a significant impact on outcomes for patients residing in areas remote from a thrombectomy centre (TC). Remote units cannot sustain a 24/7 thrombectomy service locally and transfer to a TC is necessary. There are few data on cost-effectiveness of secondary transfer via HEMS to inform commissioning decisions. We are evaluating the cost-effectiveness of HEMS versus ground-based ambulance (GBA) for stroke thrombectomy in England.**Method:** Using Geographic Information System data, we identified unavoidably remote hospitals serving a population of $\leq 800,000$ (where initiating a local sustainable 24/7 thrombectomy service is not feasible) and > 1 hour by GBA from the nearest designated TC. We previously estimated the proportion of CT/CTA-confirmed stroke patients admitted with NIHSS ≥ 6 within 4.5 hours. Probability of receiving thrombectomy via HEMS or GBA was derived from average journey times. Quality Adjusted Life Years will be calculated for secondary transfer by HEMS and GBA to the most proximal TC to derive an incremental cost-effectiveness ratio.**Results:** Annual stroke incidence of 3,860 at unavoidably remote hospitals (≥ 75 km transfer distance), of which 508 patients would be transferred by HEMS. Ongoing survey of HEMS to establish operational parameters and costs to inform cost effectiveness model is ongoing and will be presented with the health economic data.**Conclusion:** HEMS is an option for secondary transfer of patients eligible for thrombectomy from unavoidably "small" and remote hospitals. Estimates of HEMS cost-effectiveness will be presented to inform the optimal organisation of thrombectomy service delivery.**Trial registration number:** N/A

AS12-072

VIDEO SUPPORT IN THE PREHOSPITAL STROKE CHAIN**H. Maurin Söderholm¹, S. Candefjord^{2,3}, M. Andersson Hagiwara⁴, J.E. Karlsson⁵, L. Rosengren⁶ and B.A. Sjöqvist^{2,3}**¹University of Borås, Swedish School of Library and Information Science-Prehospiten Centre for Prehospital Research, Borås, Sweden; ²Chalmers University of Technology, Department of Electrical Engineering, Gothenburg, Sweden; ³Sahlgrenska University Hospital, MedTech West, Gothenburg, Sweden; ⁴University of Borås, Prehospiten Centre for Prehospital Research, Borås, Sweden; ⁵Sahlgrenska University Hospital, Department of Neurology, Gothenburg, Sweden; ⁶the Sahlgrenska