

Improving emergency treatment for patients with acute stroke: the PEARS research programme, including the PASTA cluster RCT

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Plain English summary

PEARS research programme and PASTA cluster RCT

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Plain English summary

A stroke causes severe disability, but selected patients have a better recovery when they receive emergency treatments to remove blood clots blocking arteries in the brain. These treatments are a clot-dissolving drug injection (i.e. thrombolysis), which is available at local centres, and/or surgical clot removal (i.e. thrombectomy), which is available at regional centres. National data show that the use of both treatments can be improved.

For thrombolysis, we examined whether or not ambulance paramedics could help hospital teams to recognise patients who were suitable for treatment. Paramedics, hospital staff and patients developed a new Paramedic Acute Stroke Treatment Assessment, which included a more detailed ambulance review of stroke patients, sharing this information using a structured hospital handover, staying for up to 15 minutes after handover to assist with care tasks, completing a thrombolysis checklist and seeking feedback. A randomised trial involving 1214 emergency stroke patients showed that the assessment did not increase the number of patients undergoing thrombolysis. Instead, there was a mild reduction in treatments, with slightly better recovery and lower costs for medical and social care. These results were not statistically important, but the unexpected combination suggests that the assessment might help emergency treatment decisions, especially in hospitals with less stroke specialist availability. During interviews, clinicians rated the ambulance information and handover components as the most useful.

For thrombectomy, we sought views from stroke specialists at local and regional centres about the best service design to increase the number of treatments. They recommended initial local assessment, before transfer of appropriate patients to the nearest regional centre. Although additional ambulance journeys would be required, this view was supported by the majority of patient, carer and public survey respondents. By combining published trials, it was confirmed that thrombectomy is cost-effective and suitable for one in eight stroke patients. Computer simulations examined English networks and projected affordable increases in thrombectomy if (1) there were to be six additional regional centres and (2) helicopter transfers were possible from remote hospitals.

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This report

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