

Centralizing stroke services can reduce deaths and time in hospital

August 5 2014

Centralising acute stroke services can reduce mortality and length of hospital stay, according to a study published in the *BMJ* today.

Stroke is a leading cause of death and disability worldwide. Each year in England an estimated 125,000 people have a [stroke](#) and 40,000 of them die.

Centralising means hospitals of differing capability work together to create a centralised system of [stroke care](#), in which patients are taken to a small number of high volume specialist units rather than to the nearest hospital.

Research suggests that this approach can improve the quality of care for [stroke patients](#), but it is not known if this affects mortality and length of stay in hospital.

So a team of researchers based in two English urban areas (London and Greater Manchester) set out to investigate whether centralising acute stroke services in these areas was linked with changes in mortality and time spent in hospital.

They used hospital episode statistics (HES) linked to national mortality data to analyse differences in mortality and length of hospital stay for stroke over 250,000 patients before and after centralisation in London and Greater Manchester, compared with changes in the rest of England during the same period.

Level of risk was adjusted for using several factors that could have affected the results.

During the 2008-2012 study period, mortality and length of hospital stay fell in Greater Manchester, London, and the rest of England.

However, in London there was a significant fall in mortality from any cause at 3, 30 and 90 days after admission over and above that seen in the rest of England. At 90 days, the absolute reduction was -1.1, indicating 168 fewer deaths after centralisation in London during the 21 month period after reconfiguration. This translates into 96 extra lives per year.

In Greater Manchester, there was no impact on mortality over and above the change seen in the rest of England.

In both areas there was also a significant reduction in length of hospital stay over and above that seen in the rest of England: 9% (-2 days) in Greater Manchester and 7% (1.4 days) in London. These figures equate to 17,685 fewer hospital days in Greater Manchester and 22,341 fewer in London since the reconfigurations, or a total annual saving of 8,842 hospital days in Greater Manchester and 12,766 in London.

Reductions in [mortality](#) and length of [hospital stay](#) were largely seen among patients with ischaemic stroke (when a blood clot blocks an artery that carries blood to the brain).

Further analyses also including 73,558 patients who lived in rural areas had little impact on the results, but the authors stress that greater travel times in rural areas "may make centralisation challenging."

The authors say their findings "could also inform the centralisation of other healthcare services such as cancer care, cardiovascular care, major

trauma care, and vascular surgery." And they add that future research could "examine the impact of centralising [acute stroke](#) services on disability after stroke and also on achievement of care processes and quality of care."

More information: Impact of centralising acute stroke services in English metropolitan areas on mortality and length of hospital stay: difference-in-differences analysis, *BMJ*, 2014.

Provided by British Medical Journal

Citation: Centralizing stroke services can reduce deaths and time in hospital (2014, August 5) retrieved 28 April 2024 from

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