**We now have the fastest median DNT in Northern Ireland, and the joint fastest median DNT in the entire UK**

**Bigger isn’t always better**

**The journey of a small rural hospital in achieving national excellence in hyperacute stroke care**

Shiva Sreenivas, Breffni Keegan, Jim Kelly, Sheila Grimes, Alison Beattie, Brian Gallen, Enniskillen, Northern Ireland, UK

**Time is brain**

Calculated brain death in acute large vessel stroke:

- 1 800 000 neurons
- 14 000 000 synapses
- 447 miles of myelinated nerve fibres

**Every minute!**

1 900 000 neurons
14 000 000 000 synapses
447 miles of myelinated nerve fibres

**Context**

The South West Acute Hospital is a small rural district general hospital in Northern Ireland (NI) > 60 miles (90 minutes) from the nearest large hospital. Stroke thrombolysis door-to-needle time (DNT) targets for NI are set at median 60 minutes (similar to American and Canadian Get With The Guidelines). The United Kingdom (UK) door-to-needle national average has been > 50 mins for past 5 years.

**Lessons learnt**

Published evidence favours larger units in achieving faster DNT, yet rural hospitals can outperform these. Simple interventions from the Helsinki model and SITS-Watch programme led to a 66% improvement in DNT with an increased proportion of stroke patients given thrombolytic therapy (17.8%) — well ahead of the UK national average of 11.6%.

**Problem**

In 2012, Helsinki set a new benchmark for delivering a faster median DNT of 20 minutes. We audited our performance via SITS (Safe Implementation of Treatment in Stroke) and the Royal College of Physicians annual Stroke National Audit Programme) programmes. We sought to achieve to the 20 minute median time reported by the Helsinki group.

**Message for others**

Using QI and Lean methodology to redesign stroke pathways, with senior clinician involvement, can safely and successfully deliver hyper–fast DNT in small rural hospitals.

Most of these improvement changes are transferable to all stroke units, and can improve hyperacutecare performance.

**References**