

**NIHR Collaborations for Leadership in Applied
Health Research and Care South West Peninsula (PenCLAHRC)**

Case Study Example of the Value of NIHR CLAHRC Funding

1st April 2016 – 31st March 2017

STROKE MODELLING PROGRAMME

Work on influences on thrombolysis rates has been picked up by the Royal College of Physicians' Sentinel Stroke National Audit Programme (SSNAP) which reports performance to all stroke specialist centres in England and Wales. A new PenCLAHRC-SSNAP tool identifies what the thrombolysis rate *could* be in a given hospital if its performance on key parameters were at a reference level. Key parameters are (1) door to needle time (2) knowledge of stroke onset time (3) thrombolysis completion where sufficient time remains. Reference levels are currently being set (e.g. national mean) and the tool will roll out in 2017/18.

We are using machine learning to model thrombolysis decisions based on individual patient characteristics, calibrated on clinical decisions taken by nationally recognised experts. This will give stroke physicians feedback on their decisions by indicating what other experts would probably have chosen to do.

Work on configuration of acute stroke units across the SW region is being considered by STPs and may result in significant service reorganisation in 2017/18. This work has been extended to a national level using multi-objective optimisation approaches and is informing NHS England's consideration of the shape of stroke services.

In collaboration with Oxford (AHSN) and Newcastle, and supported by funds from the Stroke Association, we are modelling thrombectomy provision in England. Thrombectomy improves revascularisation after stroke but requires highly specialised delivery (currently only regional neurosciences centres). Our work, which will explicitly inform NHS England's commissioning strategy, explores different configurations for the inter-related provision of thrombolysis and thrombectomy.

CONTRIBUTION OF NIHR CLAHRC

Modelling work has directly informed changes in stroke units in the CLAHRC area, resulting in increased proportions of patients receiving thrombolysis.

Changes to the number of HASUs in the CLAHRC region, being decided by the STPs, are directly informed by our modelling work

Commissioning of thrombectomy and thrombolysis by NHS England, is informed by our modelling work, which makes the trade-offs between size and location of units explicit.

We have mediated changes in trusts by close ongoing collaboration with key clinical leaders in stroke care. These relationships enabled, in particular, the national collaborations with SSNAP and the NHS(E).

WHAT HAPPENED NEXT?

Commissioning decisions will be taken in 2017/8 on configuration of stroke services in Devon, Cornwall and Somerset through STPs.

SSNAP will integrate the tools described and disseminate to all stroke physicians in England and Wales in 2017/8.

NHS England will take decisions on the configuration of thrombolysis and thrombectomy centres in 2017/8.

Reconfigurations of stroke rehabilitation services following CLAHRC modelling are taking place in Cornwall, Plymouth and Torbay.