



Victoria McCurrán¹, Mark Kavanagh¹, Lizz Paley¹, Emma Vestesson¹, Alex Hoffman¹, Benjamin Bray², Geoffrey Cloud³, Martin James⁴, Pippa Tyrrell⁵, Anthony Rudd⁶, On behalf of the Intercollegiate Stroke Working Party and the SSNAP Collaboration

1. Royal College of Physicians, London, United Kingdom 2. University College London, London, United Kingdom 3. St George's NHS Foundation Trust, London, United Kingdom 4. Royal Devon and Exeter NHS Foundation Trust, Exeter, United Kingdom 5. University of Manchester, Manchester, United Kingdom 6. Guy's and St Thomas NHS Foundation Trust, London, United Kingdom

Contact: ssnap@rcplondon.ac.uk

Further details at: www.strokeaudit.org

BACKGROUND

SSNAP is the stroke register of England and Wales, with national participation from all admitting hospitals and an estimated 95% of stroke admissions entered on the register.

Thrombolysis (tPA) is a treatment administered to stroke patients which can break down and disperse a clot that is preventing blood from reaching the brain.

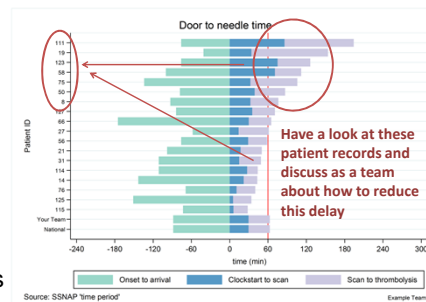
Evidence shows that tPA **improves outcomes** after stroke and the **quicker** it is given after stroke, the **more effective** it is.

National clinical guideline for stroke has made recommendations using this evidence.

Current guideline recommendations are that patients should be thrombolysed **within 3 hours** if eligible and the upper limit of benefit being 4.5 hours if they are under 80 years.

SSNAP reports back to hospitals their performance and their adherence to the recommendations

SSNAP has developed a **quality improvement tool** for tPA to identify **who is not** getting thrombolysed who should be and why, and the overall provision of tPA.



The **aim** of the tPA tool is for individual hospitals to see how they can **improve their provision of tPA** utilising data visualisation.

METHOD

Using data submitted by hospitals each quarter, SSNAP analyses **stroke patient characteristics and processes of care**.

Each team receives their **bespoke tPA tool** in an Excel document **within 3 months** of each data input deadline, which enables them to:

identify **EXACT** patients and moments in time

investigate the **reasons** of any shortfalls and missed targets

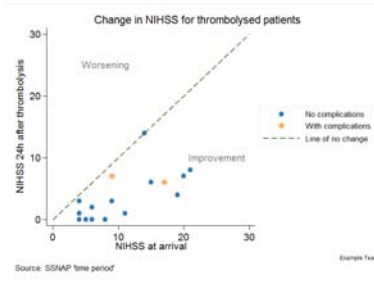
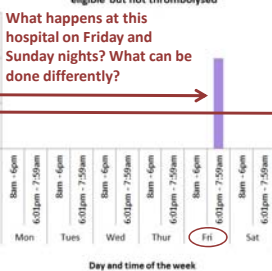
implement **new strategies** across the team while the data are still relevant

see **improvements** the next quarter

Eligible but not achieved

Eligible for thrombolysis, and either a "no" reason is given, or a "no full" reason is given, but all reasons are thrombolysed with other	Yes	No	No full
Eligible for thrombolysis (according to guideline minimum criteria)	18	14	14
Thrombolysed	18	14	14
No reason			
Stroke type	infarction	infarction	infarction
Onset of stroke in hospital?	No	No	No
Date and time of onset	11/10/2013 04:30	11/10/2013 04:30	11/10/2013 04:30
The onset date given is	Present	Present	Present
Date and time of arrival	11/10/2013 09:00	11/10/2013 23:40	11/10/2013 21:40
Symptom onset to arrival time (Min:sec)			
Age	73	84	79
Sex of arrival	M	M	F
No full reason = Haemorrhagic			
Stroke type	infarction	infarction	infarction
No full reason = Time window			
Onset of stroke in hospital?	No	No	No
The onset date given is	Present	Present	Present
Symptom onset to arrival time (Min:sec)	01:30	01:08	01:34
Age	73	84	79
No full reason = Consciousness			
Stroke type			
No full reason = Patient refusal			
Age	62	71	80
The onset date given is	Present	Present	Present
Symptom onset to arrival time (Min:sec)	01:30	01:08	01:34
No full reason = Patient improving			
No full reason = Too mild or severe			
NIHSS at arrival	20	20	11
No full reason = Onset time is unknown/variable during time			
The onset date given is	Present	Present	Present
NIHSS at arrival fully completed?	No	Yes	Yes

In hours/Out of hours clock start for patients that are eligible but not thrombolysed



The **data visualisations** display the key information in a clear and succinct way and includes door to needle timing pathway, door to thrombolysis, and door to scan time distribution, provision of tPA in hours/out of hours and change in NIHSS after tPA.

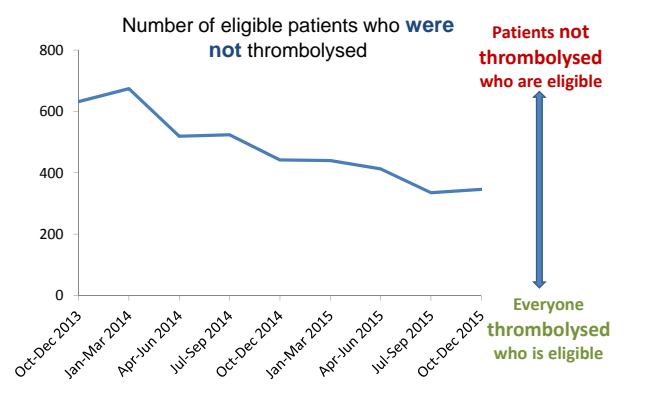
RESULTS

This tool has been used extensively by healthcare professionals, with 978 downloads of the tool in 2014 and 1709 downloads of the tool in 2015.

More eligible patients are receiving tPA. 85.6% of eligible patients in October to December 2015 received tPA compared to 74.7% in the comparable quarter in 2013 before the tool was produced.

The data visualisations **better enable healthcare professionals to analyse their hospitals' acute care.**

Case study quote
"Thanks for the spreadsheet, it is **very useful** for the **thrombolysis indicator**"
Manager, **King's Mill Hospital**



CONCLUSION

This tool explains hospitals' provision of tPA and therefore hospitals can **diagnose EXACT moments of the acute pathway where improvements can be made**, and an improvement in care quality has been apparent since implementation. Similar quality improvement tools could be produced in other healthcare settings.