Access to advanced brain imaging according to the National Optimal Stroke Imaging Pathway (NOSIP): data from the National Stroke Registry SSNAP

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Background

The National Optimal Stroke Imaging Pathway (NOSIP) is a GIRFT initiative that was introduced in 2021 in England to improve access to advanced imaging and thereby ensure patients receive time dependant reperfusion treatments urgently (Figure 1 below). In July 2021, the Sentinel Stroke National Audit Programme (SSNAP) dataset was amended to allow reporting of first imaging in acute stroke and compliance with the NOSIP recommendations.

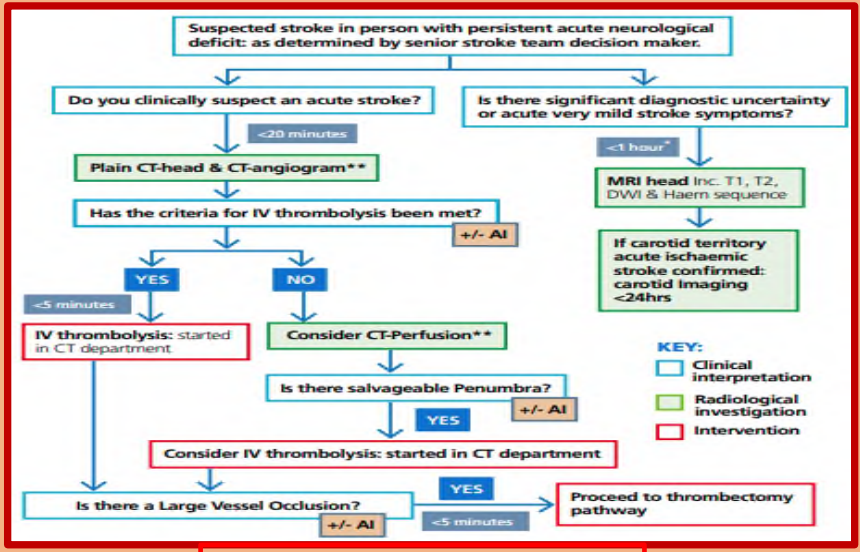

Figure 1: the NOSIP Pathway

Methods

Data for first imaging modality were extracted from the SSNAP database for England, Wales, and Northern Ireland. The national stroke registry SSNAP has a case ascertainment of approximately 95%. This analysis included all acute stroke patients from July 2021 – March 2023 who had brain imaging. Pearson's chi-squared test was used to test for a significant difference between the proportions.

Results

155,381 patients were admitted over the 21-month period since the introduction of the NOSIP. From July – December 2021 CT Angiography (CTA) accounted for 8% and CT Perfusion (CTP) for 1% of the initial imaging modality, while Non-Contrast CT (NCCT) alone accounted for 87%, with 4% for any other imaging modality.

By January 2022 – March 2023, CTA had increased to 12% and CTP to 2% while NCCT alone had decreased to 83% (P <0.001; Figure 2, right).

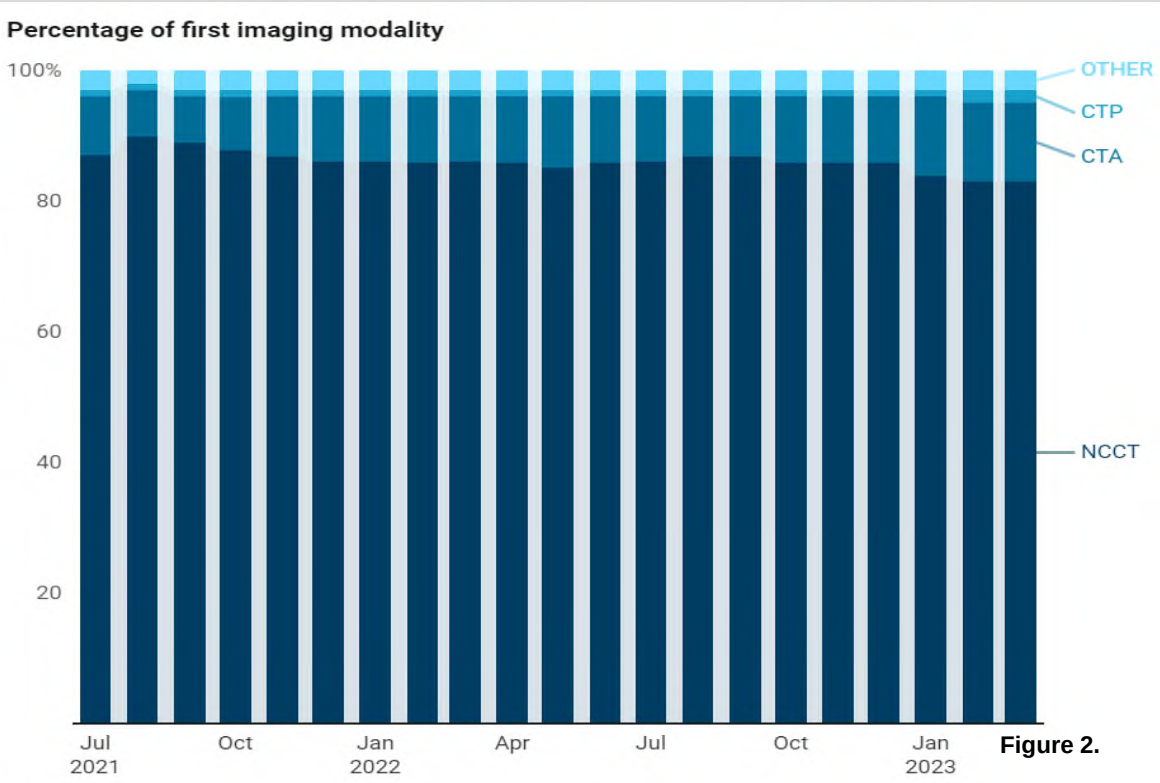

Figure 2.

Conclusions

There has been a small but significant increase in the proportion of patients receiving either CTA or CTP on their first visit to the imaging department in line with the NOSIP. Recent observational studies would indicate a typical incidence of large artery occlusion of approximately 30%, suggesting that this is a reasonable expectation for the proportion of patients who should receive advanced imaging on their first visit to the imaging department. Furthermore, changes in the eligibility for reperfusion treatment (both thrombolysis and thrombectomy) contained within the updated 2023 National Clinical Guideline for Stroke would indicate that the proportion of patients for whom advanced imaging is appropriate will increase significantly beyond the levels reported here – to at least 50% of ischaemic strokes.