

Qualitative findings from SAMueL-1

In hospitals with higher thrombolysis use:

- the stroke pathway was better developed (e.g. more stroke clinicians)
- doctors could see where our modelling might help improve thrombolysis use
- doctors wanted to know more about how changes might affect adverse events and outcomes

In hospitals with lower thrombolysis use:

- the stroke pathway was less developed/ less well resourced (e.g. fewer doctors, no specialist stroke nurses, poorer access to imaging)
- doctors were more cautious or sceptical about the modelling
- doctors wanted to know more about how changes might affect adverse events and outcomes but were concerned that increased use of thrombolysis would cause more harm than good
- doctors thought differences in thrombolysis rates related to different patient populations (e.g. they arrived later, had more complex needs, were not classic/typical stroke).

Qualitative questions in SAMueL-2

Given existing variations in thrombolysis use, what is the best way for us to use and present the outputs of machine learning to reduce unnecessary variation and promote best patient outcomes?

How does the machine-learning model compare with actual decision-making?

- what additional factors contribute to decisions?
- who makes the decision and how?
- what could drive adjustment to decision-making?

Governance processes

To follow the “standard” route we need both Health Research Authority (HRA) approval and University Ethics approval

Makes us reliant on busy R&D departments having capacity to help us find a local PI and recruit one or two clinicians per site; the problem tends to be worse at sites with low thrombolysis rates

Alternative approach: recruit through professional organisations; avoids some governance issues but likely runs into the same problems/ bias in terms of hard-to-reach physicians