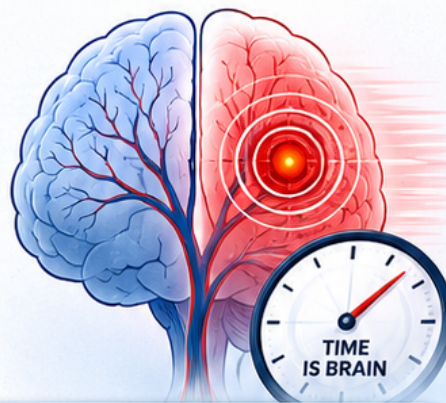


DOAC Dipstick Testing in Acute Stroke




Multicentre Registry Protocol in Regional Australia

Can rapid urine DOAC screening help guide thrombolysis and targeted reversal when time is critical?

Based on Callaly EP, Tan PS, Schembri E, et al. *BMJ Open* 2025;15:e102092



WHY THIS MATTERS

-  Patients on direct oral anticoagulants (DOACs) may be excluded from urgent stroke treatments if clinically significant drug levels cannot be ruled out quickly.
-  Standard plasma DOAC assays may be slow or unavailable outside tertiary centres.
-  Rapid point-of-care urine screening could support faster triage, reperfusion decisions, and targeted reversal.



Faster triage







Support thrombolysis decisions


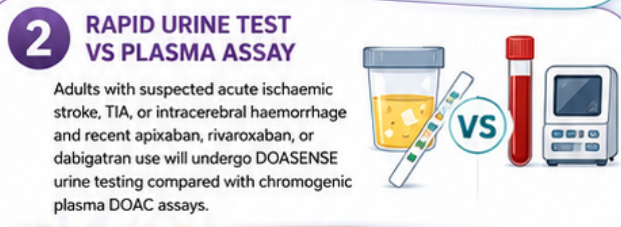
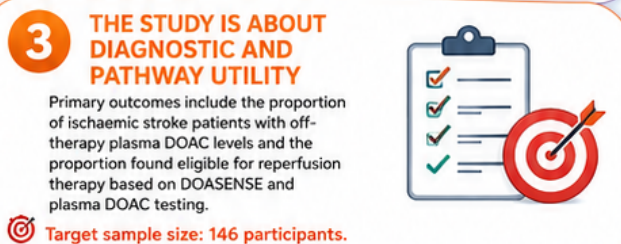



Guide targeted reversal

THE SCIENCE STORY: HOW THE PROTOCOL WORKS

-  **1 CLINICAL PROBLEM**
Acute ischaemic stroke or intracerebral haemorrhage in patients with recent DOAC use.
-  **2 INDEX TEST**
DOASENSE urine dipstick with visual interpretation and, where available, reader-based analysis.
-  **3 REFERENCE TEST**
Plasma DOAC concentration measured by chromogenic assays.
-  **4 WHAT THE REGISTRY ASKS**
Does rapid urine testing agree with plasma testing and help identify who may be eligible for reperfusion therapy or pharmacological reversal?

3 KEY POINTS

-  **1 A REAL-WORLD REGIONAL STUDY**
Multicentre prospective observational registry across Victoria and Tasmania, designed to reflect regional stroke pathways and telemedicine-connected care.
-  **2 RAPID URINE TEST VS PLASMA ASSAY**
Adults with suspected acute ischaemic stroke, TIA, or intracerebral haemorrhage and recent apixaban, rivaroxaban, or dabigatran use will undergo DOASENSE urine testing compared with chromogenic plasma DOAC assays.
-  **3 THE STUDY IS ABOUT DIAGNOSTIC AND PATHWAY UTILITY**
Primary outcomes include the proportion of ischaemic stroke patients with off-therapy plasma DOAC levels and the proportion found eligible for reperfusion therapy based on DOASENSE and plasma DOAC testing.
 **Target sample size: 146 participants.**

WHAT WILL BE MEASURED?



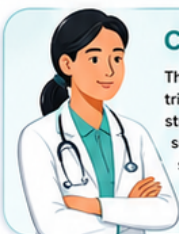
AGREEMENT METRICS
kappa



DIAGNOSTIC PERFORMANCE
sensitivity, specificity, PPV, NPV






SECONDARY OUTCOMES
Stroke aetiology, DOAC-associated intracerebral haemorrhage, false negatives/false positives at ≥ 30 ng/mL, and factors contributing to false negatives.



CLINICIAN TAKEAWAY

This is a protocol, not a treatment-outcomes trial. If agreement with plasma testing is strong, rapid urine DOAC screening could support faster decision-making in acute stroke pathways, especially in regional hospitals where plasma assays are delayed or unavailable.

IDEAS FOR FURTHER RESEARCH

-  Does rapid screening shorten time-to-treatment or expand thrombolysis access?
-  Can it improve targeted use of reversal agents in intracerebral haemorrhage?
-  How do renal impairment, urine quality, and sampling conditions affect performance?



IMPORTANT LIMITATIONS

- Visual interpretation may introduce variability.

Invalid samples with abnormal urine colour or low urine creatinine are excluded from final analysis.

- The protocol evaluates implementation and diagnostic utility, not definitive treatment efficacy.



BOTTOM LINE: This registry will test whether rapid urine DOAC dipstick screening can help acute stroke teams make faster, better-informed triage decisions when plasma testing is slow or unavailable.

