

Thank you for your interest in taking part in this study which is investigating factors that influence clinical decision-making about treating patients with acute ischaemic stroke with intravenous thrombolysis. The study is funded by the NIHR Health Service and Delivery Research Programme and is led by researchers from Newcastle University.

If you decide to take part in this survey, then you will be asked to complete (i) a series of background questions about your clinical experience; and (ii) two short scales relating to risk and uncertainty. You will then be presented with a number of vignettes, which describe hypothetical patients with acute ischaemic stroke. Based on the information provided, you will be asked whether or not you would offer intravenous thrombolysis to the patient.

We anticipate the full survey will take between 30-45 minutes to complete. You will be able to save and return to the survey at a later date, if required.

This survey is not a test or an assessment of your clinical decision-making. The responses provided will not be judged in accordance with current licensing criteria or local/national guidelines for thrombolysis. We are interested in real-world decision-making. All responses will remain strictly confidential and your name or other personal details will not appear in any report or publication arising from this research.

Completion of the survey and submission of responses provides your consent to take part in the study. The information and answers you provide will be electronically stored on the secure server of *Accent* (<http://www.accent-mr.com/>) the firm hosting the online survey. By ticking the box below and continuing to the survey, you are indicating your agreement with the following:

- I have read the information about this survey.
- I understand that I am free to withdraw my participation at any point during the survey.
- I understand that participation in the survey is completely voluntary.
- I understand that responses I provide to the survey will be combined with those provided by other participants and will be statistically analysed for presentation in published reports and peer review articles, and that no personally identifiable information about me will appear in any report or article.

Please click the relevant box below to indicate your agreement and to progress to the survey:

- I agree to participate in this study
- I do not agree to participate in this study

If you have any questions about the research, please contact: [contact details here]

Are you a clinician who is responsible for making the final decision about whether or not to offer intravenous thrombolysis to eligible acute stroke patients?

Yes

No

If Yes, participants may progress to survey (next page: Email entry page to generate unique survey link).

If No, participants are screened out of survey and presented with the following message:

Thank you for your interest but unfortunately you do not meet the criteria for participation in this study.

Page after email entry:

Thank you. A message has been sent to the email address which contains your own unique link to the survey. Please note that your responses will not be associated with your email address and your answers will remain anonymous.

Would you like to complete the survey now?

Please note that if you choose 'Yes', you will be re-directed to your own unique web link. If you choose 'No', you can still complete the survey at a later stage by going into the email sent to your email address.

- Yes (please redirect me to my personal survey link)
- No (I will complete the survey at a later date)

Thank you.

Demographics and Experience

Q1. Please state your gender by ticking the appropriate box below.

Female

Male

Q2. Please state your age in the box below.

years

Q3. Please indicate below the option that best represents your medical speciality in relation to stroke care.

Stroke physician

Accident & Emergency specialist

Acute care physician

Geriatric medicine physician

Neurologist

Other (please specify): _____

Q4. In the box below, please indicate your grade/level of seniority.

Consultant

Staff doctor

Speciality trainee

Other (please specify): _____

Q5. How many months/years of experience do you have in treating acute ischaemic stroke patients?

_____ months

_____ years

Q6. How many months/years of experience do you have in administering intravenous thrombolysis to acute ischaemic stroke patients?

_____ months

_____ years

Q6a. Would you be willing to control a patient's high blood pressure using medication before making the final decision to administer intravenous thrombolysis?

Yes

No

Patient vignettes

Introduction to task

In the following screens, you will be presented with 13 vignettes, which will describe hypothetical patients presenting with acute ischaemic stroke. You will be asked if you would or would not offer intravenous thrombolysis in the standard licensed dose, based on the information provided in the vignette.

For the purposes of this task you should assume that:

- Either patient consent or family assent for treatment will be available,
- A thrombolysis bolus can be prepared within five minutes, and
- All patients described are right-handed.

The following variables will be 'fixed'; i.e., the factor will be exactly the same in each patient vignette:

- Blood glucose level of 6 mmol/L
- CT scan result that is consistent with ischaemic stroke and showing no haemorrhage or new ischaemic changes
- The patient is not on anticoagulation therapy
- The patient has no recent history of significant bleeding
- The patient has no history of diabetes

In contrast, the following factors will vary across the vignettes:

- Patient demographics
- NIHSS score
- Frailty
- Pre-stroke dependency (mRS)
- Pre-stroke cognitive status
- Symptom onset time
- Systolic blood pressure

A blue information icon will provide further information or a definition for certain terms in the vignettes. Hovering the cursor over this icon will reveal the text.

It is important that your answers are based on **your real-world decision making**.

Please note that in all patient vignettes that will be presented to you, the patient has suffered an acute ischaemic stroke. We are asking whether or not you would **immediately offer** thrombolysis to each patient, based on their current status.

Vignette structure

A [68; 85; 95] year old [*white; Afro-Caribbean; Asian*] [*man ; woman*] has been admitted to hospital with acute ischaemic stroke. Symptom onset began [*50 minutes ; 2 hours 30 minutes; 4 hours 15 minutes*] ago. The patient, [*who you perceive as frail; who you do not perceive as frail*], had a pre-stroke dependency mRS of [*1; 3; 4*]. Further investigation revealed the patient is not on anticoagulation therapy and has a blood glucose level of 6 mmol/L. The patient has [*no history of; moderate; severe*] dementia and at the time of the treatment decision, the patient's systolic blood pressure is [*140; 185; 200*]mmHg. The patient has no recent history of significant bleeding and no history of diabetes. Clinical assessment of stroke severity indicated a NIHSS score of [*2 (with aphasia); 2 (without aphasia); 5 (with aphasia); 5 (without aphasia); 14 (without aphasia); 23 (without aphasia)*]. A CT scan was conducted and is consistent with ischaemic stroke; it shows no haemorrhage or new ischaemic changes. There are no other factors which would deter treatment.

Given the information presented above would you **immediately** offer thrombolysis to this patient?

Yes

No

Do you have any comments about this case? If so, please enter your comments in the text box below. If you do not have any comments, please tick 'No' below.

No

If participant answers 'yes' to Q1 ("Would you **immediately** offer thrombolysis to this patient?"), they will be asked if they have any comments about this case (free text response, as it currently is) and will progress to the next vignette.

However, if participant answers 'no' to Q1 ("Would you **immediately** offer thrombolysis to this patient?"), Q2 should appear below the text box ideally **only** for those vignettes when the blood pressure is 185 or 200.

Q2. Would you attempt to lower the patient's blood pressure before reassessing the patient's suitability for intravenous thrombolysis?

Yes

No

If participant answer 'no' to Q2, they progress to the next vignette. If participant answers 'yes' to Q2, Q3 will appear:

Q3. Assuming all other patient factors remain the same, at what level of lowered systolic blood pressure would you be prepared to treat this patient with intravenous thrombolysis? Please tick the **highest value of systolic blood pressure** at which you would treat this patient.

_____ mmHg

Service structure and delivery

Q7. Please indicate the regional strategic clinical network (SCN) in which you work.

- Cheshire and Mersey SCN
- East Midlands SCN
- East of England SCN
- Islands
- London SCN
- Manchester, Lancashire & S.Cumbria SCN
- North of England SCN
- Northern Ireland
- Scotland
- South East Coast SCN
- South West SCN
- Thames Valley SCN
- Wales
- Wessex SCN
- West Midlands SCN
- Yorkshire and The Humber SCN

Q8. Please enter the name of the hospital where you are principally based. This will help us link characteristics of service structure to project findings. [Please note that this information will only be used to link characteristics of service/institutional structure with your responses and individual-level data **will not be** associated with specific hospitals or treatment centres. Data you report will be combined with responses of others and analysed and presented in aggregated form]

Q8(a). In the space below, please report the approximate percentage of stroke patients thrombolysed in the hospital in which you are principally based.

Q8(b). Please tick below the description that best represents the service configuration of your place of work.

Consultant-led services in all cases (consultants present on-site and lead all decisions about thrombolysis)

Telemedicine services only

Combination of consultant-led services and telemedicine services

Q9. To help provide insight into the type of hospital in which you primarily work, please indicate your agreement with the following statements in the table below. When considering these statements, please respond in relation to the team involved in thrombolysis decision-making in the treatment of acute ischaemic stroke in the hospital in which you are principally based.

Item:	<i>Strongly disagree</i> 1	<i>Moderately disagree</i> 2	<i>Slightly disagree</i> 3	<i>Slightly agree</i> 4	<i>Moderately agree</i> 5	<i>Strongly agree</i> 6
Most people whose opinion I value would approve of me treating a patient presenting with acute ischaemic stroke within a 4.5 hour time window with intravenous thrombolysis						
Prior to delivery of intravenous thrombolysis, clinicians are provided with adequate training to inform decision-making regarding the appropriate use of intravenous thrombolysis in the treatment of patients with acute ischaemic stroke						
We encourage internal discussion of patient care adverse events						
There is an identifiable practice style that we all try to adhere to						
My hospital strongly encourages me to thrombolysate patients who meet criteria for intravenous thrombolysis when presenting with acute ischaemic stroke						
My hospital does not hold meetings regularly to discuss and review stroke service audit data						

Q10. In the following set of statements, we are interested in understanding your approach to risks and risk-taking in general. Please think about each statement and indicate on the scale below your level of agreement or disagreement.

Item:	<i>Strongly disagree</i> 1	<i>Moderately disagree</i> 2	<i>Slightly disagree</i> 3	<i>Slightly agree</i> 4	<i>Moderately agree</i> 5	<i>Strongly agree</i> 6
I enjoy taking risks						
I try to avoid situations that have uncertain outcomes						
Taking risks does not bother me if the gains involved are high						
I consider security an important element in every aspect of my life						
People have told me that I seem to enjoy taking chances						
I rarely, if ever, take risks when there is another alternative						

Q11. In the following set of statements, we are interested in understanding how you deal with uncertainty in your clinical practice regarding acute stroke care / decision making about thrombolysis. Please think about each statement and indicate on the scale below your level of agreement or disagreement.

Item:	<i>Strongly disagree</i> 1	<i>Moderately disagree</i> 2	<i>Slightly disagree</i> 3	<i>Slightly agree</i> 4	<i>Moderately agree</i> 5	<i>Strongly agree</i> 6
I usually feel anxious when I am not sure of a diagnosis.						
I find the uncertainty involved in patient care disconcerting.						
Uncertainty in patient care makes me uneasy.						
I am quite comfortable with the uncertainty in patient care.						
The uncertainty of patient care often troubles me						
When I am uncertain of a diagnosis, I imagine all sorts of bad scenarios— patient dies, patient sues, etc.						
I fear being held accountable for the limits of my knowledge.						
I worry about malpractice when I do not know a patient's diagnosis.						
When physicians are uncertain of a diagnosis, they should share this information with their patients						
I always share my uncertainty with my patients						
If I shared all of my uncertainties with my patients, they would lose confidence in me						
Sharing my uncertainty improves my relationship with my patients						
I prefer patients not know when I am uncertain of what treatments to use.						
I almost never tell other physicians about diagnoses I have missed.						
I never tell other physicians about patient care mistakes I have made.						

Q12. How recently did you last make a decision about whether to treat or not treat an acute ischaemic stroke patient with thrombolysis? Please report your answer using number of days, weeks, and/or months below.

_____ days _____ weeks _____ months

Q13. Approximately, how many acute stroke patients have you thrombolysed over the past 12 months?

Q14. Typically, out of every 100 acute stroke patients you assess for eligibility for intravenous thrombolysis, approximately how many would you thrombolysed?

_____ out of every 100

Q15a. In the past 12 months, how many instances where you have administered intravenous thrombolysis to a patient presenting with acute ischaemic stroke have resulted in the patient being harmed as a result of treatment?

Q15b. How recent was your last experience of a harmful effect of intravenous thrombolysis treatment on a patient presenting with acute ischaemic stroke? Please report your answer using number of days, weeks and/or months below.

_____ days _____ weeks _____ months

Q16. Does your work place have a formal acute stroke protocol for assessing patient eligibility for thrombolytic treatment?

Yes

No

Don't know

If 'yes' to last question, the following questions (Q16b) should appear:

Q16(b). If you answered 'yes' to Q16, are there circumstances where you do not strictly adhere to the protocol?

Yes

No

If yes, please elaborate on the circumstances where you would not strictly adhere to the protocol:

Q17. On a scale from 1–6, where 1 indicates '*not at all comfortable*' and 6 indicates '*very comfortable*', please indicate your level of comfort when:

(i) treating a patient with acute ischaemic stroke with intravenous thrombolysis outwith the licencing criteria:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6
<i>Not at all comfortable</i>					<i>Very comfortable</i>

(ii) not treating a patient with acute ischaemic stroke with intravenous thrombolysis who is within the licencing criteria for treatment:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6
<i>Not at all</i>					<i>Very</i>
<i>comfortable</i>					<i>comfortable</i>

Q18. On a scale from 1–6, where 1 indicates ‘*strongly disagree*’ and 6 indicates ‘*strongly agree*’, please indicate your agreement with the following statement:

I am very confident in communicating the potential risks and benefits of thrombolysis to patients or their family/carers.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6
<i>Strongly</i>					<i>Strongly</i>
<i>disagree</i>					<i>agree</i>

Q19. On a scale from 1–6, where 1 indicates ‘*strongly disagree*’ and 6 indicates ‘*strongly agree*’, please indicate your agreement with the following statement:

I believe the evidence is robust for treating acute ischaemic stroke with intravenous thrombolysis when a patient presents **within a 4.5 hour time window** and there are no other contraindications for treatment.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6
<i>Strongly</i>					<i>Strongly</i>
<i>disagree</i>					<i>agree</i>

Debriefing

Thank you for your participation in this study, which will help to identify the most influential factors in clinical decision-making regarding the administration of thrombolysis for patients with acute ischemic stroke, including the nature of the trade-offs made between these factors (and associated levels).

The information and answers you provided will be compiled with those of other respondents and will be analysed as part of a larger data set. We expect that the results from this study will be available in early 2015 and will be disseminated in peer-review publications and via national conference presentations. When the published results are available, we will circulate a summary of the findings and a link to the full report/paper via the mailing list used to contact you about this research.

If you would like to be entered into an optional prize draw to win an iPad, please enter your email address in the box below. (Please note that email addresses provided here will not be associated with previous responses given, but will be stored in a separate file). The winner will be selected at random by the research team at the Institute of Health & Society, Newcastle University when the survey closes.

Optional entry of your email address for prize draw:

If you have any further questions about this research, please contact the lead researcher using the contact details below. We recommend that you print this page for your own records in the event that you wish to contact a member of the research team at a later date.

[contact details here]

- END OF SURVEY -