

# Creating a decision support tool to help paramedics decide if their patients need to go to hospital

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<b>Registration date</b> 17/03/2021	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 19/05/2023	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Paramedics have specialist knowledge and skills in helping people in emergencies. For example, if you are involved in a road traffic collision, house fire or if your heart stops. These events are quite rare, and the bulk of ambulance service patients who call have problems that are described as 'urgent'. These cases are where you may need access to healthcare and medical help, but there is only a very small chance your problem is life threatening.

The care of urgent patients is complex and trying to find the right place for their care can be hard. In 2014 in Yorkshire, up to 16.9% of patients could have avoided being taken by ambulance to the Emergency Department (ED). This group of patients had no special tests or treatments and were sent home. This means they had a minor problem that could have been managed elsewhere.

When the ED is busy, ambulances have to wait a long time to handover the care of their patients. In the winter of 2017 in England, 41,879 ambulance handovers took more than 1 hour. This delay stops ambulances being free to respond to the next emergency. These problems mean paramedics need to make sure the ED is the right place for their patient before they take them there.

This project aims to develop a tool to help with that decision. It is designed to show the paramedic the likelihood of ED being an avoidable experience if the patient was to be transported. They can apply this tool to all their patients.

### Who can participate?

All patients who called an ambulance and received a face-to-face response between 1st July 2019 and 29th February 2020.

### What does the study involve?

The first step will link data from the ambulance service with that from all Emergency Departments in Yorkshire between July 2019 and February 2020. This data will show the complete patient journey from their call for help through to leaving the ED. The data will be anonymised so the researchers will only be able to see what happened in a journey, not whose

journey it was. This information will help create a tool that identifies patients who may not need to be taken to the ED. The next step will test the tool in different settings by subdividing the data. The tool will also be applied to a group of patients that were not transported to hospital.

What are the possible benefits and risks of participating?

The study will help to create a decision support tool so that future patients can get to the most appropriate healthcare setting, first time.

Where is the study run from?

Yorkshire Ambulance Service NHS Trust and the University of Sheffield (UK)

When is the study starting and how long is it expected to run for?

April 2019 to March 2022

Who is funding the study?

1. National Institute for Health Research (UK)

2. Health Education England (UK)

Who is the main contact?

Jamie Miles

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## Contact information

### Type(s)

Scientific

### Contact name

Mr Jamie Miles

### ORCID ID

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### Contact details

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## Additional identifiers

Integrated Research Application System (IRAS)

260505

## Study information

Scientific Title

The Safety INdEx of Prehospital On Scene Triage (SINEPOST): the derivation and internal validation of a risk prediction model to support ambulance transport decisions to the Emergency Department

## **Acronym**

SINEPOST

## **Study objectives**

Primary research question: Can ambulance service clinical data predict an avoidable attendance at the ED in adults?

Secondary research question: What is the simulated transportability of the model derived from the primary outcome?

## **Ethics approval required**

Old ethics approval format

## **Ethics approval(s)**

Approved 11/11/2019, Yorkshire and the Humber - South Yorkshire Ethics Committee (Yorkshire & The Humber - South Yorkshire Research Ethics Committee, NHSBT Newcastle Blood Donor Centre, Holland Drive, Newcastle upon Tyne, NE2 4NQ, UK: +44 (0)207 104 8079; southyorks.rec@hra.nhs.uk), REC ref: 19/YH/0360

## **Study design**

Observational multi-centre cohort study using a retrospective linked dataset

## **Primary study design**

Observational

## **Study type(s)**

Diagnostic

## **Health condition(s) or problem(s) studied**

Unselected (not selected by disease or demographic status) adult patients who called an ambulance and received a face-to-face response

## **Interventions**

Transported ambulance patients will have the prehospital care record linked to the ED record and a new binary variable will be created as to whether the level of care they received in ED justified the transportation by ambulance. Models will then be built to predict the positive class (avoidable attendance).

## **Intervention Type**

Other

## **Primary outcome(s)**

An avoidable attendance at ED, defined as first attendance with some recorded treatments or investigations, all of which may have reasonably been provided in a non-emergency care setting, followed by discharge home or to GP care. Measured by combining elements of routinely collected ED clinical data once a patient is discharged from ED.

## **Key secondary outcome(s)**

There are no secondary outcome measures

**Completion date**

31/03/2022

## Eligibility

**Key inclusion criteria**

Cohort 1:

1. Age 18 years old or older
2. Transported to ED by Yorkshire Ambulance Service between 01/07/2019 and 29/02/2020
3. Have an ED Care record of the event
4. Assessed by a qualified ambulance clinician ((either paramedic (of any level) or technician grade II))
5. Had an electronic patient care record completed
6. Transported to an ED between 01/07/2019 and 29/02/2020
7. Were handed over and booked in as a patient to the ED

Cohort 2

1. Age 18 years or older
2. Assessed by a qualified ambulance clinician (either paramedic or technician grade II)
3. Had an electronic patient care record completed
4. Discharged on scene and not transported between 01/07/2019 and 29/02/2020

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Total final enrolment**

409937

**Key exclusion criteria**

Cohort 1:

1. Patient cases where they were less than 18 years old at time of episode
2. Patient cases where they had five or more patient contacts within the data collection period

Cohort 2:

1. Patient cases where they were less than 18 years old at time of episode
2. Patient cases where they had five or more patient contacts within the data collection period
3. Patient cases that were transported by the ambulance crew on scene

**Date of first enrolment**

01/07/2019

**Date of final enrolment**

29/02/2020

## **Locations**

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

**Yorkshire Ambulance Service NHS Trust**

Yorkshire Ambulance Service HQ

Springhill 1

Brindley Way

Wakefield

United Kingdom

WF2 0XQ

**Study participating centre**

**Barnsley Hospital NHS Foundation Trust**

Gawber Rd

Barnsley

United Kingdom

S75 2EP

**Study participating centre**

**Pinderfields Hospital**

Aberford Rd

Wakefield

United Kingdom

WF1 4DG

**Study participating centre**

**St. James's University Hospital**

Beckett Street  
Leeds  
United Kingdom  
LS9 7TF

**Study participating centre**

**Leeds General Infirmary**

Great George Street  
Leeds  
United Kingdom  
LS1 3EX

**Study participating centre**

**Harrogate and District NHS Foundation Trust**

Lancaster Park Road  
Harrogate  
United Kingdom  
HG2 7SX

**Study participating centre**

**Huddersfield Royal Infirmary**

Acre Street  
Lindley  
Huddersfield  
United Kingdom  
HD3 3EA

**Study participating centre**

**Calderdale Royal Hospital**

Salterhebble  
Halifax  
United Kingdom  
HX3 0PW

**Study participating centre**

**Hull Royal Infirmary**

Anlaby Road  
Hull  
United Kingdom  
HU3 2JZ

**Study participating centre**  
**Rotherham NHS Foundation Trust**  
Moorgate Road  
Rotherham  
United Kingdom  
S60 2UD

**Study participating centre**  
**York Teaching Hospital NHS Foundation Trust**  
Wigginton Road  
York  
United Kingdom  
YO31 8HE

**Study participating centre**  
**Airedale General Hospital**  
Skipton Road  
Steeton  
Keighley  
United Kingdom  
BD20 6TD

**Study participating centre**  
**Doncaster Royal Infirmary**  
Armthorpe Road  
Doncaster  
United Kingdom  
DN2 5LT

**Study participating centre**  
**Northern General Hospital**  
Herries Road  
Sheffield  
United Kingdom  
S5 7AU

**Study participating centre**

**Bradford Royal Infirmary**

Smith Lane  
Bradford  
United Kingdom  
BD9 6DA

**Study participating centre****Dewsbury and District Hospital**

Halifax Rd  
Dewsbury  
United Kingdom  
WF13 4HS

**Study participating centre****Scarborough General Hospital**

Woodlands Drive  
Scarborough  
United Kingdom  
YO12 6QL

## Sponsor information

**Organisation**

Yorkshire Ambulance Service NHS Trust

**ROR**

<https://ror.org/01sawky49>

## Funder(s)

**Funder type**

Government

**Funder Name**

National Institute for Health Research

**Alternative Name(s)**

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

## Funding Body Type

Government organisation

## Funding Body Subtype

National government

## Location

United Kingdom

## Funder Name

Health Education England

# Results and Publications

## Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date

## IPD sharing plan summary

Data sharing statement to be made available at a later date

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol article</a>		08/11/2021	19/05/2023	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes