

# What works to improve patient care related to ambulance handovers at emergency departments?

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| <b>Submission date</b><br>19/03/2025   | <b>Recruitment status</b><br>Recruiting | <input checked="" type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol                       |
| <b>Registration date</b><br>30/04/2025 | <b>Overall study status</b><br>Ongoing  | <input type="checkbox"/> Statistical analysis plan<br><input type="checkbox"/> Results                                  |
| <b>Last Edited</b><br>30/04/2025       | <b>Condition category</b><br>Other      | <input type="checkbox"/> Individual participant data<br><input checked="" type="checkbox"/> Record updated in last year |

## Plain English summary of protocol

### Background and study aims

There has been a problem in the UK and other countries for many years, that at busy times Emergency Departments (EDs) become unable to manage the flow of patients. Patients remain in the ambulance, sometimes for several hours. In some areas this practice is rare, in others it is common. When ambulances are queuing, patients are not receiving full ED care and ambulances are unavailable, so there are 'knock-on' effects throughout the system. We aim to provide evidence about what works to reduce harms related to ambulance queuing.

Our objectives are to:

1. Describe what has been published about what works to reduce ambulance queuing and related harms
2. Identify initiatives in use across the UK to reduce queuing
3. Identify EDs where ambulance queuing is rare and understand what policies and practices are being used in those hospitals to avoid ambulance queuing
4. Assess the impact of successful queue management on patient flows, safety, experience, health and costs
5. Predict wider impacts of initiatives on patient flow through emergency care
6. Produce guidance about what works to reduce delayed handovers

### Who can participate?

We are using four sources of data in this study: routine linked ambulance service and hospital data, hospital case notes, patient questionnaires and patient interviews. Patients selected for questionnaire/interview will be directly contacted by their hospital team and invited to participate if they wish.

### What does the study involve?

We will use a mix of approaches to answer our questions. We will look for existing evidence about initiatives to reduce delayed handovers at the ED and survey ambulance services (with follow-up at EDs) about what initiatives exist within their areas. We will group initiatives into categories of similar types e.g. ED doctors working in delayed ambulances, paramedics working in ED, or use of additional space. We will analyse existing data to identify sites that rarely queue

patients and sites that do this more frequently. We will present findings at a stakeholder event where we will agree on criteria for selecting sites to include in more in-depth work. We will then select and collect data from four sites where ambulance queues are rare (Group 1) and four sites where queues are more frequently seen (Group 2). We will carry out work at these sites to understand what makes a difference to their performance. We will compare important patient outcomes between groups, including: death rate, 999 ambulance attendance, conveyance rates to ED, admissions and waiting times. We will send questionnaires to a sample of patients to gather their experiences, quality of life, use of non-NHS services and safety concerns. We will carry out clinical case note reviews to compare safety issues between groups. We will use hospital/ambulance service data to determine initiatives that may be most beneficial to the NHS. We will conduct interviews with patients to find out more about their experiences. We will interview stakeholders from across the emergency care system, including ED and hospital staff, ambulance clinicians and call takers, healthcare managers and commissioners, about their experiences and views. Finally, we will hold stakeholder workshops towards the end of the study to help us interpret findings and make recommendations about how to reduce ambulance queuing.

What are the possible benefits and risks of participating?

There will be no direct benefits to those taking part, but contributions will help us understand the impact of ambulance queuing on patients and the learning will be used to improve care for other patients going forward.

There are limited risks associated with the study. It is possible that some people may become emotional/distressed when reflecting on their emergency care experience. We will provide details of the support available.

Where is the study run from?

Swansea University (UK)

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

April 2024 to March 2027

Who is funding the study?

National Institute for Health and Care Research (NIHR) (UK)

Who is the main contact?

Dr Mark Kingston, [m.r.kingston@swansea.ac.uk](mailto:m.r.kingston@swansea.ac.uk)

## Contact information

Type(s)

Contact name

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### Integrated Research Application System (IRAS)

340963

### ClinicalTrials.gov (NCT)

Nil known

### Protocol serial number

CPMS 65007, Grant Code: NIHR159967

## Study information

### Scientific Title

What works to improve SafeTy, pAtient experience, outcomes and costs related to deLayed ambulance handovers at Emergency Departments? A whole systems approach

### Acronym

STALLED

### Study objectives

The objectives are to:

1. Describe what has been published about what works to reduce ambulance queuing and related harms
2. Identify initiatives in use across the UK to reduce queuing
3. Identify EDs where ambulance queuing is rare and understand what policies and practices are being used in those hospitals to reduce delays in patient handover
4. Assess the impact of successful queue management on patient flows, safety, experience, health and costs
5. Predict wider impacts of initiatives on patient flow through emergency care
6. Produce guidance about what works to reduce delayed handovers

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Approved 23/12/2024, London - Queen Square Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, UK; +44 (0)207 104 8225, +44 (0)207 104 8227, +44 (0)207 104 8284; queensquare.rec@hra.nhs.uk), ref: 24/LO/0792

### Study design

Observational cohort study

**Primary study design**

Observational

**Study type(s)**

Treatment

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

Trauma and emergency care

**Interventions**

In this study, we will use a mix of methods to answer our questions. We will carry out an initial mapping exercise to identify relevant stakeholders and run online workshops to promote engagement within and beyond the study. We will look for existing evidence about initiatives to reduce delayed handovers at the ED and carry out a survey of ambulance services (with follow-up at the EDs) about what initiatives exist within their areas. We will group initiatives into categories of similar types, e.g. ED clinician care provided on ambulances; paramedic care within the ED; or use of additional space. We will analyse existing data to identify sites that rarely queue ambulances and sites that do this more frequently. We will present findings at a stakeholder event with participants from across the Urgent and Emergency Care system, including providers, users and commissioners of care where we will agree on criteria for selecting sites to include in more in-depth work. We will then select four sites where ambulance queues are relatively rare and ambulance hours lost to delays are low (Group 1) and four sites where queues are more frequently seen and ambulance hours lost to delays are higher (Group 2). We will carry out qualitative work at these sites to understand what makes a difference to their performance. We will compare important patient outcomes between patients who called 999 or attended the ED in the two groups, including: 30-day mortality (primary outcome); 999 ambulance attendance; conveyance rates to ED; hospital admissions; and waiting times. We will investigate effects within vulnerable subgroups of the population, including the very elderly, people in ethnic minorities and people who make high use of emergency care. We will send questionnaires to a sample of patients to gather their experiences, quality of life, use of non-NHS services and safety concerns. We will carry out clinical case note reviews to compare safety issues between groups and will construct in-depth descriptions of complex cases. We will use patient flow data to determine initiatives that may be most beneficial to the NHS. We will conduct interviews with patients to find out more about their experiences. We will interview stakeholders from across the emergency care system, including ED and hospital staff, ambulance clinicians and call takers, healthcare managers and commissioners, about their experiences and views. Finally, we will hold stakeholder workshops towards the end of the study to help us interpret findings. and will make recommendations about how to reduce ambulance queuing.

**Intervention Type**

Other

**Phase**

Not Specified

**Primary outcome(s)**

Mortality at 30 days (using routine data)

**Key secondary outcome(s))**

1. 999 ambulance attendance (measured using routine data) at 6 months follow-up post emergency care incident
2. Conveyance rates to ED (measured using routine data) at 6 months follow-up post emergency care incident
3. Hospital admissions (measured using routine data) at 6 months follow-up post emergency care incident
4. Waiting times (measured using routine data) at 6 months follow-up post emergency care incident
5. Quality of life measured using the SF12 quality of life instrument (part of patient questionnaire) at 1-4 months post emergency care incident
6. Satisfaction with care measured using a modified quality of care monitor tool (part of patient questionnaire) at 1-4 months post emergency care incident
7. Safety concerns (part of patient questionnaire) at 1-4 months post emergency care incident, and through independent case note review
8. Stakeholder views collected through qualitative methods at 6 months follow-up post emergency care incident
9. Costs calculated through routine data and patient questionnaires at 1-4 months post emergency care incident

**Completion date**

30/03/2027

## Eligibility

**Key inclusion criteria**

Comparison of routinely available outcomes dataset:

1. Resident within the catchment area of a participating site hospital
2. 999 call made by or for patient OR patient attended ED in 12-month period (e.g. 1 April 2024 to 31 March 2025)

Patient survey:

1. Included in routine outcomes dataset
2. Adults (18 years of age or older)
3. Emergency care episode occurred within the most recent 1-2 months of the patient recruitment period (e.g. February – March 2025)

Patient interviews:

1. Included in patient survey
2. Consent to interview approach (via patient questionnaire)

Case note review:

1. Included in routinely available outcomes dataset

Staff interviews and focus groups:

1. Working knowledge of the study site (ambulance service/hospital)
2. Adults (18 years of age or older)

**Participant type(s)**

Patient, Health professional

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

Comparison of routinely available outcomes:

1. Local, national or study-specific data opt-out

Patient survey:

1. Deceased
2. Deemed unsuitable by the clinical team

Patient interviews:

1. None

Case note review:

1. Local, study or national data opt-out

Staff interviews and focus groups:

1. None

**Date of first enrolment**

01/08/2025

**Date of final enrolment**

30/05/2026

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre**

Not provided at time of registration

United Kingdom

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**Sponsor information**

**Organisation**

Swansea University

**ROR**

<https://ror.org/053fq8t95>

## Funder(s)

**Funder type**

Government

**Funder Name**

National Institute for Health and Care 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

## Results and Publications

**Individual participant data (IPD) sharing plan**

Not provided at time of registration

**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="#">Participant information sheet</a> | Participant information sheet | 11/11/2025   | 11/11/2025 | No             | Yes             |