

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

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

Contact information

Type(s)

Contact name

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Additional identifiers

EudraCT/CTIS number

Nil known

IRAS number

340963

ClinicalTrials.gov number

Nil known

Secondary identifying numbers

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

Secondary study design

Cohort study

Study setting(s)

Hospital

Study type(s)

Treatment

Participant information sheet

Not available in web format, please use the contact details to request a patient information sheet

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 measure

Mortality at 30 days (using routine data)

Secondary outcome measures

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

Overall study start date

01/04/2024

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

Age group

Adult

Lower age limit

18 Years

Sex

Both

Target number of participants

Planned Sample Size: 1056000; UK Sample Size: 1056000

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

England

United Kingdom

Study participating centre

Not provided at time of registration

United Kingdom

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Sponsor information

Organisation

Swansea University

Sponsor details

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Sponsor type

University/education

Website

<https://www.swansea.ac.uk>

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

Publication and dissemination plan

Our communication, publication and dissemination plan will include plans for media engagement, to include written press coverage, online media, and social networking, with the support of the dedicated marketing team at Swansea University Medical School. We will use our strong links with ambulance and health services directly and through national bodies (National Ambulance Research Steering Group, Association of Ambulance Chief Executives and National Ambulance Services Medical Directors, NHS England, NHS Improvement, Health Education England, Royal College of Emergency Medicine and College of Paramedics) to develop plans for dissemination. We will also publish findings in trade and professional publications and networks, and ensure that our findings are incorporated into ambulance service and ED guidelines, which influence practice. Patient participants who request study findings will receive a lay summary, to be available in several languages. We will circulate this lay summary and translations to third sector partners for cascading through their networks. Given the implications for practice, policy and research, we will publish our results in scientific journals and at scientific conferences, in the UK and worldwide. The annual 999 EMS Research Forum Conference <http://www.999emsresearch.co.uk/en/>, which is hosted each year by a UK ambulance service with organisation by Swansea University and PRIME Research Centre Wales, brings together academics and practitioners. We will also present findings at other appropriate national and international events, such as the Health Services Research Network annual conference, the International Forum for Quality in Healthcare and the European Society for Emergency Medicine. In addition to a final study report, we will produce a summary version to be disseminated through the PRIME network (<http://www.primecentre.wales>) and NHS and third sector organisation newsletters and social media pages. Our public contributors will help us identify and target messages to patients and the public including different age or ethnic populations. Our public contributors and our co-applicants with clinical, managerial and policy expertise will help us produce study outputs in line with our dissemination strategy, so we effectively incorporate their skills and experience to improve the potential for impact from this research.

Intention to publish date

30/03/2028

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