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

Submission date
19/03/2025

Recruitment status
Recruiting

Registration date
30/04/2025

Overall study status
Ongoing

Last Edited
06/10/2026

Condition category
Other

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] 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)
Principal investigator, Scientific, Public

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Additional identifiers

Integrated Research Application System (IRAS)
340963

Central Portfolio Management System (CPMS)
65007

National Institute for Health and Care Research (NIHR)
159967

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

Primary study design
Observational

Study design

Observational cohort study

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

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)
Health professional, Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
100 Years

Sex
All

Total final enrolment
0

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
30/03/2027

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
North West Ambulance Service NHS Trust
Ladybridge Hall
399 Chorley New Road
Bolton
England
BL1 5DD

Study participating centre
East Lancashire Hospitals NHS Trust
Royal Blackburn Hospital
Haslingden Road
Blackburn
England
BB2 3HH

Study participating centre
Mersey and West Lancashire Teaching Hospitals NHS Trust
Whiston Hospital
Warrington Road
Prescot
England
L35 5DR

Study participating centre
West Midlands Ambulance Service University NHS Foundation Trust
Millennium Point
Waterfront Business Park
Dudley Road
Brierley Hill
England
DY5 1LX

Study participating centre
Walsall Manor Hospital
Moat Road
Walsall
England
WS2 9PS

Study participating centre
Worcestershire Royal Hospital
Charles Hastings Way
Worcester
England
WR5 1DD

Study participating centre
South Western Ambulance Service NHS Foundation Trust
Abbey Court
Eagle Way
Sowton Industrial Estate
Exeter
England
EX2 7HY

Study participating centre
Musgrove Park Hospital
Musgrove Park
Taunton
England
TA1 5DA

Study participating centre
Royal United Hospitals Bath NHS Foundation Trust
Combe Park
Bath
England
BA1 3NG

Study participating centre
Gloucestershire Royal Hospital
Great Western Road
Gloucester
England
GL1 3NN

Study participating centre
South Central Ambulance Service NHS Foundation Trust
7-8 Talisman Business Centre
Talisman Road
Bicester
England
OX26 6HR

Study participating centre
University Hospital Southampton NHS Foundation Trust
Southampton General Hospital

Tremona Road
Southampton
England
SO16 6YD

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

IPD sharing plan summary
Data sharing statement to be made available at a later date