



HEALTHCARE SAFETY
INVESTIGATION BRANCH

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Local integrated investigation pilot 1: Incorrect patient identification

Independent report by the
Healthcare Safety Investigation Branch NI-003718
for the local integrated investigation pilot

November 2021

Providing feedback and comment on HSIB reports

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About HSIB

We conduct independent investigations of patient safety concerns in NHS-funded care across England. Most harm in healthcare results from problems within the systems and processes that determine how care is delivered. Our investigations identify the contributory factors that have led to harm or the potential for harm to patients. The safety recommendations we make aim to improve healthcare systems and processes, to reduce risk and improve safety.

We work closely with patients, families and healthcare staff affected by patient safety incidents, and we never attribute blame or liability.

Considerations in light of coronavirus (COVID-19)

A number of HSIB national investigation reports were in progress when the COVID-19 pandemic significantly affected the UK in 2020. Much of the work associated with developing the reports necessarily ceased as HSIB's response was redirected.

For this national report, the investigation continued as the pandemic progressed due to its association with COVID-19.

A note of acknowledgement

The investigation would like to thank the Patient whose experience is documented in this report, and her family. The investigation would also like to thank the healthcare staff who engaged with the investigation for their openness and willingness to support improvements in this area of care.

Local integrated investigation pilot

This investigation has been published as part of the Healthcare Safety Investigation Branch (HSIB)'s local integrated investigation pilot (local pilot). The local pilot was launched to evaluate HSIB's ability to carry out effective locality-based investigations (that is, investigations occurring between specific hospitals or trusts). After an evaluation, it will be decided whether this model can be implemented more widely by HSIB.

This report presents the findings of one of the investigations that comprise the local pilot. It provides an overview of the investigation's findings and makes safety recommendations and safety observations to support local improvements in patient safety. The report also identifies safety risks that might be addressed by a potential future national investigation by HSIB.

This report is intended for healthcare organisations and the public to help improve patient safety. For readers less familiar with this area of healthcare, medical terms are explained throughout.

Our investigations

Our investigators and analysts have diverse experience of healthcare and other safety-critical industries and are trained in human factors and safety science. We consult widely in England and internationally to ensure that our work is informed by appropriate clinical and other relevant expertise.

We undertake patient safety investigations through two programmes:

National investigations

Concerns about patient safety in any area of NHS-funded healthcare in England can be referred to us by any person, group or organisation. We review these concerns against our investigation criteria to decide whether to conduct a national investigation. National investigation reports are published on our website and include safety recommendations for specific organisations. These organisations are requested to respond to our safety recommendations within 90 days, and we publish their responses on our **website**.

Maternity investigations

We investigate incidents in NHS maternity services that meet criteria set out within one of the following national maternity healthcare programmes:

- Royal College of Obstetricians and Gynaecologists' 'Each Baby Counts' report
- MBRRACE-UK 'Saving Lives, Improving Mothers' Care' report.

Incidents are referred to us by the NHS trust where the incident took place, and, where an incident meets the criteria, our investigation replaces the trust's own local investigation. Our investigation report is shared with the family and trust, and the trust is responsible for carrying out any safety recommendations made in the report.

In addition, we identify and examine recurring themes that arise from trust-level investigations in order to make safety recommendations to local and national organisations for system-level improvements in maternity services.

For full information on our national and maternity investigations please **visit our website**.

Executive Summary

The safety event

The Patient (Patient 1), a woman aged 75 years, was taken to an emergency department (ED) by ambulance in April 2021. This followed a 999 call from Patient 1's Granddaughter to the emergency operations centre.

The emergency operations centre used the wrong NHS number for Patient 1. They used the NHS number of another individual (Patient 2), who had the same date of birth as Patient 1 and a similar name.

On arrival in the ED, Patient 1 was booked in under Patient 2's NHS number. This NHS number continued to be used during Patient 1's time in hospital.

Initially, Patient 1 received medication prescribed by an ED doctor, based on her own supply brought in by her family. Following a pharmacy review on day 7 of admission, the medications were changed to those taken by Patient 2.

The Patient declined to take the incorrect medication; it was unclear why. The error was identified by a pharmacist the following day as an incidental observation of an unfamiliar medication.

The investigation focused on the key communication points in Patient 1's care pathway where details of the Patient's identification were handed over. The systems and processes in place with each provider (that is, the Ambulance Trust and the Acute Trust), including their local practices and guidance, were reviewed.

Findings

The investigation found the following:

- The first names and surnames of people from South Asian communities are often used interchangeably, and not all names are necessarily used in all situations (as occurred in this case).
- When the exact date of a person's birth is not known, some ethnic communities have a standard approach of recording the date of birth as 1 January, followed by the year. The Patient in the investigation was from a South Asian community, where this practice is common.
- There were no formal written procedures in the emergency operations centre for call assessors to follow in relation to patient identification.

- Patient identification was not included as a topic in the formal, standardised training for call assessors during their induction period (or subsequently).
- The NHS number was rarely used as a key identifier by call assessors answering 999 calls.
- The emergency operations centre regularly audited its calls, but the audit did not include specific questions on patient identification. It was therefore difficult to determine how frequently identification errors occur.
- Induction training for ambulance crews focused mainly on the clinical assessment of patients. Patient identification was not formally taught.
- In practice, ambulance crews varied in the way they learned and applied patient identification.
- There was no formal process between the Ambulance Trust and the Acute Trust to verify a patient's identity.
- ED reception staff had different practices for entering patients into the patient-tracking software, and there was no formal process.
- There were several different digital systems within the ED and the wider Acute Trust, with varying interoperability (that is, the ability of different IT systems to communicate and share information).
- Staff at the Acute Trust were unaware of the requirement to obtain three pieces of information to verify a patient's identity, as detailed in the Trust's patient identification policy, before giving the patient a wristband.
- The Trust's patient identification policy did not include use of the patient's NHS number.
- There was no formal identification process for patients being transferred from the ED to the medical assessment unit, or from the medical assessment unit to the ward.
- Once the Patient's misidentification was discovered, her records were promptly amended and relevant staff and the Patient's family were informed.

The investigation identified the following learning points for potential national benefit:

- The correct identification of patients relies on staff checking patient details, and therefore will not always occur effectively. There may be opportunities for further engineered or technological barriers to decrease the chance of incorrect identification.

- The design of the digital systems considered in this investigation did not always account for variations in how people identify themselves (for example, by different names). Those systems also did not make it clear to staff where patient demographics (that is, details such as the patient's name, date of birth, address and NHS number) might be incorrect.
- The investigation recognises that a single hospital trust may receive patients from multiple ambulance trusts, and ambulances from a single trust may go to several hospital trusts. Pathways and processes potentially vary across different trusts and a consistently agreed approach may not exist.
- The use of NHS numbers to identify patients may vary across the country. The investigation found that the NHS number may not be being used according to national expectations.

Safety recommendations, safety observations, safety actions and safety risks

Safety recommendations are directed to a specific organisation for action. They are based on information derived from the investigation and are made with the intention of preventing future similar events.

HSIB makes the following local safety recommendations

Safety recommendation R/2021/161:

HSIB recommends that the Ambulance Trust develops and implements a standardised approach to patient identification in the emergency operations centre.

Safety recommendation R/2021/162:

HSIB recommends that the Acute Trust develops and implements a standardised approach to patient identification in the emergency department.

Safety recommendation R/2021/163:

HSIB recommends that the Acute Trust explores the barriers to checking three identifiers when confirming a patient's identification for their wristband, and takes appropriate action.

HSIB makes the following regional safety recommendation

Safety recommendation R/2021/164:

HSIB recommends the Acute Trust work with the Ambulance Trust to develop and implement a standardised approach to verifying and confirming a patient's identification during the handover process.

HSIB makes the following safety observations

Safety observation O/2021/133:

It may be beneficial if the Ambulance Trust develops mechanisms to capture the NHS number at the point of initial contact.

Safety observation O/2021/134:

It may be beneficial if further national work is undertaken on the use of the NHS number as a unique identifier, specifically in identifying patients.

Safety observation O/2021/135:

It may be beneficial if the Acute Trust considers the interoperability of its IT systems (that is, the ability of different IT systems to communicate and share information) as part of its digital strategy and in future procurement.

Safety observation O/2021/136:

It may be beneficial if the Ambulance Trust adjusts its call audit tool to assess whether patient identification is correctly confirmed.

HSIB notes the following safety actions

Safety action A/2021/049:

The Ambulance Trust training department has implemented training on patient demographics within its test system. Emergency operations centre staff receive this training during their formal induction.

Safety action A/2021/050:

The Ambulance Trust is designing a confirmation checkpoint, which will be included in the electronic patient record for ambulance crews to confirm the correct identification.

Safety action A/2021/051:

The Ambulance Trust now includes the importance of patient identification, including using the NHS number to verify a patient's identification, in its mandatory training.

HSIB notes the following specific national safety risk

The NHS number is a unique identifier for people living in England (and Wales). There is a chance that a patient may be incorrectly identified when the NHS number is not used.

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1 Background and context

- 1.1 This investigation focuses on the systems and processes in place to support staff in correctly identifying patients at a regional Ambulance Trust and an Acute Trust. It explores how incorrect patient identification can impact on treatment.
- 1.2 Accurately identifying a patient requires healthcare staff to ensure they have the correct patient details. The unique way to identify a patient in England, Wales and the Isle of Man is by using their NHS number. NHS numbers are provided to people who are registered for NHS care and are the primary identifier of a person within the NHS.
- 1.3 On admission to hospital, a patient is allocated a hospital/medical records number. This number is only unique to the hospital that the patient is in; it is not used across the wider NHS.
- 1.4 Patient misidentification has been recognised as a widespread problem within healthcare organisations. The Acute Trust carried out a search for the number of incidents reported for patients admitted via the emergency department (ED) in a 1-year period with an incorrect identification number or with the incorrect information on their wristband. This identified 38 reported incidents. In relation to the Ambulance Trust, it was estimated that there were approximately three or four cases of incorrect patient identification per month, out of 75,000 to 80,000 ambulance contacts.
- 1.5 During the Patient's journey referred to in the investigation, several different digital systems were used by the care providers involved in the Patient's care:

NHS Pathways

NHS Pathways is the clinical decision-support system used by NHS 111 and around half of English ambulance services (NHS Digital, 2021b). The NHS Pathways system is built around a clinical hierarchy, meaning that problems assessed as being life-threatening at the start of the call trigger an ambulance response, progressing through to less urgent conditions that require a less urgent response.

Medical Interoperability Gateway

The Medical Interoperability Gateway is a secure technology (that is, one that can only be accessed by authorised individuals using a password) that enables the two-way exchange of patient information between health and social care organisations (Healthcare Gateway, nd).

GP Connect

GP Connect allows authorised clinical staff to share and view GP practice clinical information and data between IT systems (NHS Digital, 2021a).

The Medical Interoperability Gateway and GP Connect are sometimes used by ambulance crews to identify patients and find their clinical information.

The NHS Spine

The NHS Spine supports the IT infrastructure for health and social care in England, joining together more than 23,000 healthcare IT systems in 20,500 organisations (NHS Digital, 2021c).

Summary Care Record

The Summary Care Record is an electronic record of a patient's important information. It is created from GP medical records (NHS Digital, 2020).

- 1.6 In addition, the Acute Trust used four other digital systems that were applicable to the safety event:
- ED reception software: used when patients were transferred to the ED via ambulance.
 - Patient administration software: used for all changes to patient demographic information (such as name, date of birth, address and NHS number) and to register new patients within the Acute Trust.
 - ED patient management and tracking software: the primary software used to record attendance within the ED.
 - Referral and results software: used across the Trust to collate radiology and pathology findings, referrals and so on.



2 The safety event

- 2.1 Following a virtual GP consultation for chest and abdominal pain, the GP recommended that the Patient, a woman aged 75 years (Patient 1), should be taken to a hospital emergency department (ED) by ambulance. An emergency 999 call was made by the Patient's Granddaughter as the Patient did not speak English. The call was received by the emergency operations centre (EOC).
- 2.2 On receipt of the emergency 999 call, the call assessor established the Patient's location and medical problem within 60 seconds. The Patient's location (which was her home address) was entered onto the call centre's patient demographic system (PDS), and her Granddaughter was asked for the Patient's name and date of birth (**see section 4.1.6**).
- 2.3 The Patient's first two names were relayed, without her last name. This information was used by the call assessor to search the national IT system (NHS Spine) for the patient. The Patient's name, as recorded on the NHS Spine, contained three names.
- 2.4 The search of the NHS Spine brought up the demographic details of another patient (Patient 2), who had the same first two names and date of birth as Patient 1. The address of Patient 2 differed from that of Patient 1.
- 2.5 There is an option within the PDS to confirm whether the patient match is correct. The call assessor selected this option, and Patient 2's NHS details were entered onto the PDS. These details were then transferred, via the computer-aided dispatch system (used to dispatch an ambulance crew), to the electronic patient record (EPR) on the ambulance's electronic tablet.
- 2.6 The EPR shows a patient's information in two sections: 'incident details', which include the address of the incident and the nature of the patient's problem; and 'patient details', which include the patient's forename, surname, address (including postcode), gender, date of birth and NHS number. (see figure 1).
- 2.7 In a similar process to that completed by the call assessor, the ambulance crew selected the 'patient trace' button on the EPR (see figure 1). This contained the details in the EPR for Patient 2.

Figure 1 Information available to ambulance crew in the 'patient details' section of the electronic patient record

Home | Clinical guidelines | Timings | Treatment | Secondary survey | Alert

Heart icon | Cloud icon | Gear icon | Battery icon | Power icon

Patient details

Forename:

Surname:

Title:

Address:

Line 1:

Line 1:

Town:

County:

Country:

Postcode:

Telephone number:

Gender:

Date of birth:

Age:

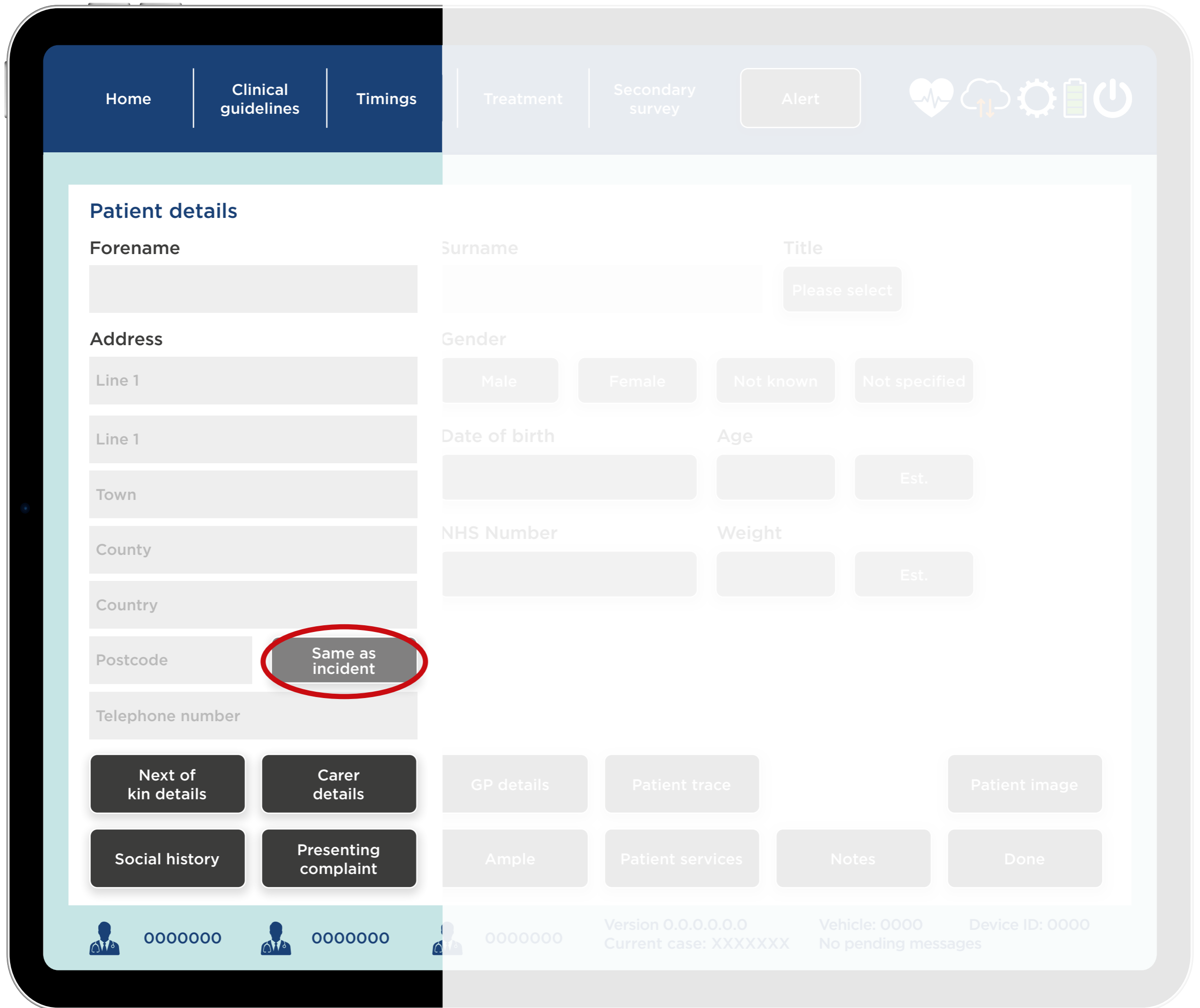
NHS Number:

Weight:

000000 000000 000000 | Version 0.0.0.0.0 | Current case: XXXXXXX | Vehicle: 0000 | Device ID: 0000 | No pending messages

- 2.8 The ambulance crew searched for Patient 1's demographic details using either the Medical Interoperability Gateway or GP Connect (**see section 1.1**); the crew could not remember which. Both are used by the Ambulance Trust.
- 2.9 The crew were unable to find Patient 1 on the IT system with the address provided by the EOC (that is, Patient 2's address). The crew did find Patient 2 and, as Patient 2 had the same name as that shown in the 'patient details' section on the EPR, they pressed the 'same as incident' button on the EPR (see figure 2). This copied over Patient 2's demographic details. This information fed through to the ED reception software system at the receiving hospital.

Figure 2 Example of how to copy incident details to patient details



- 2.10 On arrival at the ED, one ambulance crew member remained with the Patient in the ambulance. The second crew member gave an overview of the Patient to an ED triage nurse, whose role was to direct the Patient to the most appropriate area within the ED.
- 2.11 The crew member then gave the Patient's details to the receptionist, whose role was to enter the Patient's details onto the hospital's digital systems. The ED reception software already contained the details for Patient 2, as these had fed through from the EPR.
- 2.12 At the time of the investigation, the ambulance crew could not remember Patient 1, but said they would normally hand over their electronic tablet to the receptionist to allow them to undertake a manual search for a patient on the Acute Trust patient administration software.
- 2.13 The investigation learned that the receptionist remembered searching for Patient 1 on the NHS Spine, and saw two patients with the same date of birth and slightly different names. The receptionist recalled querying this with the ambulance crew, who confirmed they had the correct patient on their system.
- 2.14 The information provided by the ambulance crew was accepted and entered into the patient administration software. This was then transferred automatically to the ED patient management and tracking software, and simultaneously uploaded to the referral and results software.
- 2.15 Patient 1 was transferred from the ambulance to an assessment bay in the ED, where she was given a wristband. The wristband included Patient 1's incomplete name and date of birth, and Patient 2's hospital number and NHS number.
- 2.16 The Patient was transferred to a cubicle for further assessment. The Granddaughter told the investigation that she informed staff in the ED that the Patient's address was incorrect on the admission record. There is no record of this in the Patient's notes.
- 2.17 The Patient was reviewed by an ED doctor, who documented in the medical records that she had type 2 diabetes and a previous fractured neck of the femur. This clinical information was pertinent to Patient 2, indicating that the doctor had obtained this information from the referral and results software. The reason for admission and list of medications were correct for Patient 1. The notes state: 'Translation from Granddaughter.'
- 2.18 Approximately 5 hours after the Patient's admission to an ED cubicle, a telephone handover took place between the ED doctor and the medical assessment unit nurse co-ordinator. The Patient was admitted to the medical assessment unit and seen by an advanced clinical practitioner, followed by a cardiac pathway nurse (because of the Patient's initial chest pain).



- 2.19 The Patient's care continued as planned, and she was transferred to an inpatient ward approximately 22 hours after admission to the medical assessment unit (day 2).
- 2.20 On day 5 of admission to hospital, at approximately 03:30 hours, the nurse caring for Patient 1 asked the Patient's Granddaughter to check the Patient's emergency contact details in the paper medical records prior to the Granddaughter going home. The Granddaughter noticed that the Patient's demographic details, which had been printed in the ED, had the wrong address and GP practice (belonging to Patient 2).
- 2.21 The nurse crossed out the incorrect address and GP practice and wrote the correct details. It was documented in the Patient's medical records that the details were incorrect and that they had been 'changed on the front sheet for the ward clerk to change [on the IT system] in the day'. This did not occur.
- 2.22 On day 7, during routine medicines reconciliation (that is, the process whereby a patient's current and new medications are listed and checked), the pharmacy technician noticed that the Patient's medications on the GP record (that is, Patient 2's GP record) were different to those prescribed to Patient 1, while she was in hospital. A doctor was informed, who prescribed a new list of medications (Patient 2's medications).
- 2.23 On day 8, a pharmacist saw an inhaler next to the Patient (which had been brought in from home by Patient 1's family). The pharmacist had reviewed the Patient's prescription chart the day before and did not recall seeing an inhaler prescribed. The Patient's own medication box, which was locked in a cabinet next to the Patient, was accessed. The pharmacist reviewed the Patient's medication prescription slip and noticed that the Patient's name on the slip was slightly different to the name being used by the hospital, and that the NHS number was also different.
- 2.24 The pharmacist telephoned the Patient's Granddaughter, who confirmed the correct medications and the error was identified. A doctor was informed, who prescribed the correct medications and contacted the Granddaughter to tell her what had happened. An apology was offered, and the incident was written in Patient 1's notes. The Patient had not received any doses of Patient 2's medication as she had declined these, in addition to some other care and treatment.
- 2.25 Patient 1 was not harmed. Her medical records were found to contain information pertaining to Patient 2, and the Acute Trust carried out a review of both sets of medical records to rectify the problem, in line with its procedure for 'resolution of confused records'.

3 Involvement of the Healthcare Safety Investigation Branch

This section outlines how HSIB was alerted to the safety event and the process for its investigation.

3.1 Notification of the safety event

- 3.1.1 HSIB has connected with several acute trust hospitals and ambulance services to support a pilot of local integrated investigations. The trusts were asked to refer safety events that involved cross-boundary care (for example, care across ambulance services, acute hospitals and primary care services).
- 3.1.2 Following the referral of this safety event, HSIB reviewed the details through a defined process and the Chief Investigator authorised a local investigation. The investigation was launched within 5 working days of the referral, and the investigation promptly engaged with the trusts, the Patient and the Patient's family to start the investigation.
- 3.1.3 The HSIB local investigation did not replace any local trust or national processes for disclosing and investigating patient safety events.
- 3.1.4 The investigation focused on the key communication points in the care pathway of the Patient, where patient identification details were transferred during pre-hospital, admission and inpatient care. This included:
- Conducting a detailed investigation of:
 - interactions between and within providers to relay patient identification details
 - systems and processes used by each provider relating to patient identification
 - guidance, policy and local practice in support of patient identification.
 - Gathering intelligence from provider organisations and staff to help analyse the events.
 - Seeking to understand any cultural elements around the safety event.
 - Forming conclusions around the factors that contributed to the safety event, without allocating blame.



3.2 Evidence gathering

3.2.1 Several sources of evidence were gathered and reviewed by the investigation, including:

- the Patient's clinical records
- the policies, procedures and practices of the Ambulance Trust and the Acute Trust
- the assessment of the safety event by the Ambulance Trust and the Acute Trust
- national guidelines and standards
- research literature relevant to the identified safety risks
- relevant HSIB national investigation reports.

3.2.2 The investigation gathered both interview and observational data from the healthcare settings involved in the safety event. A semi-structured interview plan was developed to gather information on safety risks, and an analysis was performed.

3.3 Analysis of the evidence

3.3.1 The investigation used the following methods to analyse the evidence:

- the Systems Engineering Initiative for Patient Safety (SEIPS) (**see Appendix 1**)
- hierarchy of controls (**see Appendix 2**)
- varieties of human work (**see Appendix 3**).

3.3.2 These methods allowed a detailed analysis of the local work system factors. They also provided insights into potential national issues influencing the local system.

3.4 Verification of findings

3.4.1 HSIB investigations are independent; they are not undertaken on behalf of patients, families, staff, organisations or regulators. Investigations ensure that the various stakeholders participate, and draft reports are shared with the stakeholders to verify their accuracy.



- 3.4.2 Once all of the evidence has been gathered and analysed by the investigation, safety recommendations and safety observations are drafted. Where safety recommendations are made, these are directed to specific organisations or bodies that can influence and support change. Relevant stakeholders are engaged with before publication to agree safety recommendations.
- 3.4.3 Where an HSIB investigation identifies the potential for learning outside the scope of the investigation, such as national learning in these local investigations, the learning is noted in the report and is fed into HSIB's intelligence process for future learning.



4 Analysis and findings

This section analyses the gathered evidence and describes the investigation's findings in relation to the safety event. The findings are structured chronologically.

Initial 999 call to the emergency operations centre

4.1 The Patient's demographic details

- 4.1.1 The initial 999 call made by Patient 1's Granddaughter was received by the emergency operations centre (EOC). As well as establishing the nature of a patient's problem using NHS Pathways, the call assessor is responsible for completing a full patient demographic search. This is conducted using the NHS Spine.
- 4.1.2 The Patient was an older person (aged 75 years) whose date of birth was given as 1 January, followed by the year. The investigation was told that some ethnic communities have a standard approach of using this format when the exact date of birth is unknown. The Patient in the safety event was from a South Asian community, where this was common practice for people born in the 1930s and 1940s. Births were informally recorded according to the harvest season, with no full registration in their country of birth. When emigrating to the UK, the date of 1 January would be assigned and the year of birth would be estimated for a passport to be issued.
- 4.1.3 The investigation was told that the first names and surnames of patients in South Asian communities could be used interchangeably. In relation to Patient 1, three names were recorded on the NHS Spine, while the Granddaughter gave the Patient's first two names to the call assessor.
- 4.1.4 The investigation found that the NHS work system, pathways and processes were not designed to manage patient demographic details for diverse populations.

EOC information-gathering process

- 4.1.5 When the 999 call was made, initial routine clinical questions were asked as part of the Patient's triage to immediately exclude life-threatening conditions. Once it had been established that the Patient's condition was not life-threatening, the call assessor established the reason for the call.
- 4.1.6 The Patient's home address and postcode were requested and added by the call assessor to the 'incident location' section on the main screen of the patient demographic system (**see figures 3 and 4**). This ensured the address was provided to the ambulance crew.

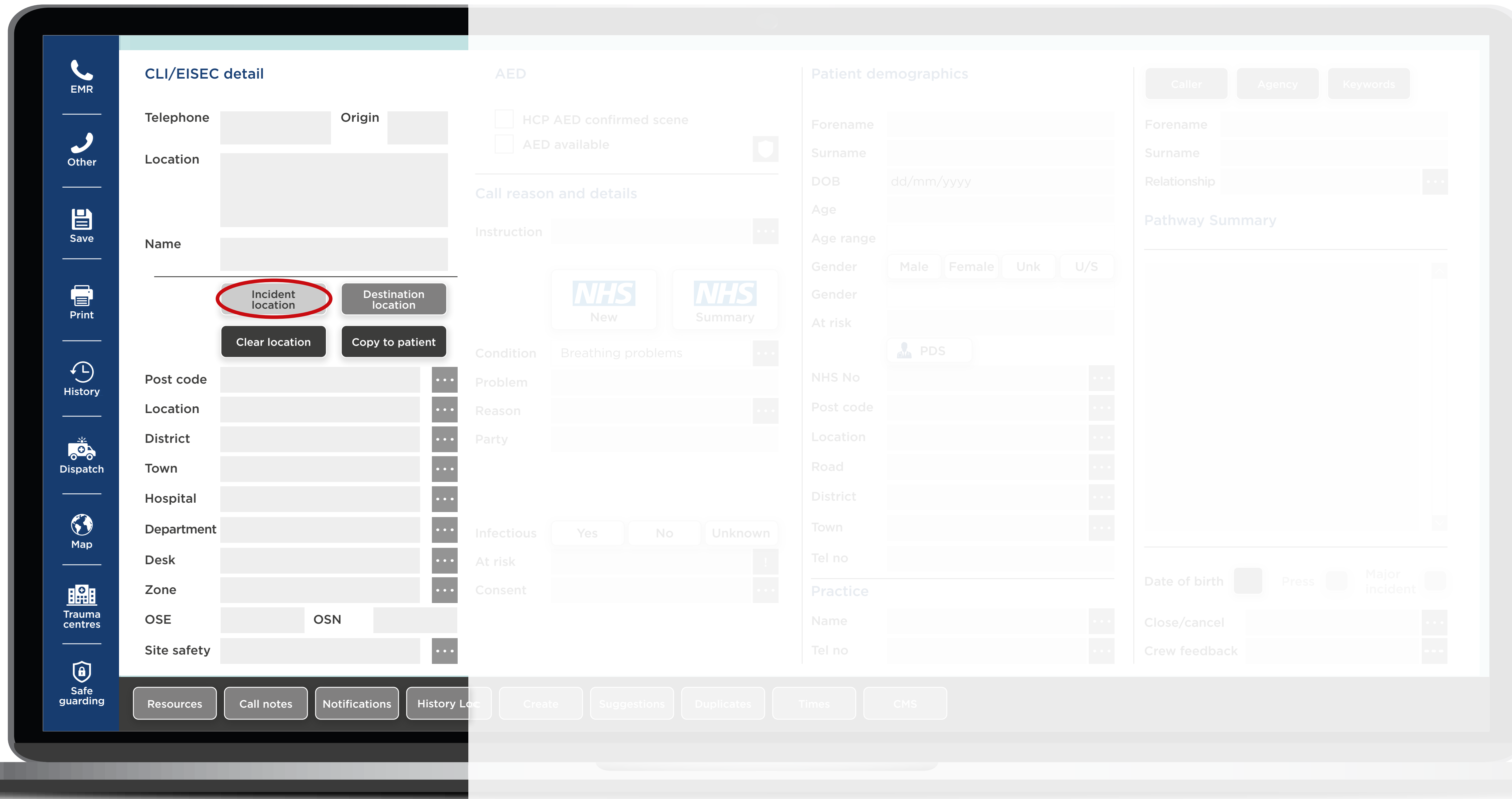


Figure 3 Main screen for emergency operations centre staff

The screenshot displays a web-based interface for emergency operations centre staff. The interface is organized into several sections:

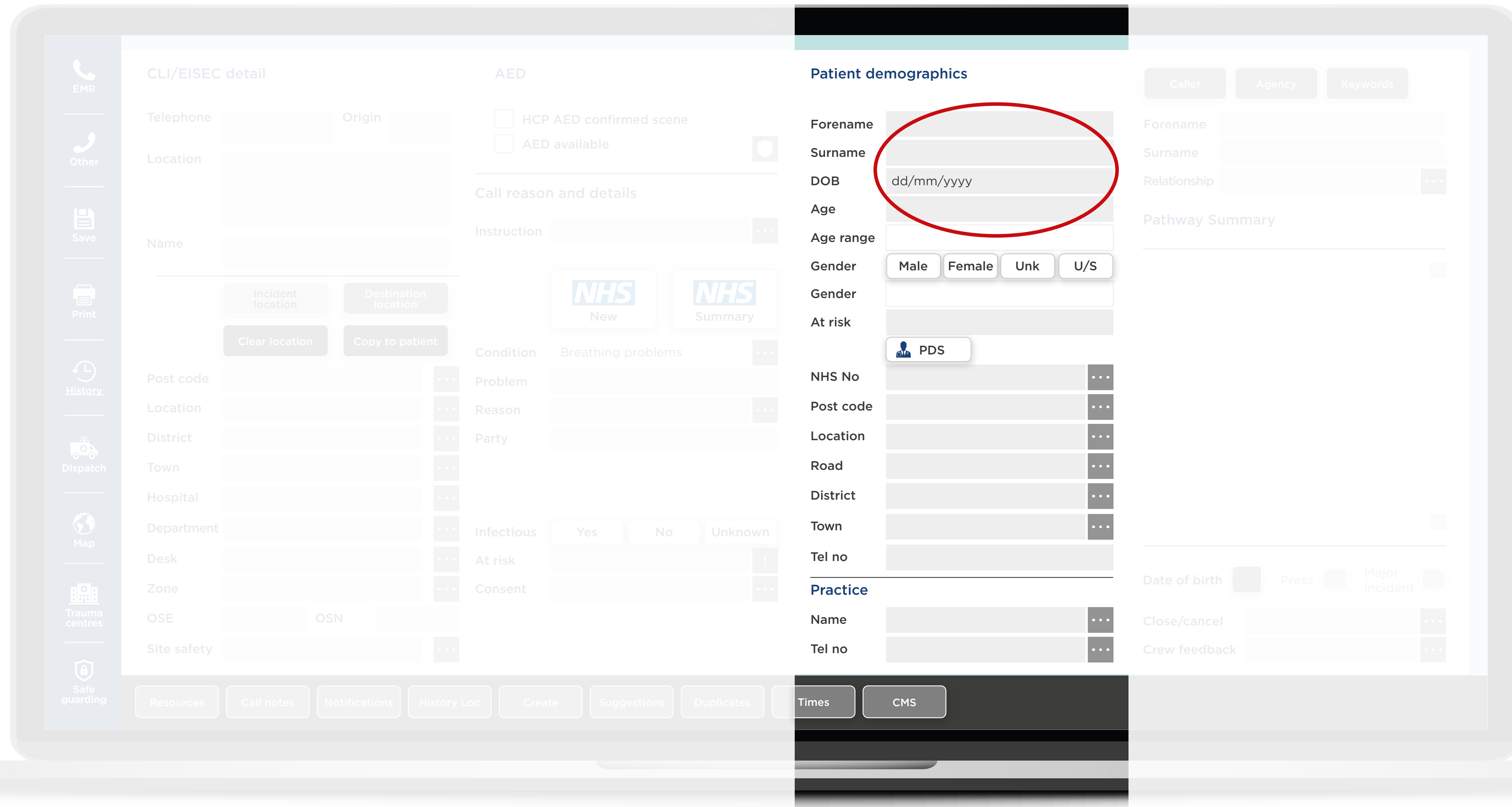
- CLI/EISEC detail:** Fields for Telephone, Origin, Location, Name, Post code (circled in red), Location, District, Town, Hospital, Department, Desk, Zone, OSE, OSN, and Site safety. Includes buttons for Incident location, Destination location, Clear location, and Copy to patient.
- AED:** Checkboxes for HCP AED confirmed scene and AED available.
- Call reason and details:** Instruction field, NHS New and Summary buttons, Condition (Breathing problems), Problem, Reason, Party, Infectious (Yes/No/Unknown), At risk, and Consent.
- Patient demographics:** Forename, Surname, DOB (dd/mm/yyyy), Age, Age range, Gender (Male/Female/Unk/U/S), At risk (PDS), NHS No, Post code, Location, Road, District, Town, and Tel no.
- Practice:** Name and Tel no fields.
- Caller/Agency/Keywords:** Search filters at the top right.
- Pathway Summary:** A large empty area for a summary.
- Bottom navigation:** Resources, Call notes, Notifications, History Loc, Create, Suggestions, Duplicates, Times, and CMS buttons.
- Left sidebar:** EMR, Other, Save, Print, History, Dispatch, Map, Trauma centres, and Safe guarding icons.

Figure 4 Incident location details



4.1.7 Further clinical questions were then asked using NHS Pathways to ensure a full clinical assessment. At the end of this assessment, the call assessor asked for the Patient's name and date of birth to complete the demographic search. The partial name given was added to the 'patient demographics' section of the screen (see figure 5).

Figure 5 Patient demographic details



4.1.8 The patient demographic system (PDS) tab was selected. This identified a different patient (Patient 2) with the same two first names and the same date of birth as Patient 1, but a different address. Patient 2's details were selected using the 'select' tab (see figure 6) and the details were transferred to the ambulance crew.

Figure 6 Select patient details (fictional test patient)

If a matched return is found the information will display:

NHS No	Title	Forename	Surname	Genders	DOB	Postcode	Address	GP code	
000 000 0000		Joe	Bloggs	Male	03/10/1945	JB1 1JB	1 Joe Bloggs Street, London	00000	✓ Close
									✕ Close

NHS confidential: Personal data about a patient
(this information is a test patient)



- 4.1.9 The investigation attempted to identify work system factors that contributed to the call assessor selecting Patient 2's details (organisational processes and software are considered later). The investigation did not identify any person factors (such as fatigue) or physical environment factors (such as noise). Each call assessor had their own headset to reduce noise and minimise distractions and interruptions. The workload was not thought to be excessive at the time of the safety event. The investigation noted that the task of selecting patient details is regularly undertaken by call assessors. It is recognised that familiar and undemanding tasks can make sustained attention a challenge; this has been noted in other investigations (**Healthcare Safety Investigation Branch, 2020**).
- 4.1.10 The investigation was informed that the expected process when a patient match could not be found would be for the 'No' tab to be selected and the data re-reviewed (see figure 7). The PDS tab would then be selected again.

Figure 7 What to do when there is not a patient match in the patient demographic system

Please confirm...

?

You have selected the details for:

Joe Bloggs

Gender: MALE
DOB: 01/06/1945

Address:
1 Joe Bloggs Street
London
JB1 1JB

NHS No: 000 000 0000


GP practice: Medical centre (M00000)

Do you wish to continue with these details?

YesNo

If the 'yes' tab is activated the information will populate into the fields in this section. If the information displayed is not correct you should select the 'no' tab review the data you've entered and reactivate the PDS tab.

Patient demographics

Forename	Joe
Surname	Bloggs
DOB	01/06/1945
Age	76 years
Age range	Adult (16+ years)
Gender	<input checked="" type="button" value="Male"/> <input type="button" value="Female"/> <input type="button" value="Unk"/> <input type="button" value="U/S"/>
Gender	Male
At risk	 PDS
NHS No	000 009 3505 ⋮
Post code	1 Joe Bloggs Street ⋮
Location	⋮
Road	⋮
District	⋮
Town	London ⋮
Tel no	012341 23133

4.1.11 The investigation was informed that call assessors aim to obtain the correct patient demographics within 60 seconds of the call being made. There is a protocol for patient demographic searches, but this does not contain a step-by-step written process on how to undertake a search.

Process implementation and training

4.1.12 When the PDS was implemented in April 2018, a newsletter describing the process for conducting patient demographic searches was circulated to personnel within the EOC. The newsletter stated that the search should be activated with three of the following pieces of information about the patient:

- name
- date of birth
- home address
- gender
- NHS number
- GP practice.

The investigation found that the newsletter was the primary method of introducing the process in 2018. While newsletters are easy to share, they cannot be assumed to prevent incidents as they are reliant on staff to follow a course of action influencing the way they work. Newsletters are transient and may be easily forgotten and do not include new staff. There may also be several other work system factors influencing performance, such as workload.

4.1.13 Call assessors receive 2 weeks' training on NHS Pathways; this is a national training programme for all ambulance services using this system. A week's local training on the 999 computer system is subsequently provided. The training was described by users as "intense, with a lot of information to get through".

4.1.14 The investigation learned that patient identification was not originally taught during the local training as the training department was only able to use live data. The investigation learned that, since the safety event, the training department is now able to simulate cases within its test system. The local training now includes training on patient demographics and identification.

HSIB notes the following safety action

Safety action A/2021/049:

The Ambulance Trust training department has implemented training on patient demographics within its test system. Emergency operations centre staff receive this training during their formal induction.

- 4.1.15 Following the formal training programmes, call assessors undergo a 2-week mentoring period. The investigation heard that the importance of correct patient identification is usually covered during this time. The investigation found that there is detailed guidance for the person assessing the competence of the new call assessor (**Appendix 4**). This guidance does not specifically refer to patient identification. The investigation learned that there was variability during the mentoring period with regard to how patient demographic information was obtained during a call. Some call assessors start the patient identification process at the beginning of the call, and others at the end.
- 4.1.16 In summary, evidence obtained by the investigation indicated that there is no formal process for call assessors to follow in relation to patient identification, although a process has been described in a newsletter. This means the Ambulance Trust has no standardised approach to patient identification. There is also no formal training on patient identification during a new call assessor's induction period or subsequently. Training 'on the job' (that is, the 2-week mentoring period) is not standardised and the competency assessment does not specifically refer to patient identification.
- 4.1.17 As a result of these findings, HSIB makes the following local safety recommendation. HSIB recognises that as an administrative intervention (**Appendix 2**), this will not prevent all cases of wrong patient identification. It will, however, help to mitigate the risk.

HSIB makes the following local safety recommendation

Safety recommendation R/2021/161:

HSIB recommends that the Ambulance Trust develops and implements a standardised approach to patient identification in the emergency operations centre.

Software functionality

- 4.1.18 When Patient 1's Granddaughter gave her Grandmother's name, using her first two names, the details of Patient 2 - who had a similar name and the same date of birth - were populated into the PDS. The investigation was told that the Summary Care Record (**see section 1.5**) has no facility to flag patients



with the same or similar names, which would help to mitigate the risk of incorrect patient identification. There was therefore no alert to the EOC or ambulance crew.

- 4.1.19 The investigation noted that there is limited functionality within the Summary Care Record that would have alerted the call assessor or the ambulance crew to the incorrect patient identification (**Appendix 2**). The findings of this investigation demonstrate the potential for national learning, and that there may be opportunities for engineering or technological solutions to mitigate the risk of incorrectly identifying patients.
- 4.1.20 After the safety event had been reported, the Ambulance Trust attempted to repopulate the electronic patient record (EPR) with the correct patient details. An NHS Spine search was conducted using Patient 1's full three names, and returned the same information as that found by the call assessor and the ambulance crew (that is, Patient 2's details). Following several attempts, the correct match was found and the information was corrected. It was not straightforward to correctly select Patient 1 in the PDS, even when the risk of incorrectly identifying her was known.

Use of the NHS number

- 4.1.21 In 2008, the National Patient Safety Agency (NPSA), NHS Connecting for Health and Informing Healthcare issued a 'safer practice notice' (NPSA/2008/SPN001, referenced within NPSA/2009/SPN002) that made recommendations about using the NHS number as the national identifier for all NHS patients.
- 4.1.22 In 2009, the notice was re-issued (NPSA/2009/SPN002) to the chief executives of NHS organisations in England and Wales for action. It was entitled: 'Risk to patient safety of not using the NHS number as the national identifier for all patients' (National Patient Safety Agency, 2009). The alert stated:
- 'To ensure correct patient identification, the NHS number should always be used in conjunction with other identifiers (usually first name, last name and date of birth) when identifying a patient.'
- (National Patient Safety Agency, 2009)
- 4.1.23 One of the actions of the notice was to use the NHS number as the national patient identifier, either alone or in conjunction with a local hospital numbering system. It also stipulated that the NHS number should be given on each patient's wristband (in addition to other personal identifiable information) so that patients could be accurately identified and their records linked. The initiative to make the NHS number mandatory as the national

identifier for all NHS patients included considering whether each person in England and Wales could be issued with a card showing their NHS number. This was never implemented.

4.1.24 In the case of the safety event, the investigation learned that the NHS number was rarely requested during emergency calls, except when a health professional called 999 on behalf of a patient. The Ambulance Trust stated that staff did not routinely ask for the NHS number as a means of obtaining the correct details for a patient, because they felt that most patients would not have this number readily available.

4.1.25 While recognising that the NHS number will not always be known by the person making an emergency call, there are opportunities to access this information. For example, the investigation learned that Patient 1 had a repeat medication prescription slip (attached to the right-hand side of a prescription) that contained her NHS number. In addition, there is now an electronic source, with more than 10 million people signed up to the NHS app (Department of Health and Social Care, 2021).

4.1.26 HSIB's national investigation into wrong site surgery found that:

'Of the trust guidance reviewed by the investigation, only one trust suggested the use of the NHS number as integral to the positive identification of patients by staff.' (**Healthcare Safety Investigation Branch, 2021b**)

The report also made two safety observations around patient identification.

4.1.27 Incorrect patient identification is also integral to the following national HSIB reports:

- '**Wrong patient details on blood sample**' (Healthcare Safety Investigation Branch, 2019c)
- '**The role in clinical pharmacy services in helping to identify and reduce high-risk prescribing errors in hospital**' (Healthcare Safety Investigation Branch, 2018)
- '**Never events: analysis of HSIB's national investigations**' (Healthcare Safety Investigation Branch, 2020).



4.1.28 In summary, the investigation found minimal evidence of the NHS number being used as a key identifier, by the Ambulance Trust, the Acute Trust and all the services/specialties involved in the safety event (other than by some administrative staff). This was due to the perceived unavailability of this information. On the occasions where it was used, the incorrect NHS number (belonging to Patient 2) had already been inputted into the system. There was then no mechanism for checking and correcting the NHS number.

4.1.29 The investigation's findings reinforce those of previous HSIB investigations around incorrect patient identification and the inconsistent use of NHS numbers. This investigation therefore further identifies a safety risk that would benefit from future national work. Because of the importance of this risk, the investigation has made a national safety observation:

HSIB makes the following safety observation

Safety observation O/2021/134:

It may be beneficial if further national work is undertaken on the use of the NHS number as a unique identifier, specifically in identifying patients.

4.1.30 Specific to this investigation, HSIB makes the following local safety observation:

HSIB makes the following safety observation

Safety observation O/2021/133:

It may be beneficial if the Ambulance Trust develops mechanisms to capture the NHS number at the point of initial contact.

Audit of calls

4.1.31 The EOC regularly audited the quality of its calls. The investigation found that each call assessor has approximately three calls audited per month, equating to 1% of call volume per month per call assessor. There is a process in place for audits that identifies room for improvements; this is tiered to allow for more frequent audits and an action plan.

4.1.32 The call that occurred during the safety event was audited. In relation to the audit item 'Manages the clinical situation safely to reach a safe and appropriate outcome,' it was noted that the PDS match showed a different address to that given for the Patient's location.

4.1.33 There is no specific audit question relating to patient identification. This means it was not possible for the investigation to identify how frequently this type of event occurs by looking at previous audits.



4.1.34 The investigation heard that the auditors rarely detect patient identification errors, although they sometimes hear call assessors experiencing difficulty in matching a patient's name with the correct address.

HSIB makes the following safety observation

Safety observation O/2021/136:

It may be beneficial if the Ambulance Trust adjusts its call audit tool to assess whether patient identification is correctly confirmed.

4.2 Information transfer to the ambulance crew

4.2.1 The investigation was told by the Ambulance Trust that, in the safety event, differing patient details were shown on the EPR under the 'incident details' and 'patient details' sections. The 'same as incident' button was selected, which copied over the incorrect patient demographic details from the 'incident details' section to the 'patient details' section. This decision by the ambulance crew assumed that the patient demographic information, as listed in the incident details section, was correct, as an NHS number was already on the system. A member of the ambulance crew said:

"If I've got an NHS number, I think that's the right patient anyway, regardless of where they are."

Available information

4.2.2 The investigation was told that it was rare for a patient's address to be incorrect on the EPR. If the two addresses did not match, then it was usually because a patient had recently moved house or was staying with friends or family. This was reported as being more common during the COVID-19 pandemic. A member of the ambulance crew said:

"If the addresses are different, it's usually the right patient, so that's why you put the address across. When I go to someone's house, it's normally their house. So it tends to be uncommon that there's two separate addresses - so I am usually so used to pushing [the button] to have the pair of them the same. It's one of those things that you become complacent, until things go wrong."

4.2.3 These findings demonstrate the use of heuristics in the patient identification process. Heuristics are mental 'rules of thumb' that help people to reach rapid conclusions. The situation involving the Patient's address had likely been encountered before with no adverse results. On this occasion, and with hindsight, the situation was different and therefore the heuristic resulted in an unintended outcome.



- 4.2.4 The use of heuristics is a common part of human cognitive processes. To prevent them being misapplied, systems and processes need to support the decision maker with accessible, clear and correct information. The investigation found that the potential for incorrect patient demographics was not flagged to those using the software – again, this is an area where engineering solutions may be designed to support safety.
- 4.2.5 The investigation was told that if an ambulance crew cannot confirm the correct patient details then they can check different digital systems; the most commonly used systems in the Ambulance Trust are the Medical Interoperability Gateway and GP Connect (**see section 1**). The investigation heard that whether this information is up to date depends on whether the patient’s primary care records have been updated. The investigation was told that:
- “A lot of the time, there are cases where it brings up an old address and it doesn’t always match their current one, and they’ve not changed the GP.”
- Poor reliability of information is another factor that may mean heuristics are misapplied. The investigation did not review the primary care records for this patient as that was outside the scope of the investigation.
- 4.2.6 The investigation was told that there is no functionality within the EPR system for the ambulance crew to edit addresses or patient details. If the patient demographic details are incorrect, the ambulance crew selects the ‘wrong patient match’ button on the system. The investigation learned that it is not easy to reject a match if the patient has already been identified.
- 4.2.7 As a consequence of this safety event, the Ambulance Trust is planning to design a ‘Yes/No’ checkpoint, which will be included in the EPR for ambulance crews to confirm the correct information. This will provide an additional prompt for the system user before proceeding to the next stage. It will act as a type of engineering/technological barrier, but will still rely on the user to check and confirm and can be overridden. It therefore will not eliminate the risk of patient misidentification.

HSIB notes the following safety action

Safety action A/2021/050:

The Ambulance Trust is designing a confirmation checkpoint, which will be included in the electronic patient record for ambulance crews to confirm the correct identification.



Induction training

4.2.8 The investigation learned that the induction training for ambulance crews focusses mainly on the clinical assessment of patients. Patient identification is not taught within this forum. The ambulance crew reported that patient identification is learned “on the job”, with varying practices:

“They all have their own slightly different way of doing things, then you pick your own style from the good bits.”

4.2.9 Prior to the safety event, several local alerts and newsletters have been circulated to remind staff of the importance of checking and confirming each patient’s identity. Since this safety event, a session has been developed for this year’s mandatory training that will highlight the importance of correctly recording the NHS number and patient information. The investigation again recognises that, as a more administrative intervention, this will contribute to safety improvements, but not eliminate the risk of patient misidentification.

HSIB notes the following safety action

Safety action A/2021/051:

The Ambulance Trust now includes the importance of patient identification, including using the NHS number to verify a patient’s identification, in its mandatory training.

4.3 Handover from ambulance crews to emergency department (ED) reception

Handover process

4.3.1 The usual process when a patient arrives by ambulance at the ED is that the triage nurse allocates a space for the patient (or the patient remains in the ambulance, depending on the capacity of the department). The ambulance crew then administratively hands over the patient’s details to the receptionist, who inputs them into the system.

4.3.2 The investigation observed the handover process during a site visit. Reception staff were in an office by the ambulance entrance, near the ED triage nurse. The office was shared with reception staff from the ED minors department (for minor injuries or illness). The investigation was told that handovers between ambulance crews and reception staff are “brief but thorough”. On occasions, the investigation observed more than one ambulance crew waiting to hand over, meaning the door to the ED was open and noise levels were elevated.

- 4.3.3 The investigation heard that it was probable that the Patient's information had been sent via the EPR ahead of the Patient's arrival at the ED. The ambulance crew confirmed that their handover to reception staff usually included verifying the patient's NHS number. This enabled the receptionist to ensure they were admitting the correct patient into the hospital system from the list of anticipated arrivals to the ED. The investigation observed that ambulance crews often take the electronic tablet into the reception area with them, and hand it to the receptionist to view. It was not known if this occurred during the safety event.
- 4.3.4 The receptionist recalled searching for the Patient on the NHS Spine and seeing two patients with the same date of birth, and slightly different names. They recall querying this with the ambulance crew, who confirmed they had the correct patient on their system due to the presence of an NHS number. The ambulance crew were unable to recall the patient or the safety event.
- 4.3.5 The investigation observed variations in the ways reception staff identified and inputted patient details into the system. There is no formal process (such as a standard operating procedure) for reception staff to follow when a patient arrives at the ED. As a result, HSIB makes the following local safety recommendation:

HSIB makes the following safety recommendation

Safety recommendation R/2021/162:

HSIB recommends that the Acute Trust develops and implements a standardised approach to patient identification in the emergency department.

Handover context

- 4.3.6 The investigation observed admissions of acutely unwell patients into the ED. The ED ambulance entrance and corridor were observed to be cramped and busy. Several staff often accumulated in this area, leading to the possibility of distractions from noise. These included the ED triage nurse, other ED and ambulance staff, and ambulance crews waiting to speak to the receptionist.
- 4.3.7 Another factor the investigation found that may have contributed to the way staff worked was that some reception staff had been relocated from a local minor injury unit since its closure a year before. The receptionist involved in the safety event had been redeployed from the closed unit. There was, however, no evidence that this impacted on the safety event.

4.3.8 Staff reported that prior to the month in which the safety event occurred, the ED had been quieter than usual because of the COVID-19 pandemic. At the time of the safety event, it was reported that ED had become busier.

Digital systems used in the ED and the Acute Trust

4.3.9 The investigation observed that several digital systems are used for different parts of the admission process in the ED reception (**see section 1**). Reception staff have two screens and use these to access the different digital systems.

4.3.10 New patient administration software had recently been introduced to the Trust following a trust merger, and staff reported that they were still getting used to the new software. There are plans to introduce ED-specific software, linked to the patient administration software, to replace the ED patient management and tracking software. The investigation heard that there are also plans to introduce a new patient information clinical system, to be consistent with the recently merged trust.

4.3.11 The investigation identified limited interoperability of the digital systems (that is, their ability to communicate and share information), meaning that staff have to copy and paste information from one system to another, or print paper copies to ensure that all departments have access to patient information. In addition, some staff groups have access to the digital systems while others do not. **Appendix 5** summarises the digital systems used in the Acute Trust and their interoperability.

4.3.12 HSIB has published several national findings and safety recommendations relating to interoperability:

- **‘Intrapartum stillbirth: learning from maternity safety investigations that occurred during the COVID-19 pandemic 1 April to 30 June 2020’** (Healthcare Safety Investigation Branch, 2021a)
- **‘Electronic prescribing and medicines administration systems and safe discharge’** (Healthcare Safety Investigation Branch, 2019a)
- **‘Management of chronic health conditions in prisons’** (Healthcare Safety Investigation Branch, 2019b).

4.3.13 In summary, the investigation identified different digital systems within the ED department and the wider Acute Trust, with varying interoperability. There were varied practices among reception staff when admitting patients into the IT system, and no formal standard operating procedure to support staff.



HSIB makes the following local safety observation

Safety observation O/2021/135:

It may be beneficial if the Acute Trust considers the interoperability of its IT systems (that is, the ability of different IT systems to communicate and share information) as part of its digital strategy and in future procurement.

4.4 Handover to a clinician in the ED by the Ambulance Trust

- 4.4.1 The usual process when a patient is admitted to an assessment bay in the ED is that a handover takes place between an assessment nurse and ambulance crew before the crew leave the department.
- 4.4.2 The investigation heard that handovers are often brief and are inconsistent in terms of patient identification and the clinical details given. The name and age of the patient were described as the two main pieces of information handed over from the ambulance crew.
- 4.4.3 Barriers to a more effective handover were described as increased work pressures in the ED and staff shortages. The investigation was told that ambulance crews are expected to leave the department within a specific timeframe so they can go to their next call.
- 4.4.4 The investigation is aware of the existence of a national standard for ambulance handover to emergency care (Professional Record Standards Body, 2019), relating to 'a standard for the information that is shared when care is transferred from ambulances to emergency departments'. The 'Ambulance handover standard final report', created by the PRSB includes ensuring the NHS number is used, along with other patient identifiers. An implementation guidance has also been drafted, as well as an 'Ambulance transfer of care hazard log.' The latter recognises patient misidentification as a risk.
- 4.4.5 In summary, evidence from the safety event suggests there was no defined, written process for verifying and confirming correct patient identification on handover from the Ambulance Trust to the Acute Trust, including in the ED reception and majors assessment bay (for emergency admissions but not immediately life threatening). Further work is required to incorporate the national standard for ambulance handover to emergency care. HSIB makes the following regional safety recommendation:



HSIB makes the following regional safety recommendation

Safety recommendation R/2021/164:

HSIB recommends the Acute Trust work with the Ambulance Trust to develop and implement a standardised approach to verifying and confirming a patient's identification during the handover process.

The application of wristbands

- 4.4.6 In 2005, the NPSA issued a 'safer practice notice' to NHS organisations providing acute services. It was entitled 'Wristbands for hospital patients improves safety.' The focus was on the importance of applying wristbands to accurately identify patients. There was recognition that 'There is wide variation in the information on wristbands and the way staff check inpatients' identity.' There was no specific information detailing what details should be included on the wristband, other than the NPSA was standardising the information and there would be a further publication. The NPSA was disbanded on 1 October 2012 and its functions moved to NHS England.
- 4.4.7 The NPSA published a 'patient briefing' (National Patient Safety Agency, 2005) alongside the safer practice notice, informing patients why they need to wear a wristband when in hospital, what to expect when in hospital and an overview of further work on patient identification. This included the NPSA's plans to standardise wristbands to ensure they have the same design and contain the same information in all NHS hospitals.
- 4.4.8 When Patient 1 was transferred to the assessment bay in the majors department of the ED, she was given a wristband. This wristband showed the name, date of birth, hospital number and NHS number for Patient 2. Figure 8 shows an excerpt from the Trust's patient identification policy.



Figure 8 Information recorded on the wristband from the Acute Trust's patient identification policy.



4.4.9 The investigation reviewed the Trust's patient identification policy, which states:

'Prior to an identification band being given to the patient, three pieces of information must be obtained in order to verify the identity of the patient; full name, date of birth and patient's address must be used. Other information such as correct spelling of name and next of kin details, GP and telephone number may also provide added assurance that the patient has been correctly identified. Staff must not assume that previous departments have done this.'

4.4.10 The Trust's policy does not include use of the NHS number when verifying a patient's identity. Staff confirmed that the NHS number is rarely used. In the safety event, the Patient's Granddaughter took the Patient's repeat medication slip into hospital along with the Patient's medication. This contained the Patient's NHS number and provided an opportunity to verify her identity.

4.4.11 The investigation looked at the wristband process in relation to the expectations described in the Trust's policy (work as prescribed) and what actually happened in practice (work as done) (**Appendix 3**). The investigation found the normal practice would be for the name and date of birth to be checked with the patient/accompanying person, but not the address.

4.4.12 The investigation learned that on the day Patient 1 arrived at the ED, the ED was short-staffed by two qualified nurses (out of established staffing numbers of 20) and two healthcare assistants (out of established staffing numbers of four). A bank nurse was working in the assessment bay and received the handover of Patient 1 from the ambulance crew. The bank nurse did not have access to the referral and results software to print a wristband, so a healthcare assistant printed and applied the wristband to Patient 1.

4.4.13 While staff shortages could lead to staff taking shortcuts in the identification process, the investigation did not find any evidence that staff were aware that three points of information, as detailed in the Trust's policy, should be used to verify a patient's identity. The investigation did not explore the barriers to this, as it was not within the scope of the investigation. The Patient's Granddaughter told the investigation that she informed staff in the ED that the Patient's address on her admission record was incorrect. There is no record of this in the Patient's notes.

HSIB makes the following local safety recommendation

Safety recommendation R/2021/163:

HSIB recommends that the Acute Trust explores the barriers to checking three identifiers when confirming a patient's identification for their wristband, and takes appropriate action.



4.5 Handover to the medical assessment unit (MAU)

- 4.5.1 The usual process when a patient transfers from the ED to the MAU is that there is a telephone handover from an ED doctor to the nurse co-ordinator on the MAU. During this handover, the nurse co-ordinator is told the patient's name, hospital number, reason for admission and whether the patient can wait in the waiting room or needs a bed. This information is handwritten onto a handover sheet and placed in the ward clerk's tray.
- 4.5.2 The notes from the ED patient management and tracking software are printed and scanned in the ED and joined with the handover sheet when the patient arrives in the MAU. A nurse or healthcare assistant always transfers the patient. The ward clerk directs the patient to a bed space with the handover sheet and notes.
- 4.5.3 The investigation heard that there is no formal identification process for patients being transferred from the ED, as staff would assume that checks had been completed in the ED. The process is more formal when patients are admitted to the MAU directly from their GP, including a request for the patient's address.
- 4.5.4 The investigation found that there had been occasions when a patient was transferred to the MAU for the ED without a wristband. In these instances, the ward clerk will print a wristband. Staff said that they would complete a formal identification by asking for the patient's name and date of birth. The third indicator (the address), as described in the Trust's patient identification policy (work as prescribed), was not checked (work as done) (**Appendix 3**).

4.6 Detection of the safety event on transfer to the ward

- 4.6.1 No formal patient identification checks took place when the Patient was transferred from the MAU to the ward. Staff on the ward told the investigation that they do not routinely check the patient's address on admission, and consider their demographic information to be correct when they are admitted to the ward.
- 4.6.2 Five days after the Patient's admission to hospital, the Patient's Granddaughter noticed that the Patient's demographic details, which had been printed in the ED, had the wrong address and GP details (belonging to Patient 2). She informed the nurse caring for the Patient. The nurse crossed out the incorrect home address and GP practice and wrote the correct details. It was documented in the Patient's notes that the information had been 'changed on the front sheet for the ward clerk to change [on the IT system] in the day'.

- 4.6.3 The investigation was not able to establish whether this note was handed over to the ward clerk, as staff could not clearly recall the event. The investigation was told there had been previous occasions on which a patient's address was incorrect. When this had happened previously, it was because the patient had moved address.
- 4.6.4 The misidentification was discovered on day 8 of the Patient's admission, following a routine medicines reconciliation on day 7. Medicines reconciliation is the process of identifying the most accurate list of all medications a patient is taking and comparing that list against the hospital prescription. The National Institute for Health and Care Excellence (2016) recommends that medicines reconciliation should happen within 24 hours of admission to an acute setting or sooner if clinically indicated.
- 4.6.5 The investigation was not able to determine why the medicines reconciliation process did not help to identify the patient identification error. The Patient's NHS and hospital numbers (which were for Patient 2) were checked, and the reconciliation process assumed that the medication was wrong instead of the Patient's details. This was exacerbated because the assumed incorrect medications had been prescribed for several days.
- 4.6.6 As referred to in **section 2.23**, the safety event was detected following an incidental observation by a pharmacist of an unfamiliar medicine (an inhaler) on the Patient's bedside table.
- 4.6.7 The investigation was initially advised that Patient 1 had received some doses of Patient 2's medication. Further investigation found that this was not the case, as the Patient had declined to take the medication, in addition to some other care and treatment.
- 4.6.8 The investigation found that once the safety event had been discovered, it was dealt with promptly and the relevant staff were informed. The Patient's family were also informed, and a formal apology was offered.

4.7 Key themes

4.7.1 The analysis of this safety event has identified three main contributory themes. These themes relate to the following:

- 1 Policies and processes for patient identification:
 - a The absence of some formal processes to support staff in identifying patients.
 - b Inconsistencies in applying the existing processes in place, because of barriers within the system. This led to heuristics (mental rules of thumb) being used.
 - c A lack of staff education with respect to the Trust's policies and processes, leading to incorrect or insufficient numbers of identifiers being used.
- 2 Inconsistent use of the NHS number as the unique identifier for patients, because of perceived barriers in obtaining this information at Ambulance Trust and Acute Trust levels.
- 3 Issues with the design and interoperability of multiple digital systems, meaning that discrepancies are not flagged.

4.7.2 The investigation acknowledges that the safety recommendations made within this report focus on standardisation and processes, with a certain reliance on staff. It is recognised that, within the hierarchy of controls, these recommendations will be unlikely to eliminate patient misidentification events, but they should mitigate the risk of them occurring. The fact that the safety recommendations are more administrative in nature potentially demonstrates the challenges trusts face in developing recommendations that may be out of their influence to action. This shows the importance of recommendations that influence national change (such as developing engineering solutions for digital systems), which may be more effective in the future. The national learning in this report will be added as intelligence to HSIB's process for identifying future national investigations.



5 Summary of findings, safety recommendations, safety observations, safety actions and safety risk

5.1 Findings

The investigation found that:

- The first names and surnames of people from South Asian communities are often used interchangeably, and not all names are necessarily used in all situations (as occurred in this case).
- When the exact date of a person's birth is not known, some ethnic communities have a standard approach of recording the date of birth as 1 January, followed by the year. The Patient in the investigation was from a South Asian community, where this practice is common.
- There were no formal written procedures in the emergency operations centre for call assessors to follow in relation to patient identification.
- Patient identification was not included as a topic in the formal, standardised training for call assessors during their induction period (or subsequently).
- The NHS number was rarely used as a key identifier by call assessors answering 999 calls.
- The emergency operations centre regularly audited its calls, but the audit did not include specific questions on patient identification. It was therefore difficult to determine how frequently identification errors occur.
- Induction training for ambulance crews focused mainly on the clinical assessment of patients. Patient identification was not formally taught.
- In practice, ambulance crews varied in the way they learned and applied patient identification.
- There was no formal process between the Ambulance Trust and the Acute Trust to verify a patient's identity.
- ED reception staff had different practices for entering patients into the patient-tracking software, and there was no formal process.



- There were several different digital systems within the ED and the wider Acute Trust, with varying interoperability (that is, the ability of different IT systems to communicate and share information).
- Staff at the Acute Trust were unaware of the requirement to obtain three pieces of information to verify a patient's identity, as detailed in the Trust's patient identification policy, before giving the patient a wristband.
- The Trust's patient identification policy did not include use of the patient's NHS number.
- There was no formal identification process for patients being transferred from the ED to the medical assessment unit, or from the medical assessment unit to the ward.
- Once the Patient's misidentification was discovered, her records were promptly amended and relevant staff and the Patient's family were informed.

The investigation identified the following learning points for potential national benefit:

- The correct identification of patients relies on staff checking patient details, and therefore will not always occur effectively. There may be opportunities for further engineered or technological barriers to decrease the chance of incorrect identification.
- The design of the digital systems considered in this investigation did not always account for variations in how people identify themselves (for example, by different names). Those systems also did not make it clear to staff where patient demographics (that is, details such as the patient's name, date of birth, address and NHS number) might be incorrect.
- The investigation recognises that a single hospital trust may receive patients from multiple ambulance trusts, and ambulances from a single trust may go to several hospital trusts. Pathways and processes potentially vary across different trusts and a consistently agreed approach may not exist.
- The use of NHS numbers to identify patients may vary across the country. The investigation found that the NHS number may not be being used according to national expectations.



Safety recommendations, safety observations, safety actions and safety risks

Safety recommendations are directed to a specific organisation for action. They are based on information derived from the investigation and are made with the intention of preventing future similar events.

HSIB makes the following local safety recommendations

Safety recommendation R/2021/161:

HSIB recommends that the Ambulance Trust develops and implements a standardised approach to patient identification in the emergency operations centre.

Safety recommendation R/2021/162:

HSIB recommends that the Acute Trust develops and implements a standardised approach to patient identification in the emergency department.

Safety recommendation R/2021/163:

HSIB recommends that the Acute Trust explores the barriers to checking three identifiers when confirming a patient's identification for their wristband, and takes appropriate action.

HSIB makes the following regional safety recommendation

Safety recommendation R/2021/164:

HSIB recommends the Acute Trust work with the Ambulance Trust to develop and implement a standardised approach to verifying and confirming a patient's identification during the handover process.

HSIB makes the following safety observations

Safety observation O/2021/133:

It may be beneficial if the Ambulance Trust develops mechanisms to capture the NHS number at the point of initial contact.

Safety observation O/2021/134:

It may be beneficial if further national work is undertaken on the use of the NHS number as a unique identifier, specifically in identifying patients.

Safety observation O/2021/135:

It may be beneficial if the Acute Trust considers the interoperability of its IT systems (that is, the ability of different IT systems to communicate and share information) as part of its digital strategy and in future procurement.



Safety observation O/2021/136:

It may be beneficial if the Ambulance Trust adjusts its call audit tool to assess whether patient identification is correctly confirmed.

HSIB notes the following safety actions**Safety action A/2021/049:**

The Ambulance Trust training department has implemented training on patient demographics within its test system. Emergency operations centre staff receive this training during their formal induction.

Safety action A/2021/050:

The Ambulance Trust is designing a confirmation checkpoint, which will be included in the electronic patient record for ambulance crews to confirm the correct identification.

Safety action A/2021/051:

The Ambulance Trust now includes the importance of patient identification, including using the NHS number to verify a patient's identification, in its mandatory training.

HSIB notes the following specific national safety risk

The NHS number is a unique identifier for people living in England (and Wales). There is a chance that a patient may be incorrectly identified when the NHS number is not used.



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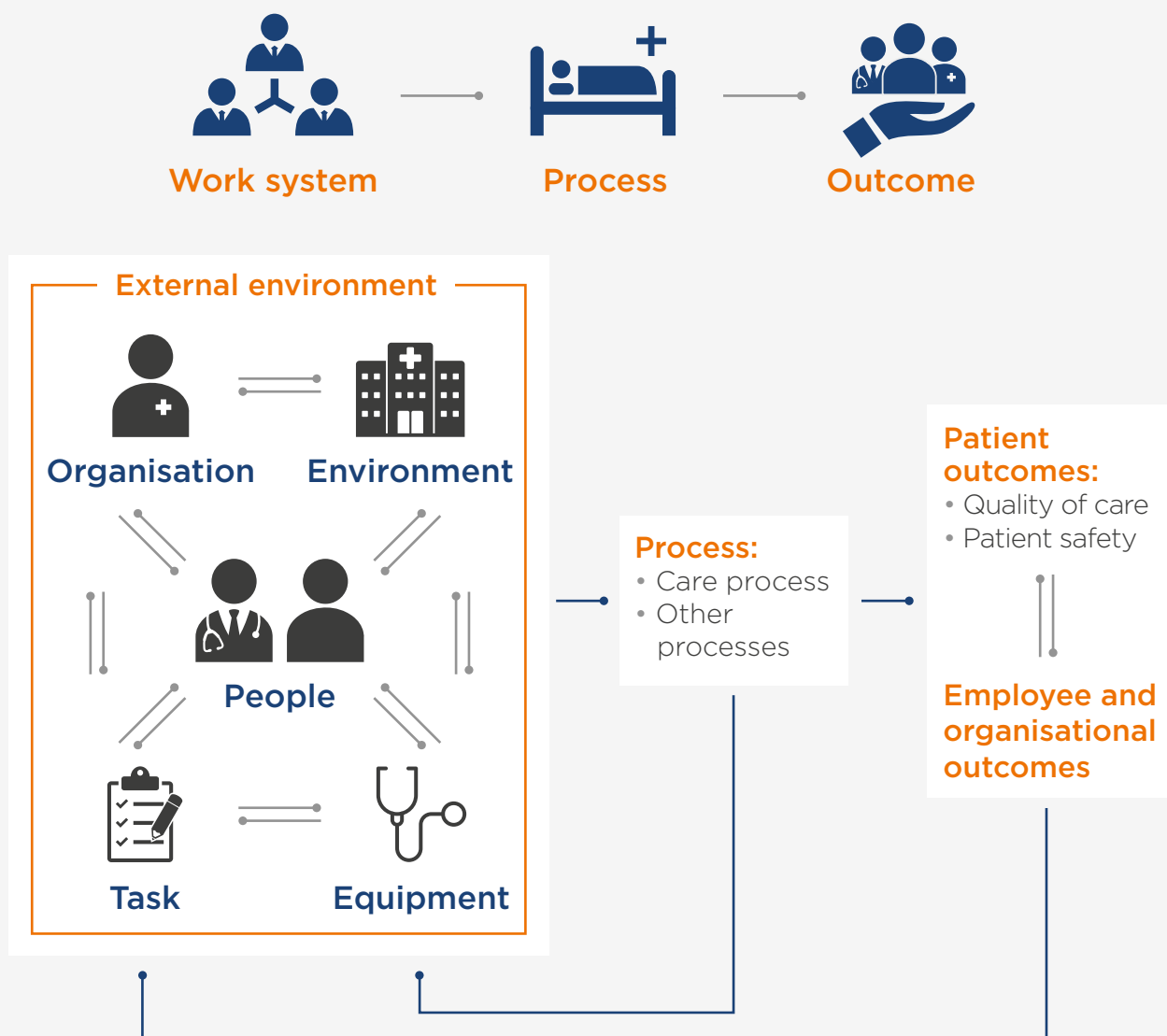
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7 Appendix

Appendix 1 The Systems Engineering Initiative for Patient Safety (SEIPS)

SEIPS was first described by Carayon et al (2006) as a framework for understanding the work systems, processes and outcomes in healthcare and the relationships between them (see figure A1). It is a systems engineering approach with human factors principles embedded within it.

Figure A1 SEIPS, adapted from Holden et al (2013)



SEIPS describes how components of the work system produce work processes that result in different outcomes. Work system factors are described below (Holden et al, 2013; Carayon et al, 2006):

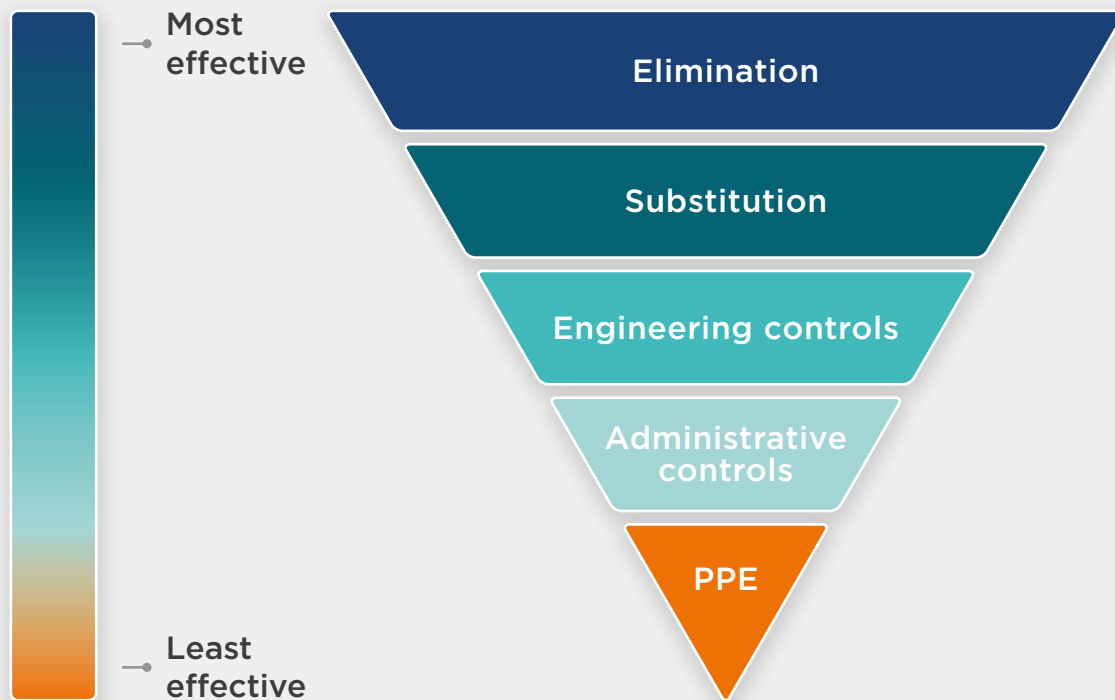
- People: the people working in the particular system and the patient.
- Tasks: undertaken by people, and which can vary in complexity or variety.
- Tools and technology: used to undertake tasks, and which can vary in usability and functionality.
- Internal environment: the physical space around people (for example, layout, noise and temperature).
- Organisation: conditions external to people to support the organisation of, for example, resources and activity.
- External environment: factors outside of the healthcare institution, such as policy, societal or economic factors.

Processes can be physical, cognitive or behavioural, and lead to outcomes for patients, professionals or healthcare institutions. Interactions between the various components of the work system lead to different outcomes, both positive and negative. The framework includes feedback loops, which represent the adjustments systems make over time.

Appendix 2 Hierarchy of controls

The concept of a hierarchy of controls (see figure A2) is commonly used to describe the properties associated with system controls. Certain methods of control provide more protection and are more effective than others. The hierarchy of controls approach implies that controls at the top of the hierarchy are likely to be more effective at managing risks than those lower down (National Institute for Occupational Safety and Health, 2015). While not developed for healthcare, the principles are useful to consider when developing recommendations to prevent future events.

Figure A2 Hierarchy of controls



Elimination: Redesign the activity such that the risk is removed or eliminated.

Substitution: Replace the activity with an activity that reduces the risk. Care is required to avoid introducing new hazards from the substitution.

Engineering controls: Design measures that help control or mitigate risks, such as barriers, guards and so on. Priority should be given to measures that provide collective protection rather than those that just protect individuals or a small group of people.

Administrative controls: Identifying and implementing the procedures to improve safety, such as undertaking risk assessments, preparing and communicating mitigating procedures, and increasing signage.

PPE: Personal protective equipment: local kit to mitigate the risks to those exposed to the hazard. People must be familiar with the function and limitation of each item of PPE for this to be an effective measure. Ideally, PPE is only considered after all previous measures higher in the hierarchy are identified as not being fully effective in controlling the risks.

Appendix 3 Varieties of human work

The following description of varieties of human work is taken from the HSIB investigation for ‘**Wrong patient details on blood sample**’ (Healthcare Safety Investigation Branch, 2019).

In order to gain an insight into how best to explore the way staff work in the clinical environment, it is important to understand the varieties of human work. Figure A3 shows the varieties of human work described by Shorrock (2016). These show why the healthcare sector needs to adopt different approaches to fully understand healthcare work and incidents.

Figure A3 Varieties of human work (Shorrock, 2016)



‘Work as imagined’ refers to assumptions that may be made about how work is carried out by staff. However, people making these assumptions may be removed in time and space from the ‘front line’ and therefore unable to observe work being carried out in the workplace (Hollnagel et al, 2015).

The imagined way in which people work becomes ‘work as prescribed’ when it is set out in policy or processes that frontline staff are asked to follow and adhere to. This is often assumed to be the safest way to work (Shorrock, 2016).

Many traditional incident investigations will place emphasis on taking statements from staff in order to understand their actions. This ‘work as disclosed’ may be based on partial or incomplete versions of one or more of the other varieties of human work. Staff may be uncomfortable about, or fearful of, disclosing variations and adaptations made to ‘work

as prescribed' if they are worried about the possible repercussions of their actions. Staff may also not recognise where adaptations have been made as part of their daily practice.

'Work as done' refers to how people actually carry out their work. Understanding 'work as done' requires a practical focus on understanding and observing work in the environment in which it takes place in order to inform ideas about how work should be planned and managed. Catchpole and Jeffcott (2017) have identified that direct observation of staff within healthcare usually reveals a difference between what is disclosed and how work is actually done in practice. Without understanding 'work as done' it is not possible to accurately know how a system is functioning, and whether the gap between 'work as imagined' and 'work as done' poses a threat to organisational safety or represents the system drifting into an improved state (Shorrock, 2018).

Appendix 4 Competency sheet used in the mentoring period for emergency operations centre staff

	Indicators	
Effective call control	1	Makes efforts to speak directly to patient
	2	Sets the scene appropriately
	3	Controls the flow and pace of the call appropriately
Skilled questioning	1	Conveys questions skilfully
	2	Ensures appropriate information is obtained to answer every question adequately
Active listening	1	Listens carefully throughout the call and retains this information
	2	Demonstrates active listening to caller
Skilled provision of information and advice	1	Information and advice is provided skilfully & accurately
	2	The disposition is conveyed effectively, using the tools provided
Effective communication	1	Communicates sensitively, professionally and with appropriate warmth
	2	Adapts approach according to the needs of the situation
	3	Negotiates where appropriate and does so effectively
Practices according to designated role requirements	1	Operates within the boundaries of their role
	2	Documentation is: clear, accurate, concise, adequate, and without abbreviations or diagnosis
Skilled use of Pathways functionality	1	Navigates the system safely, effectively, logically and efficiently
Delivers a safe and effective outcome for the patient	1	Manages the clinical situation safely to reach a safe and appropriate outcome
	2	Manages all other inherent risks appropriately to reach a safe and appropriate outcome
	3	Gives adequate worsening advice



Appendix 5 Summary of digital systems used in the Acute Trust

System	Use	Interoperability
ED reception software	Contains patient information and is sent directly from the ambulance EPR.	<ul style="list-style-type: none"> • No direct connections to other digital systems • The ambulance handover information is downloaded as a PDF, which is then attached to the patient's record in the Acute Trust
Patient administration software	Contains patient information and is sent directly from the ambulance EPR.	<ul style="list-style-type: none"> • Has replaced the previous patient administration system • Used for all changes to patient demographics and to create new patient registrations within the Trust • Accesses the NHS Spine directly to pull national information, and then outputs the demographic information directly into the ED patient management and tracking software • Information (NHS number or home address) has to be copied and pasted from the ED reception software to the patient administration software • The ED receptionist can amend details in this system if necessary • The software is accessed using a SMART card and is mainly used by administrative staff
ED patient management and tracking software	Currently the primary IT system dealing with attendances within the ED	<ul style="list-style-type: none"> • A sub-section of this IT system was used in MAU; paper copies need to be printed out when transferring a patient from the ED to the MAU • Receives demographic updates from the patient administration software and contains a complete record of patient attendance (clinicians involved, medication received, scanned documentation of the attendance and so on) • The ambulance handover PDF is stored within the same folder as the scanned documentation for the attendance, but does not come directly from the ED reception software (see above) • The IT system sends specific attendance details (time of arrival, time of discharge and so on) to the referral and results software, but does not communicate demographic updates to other systems • Can be accessed by clinical and administrative staff
Referral and results software	Collates all patient referrals and results	<ul style="list-style-type: none"> • Receives demographic updates directly from the patient administration software • Receives attendance-specific information from the ED patient management and tracking software • Can access the attendance scan folders where the ED patient management and tracking software stores scanned documentation, but cannot extract PDFs so therefore cannot display the ambulance handover patient report form. • Can be accessed by clinical and administrative staff

ED, emergency department; EPR, electronic patient record; MAU, medical assessment unit.



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