

# Safety of Patient Handover in Emergency Care – Results of a Qualitative Study

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**ABSTRACT:** The paper presents the results of a qualitative study investigating safety of patient handover in the emergency care pathway. Semi-structured interviews were conducted with 39 practitioners from two NHS ambulance services and three hospitals in England. Thematic analysis identified two main themes: (1) there are tensions in the activity of handover, which practitioners deal with by making dynamic trade-offs based on their expertise and depending on the particular situation; (2) the management of patient and information flows across organisational boundaries is a key factor affecting the quality and safety of handover. The results suggest that there is a need for greater collaboration across organisational boundaries, and that organisational policies and procedures should provide flexibility to practitioners enabling them to make necessary local trade-offs based on their expertise.

## 1 INTRODUCTION

The handover of patients from one caregiver to another has been recognised as a threat to patient safety (Johnson and Arora, 2009). Handover is a high-priority area for the National Health Service (NHS) in the UK (British Medical Association, 2004) as well as for organisations around the world (Joint Commission, 2005). There is now a wealth of evidence as well as a number of systematic reviews suggesting that inappropriate handover practices are putting patients at risk (Cohen and Hilligoss, 2010, Raduma-Tomas et al., 2011). Handover failures can lead to delays in treatments (Solet et al., 2005), medication errors (Petersen et al., 1994), unnecessary duplication of assessments (Bomba and Prakash, 2005), and poor patient experience (Kohn et al., 2000). Handover in emergency care is a particularly vulnerable activity, because practitioners need to take decisions based on brief patient encounters and in situations of great uncertainty, time pressure and departmental overcrowding (Wong et al., 2008).

Previous studies have investigated in particular handover of patients at the end of shifts. Factors that have been identified as contributing to poor handover practices include the absence of a standardised approach (Johnson and Arora, 2009), lack of time, multiple concurrent activities, interruptions and distractions (Burnett et al., 2011), and a lack of training in non-technical skills (Gobel et al., 2012). Suggestions for improving handover often include the introduction of a standardised communication protocol and corresponding checklists or mnemonics

(Catchpole et al., 2010, Riesenberget al., 2009), such as Situation-Background-Assessment-Recommendation (SBAR) (Haig et al., 2006).

There is comparatively little research that studies the handover of patients across departments and organisations (Horwitz et al., 2009). Such care transitions across boundaries may involve individuals from different disciplines and different organisations, who may have their own goals, terminology and cultural backgrounds (Beach et al., 2003). This poses additional challenges for the handover of patients and patient information.

The aim of the work presented in this paper was to explore perceptions of staff in the emergency care pathway about the factors that may contribute to poor handover across boundaries, and how this may affect the safety of patients. The work was part of a project studying Emergency Care Handover (ECHO) funded by the National Institute for Health Research Services and Delivery Research programme (NIHR HS&DR).

The next section (Section 2) provides a brief background on patient handover and the emergency care pathway. Section 3 describes the methods used for data collection and data analysis. Section 4 presents the results of the work. The paper concludes with a discussion of the implications of the work for practice and for research (Section 5).

## 2 BACKGROUND

### 2.1 *Definition of handover*

The British Medical Association defines handover as “*the transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis*” (British Medical Association, 2004). In this definition, handover can include both the transfer of information relevant to patient care as well as the transfer of responsibility for patient care. Handover is a frequent activity, occurring regularly, for example at the end of a shift, as well as driven by the patient’s journey, for example when a patient is referred to a specialty.

### 2.2 *Handover in the emergency care pathway*

The emergency care pathway refers to pre-hospital, emergency department (ED) and hospital activities for patients with acute needs. In the study presented in this paper, the emergency care pathway was restricted to include consideration of patients coming to the emergency department with an ambulance, and patients referred from the ED onwards to acute medicine.

Along this pathway several handovers may occur. Handover occurs, for example, when the paramedics bring the patient to the ED and hand over the patient to the senior ED doctor (in case of resuscitation patients) or to the senior ED nurse. The two handovers are different as in the first case treatment needs to start immediately, whereas in the latter case the purpose of the handover is to convey the acuity of the patient to the senior ED nurse in order to schedule resources appropriately (e.g. to determine whether there is reason to prioritise the patient).

When the patient is referred on from the ED there is a handover by phone from the ED doctor to either a doctor or a nurse in acute medicine or a specialty. The purpose of this handover is to communicate the patient’s story thus far, to explain the reason for admission, and to determine the most appropriate onward care pathway for the patient. There is also a handover from the ED nurse to the nurse on acute medicine when the patient is transferred physically onto the ward.

The information that is communicated during the handover is dependent on the purpose of the handover and on where in the patient’s journey it occurs. For example, handover from paramedic to ED nurse typically includes consideration of: patient demographics, patient condition, aspects of clinical and social history, treatments given pre-hospital, observation of vital signs, and any symptoms exhibited. When a patient is referred to acute medicine more tests and treatments will have been done, and a (provisional) diagnosis will have been formulated.

The handover then includes consideration of: patient demographics, time of arrival in ED, presenting complaint, aspects of the clinical and social history, investigations done in the ED and the results, provisional diagnosis, and request for onward care. The handover from the ED nurse to the nurse on acute medicine, in turn, will focus more on issues relevant to the nursing aspects, and may include: patient demographics, patient acuity, observations of vital signs, test results, and any specific care arrangements that may be needed.

## 3 METHODS

### 3.1 *Setting*

The study considered handover in three emergency care pathways in England. Two NHS ambulance services and three NHS hospitals (ED and acute medicine ward) participated in the study.

### 3.2 *Data collection*

Data were collected through semi-structured interviews with a purposive convenience sample of 39 staff from the five participating organisations during May – November 2012. Interviews lasted between 20 – 50 minutes. Interviews were audio recorded and transcribed. During the transcription any identifiers (pertaining to patient, staff or organisation) were removed to preserve anonymity.

Initially, 15 interviews were conducted with front line staff (5 staff per pathway) to establish their involvement with handover and to explore their perceptions of current handover practices. Participants also had the opportunity to suggest improvements to any problems with handover they identified.

After the analysis of this first round of interviews, a second round of interviews was conducted with further 24 staff. These included also staff with senior management responsibilities, who may not have direct involvement with patient handovers.

### 3.3 *Data analysis*

Interview transcripts were analysed using Thematic Analysis. Transcripts were first read and then coded using Open Coding (Saldaña, 2009). Categories were identified through discussion and clustering of codes in project review meetings. Codes and categories were refined through constant comparison with the interview data until new data brought no new insights. Themes were identified by analysing relationships between the categories in project meetings and in a stakeholder workshop. The coding was supported by the NVivo 10 software package.

### 3.4 Research ethics

The study had research ethics approval from South Birmingham Research Ethics Committee (reference 11/WM/0087) as well as institutional approval at all participating organisations. All participants received a participant information leaflet and were briefed prior to participation, and provided written consent.

## 4 RESULTS

Two main themes were identified during the Thematic Analysis: (1) there are tensions in the activity of handover, which practitioners deal with by making dynamic trade-offs based on the characteristics of the situation and based on their experience and expertise; (2) the management of flow (patient flow and information flow) across departmental and organisational boundaries is a key factor influencing the quality of handover. Below these themes are discussed in more detail.

### 4.1 Tensions and trade-offs

Interview participants described a number of tensions that are inherent in the activity of handover. Such tensions were identified in relation to documentation, the goals and motivations of individuals, the allocation of responsibility for patient care, and the verbal communication.

#### 4.1.1 Documentation

Participants described an organisational push to document as much as possible. There is a perception that with adequate documentation reliance on verbal handover can be reduced, and the number of verbal handovers can be minimised. On the other hand, participants also felt that they could not rely on documentation alone, since documentation does not convey subtleties, and because it may be difficult to find important bits of information that are buried in a wealth of information. They also felt that documentation could be of variable accuracy and quality, because people tended to write less in situations of high workload.

#### 4.1.2 Goals and motivations

Participants described how the different goals and motivations of staff roles could lead to conflicting information needs. For example participants contrasted the clinically oriented role with the more managerially minded role. The paramedic, who has been with the patient since arrival on scene, may be familiar with the patient's condition as well as other important background information, such as the patient's social history. During handover the paramedic may aim to convey as much information as possible in order to communicate the full picture.

However, the senior ED nurse receiving the handover may perceive this as lengthy and unnecessary, because their information needs are concerned with determining quickly the acuity of the patient and the resulting demands on the departmental resources.

#### 4.1.3 Allocation of responsibility

Participants described explicit giving and taking of responsibility for patient care as an essential step in providing high quality care. However, each patient represents additional workload and demands on departmental resources. Participants described the resulting conversations, particularly referrals from ED to acute medicine or a specialty, as particularly problematic. ED participants perceived the behaviour of receiving individuals as "gate-keeping", while the receiving party described that referrals from ED were often inappropriate. This can lead to situations where the allocation of responsibility is left implicit, and the patient is "stuck in the system".

#### 4.1.4 Verbal communication

Participants appreciated the opportunities for discussion afforded by verbal handover. On the other hand, they also described that verbal handover is very dependent on the individual. Information can be communicated inadequately or can be forgotten. In addition, due to the high workload, verbal handover is one of the activities that are likely to be abbreviated or that may not take place at all in order to save time.

#### 4.1.5 Trade-offs

Participants provided examples of how they deal with the above tensions. They rely on their assessment of the characteristics of the current situation, and they make decisions based on their experience and expertise in order to resolve tensions and to provide the best possible care under the circumstances. In the quotation below, a participant from the ED reflects on the tensions with documentation and the organisational policy of having a prescriptive standardised approach to documentation, where all details have to be recorded. The participant suggests that in practice, the reasonable approach is to determine on a case-by-case basis what is relevant and should be documented, because the purpose of the handover is to communicate that, which is important, rather than to document simply everything.

*"You can read stuff very quickly. I think you can probably read information quicker than you can hear it if someone's speaking to you. So the quickest way would be to read what somebody's written. But that then takes longer for the person who actually has to write it down because it takes longer to write than to say. So it's really looking to all different time pressures because everybody is under a time pressure. You can't have a standard formula for all the information because for a 21 year old, otherwise*

*fit and healthy person, you probably don't want to know the social information you might need to know for someone who is house-bound with elderly relatives at home. So you can't standardise and say this is what must be given. In many ways, it's experience knowing what's important and which is the information that you really do need to get."* (ED participant)

#### 4.2 Management of flow

Participants described the management of flow – patient and information flow – across departmental and organisational boundaries as an important factor that can affect negatively the quality and safety of handover. Common issues identified concerned lack of capacity, the influence of time-performance targets, and a lack of collaboration across care boundaries.

Handover contributes to the adequate management of flow. When the ambulance service provides a pre-alert about a patient whom they are conveying to the ED, this enables adequate preparation and allocation of resources in the ED. Similarly, the handover from the paramedic to the senior ED nurse enables the nurse to make appropriate decisions about how to allocate resources to the different patients currently in the department. Finally, when a patient has been referred, a separate telephone handover between senior ED nurse and the senior nurse on acute medicine or a specialty provides advance notice to enable the receiving ward to make necessary preparations.

On the other hand, inadequate patient flows and a lack of capacity may have serious negative consequences for the quality of handover and the safety of patients. The most notable of these is the situation of ambulances queuing in the ED. In such situations, handover is delayed and patients may potentially deteriorate while they are waiting in the queue. Adaptations and trade-offs by practitioners (see above) may also contribute to risk. For example, in order to trade-off the need for giving a comprehensive handover to ED staff with the need to meet turn-around targets and to get back onto the road, the ambulance crew may hand over their patient to another crew waiting in the queue. This can lead to a situation of multiple handovers (“Chinese whispers”), where important information may be misrepresented or may be lost.

Handover in the emergency care pathway includes individuals from different departments and organisations. Each department or organisation has their own priorities, targets and particular interests. Participants described how a lack of collaboration due to cultural differences and barriers could hinder patient flows. For example, participants from the ED expressed their frustration with colleagues from other departments, whom they perceived to be interested only in their own work. In the perception of

ED staff, specialties place the burden of determining appropriate onward care pathways on the ED, rather than proactively and collaboratively identifying suitable arrangements.

A participant from an ambulance service described how the management of patient flows needs to be addressed by the whole system, and how collaboration and cultural awareness are key issues that need to be worked towards.

*“The challenge is managing surges in demand and trying to secure the cultural awareness that this is an issue and that we all do have a responsibility to ensure that our crews get back out into the community quickly. [...] This is why I have felt it's been critically important to engage at the highest level within the organisation so we've had engagement at Chief Executive and Medical Director level. [...] The reason that that is critical is that, in order to maintain flow in these circumstances, you actually need the whole system supporting so it requires good operational management but also actually requires clinical buy-in from the in-patient team.”* (Participant from ambulance service)

## 5 CONCLUSION

The results presented in this paper suggest that handover should be regarded as an activity embedded in particular social and organisational backgrounds. Taking such a broader perspective provides the opportunity to identify and to describe organisational factors and behaviours that have an influence on the quality and safety of handover. In this paper we identified tensions in the activity of handover that require dynamic trade-offs, and the management of flows as such factors.

The results suggest that improvements of handover in practice require greater collaboration between the different stakeholders, including GP, ambulance services, emergency departments, and hospital services.

Future research should provide further description and understanding of how practitioners resolve tensions through trade-offs, and how organisations can support practitioners by providing sufficient flexibility in practice.

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