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Emergency Care Handover (ECHO study) across care boundaries: the need for joint decision making and consideration of psychosocial history

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ABSTRACT

Background Inadequate handover in emergency care is a threat to patient safety. Handover across care boundaries poses particular problems due to different professional, organisational and cultural backgrounds. While there have been many suggestions for standardisation of handover content, relatively little is known about the verbal behaviours that shape handover conversations. This paper explores both what is communicated (content) and how this is communicated (verbal behaviours) during different types of handover conversations across care boundaries in emergency care.

Methods Three types of interorganisational (ambulance service to emergency department (ED) in 'resuscitation' and 'majors' areas) and interdepartmental handover conversations (referrals to acute medicine) were audio recorded in three National Health Service EDs. Handover conversations were segmented into utterances. Frequency counts for content and language forms were derived for each type of handover using Discourse Analysis. Verbal behaviours were identified using Conversation Analysis.

Results 203 handover conversations were analysed. Handover conversations involving ambulance services were predominantly descriptive (60%–65% of utterances), unidirectional and focused on patient presentation (75%–80%). Referrals entailed more collaborative talk focused on the decision to admit and immediate care needs. Across all types of handover, only 1.5%–5% of handover conversation content related to the patient's social and psychological needs.

Conclusions Handover may entail both descriptive talk aimed at information transfer and collaborative talk aimed at joint decision-making. Standardisation of handover needs to accommodate collaborative aspects and should incorporate communication of information relevant to the patient's social and psychological needs to establish appropriate care arrangements at the earliest opportunity.

INTRODUCTION

Inadequate handover practices are recognised as a threat to patient safety worldwide.^{1–3} A report issued by the Institute of Medicine in the USA suggests that ineffective handover has been identified as one of the leading causes of medical error in the emergency department (ED).⁴ Poor handover has been shown to contribute to treatment delays,⁵ repetition of assessments,⁶ medication errors,⁷ avoidable readmissions and increased costs.⁸ Factors that may affect the quality of handover include unclear structure of the handover conversation;⁹ frequent distractions;¹⁰

inadequate documentation¹¹ and overreliance on documentation;¹² and a lack of training in handover and non-technical skills.¹³

Studies of handover in the ED have often investigated transfer of information or responsibilities between shifts, where handover typically takes place between individuals from the same discipline.^{14–15} Efforts aimed at improving handover have predominantly focused on standardisation of the transfer of information from sender to receiver, for example, through the introduction of structured communication protocols, such as Situation-Background-Assessment-Recommendation (SBAR).^{16–17} Much less is known about handover across care boundaries. Interdepartmental and interorganisational handover requires more negotiation and coordination than shift handover due to different contextual circumstances, such as different professional backgrounds and terminology, unequal distribution of power between departments and organisations, lack of established working relationships, less face-to-face contact and less awareness of the other department's or organisation's current state.¹⁸ All communicative acts have a content dimension and a relational dimension, which defines and reinforces the relationship between the parties.¹⁹ There is little empirical evidence available that describes the collaborative aspects of handover conversations and how these are shaped by the interaction and by the verbal and non-verbal behaviours of individuals.²⁰

This paper explores both what is communicated (content) and how this is communicated (verbal behaviours) during different types of handover conversations across care boundaries in emergency care. This provides a basis for understanding and improving handover across interdepartmental and interorganisational care boundaries.

METHODS

Setting

Organisations participating in this study were two English National Health Service (NHS) ambulance services and three English NHS hospitals (ED and acute medical ward or clinical decision unit). Each ambulance service provided emergency care in the catchment area of one study hospital. The ambulance service providing transportation to the third study hospital felt unable to participate in this study. As a result, no data involving ambulance service staff were collected in the third pathway.

Hospital A is part of a large NHS Foundation Trust and provides services to a deprived city community with ethnic diversity. Hospital B is part of



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Table 1 Basic characteristics of participating hospitals

	Population	Beds	Annual ED attendances	ED bays
Hospital A	440 000	750	110 000	30
Hospital B	650 000	850	90 000	36
Hospital C	300 000	400	49 000	22

ED, emergency department.

an NHS Trust consisting of four hospitals. The population served is slightly younger than the national average, and it has above-average health and life expectancy. Hospital C is a District General Hospital providing services to an ethnically diverse and rural population.

Table 1 provides an overview of general characteristics of the three hospitals.

Research ethics

The study had NHS research ethics approval from South Birmingham Research Ethics Committee (reference 11/WM/0087), as well as institutional approval at all participating organisations.

Data collection

Three different types of interorganisational and interdepartmental handovers were selected for this study: handover from ambulance service to ED staff in 'resuscitation' (paramedic to senior ED doctor or resuscitation team), handover from ambulance service to ED staff in the 'majors' area (paramedic to senior ED nurse) and telephone referrals from ED to acute medicine (different grades of ED doctors to different grades of acute medicine doctors or senior nurses). The two ambulance services had implemented the Age-Time-Mechanisms-Injury-Signs-Treatments (ATMIST) handover tool for handover of trauma patients.

Patient handovers were audio recorded by members of the project team during the day and evening (8:00–22:00) for a period from November 2011 to July 2012 on days when the researchers were on the respective site. Participants had been informed of the study via a participant information leaflet and had been asked to provide written consent before the start of the data collection period. The researchers recorded handover from the ambulance services using a small voice recorder. Referrals by telephone were recorded by asking the referring party to use a small combined earphone and microphone, which enables recording of telephone conversations. Audio recordings were subsequently transcribed and all identifiers removed.

Data analysis

Transcripts of handover conversations were segmented into utterances and analysed using Discourse Analysis.²¹ In a first step, utterances were coded for their content and their language form using a coding scheme adopted from a study investigating the quality of handover between ED doctors and hospital doctors in the USA.²⁰ The project team discussed the appropriateness of the coding scheme in a review meeting. It was felt that the category 'history' was broad and may hide important issues, such as the social situation and psychological needs of patients. As a result, this category was split into two separate categories: 'clinical history' and 'social history'. All other categories were adopted without change. The coding scheme is described in table 2.

Two of the authors (MAS and PC) coded an initial random sample of 30 transcripts of audio recordings collaboratively in order to allow familiarisation with the coding scheme. Ambiguities and uncertainties were resolved in discussion. One researcher (PC) subsequently coded the remaining audio recordings independently. Simple frequency counts of handover content and language form were performed for each type of handover and for each study site.

During the second phase of the analysis, the broader view of Conversation Analysis was adopted.²² Utterances were interpreted as taking turns at talk, which is both facilitated and dependent on the behaviour and the utterances of the other participant. The researchers identified sequences of turn taking that exhibited recurring patterns.

RESULTS

In total, 203 recordings of handover conversations were included in the analysis. Another 67 recordings were excluded due to excessive background noise, poor recording quality or technical failures of the recording equipment (eg, problems with the microphone for recording telephone conversations). Table 3 shows the number of recordings for each site and type of handover, the respective median age of the patients and the mean duration for the different types of handover at each site.

Content

Table 4 provides an overview of the frequency with which particular content was communicated during each type of handover. Approximately 78%–80% of handover conversation content for resuscitation patients, and 74% of handover conversation content for 'majors' patients was concerned with the patient's previous and current status (category 'patient presentation'). Approximately 4%–5% of utterances were concerned with aspects of the patient's future care (category 'assessment'), and 11%–15% of utterances served to establish a friendly and professional relationship. In general, referrals were more forward looking: 53%–67% of utterances were concerned with the patient's previous and current status, 15%–19% with aspects of future care and 16%–18% with establishing a friendly and professional relationship.

Language forms and patterns of interaction

Across the sites, resuscitation handovers lasted between 38 s and 4 min, handovers for patients in the 'majors' area lasted between 30 s and 6 min and referrals to acute medicine lasted between 1 min and approximately 7 min. Frequency counts for the language forms used are shown in table 5. Handovers from ambulance crews were predominantly descriptive (61%–66% of utterances) and unidirectional. Following the descriptive information provided by the ambulance crew were often a number of specific questions by the recipient. In resuscitation, there were frequently several questions (12%–14% of utterances) intended to elicit additional clinical information relevant to the patient's immediate treatment. In 'majors', there were often one or two questions (5%–6%) intended to elicit information on topics that were mandatory to document, such as pain and allergy status.

In comparison, referrals contained a slightly smaller proportion of descriptive utterances (45%–50%) and slightly more frequently open and closed questions (14%–16%). A recurring type of interaction consisted of the provision of patient demographics and details of the patient's current status by the referring party. The conversation then shifted to the joint identification for the reason to admit. This was followed by a discussion about actions that should be taken immediately. The

Table 2 Coding scheme (adapted from ref. ²⁰)

Coding category	Definition
<i>Content</i>	
Patient presentation	
Patient identifiers	Statements that convey patient identifiers such as name, date of birth or hospital number.
Clinical history	The patient's past medical problems/conditions that are pertinent to the current diagnosis or clinical impression.
Social history	The patient's social circumstances and psychological needs describing, for example, housing situation and existing care arrangements, family or friends accompanying, etc.
Symptom	Descriptions and explanations that provide information about symptoms of concern.
Procedure	Statements about pertinent laboratory data, pertinent test results, medications and evaluation that already been performed to address the patient's current condition.
Assessment	
Treatment	Statements about future medical procedures to be taken to address the patient's current problem.
Clinical impression	Identification of the current clinical impression, naming the problem or reasons for the problem.
Prognosis	Probabilistic statement about patient's future condition based on completed or proposed treatments.
Outcome	Definite utterances about the result of the handover, for example, accept, not accept, wait and see.
Transfer of responsibility	Statements about what was being asked of the recipient of the handover.
Professional environment	
Logistic processes	Descriptive or evaluative talk about logistics or procedural issues in emergency department, hospital, or healthcare system.
Courtesies	Statements such as thank you, greeting and closing remarks, etc., that provide a context of professional courtesy.
<i>Language form</i>	
Information seeking	
Closed question	An utterance that is designed to solicit specific information.
Open question	An utterance that is designed to solicit information in a manner that affords the respondent the opportunity to elaborate.
Clarifying question/request	An utterance that is a question designed to seek clarification of another's immediately preceding utterance. May take the form of a request.
Information giving	
Description	Utterances that provide description about the patient and the patient's past or present condition and circumstances.
Explanation	Utterances that state the facts and make an inference about the patient.
Rationale	A justification is offered to account for any medical procedures, tests, medications or recommendations concerning the patient. The intent is to justify why an action has been taken or will be taken in the future.
Directive	Advisements, orders or recommendations that inform patient evaluation, treatment and disposition.
Context talk	Talk about contextual issues in clinical environment such as logistics and procedures.
Social amenities	Utterances in which physicians exchange courtesies and talk that tells the sender that the receiver is paying attention.
Decision	Utterances in which the physician accepts or does not accept the patient. May be directly stated or implied.
Information verifying	
Read-back	Statements that paraphrase or restate what the other has said.

receiving party led these two phases of the conversation through questions and directives. The receiving party often tried to summarise explicitly the reason to admit. The conversation closed with a short phase about the patient's location or logistical details.

Table 6 shows part of a referral transcript exhibiting a typical pattern. The ED doctor (sender) provides a short descriptive monologue outlining the patient's current status (rows 1–7). The receiving acute medicine doctor (receiver) then takes the lead in the conversation and strongly guides the ED doctor

(sender) in articulating the reason for admission (rows 16–25). The receiving doctor then attempts to summarise this and seeks confirmation (rows 26–27).

Communication of social circumstances and psychological needs

The median age of patients across sites and handover types ranged from 60 to 75 years, suggesting that a high proportion of patients in the ED were elderly. However, only approximately 2%–5% of ambulance service handover communication content

Table 3 Number of audio recordings, median age of patients and median duration of handover across sites

	Number of audio recordings			Median age of patients			Median duration of handover in minutes (low–high; IQR)		
	Resuscitation	Majors	Referrals	Resuscitation	Majors	Referrals	Resuscitation	Majors	Referrals
Ambulance A/Hospital A	14	40	31	75	60	70	1:36 (0:58–2:19; IQR 0:30)	1:14 (0:30–6:01; IQR 1:10)	2:29 (1:02–5:08; IQR 0:52)
Ambulance B/Hospital B	20	39	26	69	73	73	2:10 (0:38–4:00; IQR 1:33)	2:08 (1:02–4:35; IQR 1:03)	3:27 (1:35–6:50; IQR 2:13)
Hospital C	n/a	n/a	33	n/a	n/a	70	n/a	n/a	2:22 (1:15–6:03; IQR 1:54)

Table 4 Frequency of handover communication content

	Percentage of utterances for each handover type and study site (total number)						
	Resuscitation		Majors		Referral		
	A	B	A	B	A	B	C
Patient presentation							
Patient identifiers	5.5 (14)	1.9 (12)	4.7 (45)	5.0 (69)	8.9 (155)	8.8 (124)	13.6 (178)
Clinical history	46.2 (117)	25.5 (164)	37.1 (354)	42.0 (574)	18.5 (322)	16.7 (234)	25.3 (330)
Social history	3.2 (8)	2.5 (16)	3.5 (33)	5.4 (74)	2.8 (49)	1.4 (20)	2.5 (33)
Symptom	10.3 (26)	16.1 (104)	14.1 (134)	10.6 (145)	9.5 (166)	11.5 (161)	4.0 (52)
Procedure	15.0 (38)	32.3 (208)	14.9 (142)	11.5 (157)	19.9 (347)	14.8 (208)	21.7 (283)
Assessment							
Treatment	0 (0)	5.0 (32)	1.7 (16)	0.3 (4)	8.1 (142)	10.0 (140)	4.0 (52)
Clinical impression	4.3 (11)	0 (0)	6.5 (62)	0.7 (9)	3.2 (55)	5.6 (78)	6.5 (85)
Prognosis	0 (0)	0 (0)	0 (0)	0 (0)	1.8 (33)	1.9 (26)	0.3 (4)
Outcome	0 (0)	0 (0)	0 (0)	3.1 (42)	2.1 (37)	2.6 (36)	2.0 (26)
Transfer of responsibility	0 (0)	0 (0)	0 (0)	0.1 (1)	4.6 (80)	5.6 (78)	2.5 (33)
Professional environment							
Logistic processes	4.3 (11)	5.6 (36)	2.9 (28)	5.9 (81)	4.6 (80)	3.3 (46)	1.0 (13)
Courtesies	11.1 (28)	11.2 (72)	14.8 (141)	15.4 (211)	16.0 (279)	18.1 (254)	16.6 (217)

and only 1.5%–2.8% of handover content of referrals related to the social circumstances and psychological needs of the patient, which may be particularly relevant for elderly patients. The analysis identified three recurring triggers that led to the discussion of social and psychological aspects: (i) the ambulance service was alerted by the patient's carer or family member, (ii) the patient's current episode was related to their social circumstances and (iii) during referral there was no clear reason provided to admit an elderly patient. The presence of the first two triggers could act as prompts for the sender to provide a brief description, while the latter trigger could prompt the receiver to query the sender for information through the use of questions. Table 7 provides examples for each of these triggers from the transcripts of referrals.

DISCUSSION

The results suggest that in terms of content the different handover conversation types focused predominantly on physiological

priorities of the patient. The patient's social circumstances and psychological needs were discussed less frequently, and such discussion was initiated by a small number of triggers. The results further suggest that handover conversations may entail both unidirectional transfer of information and collaborative elements aimed at joint decision-making. During the collaborative phases, leadership of the conversation often shifts from sender to receiver. The standardisation of handover practices should aim to provide a structure able to accommodate these collaborative aspects, and it should incorporate the communication of information relevant to the patient's social and psychological needs to establish appropriate care arrangements at the earliest opportunity.

In the present study, at least half of the patient sample were aged 60 years and above. A recently published best-practice guideline (the Silver Book) within the NHS describes the urgent care needs of older people and sets out the competencies that are required to meet their needs effectively.²³ A commentary to

Table 5 Frequency of language forms

	Percentage of utterances for each handover type and study site (total number)						
	Resuscitation		Majors		Referral		
	A	B	A	B	A	B	C
Information seeking							
Closed question	3.5 (9)	11.2 (72)	4.8 (46)	5.0 (68)	8.9 (155)	11.1 (156)	11.6 (151)
Open question	10.9 (28)	1.2 (8)	0.9 (9)	1.0 (14)	5.3 (93)	5.1 (72)	4.5 (59)
Clarifying question	2.7 (7)	3.7 (24)	2.5 (24)	3.8 (52)	1.8 (31)	3.3 (46)	4.5 (59)
Information giving							
Description	61.3 (157)	62.7 (404)	66.0 (630)	65.8 (900)	48.2 (840)	50.8 (714)	45.6 (596)
Explanation	5.5 (14)	0.6 (4)	1.3 (12)	0.7 (10)	4.9 (86)	2.2 (31)	4.6 (60)
Rationale	3.5 (9)	1.9 (12)	6.1 (58)	0.4 (5)	2.1 (37)	3.3 (46)	2.5 (32)
Directive	0.4 (1)	5.6 (36)	2.3 (22)	2.3 (31)	0.3 (6)	1.1 (15)	1.6 (21)
Context talk	0.8 (2)	1.2 (8)	1.5 (14)	5.4 (74)	5.3 (93)	1.4 (20)	2.5 (33)
Social amenities	11.3 (29)	10.6 (68)	14.7 (140)	15.2 (208)	16.0 (279)	18.1 (254)	16.6 (217)
Decision	0 (0)	0 (0)	0 (0)	0.1 (2)	2.1 (37)	2.2 (31)	2.0 (26)
Information verifying							
Read-back	0 (0)	1.2 (8)	0 (0)	0.2 (3)	4.9 (86)	1.4 (20)	4.0 (52)

Table 6 Excerpt of referral transcript—receiving party guides conversation on decision to admit

1	Sender:	<i>He's 73, diabetes, stomach ulcer 2 years ago, left-sided paralysis since 1967, gout and [inaudible] enlargement. Presenting with chest pain, which started today at 8 o'clock in the morning, woke the patient up from sleep, never had this pain before. He's not sure of the nature of the pain, whether it's tightness or stabbing or anything like that. 8 of 10 in severity, doesn't radiate anywhere, but he hasn't got any other symptoms. Risk factors are diabetes and a smoker for 60 years, stopped last December. He has a nurse with him and he's using a wheelchair to move around since last December. Family history is unknown. Obs are within normal and heart—ECG, there are no significant changes there.</i>
6	Receiver:	<i>OK</i>
7	Sender:	<i>Right. I just sent his bloods and I've just sent to him to X-Ray—chest X-Ray.</i>
8	Receiver:	<i>OK, so what do you think is going on?</i>
9	Sender:	<i>Well, I think I can't rule out a cardiac.</i>
10	Receiver:	<i>No, not about ruling out. What do you think is going on?</i>
11	Sender:	<i>Right.</i>
12	Receiver:	<i>Not what you think needs to be ruled out.</i>
13	Sender:	<i>Right.</i>
14	Receiver:	<i>What do you think the cause of his symptoms is?</i>
15	Sender:	<i>I think it's cardiac.</i>
16	Receiver:	<i>So you think it's cardiac?</i>
17	Sender:	<i>Yes.</i>
18	Receiver:	<i>Based on what?</i>
19	Sender:	<i>Based on chest pain, which started at 8 o'clock.</i>
20	Receiver:	<i>But why? What is it about it that makes you worry that it's cardiac?</i>
21	Sender:	<i>Well, the history of smoking, the nature of the pain.</i>
22	Receiver:	<i>OK, so what in the nature of the pain makes you worried about it being cardiac?</i>
23	Sender:	<i>Well, it's left-sided chest pain. It started all of a sudden and it is continuous until now, you know.</i>
24	Receiver:	<i>OK.</i>
25	Sender:	<i>And with significant smoking history and he's diabetic also.</i>
26	Receiver:	<i>OK, so it's the risk factors that he's got that are worrying you?</i>
27	Sender:	<i>Yes, the risk factors. Yes, exactly yes.</i>

Table 7 Examples of triggers that may prompt discussion of social and psychological issues

Trigger (i): Ambulance service was alerted by the patient's carer or family

1	Sender:	<i>She's 88 years old. She's got a carer. The carer was concerned this morning because she didn't seem herself, increased confusion, agitation and abdominal pain. The patient says she's not sure why she's in today. She's complaining of a bit of a muscular ache around her sternum.</i>
2		
3		
4		

Trigger (ii): Patient's current episode was related to their social circumstances

1	Sender:	<i>The referral is purely a social. Lady who fell a couple of weeks ago. She's got a pubic rami. She's been trying to cope at home and she hasn't. The OTs [Occupational Therapists] have kindly checked this, but unfortunately no community beds available at all.</i>
2		
3		
4		

Trigger (iii): No clear reason provided to admit elderly patient

1	Receiver:	<i>Fine, I mean we don't really feel like this is a chap who probably needs to come in. You know, if his chest's fine we could try him with some simple analgesia, or if you think there might be some pericarditis, but if it is a saddling of the ST segments, or is that what you're thinking?</i>
2		
3		
4		
5	Sender:	<i>Well, we thought it was more of an ST elevation type picture really, rather than saddling. Yes.</i>
6		
7	Receiver:	<i>But his troponin is negative?</i>
8	Sender:	<i>Yes.</i>
9	Receiver:	<i>And he's not had any shortness of breath or [inaudible] at all?</i>
10	Sender:	<i>Not any shortness of breath worse than normal for him.</i>
11	Receiver:	<i>OK and what's the situation at home with him?</i>
12	Sender:	<i>He lives with his partner.</i>
13	Receiver:	<i>Yes, OK. I mean I think it doesn't really sound to us too much here that we would kind of do anything about it tonight really. Yes, so I mean obviously the usual kind of safety netting for him, but yes, I don't think we need to see him really.</i>
14		
15		

the guideline calls for multidisciplinary assessments that take place at the earliest possible opportunity in order to deliver coordinated care.²⁴ The findings of the present study suggest that only a very small proportion of the handover conversation

is dedicated to the discussion of the patient's social circumstances and psychological needs. These are usually discussed in cases where the patient's relatives or carers alerted the ambulance service, where the patient's current episode was in direct

relation to their social circumstances or where there was no clear reason for admission of an elderly patient. While it could be argued that in a busy ED environment, the elicitation and assessment of comprehensive social information should be left to inpatient speciality teams who may have more time to ascertain and determine the significance of these factors, such a practice also bears risks to patient safety. Ambulance crews, who have seen the patient's home environment, are often best placed to provide important initial background information to the ED. The majority of patients will not be admitted to hospital, but will be discharged from the ED, and early consideration of the social history and psychological needs of the patient may facilitate the discharge planning process and contribute to reducing delays and unnecessary reattendances. The study raises questions about the extent to which early consideration of psychosocial aspects is currently supported by the handover process in the participating study sites.

Handover is often regarded as the transfer of information from sender to a more or less passive receiver.^{19 25} This is sometimes described using analogies to sports such as 'passing the baton' or something similar. As a result, the most frequently encountered recommendation for improving handover communication is that of standardisation through procedures, checklists or mnemonics and appropriate training in their use.^{10 17} In the UK, trauma guidelines now often include the use of the ATMIST handover tool for handover of trauma patients in resuscitation. Even though this logically feels like it should reduce the instances of critical information being omitted, there is no reliable body of evidence to suggest that standardisation of handover provided sustainable improvements in patient outcomes.^{2 16} Patterson and Wears¹⁹ point out that there are different complementary framings through which the purpose of handover can be viewed. They caution that the narrow focus of handover improvement efforts on the information-transfer framing may be impoverishing and limiting. The results of the present study support this view. The above analysis indicates that handover conversations may entail both unidirectional descriptive phases and collaborative phases during which the parties involved aim to reach a shared understanding of the patient's situation and needs, and try to make a joint decision about the best way to proceed. During these phases, the leadership of the conversation may shift, and far from being passive, the receiver may take charge of the conversation through guiding questions and prompts, and explicit summaries of their understanding. Different types of handovers exhibit these dynamic characteristics to a different extent. The predominantly unidirectional and descriptive structure of ambulance service handover may lend itself more readily to standardisation based on the information-transfer model, even though it could be argued that these types of handovers should be less unidirectional with more read-back and active information seeking from the receiving party. More importantly, though, standardisation of handovers, such as referrals, which entail a significant amount of collaborative talk, may require a different approach able to accommodate changes in leadership and joint decision-making. Anecdotally, referrals are often described as difficult conversations by ED clinicians. This may be due to the preconception of handover as a unidirectional activity, which may lead to frustration when the conversation changes leadership and enters the collaborative phases. Standardisation of and training in handover should aim to make explicit the need for collaborative aspects of handover conversations in order to ensure that staff possess awareness of and appropriate skills to engage in these collaborative aspects

of handover. Adopting such a dynamic model of handover conversations may contribute to making these more effective and reducing the negative personal feelings resulting from unexpected discussions.

LIMITATIONS

The process of audio recording conversations may have introduced an element of reactivity as participants were aware that their conversations were being recorded. As a result, participants may have behaved in ways that they felt were appropriate or particularly desirable. The researchers tried to mitigate this effect by explaining to participants that the data collection was for research purposes only and that all data would be anonymised.

The study focused on the description of the dynamic structure of handover conversations. The data collection did not consider the accuracy of the information transmitted or whether this was received appropriately. No information on patient outcomes was collected, and hence, it was not possible to determine the actual effect on patient care of the handovers recorded.

The study did not consider conversations that may have taken place after the handover or whether written documentation was consulted subsequently. This means that low-frequency counts of handover content do not imply that this information was not in other ways transmitted to the receiving party. However, low-frequency counts indicate that certain topics are not routinely communicated during handover, and often this may be the only opportunity participants have for a formal verbal exchange of information.

CONCLUSION

A narrow focus on handover as an information-transfer activity may limit the options for improvement, and complementary perspectives should be considered. Handover may entail both descriptive talk aimed at information transfer and collaborative talk aimed at joint decision-making. Standardisation of handover needs to accommodate collaborative aspects and should incorporate communication of information relevant to the patient's social and psychological needs to establish appropriate care arrangements at the earliest opportunity.

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Contributors MAS, MWC, PS and MI-K designed the study. MAS was chief investigator, led the data analysis and drafted the manuscript. MR and PC collected the data and contributed to the data analysis. All authors contributed to the interpretation of findings and to the writing and review of the manuscript.

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