

## Developing a framework for nursing handover in the emergency department: an individualised and systematic approach

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**Aims and objectives.** To explore emergency department (ED) nurses' perceptions of current practices and essential components of effective change of shift nursing handover.

**Background.** Ineffective nursing handover can negatively impact on patient outcomes. Evidence suggests that nursing handover in ED is highly variable. Proposed handover models in the literature are structured for inpatient settings and may not be suitable for ED settings.

**Design.** A mixed methods study (survey and group interviews) was conducted in a metropolitan ED in Melbourne, Australia.

**Methods.** During February–June 2011, a survey ( $n = 63$ ) investigated perceptions of current practices and preferences for handover structure. Analyses are descriptive. In the same period, group interviews ( $n = 41$ ) explored nurses' opinions about essential features and information of an effective nursing handover in the ED environment. A modified nominal group technique generated data that were analysed using content analysis.

**Results.** Most nurses (96%) perceived receiving adequate information during handover; however, gaps were identified, including omission of important information regarding medications, vital signs and nursing care needs. Group interviews identified five essential features of effective handover: systematic approach, treatment, appropriate environment, reference to documentation/charts and efficient communication. Essential information included patient details, presenting problem, future care/disposition plan, treatment and nursing observations.

**Conclusion.** Handover structures in the ED may not provide essential information to ensure adequate continuity of nursing care. ED nurses consider optimal handover to be specific for patients for whom they are caring, conducted at the bedside, structured and containing key elements (patient details, presenting problem, treatment, nursing observations, plan).

**Relevance to clinical practice.** Provision of a handover framework incorporating key features and essential information has the potential to improve the efficiency of handover. Use of this framework may enhance the transfer of accurate and essential information to enable safe and high standards of nursing care in the ED.

**Key words:** communication, emergency departments, evidence, handover, nursing

Accepted for publication: 4 January 2013

### Introduction

Clinical handover can be time-consuming, inconsistent and, if not done well, can have a negative impact on clinical

outcomes (Clinical Excellence Commission 2008). The evolution of health care with greater specialisation has resulted in more clinicians involved in patient care; patients are likely to have more handover episodes. In addition, the

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clinical environment is dynamic and complex creating challenges for effective communication between healthcare professionals (Friesen *et al.* 2008). A large proportion of patients are transferred or discharged every day, highlighting the frequency of handover episodes that can occur. Around the world, a large proportion of sentinel events are attributed to poor communication between healthcare professionals (World Health Organization 2007, Chaboyer *et al.* 2008, Jeffcott *et al.* 2009). Despite significant attention in the past decade, handover continues to be associated with adverse events and patient safety risks including medication errors, wrong-site surgery and patient deaths (Friesen *et al.* 2008).

Several standardised clinical communication tools have been developed to improve the efficiency of handover in the healthcare domain, most represented by a mnemonic. These include ISOBAR (Yee *et al.* 2009); iSOBAR (Porteous *et al.* 2009); ISBAR (Thompson *et al.* 2011); SBAR (Velji *et al.* 2008); SHARED (Hatten-Masterson & Griffiths 2009); VITAL and PVITAL (Wilson 2011) (See Table 1). Most of these tools have been designed for use on inpatient wards. The emergency department (ED) context is a very different clinical environment: there are higher patient turnover and unpredictable patient flow, more nursing interventions per patient per unit time, greater likelihood of changes in a patient's condition and more rapid evolution of disposition and care plans. Patients are often cared for by multiple individuals resulting in the risk of inadequate transfer of information between healthcare professionals. ED patients can also have high-acuity illness or injury and require rapid

healthcare decisions with severe time constraints. These contextual issues challenge the translation of the previously developed tools into the ED environment.

## Background

Ideally, during handover, all clinicians know the purpose of the handover, and the information that they are required to acquire and communicate [Australian Commission on Safety & Quality in Health Care (ACSQHC) 2010]. There is a growing body of evidence detailing the benefits of a systematic approach to clinical handover (Currie 2002, Haig *et al.* 2006, Velji *et al.* 2008, Hatten-Masterson & Griffiths 2009, Porteous *et al.* 2009, Yee *et al.* 2009, Thompson *et al.* 2011, Wilson 2011). This has been recognised by healthcare quality bodies such as the Australian Commission on Safety and Quality in Health Care (2010), Joint Commission (2009) and Institute for Healthcare Improvement (IHI) as a priority area. Australia has taken the lead in handover improvement exemplified by The 'OSSIE Guide to Clinical Handover Improvement' (Australian Commission on Safety & Quality in Health Care 2009). This resource has been developed to inform and support the development of standardised handover processes by healthcare professionals. Improvements in documentation, communication and the overall structure and quality of handover have been observed after the introduction of a standardised approach to nursing handover (Fenton 2006, Haig *et al.* 2006, Catchpole *et al.* 2007, Velji *et al.* 2008, Hatten-Masterson & Griffiths 2009).

**Table 1** Components of structured clinical communication tools: ISOBAR; iSOBAR; ISBAR; SBAR; SHARED; VITAL; and P-VITAL

Handover mnemonic	ISOBAR*	iSOBAR†	ISBAR‡	SBAR§	SHARED¶	VITAL**	P-VITAL††
Components	Identification of patient Situation and status Observations of patient Background and history Action, agreed plan and accountability Responsibility and risk management	Identify Situation Observations Background Agreed plan Read back	Identity of patient Situation Background Assessment and action Response and rationale	Situation Background Assessment Recommendation	Situation History Assessment Risk Events	Vital signs and observations Input = output Treatment = diagnosis Ambulation and patient safety Legal and patient Learning	Present patient Vital signs Input/Output Treatment and diagnosis Admission or discharge Legal and documentation

\*ISOBAR (Yee *et al.* 2009).

†iSOBAR (Porteous *et al.* 2009).

‡ISBAR (Thompson *et al.* 2011).

§SBAR (Velji *et al.* 2008).

¶SHARED (Hatten-Masterson & Griffiths 2009).

\*\*VITAL.

††PVITAL (Wilson 2011).

Handover in the ED has been recognised as a high-risk scenario that can result in adverse effects for the clinician and patient (Wong *et al.* 2008a). Research is emerging from the medical domain regarding risks during patient handoffs in emergency care including delays in diagnosis and increased risk of adverse events (Ye *et al.* 2007, Cheung *et al.* 2010). Multitasking and shift changes for ED clinicians can lead to gaps in information transfer, and interruptions are prevalent and diverse in nature (Laxmisan *et al.* 2007).

Nursing handover has been described as lengthy, inconsistent, lacking specific and important detail, medically focused and ritualistic (Kassean & Jagoo 2005, Anderson & Mangino 2006, Fenton 2006, McCloughen *et al.* 2008). Although nursing handover has been investigated frequently in the literature, there have been few examinations of nursing handover procedures in the ED. In a UK study, Currie (2002) has found that nurses are concerned about missing information, distractions and lack of confidentiality in nursing handover in the ED setting. She recommended the development of guidelines specifically for the ED setting to improve the handover process by nurses. In Australia, P-VITAL (Wilson 2011) is the only approach that has been specifically designed for use in the ED, but it has not been externally evaluated. Favourable opinions regarding the implementation of P-VITAL were found with the majority of respondents reporting enhanced learning and benefit for patients and, for inexperienced staff, preference for the structured approach (Wilson 2011). Behara *et al.* (2005) state that attempts to improve handover in the ED have generally failed. They recommend a deeper understanding of the nature of handovers in this setting to enhance the development of successful strategies for use in future.

This project was prompted by concerns at the study ED about nursing handover practice and potential risks to high standards of patient-centred care. These concerns centred on reports that handover was time-consuming, lacked patient involvement and was highly variable. It was reported that handover was not conducted at the bedside and that nurses were frequently distracted by other activities or interruptions. The structure and quality of handover was reportedly ad hoc and often lacked important clinical information such as nursing observations, treatment, ongoing clinical care and disposition plan. Furthermore, it was reported that nursing and medication charts were often not reviewed during the handover process.

This paper describes the first phase of a project that aims to develop, implement and evaluate a standardised change of shift nursing handover model for the ED setting. This study explored emergency nurses' perceptions of current

handover practices and what they considered essential components of effective change of shift ED nursing handover. This paper reports on an innovative approach that included nurses in the development of a standardised ED handover model, an important step in strengthening the sense of ownership and willingness for nurses to adopt the model at a later stage.

## Method

### Design

This was a mixed methods study, conducted from February to June 2011, at a metropolitan teaching hospital in Melbourne, Australia. The ED has an annual census of approximately 63,500 patients (2010 data), including approximately 20,000 children. This study had two components: an anonymous survey and facilitator-led group interviews. The participants were ED registered nurses and enrolled nurses who provided care for patients in the ED during the study period.

### Survey

#### *Data collection*

A purposive sample of nurses working in ED were asked to voluntarily complete the survey. Participants included all permanent and casual nursing staff working in the morning and afternoon shift over a five-day period. All eligible participants were given a Participant Information Sheet that contained key information about the study in the week preceding the study.

During the study period, the research assistant provided nurses with a brief verbal explanation of the study after the morning and afternoon nursing handover. At that time, handover was given as a group handover in the nurses' station. All nurses of the oncoming shift received information about the patients in the ED from the nurse-in-charge of the preceding shift. On completion of nursing handover, and after having performed a clinical assessment of their assigned patients, nurses were asked to complete the questionnaire. Ideally, this was within two hours of receipt of shift-to-shift nursing handover. This was designed to enhance their memory of information exchanged during handover and the patient's condition on their initial assessment. Completed surveys were returned by participants to a sealed box in the ED nurses' station to protect anonymity of responses. The box was emptied daily. Participants were asked to complete the survey once during the study period. Survey data were entered into an excel spreadsheet for

storage and analysis. All data entries were double-checked for accuracy by one investigator.

The survey instrument was developed from a tool used in a ward research project (O'Connell *et al.* 2008, Kerr *et al.* 2011) and was modified to suit the ED setting. The survey consisted of three sections. The first section collected demographic data (gender, duration of registration as a nurse, duration of employment, current position and employment status). The second section gathered information about preferences for the structure and style of nursing handover. Participants were asked who they would prefer to receive handover from (e.g. nurse in charge or the nurse caring for patients of the previous shift), where they would like handover to be conducted (nurses' station, meeting room or at the patient's bedside) and structure of handover (information for all patients or only patients for whom they will be directly caring for). In the third section, participants were asked to respond to twenty-one statements related to their perceptions of change of shift nursing handover using a Likert-type scale of seven categories ranging from 'strongly disagree' (1) to 'strongly agree' (7). Statements such as 'I feel that important information was not given to me' and 'Patients had the opportunity to contribute and/or listen to handover discussions' were provided. The survey was trialled prior to use in this study, and minor adjustments were made.

#### Data analysis

Responses were collated into three categories for analysis according to a negative ('strongly disagree', 'disagree', 'slightly disagree'), neutral ('neither agree' nor 'disagree') or a positive ('slightly agree', 'agree' and 'strongly agree') response. This technique was used in previous research at this organisation (Kerr *et al.* 2011). Survey data were analysed using SPSS for frequency, percentages and descriptive techniques (means, medians, interquartile range (IQR)).

#### Group interviews

##### Data collection

The objectives of the group interviews in this study were to identify essential information and features of an effective handover for the ED setting from the clinical nurses' perspective. Three group interviews were performed over three consecutive days in the study period to include as many ED nursing staff as possible. Each participant attended one group interview session only. Membership of each group interview constituted a range of nursing staff, including associate nurse unit managers, clinical nurse specialists, registered nurses, enrolled nurses and graduate nurses.

Morning shift nurses attended the group interview session unless they had already participated in a previous session. In these cases, an afternoon shift member attended. A sample of at least 30 ED nurses was sought to reveal an extensive range of potentially important perceptions regarding the issues under investigation (DePaulo 2011).

Group interviews were used in a modified nominal group technique (NGT) process to generate and classify ideas that were analysed by content analysis (Pokorny *et al.* 1988, Tague 2005). This process provides all members with an equal opportunity to participate and for their input to be considered. The NGT has been described as a 'useful consensus methodology' (Potter *et al.* 2004, p. 126) and has been used by other health disciplines including medicine, physiotherapy and occupational therapy. Strengths of this technique include minimal preparation by participants, task completion and immediate dissemination of results to the participants, and reduced researcher bias. As described by Potter *et al.* (2004), NGT has five distinct stages: introduction and explanation, silent generation of ideas, sharing ideas, group discussion and voting and ranking. The NGT process starts with the presentation of a specific question to the group. All members of the group are asked to generate answers to this question. Each answer is accepted. In the second phase, all ideas are shared amongst the group members. Lastly, all members determine the importance of the finalised list of ideas. In the healthcare field, NGT has primarily been used to develop policies and guidelines for clinical practice, identify problems and address quality of care issues (Potter *et al.* 2004). This method of data collection was not trialled prior to conduct of the study; however, the group interviews were facilitated by an independent facilitator experienced in use of this technique.

In the first phase, the Crawford Slip Method (Crawford & Demidovich 1983) was used as a basis for initiating discussion related to the question and for the generation of ideas. This brainstorming technique used notepaper as a method of generating and organising data. Participants were provided with a quiet environment to think freely without interruption. Interaction between group members was discouraged during the idea-generating phase but encouraged in the second phase. Members were asked two questions during the first phase: 'What are the five most important pieces of information you require at handover?' and 'What are the five most important characteristics of a good handover?' Each participant of the group session was asked to record their responses to the two questions on separate pages of notepaper provided to them for the purpose of data generation and collection. Responses were collected by the facilitator.

In the second phase, responses to each question were recorded on a whiteboard, discussed by group members and then sorted into general categories. Finally, the group members prioritised these categories. The modified NGT was helpful in generating a list of features for an effective handover and essential handover information.

#### Data analysis

After all group sessions were conducted, data were transferred from the notepaper into two distinct Excel spreadsheets: essential handover information and features of an effective handover. Content analysis of the textual data was performed. The aim of content analysis is to combine together similar types of ideas resulting from written, verbal or visual messages into smaller content categories (Burnard 1996, Elo & Kyngas 2008). Categories were derived from the data after reading the text several times and creating headings in the margins. Next, categories with similar meanings were combined. Finally, the categories were reviewed and main categories were created. At this stage, the data were searched and relevant notepaper responses were placed into a category. The number of responses in each main category was counted. All group responses were considered in the analysis and accounted for by the categorisation.

#### Ethical considerations

For each component, participation was voluntary and approval was obtained from the organisation's ethics panel. Completion of the survey, and attendance and contribution at the group interview session, was deemed as implied consent. Survey data were collected and managed in strict confidence, and anonymity was maintained throughout the study.

## Results

### Survey

Approximately half ( $n = 63$ , 47.9%) of the staff employed in the ED completed a survey during the study period. No nurse who was on morning or afternoon shift over the five-day period declined to participate. Ninety-one per cent of participants were female, 57% were aged <30 years, 72% classified themselves as registered nurses, and 72% reported working part-time. Median years postregistration were 5 (IQR 7), and median years working in ED were 4 (IQR 6).

The majority of participants reported a preference for a detailed handover for their allocated patients only (87.9%), to receive handover from the nurse caring for the patient of the preceding shift (98.5%), and for handover to be

conducted at the patient's bedside (62.7%). A minority preferred handover to be conducted at the nurses' workstation (13.4%) or in a separate room (8.9%).

Perceptions of current nursing handover are shown in Table 2. The majority of nurses reported that they perceived that they had received sufficient information about patients in their care (97%) during handover. However, of particular concern, 51% agreed that important vital sign information was often omitted, and 35% agreed that important information regarding medications was often omitted. Less than two-thirds (62%) reported that handover was performed in front of the patient, and only 41% believed that the patient had the opportunity to contribute or listen to nursing handover.

### Group interview

A total of 41 nursing staff participated in the group interview sessions: 38 females and 3 males. A total of 194 responses were received in response to the question, 'What are the five most important pieces of information you require at handover?' (Table 3). Five main categories were identified as representing essential handover information: 'patient details', 'presenting problem', 'the plan', 'treatment given' and 'nursing observations'. Information about the patient's details was the most important element of handover for nurses (64 responses) and included the patient's name and age, allergy status and social history. Second, nurses wanted information about the patient's presenting problem (63 responses) such as why the patient presented to the ED, relevant past medical history and current medications. Third, details regarding the intended plan for the patient (25 responses) were requested, such as the plan, diagnosis, investigations, resuscitation and fasting orders. Fourth, information about the treatment given in the ED (22 responses) was considered important including prescribed treatment, whether it had been given and response. Lastly, information about the vital signs and pathology results was listed as essential information (20 responses).

A total of 205 responses were received in response to the question, 'What are the five most important characteristics of a good handover?' (Table 4). Five main categories were identified as essential features of an effective handover: 'a systematic approach', 'treatment', 'an appropriate environment', 'documentation and charts' and 'efficient communication'. First, nurses expressed a preference for a systematic approach (83 responses), with additional features including structured, concise, comprehensive and relevant style. Second, there was a strong request for information about the



**Table 2** Perceptions of emergency nurses about most recent handover\*

Statement	Disagree (n, %)	Neutral (n, %)	Agree (n, %)
I have been provided with sufficient information about patients in my care.	1 (1.6%)	2 (3.2%)	59 (96.7%)
I have been provided with adequate information about all patients in the ED.	38 (60.3%)	9 (14.3%)	16 (25.4%)
Handover was too long.	46 (73.0%)	12 (19.0%)	5 (7.9%)
Information was presented in a systematic and organised way.	10 (15.9%)	2 (3.2%)	51 (81.0%)
I feel that important information was not given to me.	47 (74.6%)	8 (12.7%)	8 (12.7%)
I was given information that was irrelevant and/or inappropriate during patient handover.	46 (73.0%)	6 (9.5%)	11 (17.5%)
The ED charts were available during handover to clarify information provided to me.	8 (12.7%)	2 (3.2%)	53 (84.1%)
The ED charts were reviewed during handover, for example drug chart, vital signs, patient allergy, FBC.	13 (20.6%)	2 (3.2%)	48 (76.2%)
The way in which information was provided to me was easy to follow.	5 (7.9%)	2 (3.2%)	56 (88.9%)
I was unable to keep my mind focused during handover due to excessive noise.	35 (55.6%)	7 (11.1%)	21 (33.3%)
Handover was given using effective communication skills, for example clear speech, not too fast.	2 (3.2%)	2 (3.2%)	59 (93.7%)
Handover was interrupted by patients, their significant others or other staff.	34 (54.0%)	4 (6.3%)	25 (39.7%)
The information I received was up to date.	1 (1.6%)	2 (3.2%)	60 (95.2%)
Handover was conducted in front of the patient.	17 (27.0%)	7 (11.1%)	39 (61.9%)
Patients had the opportunity to contribute and/or listen to handover discussions.	30 (47.6%)	7 (11.1%)	26 (41.3%)
I had to seek further information about my patient(s) from a nurse or nurse-in-charge after the handover.	45 (71.4%)	8 (12.7%)	10 (15.9%)
I had the opportunity to ask questions about things I did not understand during handover.	3 (4.8%)	2 (3.2%)	58 (92.1%)
As a result of handover, I have a clear understanding of the plan (diagnosis, treatment, discharge) for the patient(s).	0 (0.0%)	3 (4.8%)	60 (95.2%)
I received adequate information about nursing care during handover, for example mobility, nutrition/hydration, pain.	5 (7.9%)	6 (9.5%)	52 (82.5%)
Important vital sign observations are often omitted from nursing handover, for example BP <100, oxygen saturation <93%.	21 (33.3%)	10 (15.9%)	32 (50.8%)
Important information about medication is often not given during handover, for example withheld, allergy, unavailable.	28 (44.4%)	13 (20.6%)	22 (34.9%)

\*Not all participants responded to each survey question; therefore, some total responses are less than  $n = 63$ .

treatment received in the ED (45 responses) regarding what needs to be done, results/diagnosis and plan and what treatment has been given. Third, an appropriate environment in which to conduct handover was expressed by ED nurses (28 responses). They preferred that it was conducted at the bedside, involved the patient and is quiet and free of distractions. Fourth, use of documentation and charts during handover is preferred (26 responses) with particular reference to viewing of the nursing charts and ensuring that documentation is up to date. Lastly, ED nurses conveyed that the way in which handover is communicated is important (23 responses) and must be professional and respectful.

## Discussion

Several key outcomes have arisen from this project. We have identified that nurses in the study ED consider optimal handover to be specific for patients for whom they will be caring, conducted at the bedside, structured and containing the key information elements of patient details, presenting

problem, treatment, nursing observations and the plan. Overall, the survey suggested that nurses were satisfied with current handover practices. However, some areas of nursing handover in the ED were identified that are lacking sufficient detail and may benefit from a structured and systematic approach.

Most (97%) reported that they had received sufficient information at handover. However, the survey data revealed some inconsistencies. Approximately 51% agreed that important vital sign information was often omitted and 35% agreed that important information regarding medications was often omitted. Findings from the group interviews highlighted that nurses want information about current patient status (vital signs) and treatment administered. These data point to current handover practices that may be inadequate, with the risk of vital information not being communicated.

Approximately 20% of participants reported that handover information was not presented in a systematic or organised way ( $n = 12$ ) and that the ED charts (vital signs

**Table 3** Group interview responses to identify essential handover information

Category	Detail	Number	%
Patient details	Name	21	51.2
	Age	21	51.2
	Allergies	9	21.9
	Social history, that is, living arrangements	6	14.6
	Identification number	3	7.3
	Gender	2	4.9
	Language/nationality	2	4.9
Presenting problem	Why have they presented to ED?	35	85.4
	Relevant medical history	18	43.9
	Current medications	10	24.3
The Plan	What is the plan?	14	34.1
	Tests required/pending	5	12.2
	What is the diagnosis?	3	7.3
	Resuscitation orders	2	4.9
	Fasting	1	2.4
Treatment given	Treatment ordered/given/response	22	53.7
Nursing observations	Vital signs (initial/ongoing)	19	46.3
	Pathology/Radiology/Other results	1	2.4

and medications) were not reviewed during handover ( $n = 15$ ). Key features of an effective handover identified in the group interviews of this study included a preference for a systematic approach and reference to nursing charts and documentation during conduct of handover. This is consistent with the broader clinical handover literature that supports the use of minimum data sets and systematic approaches for handover delivery to improve accuracy and consistency (Talbot & Bleetman 2007, Wong *et al.* 2008b, Iedema *et al.* 2012).

A key government health department in Australia (NSW Health 2009) has recommended two standard key principles for safe and effective clinical handover: recognition and inclusion of patients and carers as handover participants and conduct of handover in the patient's presence at the bedside. Several Swedish studies (Florin *et al.* 2006, Frank *et al.* 2009) have found conflicting views regarding participatory care. Florin *et al.* (2006) discovered that nurses and patients can have differing views regarding degree of participation for patients in decision-making regarding their care. They recommend communication between patient and carer to establish patient preferences for their participation. According to Frank *et al.* (2009), patients consider they are participating in their care when emergency staff provide them with information about their condition. Survey responses from this current study indicate

**Table 4** Group interview responses to identify features of an effective handover in the emergency department

Category	Detail	Number	%
Systematic approach	Systematic/Structured	24	58.5
	Concise	21	51.2
	Relevant	12	29.2
	Comprehensive	8	19.5
	Knowledge of the patient	8	19.5
	Timely	5	12.1
	Accuracy	5	12.1
Treatment	What needs to be done?	16	39.0
	Results/Diagnosis/Plan	13	31.7
	What has been done?	8	19.5
	Information about medications given	4	9.8
Appropriate environment	Has patient improved?	4	9.8
	At the bedside involving the patient	15	36.5
	Quiet environment 'free of distractions'	13	31.7
Documentation and charts	Show relevant charts/documentation	16	39.0
	Documentation up to date/accurate/complete/signed	5	12.1
	Allergies	2	4.9
	Vital signs	2	4.9
	Medications charted/given/ordered	1	2.4
	Clear speaking	15	36.5
	Professional	3	7.3
Efficient communication	Team work	3	7.3
	Respectful	2	4.9

that patients may not be recognised as handover participants: only 41% were provided with the opportunity to contribute or listen to handover discussions. However, there seems to be a discrepancy in results in that two-thirds of participants reported that handover was conducted 'in front of' the patient. This may be explained by our observation during the study that the majority of nursing handover was conducted some distance from the patient (albeit in front of them but at least five metres away) that would have excluded patient participation during the handover conversation.

In a study that used a video-reflective technique, identification of frequent interruptions during handover in the busy corridors of the emergency department led to the redesign of handover including a bedside ward round (Iedema *et al.* 2009). An additional objective of the new process was to respond more directly to concerns and questions from the patient and their family/caregiver. More than one-third (36.5%) of group interview participants

reported a preference for conducting handover at the patient's bedside in the ED. Whether patients in the ED have a preference for handover to be conducted in their presence and the degree of their involvement has not been explored in the ED setting, but is a focus of future research by our group.

Taken together with the strongly held preference of a structured handover and the gaps identified in the survey of omission of important vital sign and medication information, we undertook the development of a structured handover framework for nursing handover in ED. The survey and group interview data were examined and discussed at two workshops involving clinicians (nurse unit manager, associate unit manager, nurse educator, registered nurses) and academic researchers. The framework, as shown in Table 5, is modelled on the ISBAR (Thompson *et al.* 2011) approach but modified for the ED context based on our findings. The major difference between this ED framework and other models of nursing handover (Table 1) is the emphasis on nursing care needs, the disposition plan and what needs to be done, and direction to alert the nurse-in-charge and/or medical officer when vital signs and pain are outside normal parameters. This approach is also consistent with recommended minimum data sets for clinical handover (Wong *et al.* 2008b, NSW Health 2009). After review of responses to the most essential features of an effective handover in the ED, the workshop members identified the following features: 1) a systematic approach, 2) to be conducted in the cubicle at the bedside, 3) to involve the patient and/or relative, 4) to include viewing of patient charts during handover and 5) a preliminary group handover for all ED patients for information about variances and alerts (e.g. allergies). Critics of 'bedside handover' have raised concerns about risk to patient confidentiality, time and resource use and use of advanced clinical jargon (Cahill 1998, Greaves 1999, Rutherford *et al.* 2004, Martin *et al.* 2007). More recently, McMurray *et al.* (2011) have found that bedside handover provides an opportunity for patients to be involved as active participants in their care. Baker

(2010) proposes that bedside reporting improves nursing accountability and patient safety. She suggests that application of this handover model addresses the 'Joint Commission's National Patient Safety Goals' (Joint Commission 2009), including improvement of accuracy of patient identification, effectiveness of communication amongst caregivers and patients' active involvement in their own care. Patient involvement in the ED setting may be important where breakdowns in communication have been found in the journey from home to the emergency setting (Talbot & Bleetman 2007). In a review of the literature, Nairn *et al.* (2004) found that the area of communication and information giving is of concern to patients whilst receiving care. An opportunity to clarify details and provide additional information may improve overall patient care for emergency department patients. Work to implement and evaluate the ED handover framework is underway, including an investigation of patient opinion about the new handover process.

This study had several limitations. The study ED employs approximately 140 nursing staff; however, approximately 50% completed the survey. The sample is likely to be representative of the population of nursing staff who are employed on a rotating basis over a seven-day week including morning, afternoon and night shifts as almost all nurses rotate between these shifts. However, the data may not accurately reflect all nursing staff opinions about handover practices in the study ED. A modified NGT was used employing the Crawford Slip Method technique to generate the initial ideas. Whilst different from other versions of NGT, it is consistent with its principles (Pokorny *et al.* 1988). Participants represented the various nursing positions ranging from graduate nurses through to associate unit managers. Seniority mix may have influenced the results. This raises the possibility of bias which may have impacted on data and results. In addition, whilst NGT may reach consensus on a particular issue, the correct answer or solution may not have been found (Potter *et al.* 2004). Implementation of the specific ED handover framework proposed in this study will need further testing and validation in future to evaluate patients' opinion regarding the nursing practice and measurement for improvements in nursing care and documentation.

**Table 5** The Sunshine Hospital ED structured nursing handover framework

I	Identification and alerts
S	Situation/Presenting problem
B	Background
A	Assessment and progress
N	Nursing care needs
PLAN	What is the plan? Outstanding issues?
CHECK	Check medication chart, vital signs, fluid balance, etc.
ACT	Alerting nurse in charge/medical officer based on vital sign parameters or clinical deterioration

## Conclusion

ED nurses consider optimal handover to be specific for the patients they will be caring, conducted at the bedside, structured and containing the key information elements of patient details, presenting problem, treatment, nursing observations and the plan. This study has identified that important patient information is often omitted and there is a lack of patient



involvement in handover conversations between nurses in the ED. These weaknesses in handover communication, in particular missing information about vital signs and medication, may contribute to the occurrence of serious adverse events in the emergency setting. The findings of the study have made an important contribution to nursing knowledge in EDs because they have contributed to the development of a structured and systematic handover approach, for future implementation in the ED setting. Moreover, further planned implementation of the new handover model in ED will need to be carefully evaluated to determine actual application of the model and acceptability by nurses.

### Relevance to clinical practice

Provision of a handover framework for use in the ED incorporating essential elements has the potential to improve the effectiveness and efficiency of handover and to avoid omission of critical information. Continuity of care and patient safety may be enhanced with a standardised process for clinical handover. In addition, strengthened interpersonal relationships between the nurse and the patient may ensue with an approach that includes the patient.

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### Acknowledgement

The researchers would like to thank Colin Yates for his assistance with conduct of the focus groups and analysis of their outputs. In addition, the nursing staff who participated in the focus groups and senior emergency nursing staff (Samantha Boswell, Chris Hill, Julie Shelton, Sarah Paul) are thanked for their contribution.

### Funding

This project was supported by a grant from Nurses Board of Victoria Legacy Limited Grant.

### Contributions

Study design: SK, AMK, DK, SW, TM; data collection: SK, DK, SW; manuscript preparation: SK, AMK, DK, TM.

### Conflict of interest

The authors declare no conflict of interest in regard to conduct of this study.

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