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5 **Clinical Practice Guidelines for person-centered handover practices in**  
6 **emergency departments: A scoping review**  
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10 **Aims:** To review the available information on clinical practice guidelines for person-centered  
11 handover practices between emergency care practitioners and healthcare professionals in  
12 emergency departments. Currently, there is no gold standard for person-centered handover  
13 practices in emergency departments. Collating existing clinical practice guidelines may  
14 improve handover practices.  
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16

17 **Design:** Scoping review.

18 **Data sources:** The literature on clinical practice guidelines for person-centered handover  
19 practices was reviewed. Three electronic data bases were searched: MEDLINE (PubMed),  
20 CINAHL (EBSCO), and Scopus. Nineteen studies met the inclusion criteria.  
21  
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23 **Methods:** The review was conducted according to the Johanna Briggs Institute methodology  
24 for scoping reviews. Results were reported using the Preferred Reporting Items for  
25 Systematic Reviews and Meta-Analysis extension for Scoping Reviews checklist.  
26  
27

28 **Results:** Various mnemonics exist for handover practices. Where mnemonics are not used,  
29 participants have identified important information that should be included during handover  
30 practices. We did not find any clinical practice guidelines or information on person-centered  
31 handover practices in any of the reviewed articles.  
32  
33

34 **Conclusion:** Currently, there is no gold standard for person-centered handover practices,  
35 which has led to various practices being implemented. Most articles expressed a need for  
36 standardized handover practices; however, not all aspects of handover practices can be  
37 standardized and should be kept patient and context specific.  
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39

40 **Impact:** Currently, there are no clinical practice guidelines for handover practices in  
41 emergency departments. Subsequently, there is a need for standardized, yet patient and  
42 context specific, handover practices. Knowledge of existing handover practices may guide  
43 the development of clinical practice guidelines for person-centered handover practices  
44 between emergency care practitioners and healthcare professionals in emergency  
45 departments. Such guidelines may improve current handover practices and lead to improved  
46 patient care.  
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52 **Reporting Method:** The study adhered to the relevant EQUATOR guidelines: Preferred  
53 Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews  
54 checklist.  
55  
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57 **Patient or Public contribution:** No Patient or Public Contribution.  
58  
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**Keywords:** clinical practice guidelines, person-centered, handover practices, emergency care practitioners, healthcare professionals, emergency department

**What does this paper contribute to the wider global clinical community?**

- Current handover practices in emergency departments may be improved by creating awareness of current handover practices.
- We identify existing handover mnemonics or tools to guide handover practices.
- This review highlights the importance of adequate handover in continuity of patient care.
- Standardized, yet patient and context specific handover practices, are needed in emergency departments.

**Trial and Protocol Registration:** This scoping review protocol was registered on Figshare:

[10.6084/m9.figshare.21731528](https://figshare.com/records/10.6084/m9.figshare.21731528)

Review Copy

## 1. INTRODUCTION

In clinical settings, transfer of care is often described as handover, hand off, or transition of care. The British Medical Association (2008) defines clinical 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*” (Friesen, White and Byers, no date). Handover occurs multiple times per day in all healthcare facilities and amongst various healthcare professionals (Cheetham *et al.*, 2023; Forde, Coffey & Hegarty 2020; Tortosa-Altied *et al.*, 2021). Regarded as a complex procedure, handover involves many different role players (professionals, patients, members of the public) and uses a variety of technologies and formats (Guasconi *et al.*, 2022).

In emergency departments (EDs), handovers differ from those in other healthcare settings due to the unique, somewhat chaotic, and complex environment of the ED (Cheetham *et al.*, 2023; Guasconi *et al.*, 2022; Tortosa-Altied *et al.*, 2021). Rapid decision making, rather than listening, is often prioritized in EDs (Cheetham *et al.*, 2023; Howell *et al.*, 2023; Tortosa-Altied *et al.*, 2021). Amongst the different types of handovers that occur in EDs, handovers from the pre-hospital environment (emergency care practitioners [ECPs]) to the in-hospital environment (healthcare professionals-doctors and nurses) are vitally important for continuity of care, patient safety, and quality care (Cheetham *et al.*, 2023; Cowan *et al.*, 2023; Howell *et al.*, 2023). Effective communication is crucial during handovers between ECPs and healthcare professionals in EDs. Currently, there are various handover tools/mnemonics/protocols/models that aim to facilitate communication and standardize handover practices between ECPs and healthcare professionals (Cheetham *et al.*, 2023; Guasconi *et al.*, 2022; Howell *et al.*, 2023), but the optimal method has not been identified. Consequently, many studies have suggested the need for improving handover practices (Cheetham *et al.*, 2023; Cowan *et al.*, 2023; Howell *et al.*, 2023; Guasconi *et al.*, 2022; Mastrogiovanni & Michelle Moccia, 2022;).

Standardized handover practices have been associated with improved staff satisfaction, comprehensive information transfer, shortened handovers (Guasconi *et al.*, 2022), retention of information (Mastrogiovanni & Michelle Moccia, 2022), fewer interruptions, increased confidence in handover delivery (Cowan *et al.*, 2023), and less room for mistakes (Clark, 2023). Ideally, standardized methods should be closely followed to prevent information loss (Guasconi *et al.*, 2022). Health professionals are not the only role players during handovers; patients are also involved. Patients are commonly involved in handovers during nursing staff shift changes (Ismuntania *et al.*, 2023; Poelen, van Kuppenveld & Persoon, 2023). Patient

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2  
3 involvement during handovers is important for delivering person-centered care and shared  
4 decision-making, which reduces anxiety, improves satisfaction, and increases participation in  
5 care (Ismuntania *et al.*, 2023; Kim, Kim & Lee, 2022; Street *et al.*, 2022:). Patients who are  
6 involved in their care also have the opportunity to clarify and correct inaccuracies  
7 (Ismuntania *et al.*, 2023). Despite these benefits, patients are rarely included in handovers  
8 (Street *et al.*, 2022). Person-centered handovers promote person-centered care, which  
9 involves eliciting information regarding patients' values and preferences to guide  
10 individualized care (Kim, Kim & Lee, 2022; Poelen, van Kuppenveld and Persoon, 2023).  
11 Person-centered care in EDs has gained traction with the move from being centered on the  
12 illness or provider to being individualized and based on partnerships between patients and  
13 healthcare professionals (Kim, Kim & Lee, 2022). Despite person-centered care gaining  
14 momentum in EDs, research on person-centered handover practices between ECPs and  
15 healthcare professionals in EDs is limited.

## 23 24 25 2. AIM

26 This review aimed to identify and present the available information on clinical practice  
27 guidelines for person-centered handover practices between ECPs and healthcare  
28 professionals in EDs.  
29

## 30 31 32 33 3. METHODS

34 The review was conducted according to the Johanna Briggs Institute (JBI) methodology for  
35 scoping reviews (Peters *et al.*, 2021). The results were reported using the Preferred  
36 Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews  
37 checklist (PRISMA-ScR) (Tricco *et al.*, 2018).  
38

### 39 40 41 42 43 3.1 Data sources and search strategy

44 As per the JBI approach, literature was searched in three-steps. The search strategy was  
45 designed and refined in collaboration with an information specialist. Step 1: an initial search  
46 using MEDLINE (PubMed) was conducted. For the full electronic search strategy conducted  
47 on MEDLINE (PubMed). (Table 1 – supplementary file – search strategy)  
48

49 Step two involved searching the CINAHL (EBSCO) and Scopus databases. Although we  
50 planned to search Web of Science, we did not search Web of Science because most studies  
51 were duplicate studies found on both CINAHL (EBSCO) and Scopus. Step three involved  
52 searching for organizations that publish clinical practice guidelines, namely the National  
53 Institute of Health, American College of Physicians, the National Institute of Health and Care  
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3 Excellence, the Registered Nurses' Association of Ontario, the Australian Medical  
4 Association, and the British Medical Association. Lastly, the reference lists of included  
5 studies were searched for additional studies. Searches were conducted between January 29  
6 and May 31, 2023 after the search strategy was pilot tested by the information specialist and  
7 one member of the scoping review team (SdL).  
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### 11 12 13 3.2 Inclusion and exclusion criteria

14 The participants, concept, and context framework was used to determine the inclusion  
15 criteria for the review (Peters *et al.*, 2021).  
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#### 18 19 *Participants*

20 Emergency care practitioners transporting and handing patients over to healthcare  
21 professionals in EDs. Healthcare professionals including doctors and nurses working in EDs,  
22 who are involved in handovers with ECPs.  
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#### 25 26 27 *Concept*

28 Clinical practice guidelines for person-centered handover practices between ECPs and  
29 healthcare professionals in EDs.  
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#### 32 33 34 *Context*

35 Studies conducted in EDs, emergency rooms, or emergency centers in any geographical  
36 area.  
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39 Due to limited literature, we did not apply any language or time restrictions. The search  
40 included published and unpublished studies, opinion papers as well as primary sources, and  
41 evidence synthesis. All qualitative and quantitative research designs were included.  
42  
43

### 44 45 46 3.4 Search outcomes

47 The initial search yielded 129 records and three handover guidelines from organization sites,  
48 resulting in 132 records. No automation tools were used for the screening and selection  
49 process. After de-duplication, irretrievable and non-English record were removed. The  
50 abstracts of 69 records were screened. Forty-eight records did not meet the inclusion criteria  
51 and were excluded, resulting in 21 full-text reports being screened. Thereafter 13 reports  
52 were excluded as it did not pertain to inclusion participants (population), some was the  
53 wrong participant group, and articles not related to handover practices. From there, 11  
54 reports were identified from reference lists of identified articles resulting in 19 studies being  
55 included in the final review (Figure 1). All reports were uploaded into Mendeley reference  
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3 management software 2022 (Mendeley Ltd, Elsevier, New York). All full text citations were  
4  
5 uploaded into Rayyan (2022) to collaboratively review the literature. The full text citations  
6  
7 were assessed in detail against the inclusion criteria by two members of the scoping review  
8  
9 team (SdL and TH), and a third reviewer (CF) resolved any disagreements.  
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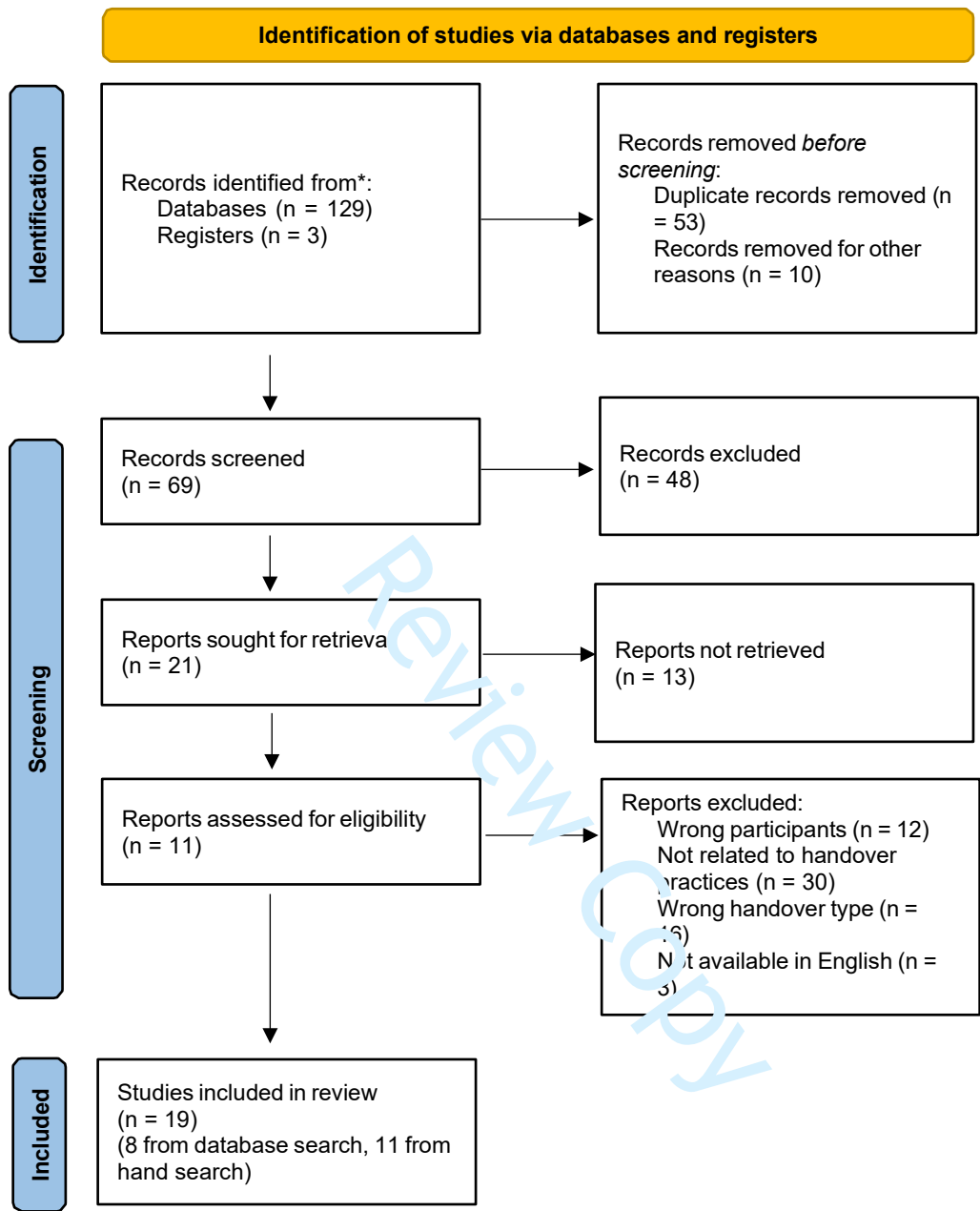


Figure 1: PRISMA flow diagram-search and retrieval process

### 3.5 Data extraction and synthesis

A data extraction tool was developed, pilot tested, and used to extract data from the included studies (Table 2 – supplementary file – data extraction tool).

## 4. RESULTS

Most the reports originated from developed countries, of which 36% ( $n = 7$ ) were done in Europe, Australia ( $n = 6$ ), America ( $n = 5$ ), and the Middle East ( $n = 1$ ). (Figure 2 – supplementary file – number of studies per country).

Articles were published between 2001 and 2020. Most of the articles (47%) were published between 2011 and 2015 ( $n = 9$ ), followed by 2016 to 2020 ( $n = 4$ ), then 2006 to 2010 ( $n = 3$ ), and the least reports were published between 2001 and 2005 ( $n = 2$ ) at 10%. Evidently, the number of publications on handover practices between ECPs and healthcare providers in EDs has increased over the last 20 years. (Figure 3 – supplementary file – illustration of publications per year).

Forty two percent of reports were qualitative ( $n = 8$ ), which included observational studies, focus group interviews, audits, and ethnographic studies. Fifteen percent of articles were quantitative ( $n = 3$ ), 15% were mixed methods studies ( $n = 3$ ), and 26% reviews (systematic and literature) ( $n = 5$ ). All studies were conducted in EDs involving various participants; 5% included ED nurses only, 5% included only emergency care practitioners (ECPs), 5% included ECPs and ED nurses, 10% included ECPs and doctors, 52% included ED nurses, ECPs, and doctors, and 15% of articles were document audits. (Table 3 – supplementary file – included studies characteristics).

Four studies used standardized or structured handover tools. Two studies referred to guidelines, and two studies referred to mnemonics. The remaining 13 articles did not provide a specific term for handover practices. Ten studies provided a specific tool or mnemonic to be used when conducting a handover such as, MIST (Dawson, King & Grantham, 2013; Jensen, Lippert & Østergaard, 2013; Wood *et al.*, 2015), DE-MIST (Bost *et al.*, 2010; Ebben *et al.*, 2015), ISBAR (Dawson, King & Grantham, 2013; Di Delupis *et al.*, 2015; Dojmi Di Delupis *et al.*, 2014; Yegane *et al.*, 2017), IMIST-AMBO (Iedema *et al.*, 2012; Jensen, Lippert & Østergaard, 2013; Reay *et al.*, 2020), ICE/ ASHICE (Wood *et al.*, 2015), and BAUM (Jensen, Lippert & Østergaard, 2013). The remaining nine studies mentioned important details or information that should be included in handover practices (Table 4).

**Table 4: Summary of the reports included in this scoping review of clinical guidelines for handover practices in emergency departments (EDs) (n = 19).**

Author	Title	Aim/s of the study	Study design	Population and sample size (n)	Available clinical practice guidelines (CPG)/ transition in care guidelines/ handover-model/ tool/ mnemonic in report	Key findings
Bost, Crilly, Patterson, & Chaboyer (2012)	Clinical handover of patients arriving by ambulance to a hospital emergency department: A qualitative study	(1) Explore clinical handover processes between ambulance and ED personnel (2) Identify factors that impact on the information transfer to ascertain strategies for improvement.	Focused ethnographic study	Emergency care practitioners (ECPs) (n = 79) Nurses (n = 65) Doctors (n = 19)	No CPG, transition in care, handover- tool/ model or mnemonic. Handover guideline was suggested.	Handover guideline: AMIST-Age, Mechanism of injury/ illness, Injury or illness, Signs and Treatment. Included information on place of retrieval, condition of patient on arrival of ambulance, age, signs and symptoms, observations performed, and treatment given by paramedics, past medical history if known, medications prescribed for previous medical conditions and social history if deemed relevant by paramedics. Transfer of responsibility should also occur. Standardizing the key principles of clinical handover can prevent the loss of vital information. These principles include nominating a leader at each handover, documentation of handover, and transferring information in a predetermined format. Two different handover processes were identified depending on the patient's acuity. Handover content differed and depended on experience and the preferred method of both the receiver and the giver of information.
Bost, Crilly, Wallis, Patterson &	Clinical handover of patients arriving by ambulance to the	To critically review research on clinical handover	Literature review	ECP to ED handover (n = 8 articles)	No CPG, transition in care, handover- tool/ model or mnemonic.	A detailed handover includes patient problems, incident, and patient assessment in verbal and written

Chaboyer (2010)	emergency department – A literature review	between ambulance services and EDs			Handover structure was mentioned.	form. Known structures such as DeMIST are helpful. Information should include vital signs, past medical history, current medication, and pre-hospital treatment. Should be performed in two phases (a summary and then detail later). A standardized approach to handover should be followed. Discipline specific guidelines are needed.
Bruce, & Suserud (2005)	The handover process and triage of ambulance-borne patients: the experiences of emergency nurses.	To explore the experiences of emergency nurses receiving patients who were brought into hospital as emergencies accompanied by ambulance nurses through an analysis of the handover and triage process.	Qualitative descriptive approach	ED nurses (n = 6)	No CPG, transition in care, handover-tool/model/ mnemonic mentioned.	The ideal handover included information that was patient focused and clearly stated identifiable problems. Handover was a verbal report, clarifying the circumstances around what happened to the patient together with a descriptive picture of the patient's problems or needs. Information regarding the patient's overall care needs were deemed more important together information on the patient's life situation and potential problems. Commence with a brief handover to obtain an impression of the patient. Attentive listening during handover is important. Handovers comprise of verbal, written and physical handover involving ED nurses, ambulance nurses, and patients.
Carter, Davis, Evans & Cone (2009)	Information loss in emergency medical services handover of trauma patients	To determine the degree to which information presented in the EMS trauma patient handover is degraded.	Observation and document audit	Observed and audited handovers (n = 96)	No CPG, transition in care, handover-tool/model/ mnemonic mentioned	Knowledge regarding what happened to the patient before arriving at the ED is important. Handover information should include: pre-hospital hypotension, Glasgow Coma Scale, age, end-tidal CO <sub>2</sub> , pulse, respiratory rate, saturation, blood loss in filed, death of occupant in same compartment, mechanism of

						injury, intrusion, extrication time, estimated crash speed, anatomic location of the injury, pre-existing disease, prehospital intubation. From this list only 4.9 items were transmitted at every handover, with many not relevant to all patients.
Dawson, King, & Grantham (2013)	Improving the hospital clinical handover between paramedics and emergency department staff in the deteriorating patient.	To establish: (i) what aspects of the clinical handover between paramedics and ED staff impact on the effective transfer of a patient in a state of physiological deterioration (ii) how these aspects might be improved in the future.	Integrative literature review	ED doctors and nurses and paramedics (n = 17 papers)	No CPG, transition in care, handover- tool/ model. Handover mnemonics was mentioned.	A structured handover tool is needed. Mnemonic tools include ISBAR (Introduction, Situation, Background, Assessment and Recommendation) and MIST (Mechanism of Injury/Illness, Injuries, Signs, observations and monitoring, and Treatment given). Baseline observations, such as airway, breathing, circulation and level of consciousness, and changes in patient condition are required. Written (electronic or paper) should follow verbal handover.
Dojmi Di Delupis, Mancini, di Nota, & Pisanelli, (2015)	Pre-hospital/ emergency department handover in Italy	To measure communication during clinical handovers from prehospital to ED providers in a realistic setting with our communication evaluation tool.	Observational study	Observed handovers (n = 240)	No CPG, transition in care, handover- model/ mnemonic mentioned. Handover tool was mentioned.	Handover tool: ISBAR > 90% of handovers: the pre-hospital providers and nurses did not introduce themselves In 36% of handovers the patient was introduced by name. Other patient demographics were only reported in 10% of handovers. Reason for the emergency call was reported in 80% of handovers. In 26% of handovers changes in the patient's condition were reported. In 8.8% of handovers, allergies were reported and in 23% the medical history and home therapies were reported. Regarding patient assessment, the information was transmitted either completely, in part or not at all, in only 1% a

						complete and systematic manner was used to transfer information completely. Vital signs were only reported in 66% of handovers. Recommendations (R) were not usually provided. No standardized tool existed which resulted in incomplete, partial, or disordered information being transferred.
Dojmi Di Delupis, Pisanelli, Di Luccio, Kennedy, Tellini, Nenci, Guerrini, Pini, & Franco Gensini (2014)	Communication during handover in the pre-hospital/ hospital interface in Italy: from evaluation to implementation of multidisciplinary training through high-fidelity simulation	(1) Development of simulated handover scenarios to evaluate the communication between pre-hospital and hospital providers (2) identify critical information that should be routinely communicated during the handovers between the pre- hospital and the hospital providers; (3) evaluate and adapt existing tools for measuring communication between medical providers for use in the pre-hospital/ED interface (4) validate the adapted tool (5) develop training for pre-hospital providers in handover communication (6) evaluate communication pre and post-training.	Mixed methods. Multidisciplinary handover simulations and debriefings. Baseline nursing quantitative surveys to evaluate handover communication. Multidisciplinary focus group interviews. Handover tool validation.	<i>Simulation activity:</i> Simulation scenarios (n = 12): Pre-hospital providers and ED physicians (n = 35), ED nurses (n = 6), Rescuers (n = 12) and Actors (n = 6). <i>Quantitative survey:</i> Triage nurses (n = 23). <i>Focus group interviews:</i> Emergency physicians (n = 4), ED nurses (n = 4) Rescuers (n = 4). <i>Handover tool validation:</i>	No CPG, transition in care, handover-tool/model/ mnemonic mentioned.	The lack of a standardized handover communication process was a concern for authors. The ISBAR tool was implemented, and training provided. Standardized communication was suggested for handovers. Both verbal and written handovers should occur. Triage nurses suggested the following critical information: patient identification, chief complaints, clinical condition, and medications. Family contact information and pre-hospital vital signs were regarded as less important information to be received. Other information regarded as important to handover included: patient name, age, baseline condition, condition during transfer, primary survey, and patient allergies.

				Handover practices (n = 12)		
Ebben, van Grunsvan, Moors, Aldenhoven, de Vaan, van Hout, van Achterberg, & Vloet (2015)	A tailored e-learning program to improve handover in the chain of emergency care: A pre-test post-test study	To evaluate the effectiveness of a learning program to improve ECPs adherence to handover guidelines during pre-hospital notification and handover in the chain of emergency medical service, emergency medical dispatch, and the ED.	Prospective pre-test post-test design	E-learning program: Emergency medical services (n = 73), Emergency medical dispatch (n = 15) Pre-test handover (n = 145) Post-test handovers (n = 167)	No CPG, transition in care, handover- tool/ mnemonic. Described the DeMIST model.	DeMIST (Demographics, Mechanism of injury or illness, Injuries (sustained or expected), Signs (including observations and monitoring), Treatment given). The pre-test post-test indicated no significant difference in adherence to the model. Post intervention handover receiving team composition changed. Handovers took place after patient transfer. Results indicate that the DeMIST model was not always deemed appropriate for handovers.
Goldberg, Porat, Strother, Lim, Wijeratne, Sanchez & Munjal (2017)	Quantitative analysis of the content of EMS handoff of critically ill and injured patients to the emergency department	A quantitative analysis of the information transferred from EMS providers to ED physicians during handoff of critically ill and injured patients.	Observational study	Observed handovers (n = 90)	No CPG, transition in care, handover-tool/model/ mnemonic mentioned	Less than half of the required information is transferred during handovers. The most transferred information includes the presenting problem, initial patient condition information, vital signs, past medical history, medications, chief concern, and overall assessment of pre-hospital providers. A summary of the patient situation and clinical impression is also deemed important, but only done 31% of the time. Standardization is used increasingly and improves patient handoff quality and could potentially improve patient outcomes.
Iedema, Ball, Daly, Young, Green, Middleton, Foster-Curry, Jones, Hoy,	Design and trial of a new ambulance-to-emergency department handover protocol: IMIST-AMBO	(1) Identify the existing structure of paramedic-to-emergency staff handovers by video analysis. (2) involve practitioners in reflecting on practice using	Video-reflexive ethnography with six phases: Focus groups and pre- and post-survey analysis	Pre-videod handovers (n = 73) post-videod handovers (n = 63)	No CPG, transition in care, handover-tool/model/ mnemonic mentioned. Handover protocol was mentioned.	A paramedic to ED staff protocol was developed from existing practices. Handover protocol: IMIST-AMBO Current practices indicated that 73 handovers were done in a tentative or tacit structure by paramedics.

Comerford (2012)		footage (3) combine those reflections with formal analyses of these filmed handovers to design a handover protocol (4) trial-run the protocol (5) assess the protocol's enactment		pre-post survey triage nurses (n = 416)		Information included was patient identification, an outline of the medical complaint, the mechanisms of injury, details about the complaint or the relevant injuries and vital signs and GCS. Post implementation IMIST-AMBO appeared to provide paramedics with cues for components they regard as critical, while also matching informational expectations of ED clinicians. Mnemonic ensured more consistent information transfer, improved triage and care decisions.
Jenkin, Abelson-Mitchell, Cooper (2007)	Patient handover: Time for a change?	To identify the current process of information transfer between ambulance staff and ED staff during patient handover.	Quantitative questionnaire	ECPs (n = 42), Doctors (n = 17) ED nurses (n= 21)	No CPG, transition in care, handover-tool/ model, or mnemonic.	The reason for attendance, problems requiring immediate intervention and treatment provided, and any significant previous medical history is important. Electronic transfer of information to the ED may improve the delivery and efficiency of handovers. Legible written information with a verbal handover should occur. Patient's name, time of the event, time of medication administration, suspected injuries/ illness, and allergies are part of the handover.
Jensen, Lippert, & Østergaard (2013)	Handover of patients: a topical review of ambulance crew to emergency department handover	To identify important factors influencing ambulance to ED handover, and to suggest ways to optimize this process.	Literature review	Ambulance and ED personnel handovers (n = 18 papers)	No CPG, transition in care, handover- model/ mnemonic. Handover tool mentioned.	Verbal and written handover information should be transferred in a structured manner. Responsibility should also be transferred. Some studies indicated a need for national guidelines. Handovers should be a context specific. Three structured tools were identified: 1) BAUM 'Bestand' (inventory), 'Anamnese' (medical history), 'klinische Untersuchungsergebnisse' (clinical findings)

						and 'Massnah- men' (actions). 2) MIST and 3) IMIST-AMBO. (identification, mechanism/medical impact, signs, vitals and Glasgow Coma Scale, treatment and trends/ response to treatment – allergies, medications, back- ground history and other (social) information).
Meisel, Shea, Peacock, Dickinson, Paciotti, Bhatia, Buharin & Cannuscio (2015)	Optimizing the patient handoff between EMS and the ED	To identify issues surrounding the EMS handoff process to describe how the EMS-to-ED handoff functions and how it can be improved.	Qualitative, focus groups	EMS providers (n = 48) Focus groups (n = 7)	No CPG, transition in care, handover- tool/model/ mnemonic mentioned	Handovers should be clear, effective, and delivered to the right ED staff. Changes in patient condition should be described in detail. Participants suggested a direct handover to the physician from EMS. Some but not all aspects of the handover should be standardized. Electronic records should be used for the written component of the handover.
Picinich, Madden, & Brendle (2019)	Activation to arrival: transition and handoff from emergency medical services to EDs	Not provided	Not provided	Not provided	No CPG, transition in care, handover- tool/ model or mnemonic.	An effective standardized handoff is needed. Handover information should include airway status and management, vital signs, neurologic exam, therapeutic interventions, mechanism of injury, time of symptom onset, medical history. Identification, chief complaint, status, assessment, interventions, and background and response to treatment. Should include a verbal and written component.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Reay, Norris, Nowell, Hayden, Yokom, Lang, Lazarenko, Abraham (2020)	Transition in care from emergency services (EMS) providers to emergency department (ED) nurses: A systematic review	To examine: (1) factors that influence transitions in care from EMS providers to ED nurses (2) the effectiveness of interventional strategies to improve these transitions.	Mixed methods systematic review	Emergency care practitioners (ECPs), medical providers and ED nurses (n = 20 articles)	No CPG or handover-model/tool/mnemonic in report. Transition in care guideline was suggested.	Transition in care guidelines include: DeMIST (Demographics, Mechanism of injury or illness, Injuries (sustained or expected), Signs (including observations and monitoring), Treatment given) or IMIST-AMBO (Identification, Mechanism/ Medical complaint, Injuries/ Information related to the complaint, Signs, Treatment and Trends - Allergies, Medication, Background history, other information). Guideline should involve the patient and family. Pre-notification and a dedicated person to be allocated to the handover and performing triage. Use of digital images is useful to ED nurses. Using a standardized protocol resulted in conflicting findings. Standardized handoffs can improve patient safety and ensure the transfer of essential information transfer, but flexibility might be needed.
26 27 28 29 30 31 32 33 34 35	Thakore & Morrison (2001)	A survey of the perceived quality of patient handover by ambulance staff in the resuscitation room	To describe current perceptions of medical and ambulance stay.	Descriptive survey with questionnaires	Medical staff (n = 30) Ambulance staff (n = 67)	No CPG, transition in care, handover-tool/model/ mnemonic mentioned	A system including patient details, followed by a concise history of the events, general medical condition, salient physical, and vital signs should be developed. Medical staff (69%) felt the quality of handovers varied a great deal between ambulance crews. Information received included: history, vital signs. Handover training is needed.
36 37 38 39 40 41 42 43 44 45 46	Wood, Crouch, Rowland, & Pope (2015)	Clinical handovers between prehospital and hospital staff: literature review	Intended to inform the policy debate and future research about the quality and effectiveness of pre-hospital to hospital handover	Literature review	Verbal and written handovers in EDs (n = 21 papers)	No CPG, transition in care, handover- tool/ model. Handover mnemonics were mentioned.	Common mnemonics used in the pre-hospital settings for handovers are MIST and ICE/ASHICE (injury, condition, time to hospital, with Age, Sex and History). Unstructured









































































JOANNA BRIGGS INSTITUTE

I hereby certify that

**Santel  
de Lange**

attended

**Comprehensive Systematic Review  
Training Program**

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**Module 1:** Introduction to Evidence-Based Healthcare  
and the Systematic Review of Evidence

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**Module 2:** Conducting Systematic Reviews of  
Quantitative Evidence

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**Module 3:** Conducting Systematic Reviews of  
Qualitative Evidence and Text and Opinion

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**Remote attendance  
South Africa**

between

**25 August 2020 – 2 September 2020**



**Professor Zoe Jordan, PhD**  
Executive Director  
Joanna Briggs Institute