

Chapter 1

Effective communication in clinical handover: challenges and risks

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Setting the scene

This book on effective communication in clinical handovers was motivated by the urgent need to minimise avoidable patient harm caused by communication failures. It is motivated by real stories of human suffering, such as the one which follows.

A patient we will call Mandy was admitted to her local hospital in Australia to give birth to her second child. Mandy suffered from schizophrenia, but had been coping well in the community with regular use of the antipsychotic medication clozapine. Her psychiatric care was managed well by a community mental health team, and she regularly saw a psychiatrist. When Mandy fell pregnant, her psychiatrist provided verbal and written handovers to her general practitioner. These outlined the potential risks of Mandy's mental illness to herself and her baby, and the need for special monitoring. Her general practitioner then transferred Mandy's care to a colleague, who became responsible for coordinating and sharing Mandy's care with the obstetric ward at the local hospital.

However, the handover that Mandy's psychiatrist gave her general practitioner were not passed on to the hospital when she was admitted for the birth. This meant that the clinical team dealing with Mandy's delivery did not understand the significance of her condition or her medication.

Although Mandy took her medication to hospital, staff did not store the medication or give it to her. This was contrary to hospital policy. Mandy stopped taking the medication, but staff did not realise this. She had a relapse of her mental illness and

was transferred to the mental health unit. Once again, in the handover between the obstetric and mental health units, the significance of Mandy's medication and condition were not handed over.

After the birth of her child, and while still in the mental health unit, Mandy deteriorated further. She became psychotic, ingested a corrosive substance, and was secluded and restrained. Ten days after her admission to the hospital she had a cardiac arrest. Three days later she died in intensive care.

At the coronial enquiry, the consultant psychiatrist providing an expert opinion advised that people with a history of psychotic illness are at a high risk of developing psychotic symptoms during the first six weeks after delivery, particularly from the second to the sixth weeks (NSW Government Attorney General and Justice Department 2011). According to the specialist, postpartum psychosis is a common occurrence for such patients, rather than a rare event.

The coronial inquiry exposed the accumulation of oversights in communication—particularly the repeated failures to hand over accurate, relevant information—that contributed to Mandy's deterioration and her tragic and preventable death.

The ECCHo research was motivated by our team's commitment to better understand how we can improve communication in handover and minimize avoidable patient harm caused by communication failures. In this chapter we briefly outline the research our team did to answer this important question, through the *Effective Communication in Clinical Handover* (ECCHo) study.

Communication in clinical handovers

Mandy's story demonstrates the urgent need to better understand and manage the risks posed by the process of clinical handover. Of the many factors affecting handover safety, published research has increasingly pointed to the *quality of communication* in clinical handover.

Clinical handovers are, by their nature, an inherently communicative event—they can only be achieved through language, by clinicians talking and writing to one another. They are arguably the most frequent and significant communicative process between clinicians in the delivery of patient care.

Communication in handover involves a complex mix of formal and informal communication in both spoken and written modes. Spoken handovers occur through face-to-face interactions, by radio, telephone or by pre-recorded messages. Written handovers occur through fax, email, letters or electronic medical record.

Handovers—whether spoken, written or a mixture of these—also typically incorporate visual elements (X-rays, CT scans and graphs) and supporting written documentation, such as patient charts and medical records.

Failures in communication during handover are now recognised internationally as a major cause of critical incidents (Garling 2008, WHO 2008), and are the trigger for a significant proportion of patient complaints (Ye et al. 2007, Chaboyer et al. 2009).

Published research has identified a long list of risk factors associated with communication practices. These can be conveniently grouped into two categories: factors arising from the *organisational or institutional context* of clinical handover, and those associated with the actual *handover process* itself.

Recognising the role of communication in clinical handover

In Mandy's story we can see the failures of communication that can occur between clinicians when handing over information and responsibility for a patient. This process, known as clinical handover (the term we use in this book) or clinical handoff (as it is in North America), occurs when clinicians transfer responsibility

and accountability for patients and their care to another clinician¹ or team (AMA 2006).

Clinical handovers are key events in transitions within teams, between teams, between organisational units, within healthcare organisations and between different healthcare providers. Handovers occur formally and informally in a wide range of institutional settings and physical locations, including beside the patient's bed, by the whiteboard, in meeting rooms, in ward rounds, at the nursing station and even in corridors.

The past decade has seen a significant increase in research into handover practices (see reviews in Cohen & Hilligoss 2010, Cummings et al. 2010, Bost et al. 2012, Raduma-Tomàs et al. 2011). To a lesser degree, there has also been an increase in the number of interventions proposed to improve handover (see e.g. Robertson 2014 for a review). An ever-accumulating quantity of international evidence confirms that handover is a high-risk moment in the patient's hospital journey, as Wong et al (2008: 3) point out:

There are now a large number of studies that have investigated various aspects of clinical handover and improved understanding of its complex and dynamic nature. These studies clearly confirm clinical handover is a high risk scenario for patient safety with dangers of discontinuity of care, adverse events and legal claims of malpractice.

The need to attend to the 'high risk' status of clinical handover is becoming ever more pressing as the number of clinical handovers increases with the growth and

¹ Where possible we use the terms 'doctor', 'nurse' or 'allied health worker' when it is clear from the context who we are talking about. At other times, this book uses the word 'clinician' to refer inclusively to doctors, nurses, social workers and all other healthcare practitioners working in hospitals.

ageing of populations (Sabir et al. 2006). Estimates put the number of handovers each year at over 300 million in the USA (AHA 2014, CDC 2010), more than 40 million in Australia (OECD 2011), over 100 million in England (HSCIC 2013) and about 15 million in Hong Kong (Hong Kong Hospital Authority 2013). At every handover, irrespective of the particular context or who is involved, there is a possibility of miscommunication or gaps or errors in information transferred, and with each of these errors or misunderstandings there are potential risks to patient safety.

Demographic changes are making clinical handovers both more frequent and more complex. Across the world, healthcare systems are under pressure from patients presenting with multiple co-morbidities and chronic conditions. Such patients may re-present frequently to healthcare services and may have many different specialists and treating agencies. The challenge is to ensure co-ordination of care across these increasingly frequent and complex clinical handovers. These demographic changes are also putting extreme pressure on healthcare funding. Few national budgets are able to keep pace with the rapid growth in healthcare costs. As funding falls but demand increases, the health sector is at risk of being inadequately funded to provide all the staff, facilities and organisational support to ensure safe handover practice (WHO 2014).

Impact of organisational and institutional factors

A number of factors in organisational and institutional contexts affect communication in clinical handover.

Physical constraints

Physical constraints such as noise, interruptions and lack of dedicated or sufficient space regularly affect communication during clinical handover (see Siu et al. 2010, Liu et al. 2012, Cone et al. 2012, Symons et al. 2012, Evans et al. 2010). These physical constraints can create or contribute to a range of communication problems, such as

clinicians being unable to hear one another during handover and clinicians not attending to or completing the handover because of interruptions.

Recommendations designed to improve the physical environment of handovers can be problematic because they either make unrealistic suggestions (e.g. for dedicated handover rooms) or conflict with other mandated practices (e.g. that handovers be performed at a patient's bedside).

Rostering and scheduling

Poor scheduling and inadequate time can mean that relevant people are not present at a handover or that the handover is rushed or ill-prepared (see e.g. Watson et al. in press). Rostering problems may mean that clinicians omit to hand over relevant information because they have not had time to plan and deliver a concise and comprehensive handover, or they cannot check key information with relevant staff who have been unable to attend the handover. This situation is exacerbated by the fact that different medical specialties and units often work in independent groups and do not communicate well with each other (Kreindler et al. 2012), leading to a lack of coordination between professionals. In such environments knowledge sharing is difficult across a range of topics, including patient care management. Agreement on who is managing the patient is also problematic (Hewett et al. 2009).

Researchers have recommended that all relevant staff are present at handovers, although this proves extremely difficult, especially in emergency departments. Research also suggests that the success of handovers depends not just on the skill of the doctor or nurse who takes the primary role in the handover, but on *all* clinicians who will be involved with the patient. The process of considering options, questioning decisions and providing support to the clinicians creates the foundation for safer, better quality patient care (Kolbe et al. 2010, Tschan et al. 2009).

Cultural diversity

Increasing linguistic and cultural diversity of both patients and healthcare professionals means that those participating in clinical handovers, including the patient, may not share a common language or cultural background. In some countries such as Australia, an increasing reliance on foreign-trained healthcare professionals contributes to this cultural diversity. And even where co-workers and patients share a common language, regional dialects can create problems of mutual intelligibility. Cross-cultural misunderstandings and lack of comprehension are very real risks during clinical handovers, as observed in Slade et al. (2015a). There are no easy solutions to these problems (see also Penner et al. 2010, Scammell & Olumide 2012).

A significant number of the communication difficulties and breakdowns also occur between clinicians in clinical handovers between people who believe they are communicating satisfactorily in English. Research on cross-cultural communication has shown that serious communication problems can occur even where there is no obvious language barrier (Gumperz 1982). For example, misunderstandings and communication breakdowns can occur in clinical handover because of different cultural assumptions about how to appropriately query a senior clinician, express disagreement or confusion, structure the information or indicate the relative significance of what is being said. Different ways of speaking (such as tone of voice and intonation patterns) can result in inaccurate inferences being drawn about another person's attitude or knowledge. Such inferences and miscommunication can lead to adverse events for patients (Gasiorek & van de Poel 2012).

Employment conditions

Changing employment conditions (such as shorter shifts) have led to increasingly frequent staff rotations, necessitating more frequent clinical handovers. The increased use of casual and agency staff also has implications for familiarity and compliance with organisational protocols and consistency in clinical handover

practices. Retirements and attrition mean a loss of senior staff to oversee and mentor junior clinicians (see Productivity Commission 2005, McGrath 2004).

Interdisciplinary boundaries

Despite the fact that patient care is shared by teams of mixed professions, there are still tight disciplinary boundaries, particular between nursing and medical staff. As a result, it is rare to find examples of effective teamwork, handovers or examples of collaborative training between professionals (see, for example, Hesselink et al. 2013, James et al. 2013, Staggers & Blaz 2013).

Hierarchical barriers

Hospitals are often training grounds for student and junior doctors and nurses. Patients are constantly moving between clinicians with greater expertise and those with less. There is often a lack of leadership or mentoring in handover skills. Rather than using the expertise of clinicians as a positive resource for mentoring in the handover process, the existence of this hierarchy results in bullying, fear and intimidation (Chandler et al. 2015). Junior doctors can regard the handover as a critical examination of their work, increasing their levels of fear and anxiety and contributing to lack of confidence (Arora et al. 2005, Doyle & Cruickshank 2012, Manias & Street 2000, Stoyanov et al. 2012). Similarly, nurses may consider requests for patient information during the bedside handover to amount to an examination of their own clinical practices (Manias & Street 2000). Some senior nursing staff may use the handover as a means of analysing faults or 'gaps' in practice.

In some hospital contexts, however, some nurse managers and senior doctors consider the handover as an opportunity for educational training (Boor et al. 2011), in which less experienced clinicians can learn to improve their clinical practices (Skaalvik et al. 2010). Many health bodies are now recommending that handovers be led by a senior clinician who demonstrates appropriate conduct, analysis and

documentation (Accreditation Canada 2014, Queensland Health 2009, Solet et al. 2005).

Lack of clinical handover training

Despite the growing recognition among researchers and policy bodies that communication in clinical handover is vital for safe healthcare practice, most medical and nursing courses around the world give very little time (if any) to training in clinical handover. Handovers are rarely directly addressed in practical clinical training programs or professional development programs (BMA 2004, Bomba & Prakash 2005, Scovell 2010). Clinical handovers are 'neither well taught nor well practiced' (AMA 2006: 12).

Government enquiries and healthcare organisations are increasingly recommending pre-service and professional development training in clinical handover (Scovell 2010). Handover training and education can improve teamwork, hospital safety, clinician morale and the level of overall patient care (Street et al. 2009, Jeffcott et al. 2009, Klee et al. 2012; see also Wong et al. 2008 for review of the literature).

Clinicians who participate in communication training report enhanced skills and better confidence, as well as a greater sense of wellbeing and involvement in the process of delivering health care (Lee et al. 2012, Manser 2008).

Communicative risk factors in actual handover delivery

Study of the conduct of clinical handovers in different contexts internationally has identified a variety of problems with 'failure-prone communication processes' (Arora et al. 2005: 11) during or in the lead-up to handover.

Lack of structure

The lack of a systematic structure can lead to handovers that are 'informal and error prone', with a failure to hand over all relevant content (such as medications or test results) (Bomba & Prakash 2005: 68). Without specific training in communication, clinicians tend to perform handovers that are unstructured and that lack any

meaningful interaction with the participants—whether other clinicians or the patient.

Lack of adequate explanations about process

Clinicians often do not explain their reasons for decisions to colleagues during handovers (Slade et al. 2008: 271). Research suggests that clinicians need to clearly communicate the intermediary steps in their diagnosis and treatment plans to colleagues and patients (Cunningham 2009, Tschan 2009). This communication requires the use of clear terminology by clinicians (i.e. avoidance of jargon and colloquialisms), and clarity about medication and the treatment plan (Slade et al. 2015a, Slade et al. 2015b, Slade et al. in press).

Lack of patient involvement

When handovers are performed away from patients (and family), patients often lack understanding of their treatment plan (Wilson 2011). Many cannot name their diagnosis or medications, and many do not understand the potential side-effects of their medications (Makaryus & Friedman 2005).

Conversely, involving patients in the clinical handover process results in fewer misunderstandings about diagnosis, greater adherence to treatment and a reduced number of hospital readmissions.

Conducting handovers at the bedside can improve safety by providing checks for identity, accuracy and alterations in a patient's condition (Kerr et al. 2014, Tobiano et al. 2013, Chaboyer 2009). In hospitals using bedside handovers patients have higher levels of confidence in their care, as long as the communication events are handled with skill, confidentiality and consistency (Bradley and Mott 2014, Kerr et al. 2013, Lu et al. 2014). However, recent studies have also indicated that when doctors are conducting handovers at the bedside they frequently omit key information in relation to potential side-effects and risks and often do not sufficiently explain options to the patient (Ahluwalia et al. 2013). This suggests that just 'being at the

bedside' is not enough to ensure effective communication with the patient at handover.

Excessive reliance on memory without reference to written documentation

Heavy reliance on memory without reference to documents such as the patient's medical records (Wilson 2011) is often associated with omissions or incorrect information being handed over. The lack of available, accurate information about the patient during the handover is often due to the patient presenting without their medical records. This can result in inaccurate or delayed diagnosis and incorrect treatment (Matic et al. 2010, Dayton & Henriksen 2007). Doctors frequently argue that they have not received information during the handover which would have been useful during their shift (e.g. Borowitz et al. 2008). Studies of nursing handovers have also found that handovers often create confusion and fail to clarify significant issues about patient management and treatment (Sexton et al. 2004).

Poor quality of written medical records

A wealth of literature now acknowledges problems with how patient information is stored. Patient information is not always formally recorded—nurses write patient details on scraps of paper or even on their hands (see Hardey, Payne, & Coleman 2000), and formatted report sheets are often absent (e.g. Dowding 2001). The illegibility and poor quality of written records can result in lack of continuity and consistency of information flow between clinicians, contributing to adverse events. In response, most healthcare jurisdictions are pushing for electronic records to be made of the handover. As Matic et al. argue:

The potential advantages of electronic tools include the standardization of data definitions, consistency with the information communicated, the minimization of ambiguities and the potential to increase process efficiencies. (2010: 187)

However, in Australia—as elsewhere—funding constraints and jurisdictional boundaries often mean that electronic medical records are far from universally

available, even in major metropolitan hospitals. Where they are in place, they are often used in conjunction with paper documents, resulting in a hybrid system that creates new types of potential communication errors (Thomas 2009).

Responses designed to improve clinical handover communication

The evidence of risks in clinical handover and the locus of these risks in communication during and around handover have led peak health bodies worldwide to make improving handover communication a top priority (Accreditation Canada 2014, CEC 2014, NSW Health 2006). The World Health Organization (WHO) lists improved communication in handover in its top five patient safety solutions (WHO, 2014). But while there is no argument about the need to improve handover communication, there are different responses to the key question, 'How?' One response has been through policy changes that seek to standardise the structure of handover communication.

Structural handover tools: 'SBAR'

The development of structural communication tools for handover has been a key aspect of the North American response to handover problems. The publication of *To err is human* by the Institute of Medicine in 2000 recognised communication as a safety issue and recommended the development of structural tools.

In 2002 the staff at Kaiser Permanente in Colorado recognised the relevance of human factors research for healthcare (Leonard et al. 2004, Monroe 2006, Bonacum 2008). They drew on US Navy situation briefing tools to develop a mnemonic to support effective communication between healthcare professionals during handover (Monroe 2006, Bonacum 2008). The 'SBAR' mnemonic aims to guide clinicians to gather and present a minimum dataset of information in every handover, in the sequence Situation (patient's presenting condition), Background (previous medical history), Assessment (current medical status) and Recommendation (care plan).

In the UK documents such as *Safe handover: safe patients—guidance on clinical handover for clinicians and managers* by the British Medical Association and *Hospital at night risk assessment guide* similarly emphasise planning for handover and organising it in a standard and systematic way (NHS Modernisation Agency 2005).

These structural suggestions to improve handover communication have been taken up by leading international health organisations, including the World Health Organization. One of their early recommendations, published in a 2007 Patient Safety Solution Aide Memoire on *Communication during patient hand-overs* (WHO 2007), recommended a number of actions including allowing adequate time for handover, system level support for processes and training for staff. The report also recommended standardisation of handover practices through the use of techniques such as SBAR.

The SBAR mnemonic has become the most commonly used tool for standardising handover in health settings and as a result is the most studied. Wacogne & Diwakar (2010) note that studies of SBAR-related tools in various countries have shown reductions in the time it takes to hand over information and in the frequency of adverse events. Nurses who are trained to use SBAR and its variants believe they have more effective communication with their colleagues. In wards where nurses received handovers using SBAR there was better documentation and avoidance of adverse events, as well as a decrease in the percentage of unexpected deaths (Alvarado et al. 2006, De Meester et al. 2013). Almost all studies evaluating the use of the SBAR or similar mnemonics are based on observational and self-reporting methods and not on the analysis of what actually occurs in the handover process.

This response of addressing risk through communication standardisation applies also in Australia. The *National Standard 6 Clinical Handover* (ACSQHC 2012b)²—the regulations hospitals must comply with to be accredited—specifically recommends the use of a standardised handover protocol.

The most prevalent tool recommended is SBAR. However, many health jurisdictions around Australia have added an 'I', for Introduce (the patient or individuals conducting handover) to the communication tool. Some jurisdictions have also incorporated an 'O' for Observations (such as early warning indicators) making it iSoBAR (Porteous et al. 2009). The iSoBAR mnemonic encapsulates multiple dimensions of safe clinical handover practice: standardised, structure, accurate patient identification and observations that would allow early recognition of deteriorating patients.

Flexible standardisation and the minimum dataset

While the introduction of tools like SBAR demonstrates the commitment to standardisation in handover practice, the Australian clinical handover standard stresses the notion of 'flexible standardisation' of handover practices, explained as follows:

Standardisation of clinical handover should not minimise communication or set guidelines that interfere with what the workforce deems to be the most critical information. Flexible standardisation provides a structure to convey important clinical information with relevant defined patient information (a minimum dataset of information). (ACSQHC 2012b: 14)

² In this book we refer to National Standard 6 as the Australian clinical handover standard. For details of the standard, see ACSQHC 2012b. For an overview of all the national healthcare standards, see ACSQHC 2012a.

The Australian national standards document echoes international research that argues that whatever standardisation tool is used in the handover process, it needs to be flexible enough to fit the requirements of clinical work in a particular ward, local culture and country or region (Jorm et al. 2009, Mistry et al. 2010). To be successful, handover protocols must facilitate transitions and provide clinicians with the content and skills needed to handle complex, dynamic, multi-party interactions (Cook et al. 2000, Eggins and Slade 2012, Eggins and Slade, in press).

Flexible standardisation is typically linked—as in the quote above—to the concept of the ‘minimum dataset’. This term implies that handovers should be clinically tailored by identifying relevant and necessary information that needs to be handed over in specific handover contexts.

However, precisely whose responsibility it is to achieve flexible standardisation and determine the minimum dataset is left implicit, as are the principles on which flexible standardisation should be based. Nor is it made clear just how flexible standardisation is seen in communication in practice, or how its achievement can be evaluated.

Patient-centred care and bedside handover

Moves to make handover communication more structured have been accompanied by a more general health care emphasis on including the patient and their carers in the handover. Guidelines now promote models of patient-centred care as the most effective and safe approach to healthcare delivery, including in handover (Lau 2002, UK Department of Health 2013, McBrien 2009, McCarthy et al. 2013, McMillan et al. 2013). The Australian clinical handover standard echoes these international guidelines, making ‘patient and carer involvement’ one the three criteria for effective achievement of the standard:

Health service organisations [need to] establish mechanisms to include patients and carers in the clinical handover processes. (ACSQHC 2012b: 9)

Patient-centred care emphasises shared patient–clinician decision-making, the provision of easily understandable information by clinicians and the development of rapport and empathy. The basic premise is that the focus of healthcare consultations should be not only on the provision of clinical expertise or knowledge but also on how this is communicated to the patient, and on the patient’s experience and understanding of his or her condition (McCarthy et al. 2013, McMillan et al. 2013, Hobgood 2002).

Patient-centred care is now favoured by healthcare providers, educators and health departments after successive research has linked such care to greater levels of patient satisfaction, better understanding of diagnosis and treatment, more informed participation in consultations, and higher adherence to treatment recommendations (Slade et al. 2015a, Slade et al. 2015b, Slade et al. in press, Ekwall 2013, McMillan et al. 2013, Perez-Carceles et al. 2010, Nitzan et al. 2012).

Similarly, there is increasing evidence that involving patients specifically in the clinical handover process results in fewer misunderstandings about diagnoses, greater compliance with treatment and a reduced number of hospital readmissions (ACSQHC 2008). Conducting handovers with the patient and family or carers therefore reduces risk and increases patient safety. For this reason, bedside handovers have been recommended or mandated in many jurisdictions, including in many major hospitals in Australia. However, empirical research identifying the components of patient-centred communication practice and evaluating compliance, performance and outcomes of such communicative behaviour is scant.

Gaps in clinical handover research and understanding

The brief summary above indicates the breadth and diversity of factors that have been linked in one way or another to the risks of poor quality communication in clinical handover, and some of the major policy responses. However, evidence from clinicians’ accounts (see chapter 2, Chandler et al. 2015, Slade et al. 2015a) and adverse incident reports and coronial inquiries indicate that significant problems still

persist. The number of incidents of avoidable patient harm around the world caused by communication failures is alarmingly high, as are the rates of unnecessary hospital readmissions and patient complaints. As a recent WHO report indicated, within developed countries the overall incidence rate for patient harm in hospitals is now as high as one in ten; this rate is multiple times higher for patients in hospitals within developing nations (WHO 2014). Estimates of the annual worldwide costs of failures in health care are in the tens of billions of US dollars (WHO 2014). The WHO World Alliance for Patient Safety (WHO 2014) focuses on communication in handovers, citing the need for specific and significant improvements in this area.

The research and the interventional tools presented in this book came about as an attempt to improve this situation. We set out to complement existing research by filling what we identified as two major gaps in existing research into communication in clinical handover: first, the need to base research on empirical data of actual handover events; and second, the need for an interdisciplinary multi-methods approach to handover which included an intensive qualitative analysis of actual handovers.

Lack of empirical evidence of actual communication in handover

Despite the recognition that miscommunication in handover is a major cause of avoidable patient harm, systematic in situ empirical evidence about why handover-related incidents occur and exactly how communication is implicated in these incidents is still relatively limited (Andersen et al. 2014). Evidence is even scarcer when it comes to evaluating interventions designed to improve handover. As Wong et al. (2008) state in summing up their extensive literature review on clinical handover research and interventions:

This literature review highlights that despite the proliferation of published literature on clinical handover in the last 3–5 years, the numbers of high quality evidence based interventions that display a high level of potential for transferability remains relatively low. (p. 3)

One of the major barriers to understanding communication's role in clinical handover is the lack of a language research base upon which programs of improvement in handover can be built. As the dominant methods used in handover research have been observation and interviews, there is a dearth of examples of actual communicative behaviour in clinical handover and a similar absence of language professionals (linguists, applied linguistics, communication specialists) working with healthcare professionals and academics in the research field. From observational research we know what people *say* they do or don't do; and we have descriptions of what observers saw and heard. But we have very few actual examples of clinical handover interactions, spoken and written. Without this firsthand data, systematically analysed by an interdisciplinary team of language specialists working with clinicians and healthcare academics, claims about what actually occurs in the handover context are often partial and speculative. In the absence of a solid empirical base, policies and intervention strategies designed to improve communication in clinical handover raise many unanswered questions.

Under-theorisation of patient-centred care

The lack of actual communicative data and the inevitably broad sweep of generic guidelines together mean that key terms are not defined clearly enough to be acted on in actual healthcare settings. What does patient-centred communication *really* mean? How do clinicians *do* patient-centred communication in the real world of the hospital ward? What are the characteristic features of patient-centred communication? Does patient-centred communication actually affect patient health outcomes?

Lack of evidence and evaluation of standardisation

The lack of actual communicative data makes it impossible to determine just how practical and effective standardised handover protocols are. Anecdotal and interview responses suggest that compliance with standardised protocols is low (McGregor et al. 2011), but we can only establish this by looking at actual examples

of handover interactions. What problems, if any, might clinicians have in applying standardised protocols? Are these problems to do with the communicative design of the protocols? Or do they lie in inadequate training and support for the new practices? Or in both?

Handover protocols provide a set of 'prescribed expectations' for communication and documentation during transitions (Scovell 2010: 39). However, studies have shown that success requires more than single interventions and that training programs, leadership and organisational culture play a part in how effective SBAR tools can be in improving handover. To design and evaluate effective training programs, we first need to better understand current communicative practice. Interventions need to be designed on the basis of linguistically sound models of effective communication that are based on situated actual performance in real hospital contexts.

Lack of clarity about 'flexible standardisation' and the minimum dataset

Guidelines assume that both flexible standardisation and the identification of the 'minimum dataset' are easily achievable. They imply a straightforward translation of policy into changed communicative behaviour. We question this assumption and suggest that it raises many questions. How do clinicians actually achieve flexible standardisation in their diverse and disparate contexts? What do they *do* in their communication to adapt? How is flexible standardisation seen successfully in actual communication examples? What models do we have of the effective communicative performance of flexible standardisation? Until we have empirical data of actual handover events, these questions cannot be answered.

Unclear allocation of responsibility for behavioural change

While research findings explicitly state the need for significant cultural and communicative change in how clinicians perform handovers, research is far less clear on how to achieve these sometimes very significant changes. Who is

responsible for changing communication behaviour—individual clinicians, disciplinary leaders or organisational management? Is the change to be achieved through pre-service training, professional development, on-the-job mentoring, or modelling—or all of these? What evidence do we have that any or all of these options are happening or could be implemented? How is communicative change to be monitored? Do we have ‘before’ and ‘after’ communicative behaviour, to compare and evaluate and use as models?

The ECCHo project: an interdisciplinary language-based approach to communication in clinical handover

In this book we provide theoretical, empirical and practical input to address these gaps in handover research by focusing explicitly and in detail on communication in clinical handover. Over the three years from 2011 to 2014, the *Effective Communication in Clinical Handover (ECCHo)* project studied clinician–clinician and clinician–patient communication during actual clinical handovers in various hospital contexts and involving different professional and patient groups across Australia.

The ECCHo research was carried out by interdisciplinary teams of professionals with expertise in linguistics, medicine, nursing, allied health, health policy, human factors and communication studies. There were teams based in hospitals in four states and territories of Australia. Each of the four hospitals is a major metropolitan, public, tertiary teaching hospital. To respect the ethical requirement to de-identify clinicians and patients, throughout this book we refer to the research sites as hospitals A, B, C and D. The focus of each site’s research is summarised in table 1.1 below.

Insert table 1.1 here

Table 1.1 Research focus of each ECCHo research site

The collaborative, cross-site and cross-jurisdictional design of the study, and its strong commitment to clinician participation, allowed the ECCHo team to collect a substantial corpus of actual clinical handover examples recorded in a variety of

different hospital contexts, as well as a wealth of formal and informal input and advice from clinicians on the ground.

In focusing on communication in these contexts the ECCHo team critically examined:

- the ways in which clinicians communicate the handover of clinical tasks
- the type and complexity of information conveyed during handover
- the complexities of care and competing demands that affect handover
- the spoken, written and non-verbal features of handovers in order to identify the features of both the successful and unsuccessful encounters
- the role of communication in ensuring continuity of patient care across the sequence of clinical handovers
- the communication strategies clinicians could employ to improve handovers.

ECCHo research framework

In approaching the study and in writing this book, the ECCHo teams were strongly focused on how language is used to achieve clinical handover. We adopted a perspective on communication that challenges several basic assumptions that underlie much existing work on handover communication.

First, healthcare communication studies predominantly conceptualise communication as separate from the tasks of clinical care. They imply a 'funnel' or conduit model of communication, where clinical knowledge exists independently of language, constructing healthcare practices as somehow distinct from communication practices. We suggest that this separation is theoretically untenable and inconsistent with empirical evidence. We believe a fundamental point of departure for understanding the nature of healthcare practice is to recognise that to deliver care effectively, clinicians must communicate care effectively (Slade et al. 2015a, Joyce et al. 2014). The chapters in this book apply this understanding by analysing *how* care is communicated and by demonstrating that the manner in which

care is linguistically achieved is inextricably linked to the quality and safety of the care delivered.

Second, we dispute the implicit assumption common within the healthcare field that communication can be defined as ‘information **Error! Bookmark not defined.**only’. The overwhelming emphasis in existing clinical handover literature is on *what* is communicated, with little attention to the interactional achievement of communication—the *how* (Eggins and Slade 2012). Yet handover is a quintessentially interactive achievement, shaped by the active collaboration of both givers and receivers. Our data suggests that a handover’s success cannot be evaluated purely on the basis that the handover giver has delivered information according to a particular structure. If handover recipients are passive listeners, there may be legitimate doubts about what the information means to them. What did those receiving the handover understand? How do we know? Did they recognise gaps or ambiguities in the information? How did they deal with them? What are the implications if they did not? Throughout this book, ECCHo researchers focus as much on *how* clinicians communicate as on *what* they communicate. That is, we explore both the interactive *and* the informational dimensions of handover communication.

ECCHo as a mixed methods translational research project

One further significant difference between the ECCHo project and much of the other research in the healthcare field lies in ECCHo’s methods. These build on the research approach formulated by Slade and colleagues in their research on clinician–patient interactions in emergency departments (Slade 2015a). Unlike many existing studies of clinical handover where data collected through observations and interviews is analysed quantitatively, the ECCHo project used a range of qualitative and quantitative methods, and focused on the qualitative data.

This approach enabled us to combine methods that gave the richest insights into contextualised handover behaviour in actual hospital contexts. Our methods were

grounded in the daily reality of the material context of the wards as experienced by participants. That is, we described actual behaviour, not experimentally designed interactions or interactions engineered for research. Finally, by triangulating the findings from the survey and interview data with a linguistic description of what actually occurred, we have been able to combine information about what people *say* they do with what they *actually* do.

In the following chapters, a detailed linguistic description of what was actually said is central. As a first step, the audio and video recordings were transcribed and de-identified. The linguists and applied linguists in the ECCHo teams then analysed the transcripts for discourse features.³

Our analyses examined how language organises and enables handover practices, and, in turn, how language, culture and the workplace influence the effectiveness of handover communication. We particularly wanted to describe the spoken, written and non-verbal features of handovers, in order to identify the features of both successful and less successful encounters. We identified gaps in communication, misunderstandings, and ways in which handovers were structured that either facilitated or hindered the effective transfer of patient information or responsibility.

³ Discourse analysis focuses on describing the structure and function of naturally occurring spoken or written language (see Eggins & Slade 1997). Discourses are enacted within a social context and in turn shape that social context. A detailed analysis of discourse is therefore a powerful technique for examining communication in practice. It enables systematic exploration of relations between clinicians as well as between clinician and patient, and of how information is exchanged and understood or misunderstood, and the consequence of these communication encounters to the patient health outcomes.

Health sciences, particularly medicine, have focused on quantitative research. However, the value of qualitative research is increasingly recognised, as it can answer quite different questions. As Sullivan and Sargeant write (2011):

Good research follows from a reasonable starting point, a theoretical concept or perspective. Quantitative research uses a *positivist* perspective in which evidence is objectively and systematically obtained to prove a causal model or hypothesis; *what works* is the focus. Alternatively, qualitative approaches focus on *how* and *why* something works, to build understanding ... Qualitative studies are helpful to understand why and how; quantitative studies focus on cause and effect, how much, and numeric correlations. Qualitative approaches are used when the potential answer to a question requires an explanation, not a straightforward yes/no. (2011, p. 449)

In the ECCHo project, we have drawn on a theoretically coherent set of strategies from both quantitative and qualitative traditions. This has allowed us to produce both a large-scale overview from participants' perspectives, and a complementary and more detailed small-scale perspective capturing what participants actually do in practice when communicating in different hospital contexts.

The ECCHo project extends current knowledge about clinical handover by observing, collecting and analysing clinical handovers across a broad spectrum of hospital sites. From this data we have been able to distil the general principles of effective handovers and identify context-specific features. We draw our findings from the detailed language analysis of actual handovers as they occurred, as well as from the extensive observations, interview and survey data.

Methods

Although the ECCHo project used predominantly qualitative methods to research communication in handover, at different stages it employed the following methods:

1. Multi-site survey: 707 respondents: nursing (60.4%), medical (22%), allied health workers (14.5%), pharmacy (0.4%) and other (2.7%)
2. Interviews with 112 hospital staff (administrative personnel, senior management, nurses, doctors, allied health workers)
3. Non-participant observations of handovers and 'shadowing' of clinicians across the four hospital sites: approximately 2000 hours
4. Audio and/or video recordings of 829 actual handover interactions at the four hospital sites, made up of
 - a) 317 spoken nurse handovers across the four sites
 - b) 290 medical handovers across three sites
 - c) 222 interprofessional team meeting handovers across two sites
 - d) 15 patient journeys—three patient journeys through the emergency department and the transfer to hospital wards and 12 patient journeys through the emergency department. These recordings captured all the interactions that occurred between the patient and their attending clinicians
5. Discourse analysis of a subset of the recorded handover interactions
6. Audits of written and electronic documentation.

By combining these methods the ECCHo project was able to accumulate a substantial corpus of handover data, providing us with a powerful representation of clinical handover practices across a range of different contexts.

The different handover contexts recorded and analysed are summarised in table 1.2.

Insert table 1.2 here

Table 1.2 Types of clinical handovers recorded in the ECCHo project

At all the research sites, our methods were grounded in the daily reality of the material context of the wards as experienced by participants. That is, we describe

actual behaviour, in situations that arose naturally as part of the working days or university training requirements of participants.

By drawing on the findings from the survey and interview data, we have been able to access clinicians' perspectives on clinical handover: what they feel matters about handover, where they feel the problems lie and what they would like to see done about them. This input also helped shape our collection of qualitative data. We present this data of clinicians' perspectives in chapter 2.

Through the empirical data of actual handover events—both spoken and written—we were able to develop a language description of what actually goes on in a sample of everyday handovers in a broad range of contemporary hospital contexts. We then drew on this empirically based description to develop communication strategies, tools, interventions and policy directions to make clinical handover communication safer and more effective.

ECCHo team members at different sites drew on their different disciplinary tools and approaches to analyse and interpret their data. In the final chapter of the book we draw the outcomes and insights of the national research together into an integrated model of handover communication, iCARE³.

Translational research process

From its inception the ECCHo project was designed to be a translational research project. By 'translational' we mean that it sought to apply research outcomes 'into everyday clinical practice and health decision making' (Woolf 2008). In this book we define translational research as:

Research that responds to real-world healthcare communication problems. It exploits the investigative concepts, expertise, tools and methodologies of different disciplines to produce practical outcomes that benefit health users and providers. (Eggins & Slade 2015: 8)

Throughout this book we apply the findings from the research at different sites to redesign handover practices and suggest strategies to improve practice. Because of their different expertise and contexts, researchers at different hospitals followed different trajectories in translating their research findings—some developed and taught communication interventions; others developed audit tools or wrote checklists. Some of the protocols, checklists and other improvement strategies outlined in this book have general applicability, while others apply to particular handover contexts. To reflect the close relationship between the empirical qualitative research and its translation into applications, we present the translational ‘resource’ chapters immediately following each of the empirical research chapters from which they developed.

Throughout the three years of the ECCHo project, our interdisciplinary research teams worked collaboratively with our partners in the hospitals and the health departments and with front-line clinicians to design, implement, deliver and evaluate the communication frameworks, strategies, protocols and training outlined in the book.

Outline of this book

Each chapter of this book presents either findings from the empirical research into different specific handover contexts studied in the national, project or a set of resources developed from the preceding research chapter. Chapter 2 of **section 1**, the second chapter in the background section, discusses the clinician’s perspective on clinical handover, summarising the findings of the ECCHo national clinician survey.

The remaining chapters are grouped into sections according to the types of handovers the chapters explore. **Section 2** reports on communication in clinical handovers when clinicians move during shift-changes. Chapters three, four and five cover research and applications based on medical handovers in emergency departments. Chapters six and seven report on communication in bedside nursing handovers and communication training to improve bedside handovers.

Section 3 explores communication in clinical handovers when patients move, for example when patients are transferred between wards. Chapter 8 tracks communication across an individual patient's journey and evaluates the risks and protections of the interactions with and about the patient. Chapter 9 reports on a clinical audit of written documentation during patient transfers from rural to metropolitan hospitals.

Section 4 explores clinical handover communication among interprofessional teams. Chapters 10 and 11 explore and refine the effectiveness of iSoBAR in interprofessional student ward handovers. Chapters 12 and 13 investigate communication in mental health handovers.

In **section 5**, we draw the separate findings and practical applications together in a conceptual model that we call iCARE³. This model emerged as our interdisciplinary team pooled the national research findings and the outcomes of the training we delivered across Australia. ■