Figure 7. process tool for PACU hndover

Connect
- Prepare a safe environment
- Connect monitoring

Observe
- Assess patient safety
- Meet immediate care needs

Listen
- **Stop** to listen
- Anaesthetic handover: ISoBAR

Delegate
- Documents checked using checklist
- Discuss questions, confirm information

Summary

Handover improvement strategies and solutions must be specific to the context of care in which they are to be used. Multiple methods and sources of data ensure that these strategies and solutions are acceptable and feasible to implement because they incorporate local influences and sensitivities. Consideration should be given for handover improvement strategies that not only standardise processes and guide clinical handover but also allow ongoing quality monitoring and evaluation to ensure handover practices are both robust and resilient in the workplace.
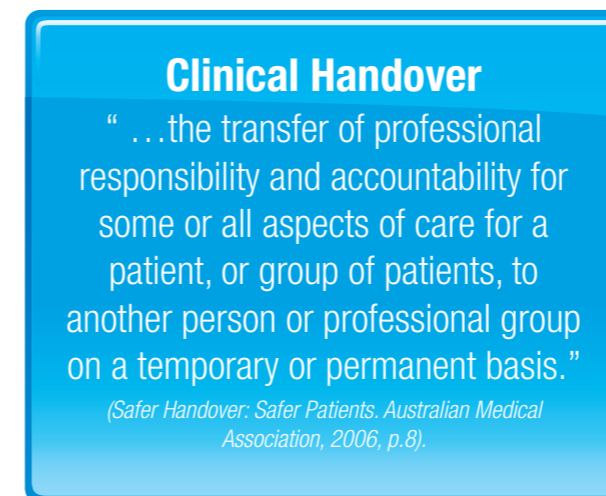
Using tools to evaluate the quality of interprofessional clinical handover in complex settings

Safe health care delivery depends on effective communication between health care providers. Developing and implementing consistent and reliable approaches to clinical handover is a key strategy to reduce communication errors.[1]

Clinical handover (see Figure 1) is a routine task performed many times a day within numerous healthcare settings. Handover is most challenging in complex situations when patients are particularly vulnerable, handovers are frequent and rapid, patient status is dynamic, the environment can change unexpectedly, and when different professional groups interact. In these situations handover needs to be comprehensive, specific and time-efficient.

Figure 1. Definition of clinical handover

Clinical Handover

" …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."

(Safer Handover: Safer Patients. Australian Medical Association, 2006, p.8).

This document presents a range of practical tools and strategies that can be used to examine complex clinical handover situations and inform viable improvement solutions. This document will assist you to:

- select and use different methods for evaluating the quality of clinical handover in your local context using principles that underpin quality improvement

- identify advantages and disadvantages of using different methods for evaluating clinical handover

- develop a multi-method strategy for evaluating practice improvements specific to your clinical environment.

Strategies useful to examine clinical handover include:

1. Analysis of reported critical incidents
2. Measurement of team climate and safety culture
3. Observation of practice
4. Focus group discussions with clinicians

Background

In complex handover situations, cultural, behavioural and environmental factors associated with team performance[2, 3, 4] can impact on patient safety outcomes by undermining the stability of team functioning and the effectiveness of interprofessional communication.[5, 6] Attempts to improve clinical handover that have focused on single dimensions have been less successful[7] than those that have considered multifaceted[8, 9, 10] and organisational[4] influences. Mixed method approaches use a combination of qualitative and quantitative data to capture the barriers and facilitators to quality improvement. These methods are most effective in informing targeted improvement and implementation strategies.[11, 12]

The framework of tools and strategies described here was devised and used in a recent quality improvement project that investigated interprofessional communication and team performance during clinical handover in the Post Anaesthetic Care Unit (PACU).[13] The project was conducted in three organisations (one public and two private). The framework reflects the importance of systematic and comprehensive measurement of all aspects of inter- and intra- professional communication during clinical handover and within the context of care delivery if the complex interplay of factors is to be understood and to inform viable solutions. Underpinning the framework are five concepts commonly used in quality improvement processes and prominent in the literature of organisational safety, high reliability organisations and change management in healthcare environments. These concepts are illustrated in Figure 2.

Figure 2. Framework for quality improvement

Clinical Governance
- An environment that maintains quality and safeguards standards of care

Clinical engagement
- Participation
- Local ownership and endorsement

Sustainability
- Improvements embedded in structures, processes and quality assessment

Safety and quality of clinical handover

Ecological validity
- Improvement strategies feasible in real-life situations

Team climate and safety culture
- Attitudes and behaviours that influence group performance

Supported by:

AUSTRALIANCOMMISSIONON SAFETYANDQUALITYINHEALTHCARE

Epworth HealthCare · Cabrini Health · ALFRED · MONASH University · Deakin

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Comprehensive quality assessment of handover

Three elements that need to be considered when evaluating the quality of handover are:

1) information
2) delegation of responsibility and/or transfer of accountability, and
3) the system and context of the handover, including the composition of the teams and their work environments (Figure 3)(Leape[14] as cited in Jeffcott et al.[15]).

Figure 3. Transfer of care at handover

Four sources of data useful for examining the quality of clinical handover are: critical incident reports, observation of practice, team climate and safety culture surveys, and group discussion and reflection by stakeholders.

Analysing critical incidents

An incident is any event with the potential to cause harm to the patient.[16] Analysis of the characteristics of incident reports and the associated narrative descriptions of incidents can uncover quality and safety issues contributing to error[17, 18] as well as providing insight into an organisation's safety culture related to reporting incidents, reporting culture and clinicians' awareness of risk in a particular context.[19] This information can help to inform recommendations aimed at improving clinical handover processes.[20]

Identification and analysis of incidents related to clinical handover can be challenging. Mixed attitudes about the value of incident reporting systems,[21, 22] clinician competencies in using reporting systems,[21] deficiencies in the quality of reporting,[17, 23, 24] and the resources required to analyse incident data are common problems.[22]

Riskman™ classifications may not be sufficiently sensitive to reliably identify handover incidents. It may be necessary therefore, to conduct a manual review of all incidents.

The framework used to classify and analyse incidents related to PACU handover (Figure 4) was informed by a number of incident evaluation protocols.[18, 23, 25, 26]

- Types of error: slip/lapse, rule based, knowledge based or violations.[27]
- Contributing Factors: institutional context, organisational or management factors, work environment factors, team factors, individual staff factors, task factors or patient factors[25]
- Outcome or consequences of incident: near miss or patient harm (delay, injury, infection risk).

Figure 4. Strategy for classification of handover related incident reports
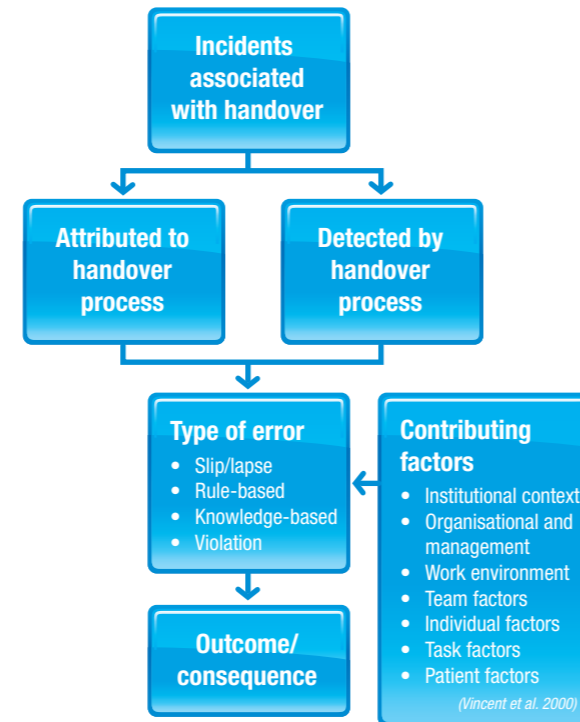
Limitations of critical incident report analyses to consider:

- Voluntary reporting systems such as RiskMan™ are reliant on recognition and reporting of clinical incidents by clinicians, as well as clinicians' knowledge and skill in reporting that supports analyses and action[17, 28]
  - Differences in clinician perceptions about what constitutes a 'reportable' incident can result in under reporting.[24] (e.g. a number of incidents (e.g. near miss) are not reported)
  - Differences exist in reporting practices (e.g. nurses are more likely to use hospital reporting system than doctors)[17, 20, 21, 22] and this is likely to result in under reporting of some types of incidents[17]
  - Some clinicians (e.g. anaesthetists) use alternatives to hospital reporting systems to report critical incidents
- Incident classifications systems are typically broad and non-specific which can make it difficult to identify and examine incidents related to a specific type of error or event[29]

Observations

Observation methods are considered 'gold standard' for measuring aspects of quality and safety. Observation methods are useful to detect communication failures[30] and to understand the complex social interactions that underpin clinical practice.[31] Observation studies of teamwork behaviors can identify patterns of communication, coordination, and leadership that support effective teamwork and quality patient outcomes.[32]

During observation of handover there are two foci of observation. These are the tasks performed and accompanying behaviours. For a comprehensive approach to observation of handover, two trained observers can observe two foci independently where one observes clinician behaviors and the other tasks performed.

There are useful tools available that assist observations. For example the "observational teamwork assessment for surgery" (OTAS) tool[33] supports assessment of two facets of the surgical process by using two observers, each focusing on different aspects of practice.

Team climate and safety culture

Teamwork plays an important role in the causation and prevention of adverse events.[32] Health care teams are essential for high-quality patient care and positive safety culture and team climate are important characteristic of successful teams.[34] Team climate and safety culture are determined by power relationships, group values, attitudes, perceptions and competencies as well as behaviours towards teamwork and safety management.[35, 36] Understanding team members' perceptions of their workplace is an important step in creating work environments where safety is a priority.

Positive safety culture correlates with increased incident reporting and better risk management.[32, 37] UK and Australian studies show team climate scores related to team functioning and organisational readiness for change,[11, 38] job satisfaction,[39, 40] patient care outcomes[41] and patient evaluations of their care.[40, 41]

Surveys have been used extensively to collect data on team climate and safety attitudes and a number of tools exist for his purpose.[35] The Safety Attitudes Questionnaire (SAQ)[42] and Team Climate Inventory (TCI)[43] have been successfully used to examine organisational culture in relation to quality improvement in a number of healthcare settings.

Data collected using these surveys can be used to:

- Benchmark survey findings against data from similar organisations
- Detect differences within and between staff groups (e.g. across different wards, between disciplines)
- Provide information for improvement and inform local unit strategies as well as organisational aspects of a quality improvement framework.

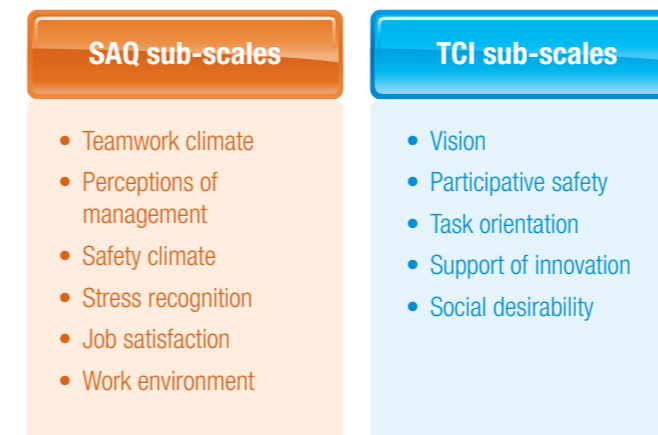The different dimensions of culture measured by the SAQ and TCI are shown in Figure 5.

The usefulness of survey data can be influenced by:

- Response rate (who did, and did not participate and are they representative of the broader staff group?)
- How the surveys are 'sold' to the staff
- Anonymity of participants.

Strategies most useful to enhance response rates include:

- including a support letter from the institutions' executive
- enlisting support of clinical leaders and champions (medical and nursing)
- personal hand delivery of surveys to individual staff members with an explanation
- distribution of extra survey forms to staff during 'down times'
- assuring anonymity
- staff incentives when satisfactory response rates are reached
- providing a designated return box in an easy to access location
- professional or discipline endorsement.

Figure 5. Sub-scales of team climate and safety attitudes

SAQ sub-scales	TCI sub-scales
• Teamwork climate	• Vision
• Perceptions of management	• Participative safety
• Safety climate	• Task orientation
• Stress recognition	• Support of innovation
• Job satisfaction	• Social desirability
• Work environment	

Group reflection and feedback (focus groups)

Focus groups discussions are an effective way to explore the discipline specific perceptions about complex tasks in health organisations.[44, 45] They are also a useful way to inform and engage clinicians in the processes of quality improvement.

In relation to clinical handover, focus group discussions can help unpack discipline specific perceptions related to:

- Transfer of responsibility and clarity of accountability for patient care
- Interprofessional expectations of information transfer
- Influences on quality and safety of handover
- Improving handover.

Tools for quality improvement of PACU handover

Examination of the multiple data sources from the three hospital sites informed the development of several tools to improve communication in PACU handover through:

- Risk recognition and minimisation
- Standardisation of processes
- Use of checklists for the delivery of information

Risk recognition and minimisation

Observations of handover revealed three 'categories' of patient handover common in the PACU. These three categories fit a visual 'traffic light' system (Figure 6) to alert and guide clinicians to:

1. a checklist for the minimum standards for every handover (green)
2. situations associated with increased risk for communication error at handover (amber); and
3. situations of high risk where comprehensive and systematic handover is essential (red).

Figure 6. Matrix for risk minimisation by identification of patient and environmental risks
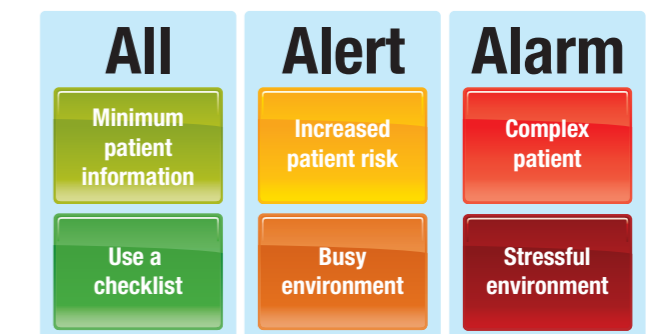
A secondary benefit of the approach is the foundation for change management processes by facilitating participation and skill development of clinicians from within the clinical settings. This can be achieved by using reference groups and training local clinical champions to communicate and consult as well as lead, monitor and review the progress of the process.

Standard process

Five distinct steps in the process of clinical handover were identified using a multi-methods approach. These five steps were used to develop a process support tool for safe PACU handover (Figure 7) between inter and intra-professional groups:

1. CONNECT the patient to monitoring and support devices on arrival in the PACU and;
2. OBSERVE the patient and respond to patient care needs;
3. LISTEN to the verbal information provided;
4. DELEGATE care by checking the DOCUMENTS and DISCUSSION to clarify and confirm information.