ROYAL HOBART HOSPITAL

National Clinical Handover Initiative:

Nursing and Medical Handover in General Surgery, Emergency Medicine and General Medicine at the Royal Hobart Hospital

Overarching Standardised Operating Protocol (SOP)

Submitted to:

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

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Tasmania
Explore the possibilities

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1 Introduction

1.1 Project Background

This report constitutes the third project deliverable of the ACSQHC funded project "Clinical Handover Initiative: Nursing and Medical Handover in General Surgery, Emergency Medicine and General Medicine at the Royal Hobart Hospital". The project forms part of ACSQHC's National Clinical Handover Initiative.

The Australian Commission on Safety and Quality in Health Care (the Commission) has identified clinical handover as one of its top priorities for work in 2007-2008. This priority is in the context of Australia taking a lead role in producing a standard operating protocol for clinical handover as part of its participation in the World Health Organisation's 'High Fives' initiative (ACSQHC, 2007).

The Commission's focus in this priority program seeks to achieve:

1. Significant, sustained and measurable reduction in communication gaps in the continuity of care delivery;
2. Reliable measures of impact on patient outcomes, focusing on the information systems and communication processes that support handover;
3. National learning on handover by enabling sharing of transferable and sustainable handover solutions;
4. Standardised operating solutions for handover communication that will contribute to Australia's participation in the 'High Fives' initiative.

This document presents **an over-arching standardised operating protocol (SOP)** that has been developed as part of this national initiative to improve clinical handover. This SOP has been generated from data collected from six areas: medical and nursing shift-to-shift clinical handover for General Medicine, General Surgery and Emergency Medicine. This over-arching SOP will be further validated in these six areas to provide an evidence-based guide for standardisation. This SOP is applicable to both medical and nursing shift-to-shift handover and although this protocol may be applicable to other scenarios, the evidence for its utilisation is limited to medical and nursing shift-to-shift handover. It is the intention of this SOP to provide an inclusive framework which allows for future expansion. This over-arching SOP is also intended to encompass both medical and nursing professions in order to contribute to moves towards multidisciplinary handover. Whilst this SOP currently does not cater for multidisciplinary handovers, it is anticipated that its inclusive framework builds the platform necessary for future development and implementation of a multidisciplinary handover.

The context of this work recognises that the system for the delivery of healthcare services is a very complex one involving multiple parties with a common aim to deliver the highest quality of care. Safety and quality in patient care depends largely on effective communication between various healthcare providers. Transfer of information between healthcare providers should ideally contain all relevant information in an accurate, unambiguous and timely manner. This will ensure that appropriate actions can be taken to facilitate the best quality care. Breakdown in communication has been identified as one of the most important contributing factors in serious adverse events.

Many factors have been identified as impacting on communication. One of these factors is the growing trend to reduce working hours for healthcare professionals (especially junior medical officers), in recognition of the fact that fatigue may contribute to poor work

performance (Junior Doctors Committee, 2004). In Europe, the European Work Directive will progressively reduce the maximum working hours of healthcare professionals to 48 hours per week (Junior Doctors Committee, 2004). In Australia, the Australian Medical Association has produced guidelines for safe working hours (AMA, 2006). In the United States, the trend towards reduction in working hours is also evident (AMA, 2006). The reduction in working hours has led to an increase in the number of shifts and an increase in the number of teams of healthcare professionals who look after the same patient. Effective and efficient handover processes to transfer information, responsibility and accountability become pertinent.

Shift-to-shift clinical handovers amongst medical staff are not well defined and not well understood (AMA, 2006). Many hospitals do not have a clear policy for effective handover. More importantly, the transfer of responsibility and accountability is not well practiced (AMA, 2006).

The nursing profession on the other hand has had a long tradition of practising shift-to-shift handover. The effectiveness and efficiency of nursing handover has been scrutinised intensely in recent times. There is still room for improvement in nursing handover in order to optimise the accurate transfer of information, responsibility and accountability. More importantly, the medical profession and the nursing profession need to work together more closely to achieve a uniform understanding of clinical handover.

Although there has been a proliferation of literature in the area in recent years, there remains little evidence base for best practice in handover processes (Wong et al, 2008a). There is a lack of frameworks to assist in understanding handover, developing tools to improve handover and also developing methodologies to evaluate handover practices. This is a significant barrier for clinicians and managers to establish practices to transform clinical handover into a more consistent and reliable part of the delivery of safe patient care. Whilst a strong argument exists for face-to-face handover, the lack of structure in terms of content, process and information tools leads to handover being a highly variable and individual-dependent process.

1.2 Project Aims

This SOP is designed to directly contribute to the achievement of the four priority objectives identified above and set out in the priority program for clinical handover in 2007-2008 by the Commission.

This SOP has been developed in the context of a recognised need for solutions that are transferable at a national and potentially international level. Importantly however, this SOP has also been developed with recognition of the fact that any standardised solution will also require the capacity to be adapted to local circumstances, in order to ensure integration to achieve safer clinical care. This SOP aims to achieve the following objectives:

1. A standardised solution which allows seamless integration into the local clinical context to improve clinical handover.
2. A standardised solution which will provide tools to clinicians and managers interested in the area of clinical handover to implement clinical handover improvement initiatives within their local clinical services.
3. A standardised solution which will reduce communication gaps for patient care.
4. A standardised framework which allows for national learning from local adaptation and implementation of the standardised operating protocol.

5. A standardised framework which will enable evaluation of information tools and communication processes for patient safety.

In order to achieve the above objectives, this SOP consists of five phases. Each phase has a number of individual steps described in terms of background issues, objectives, framework, local considerations, and tools and guidance. The objective of this SOP is to enable clinicians and managers with little knowledge of clinical handover to have a clear understanding of the issues involved, and to be able to design and implement clinical handover improvement initiatives.

More importantly, another objective of this SOP is to provide a platform for future integration and collaboration with other clinical handover projects funded by the Commission nationally..

1.3 Frameworks

It is important that the framework for this SOP be well defined in order to improve the transferability and generalisability of this standardised solution. This SOP draws on, and adapts insights from, a number of different frameworks for different phases of the SOP. These frameworks take into consideration the potential to incorporate and collaborate with other clinical handover projects funded by the Commission nationally, as well as the Commission's eight other priority programs approved by the Australian Health Minsters' Conference in 2007.

For the purpose of this SOP on shift-to-shift medical and nursing handover, the definition of clinical handover from the United Kingdom National Patient Safety Agency (Junior Doctors Committee, 2004) and the Australian Medical Association in their 'Safe Handover: Safe Patients' guideline (AMA, 2006)is adopted:

> *"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"*

It is important to emphasise that clinical handover requires a transfer of information, responsibility and accountability for patient care. This SOP has been developed to emphasise all of these elements of clinical handover.

1.3.1 User-centred frameworks

The SOP emphasises the principles of user-centred approaches and user engagement in the quality improvement process (Wong et al, 2007). It is imperative that clinicians and managers who wish to adopt this standardised solution adopt a user-centred approach to engagement with health professional colleagues. Although this framework is important in all five phases, it is especially important in the preparation phase and design phase.

The SOP emphasises the need to obtain views and perspectives of end-users. This preparation phase allows engagement of end-users as well as creating momentum for change. User participation and user-centred design principles were widely used in the development of this SOP. It is important to emphasise that the design process should involve as many users as possible in order to create a collaborative atmosphere among staff.

User engagement and user participation in the implementation and evaluation phases are very important to ensure that the process empowers users, rather than limiting them from improving the quality of care delivered. Users should be informed of the evaluation approach and engaged in conversations about how to further improve the process.

1.3.2 Adult educational theory

Adult educational theory is the theoretical framework for education and training design used in this SOP. Malcolm Knowles' adult educational theory emphasises that adults learn very differently and learning is best achieved through self-directed learning (Kaufman, 2003). A few assumptions underpinning this concept are:

1. Self-concept: Adult learners are self-directed and no longer dependent on others to learn.
2. Experience: Adults have more experience to draw upon as a learning resource and they prefer to draw on previous experience.
3. Readiness to learn: Adults are prepared to learn skills and knowledge pertaining to their social role.
4. Orientation of learning: Adult learning is directed to problem-centred learning which will be immediately applicable to their role.
5. Motivation to learn: Internal rather than external.

This framework is especially important for the design phase, implementation phase and evaluation phase of this SOP.

1.3.3 Iterative feedback frameworks

This SOP emphasises the need to take socio-cultural factors into consideration. This builds on clinical handover work undertaken by the Royal Hobart Hospital and University of Tasmania deploying a holistic socio-technical approach to understanding and improving clinical handover (Wong et al, 2008b). This approach integrates clinical and information systems expertise with qualitative field techniques and user-centred education and training in an iterative feedback loop to support continuous improvement. This approach relies on the benefits and synergies of interactions across the streams to optimise transferability and sustainability (see Figure 1 below).

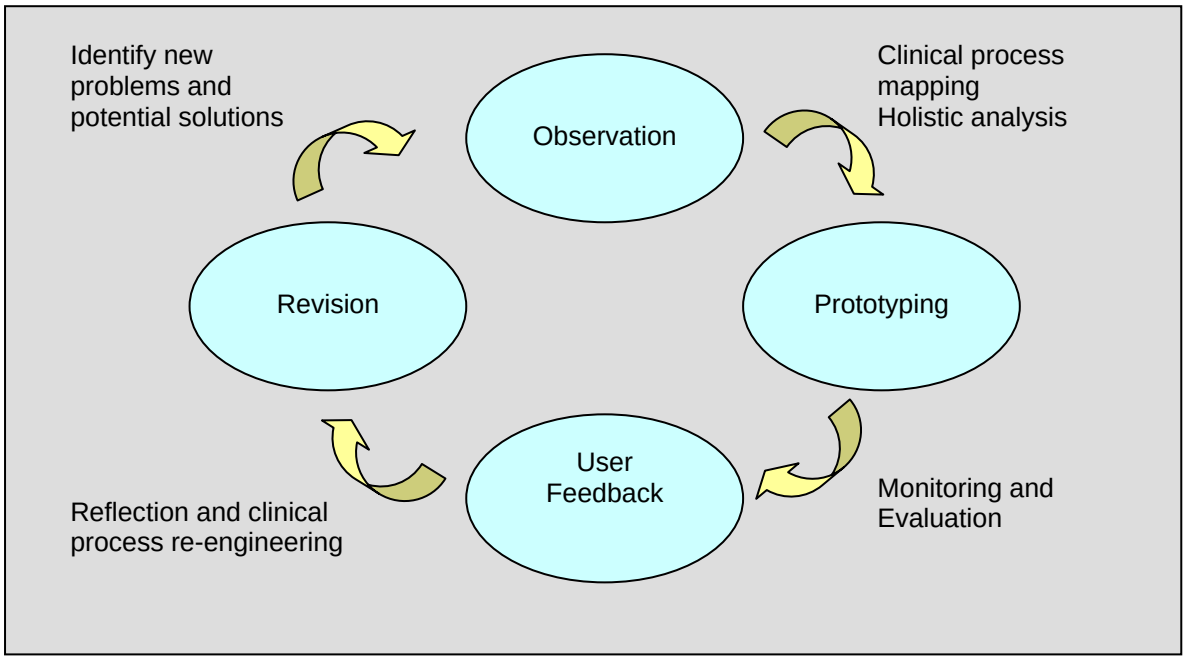


Figure 1: Iterative feedback process

The iterative feedback framework is especially important in the design and implementation phases. The iterative feedback process not only ensures continual and increasing engagement of end-users but also allows the system to adapt to the dynamic nature of healthcare delivery over time.

1.4 Local considerations

The above frameworks for clinical handover improvement highlight a tension between the need for standardisation to support national improvement and the need for flexibility to respond to local socio-cultural circumstances. While this SOP emphasises the need to engage users and to develop a solution for local socio-cultural clinical practice, it recognises the need to deliver standardised solutions for better patient outcomes both nationally and internationally.

This SOP attempts to provide a solution that addresses this tension. It introduces the concept of flexible standardisation and critical standardisation. This concept is shown in the diagram below. A national standardised framework developed for clinical handover may not integrate well with current local clinical context and practices. For this to be useful at a national level, there needs to be some area of overlap between the national standardised framework and local clinical context and practices. This is the process of critical standardisation (see Figure 2) both at a conceptual level and at a practical level. The goal of continual improvement is to expand the surface area of overlap as much as possible, without affecting the local socio-cultural context.

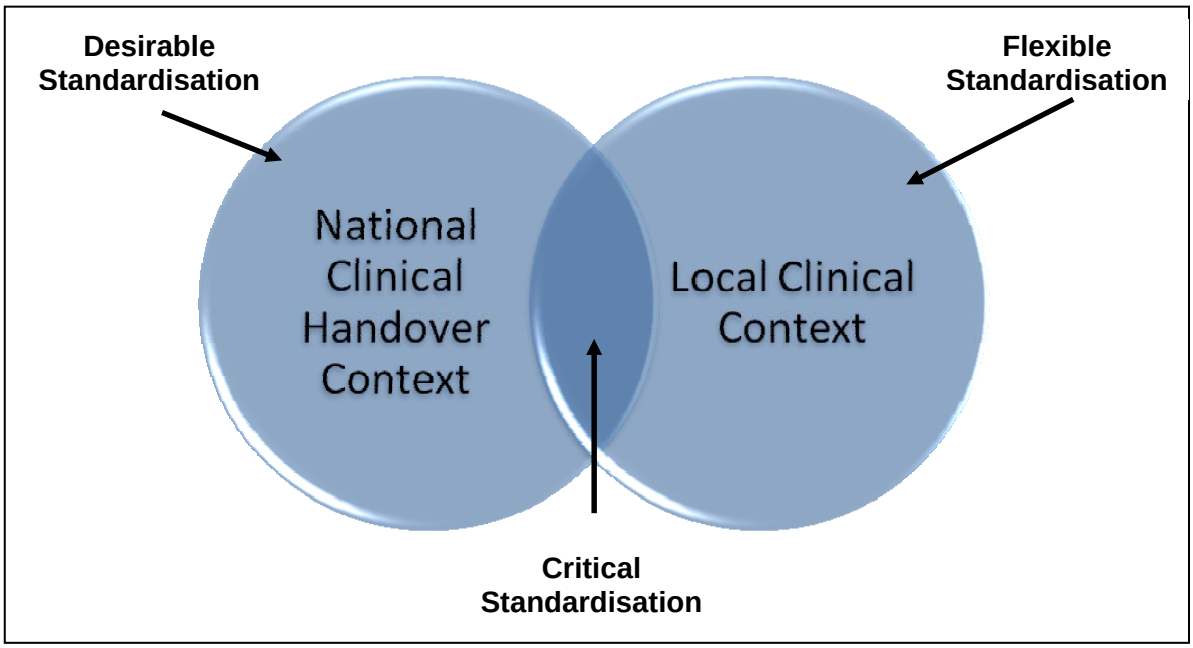


Figure 2: Critical Standardisation

This SOP addresses the need for critical standardisation in each of the phases. Each phase includes a section on local considerations that identifies important issues from the perspective of the local socio-cultural setting and local clinical practices.

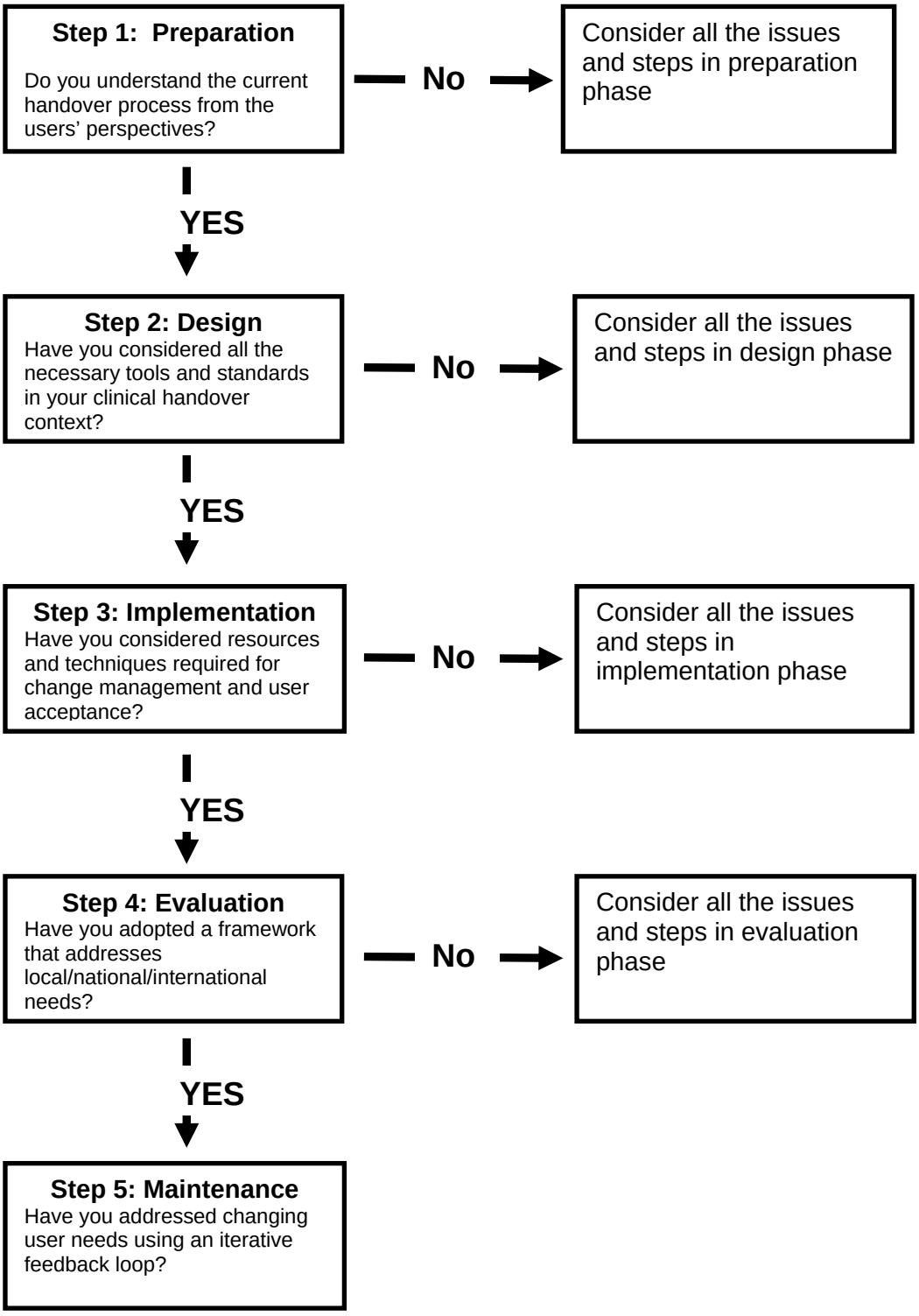
1.5 Tools and guidance

This over-arching SOP contains five phases. It is recommended that all five phases be considered by individuals or groups who are interested in improving the clinical handover processes. These five phases are as follows:

1. **Preparation phase**
    a. Identify local practice and define objectives and rationales
    b. User-centred approach
    c. Ensuring readiness for change
2. **Design phase**
    a. Identify and design content and processes for improvement
    b. User-centred and iterative feedback approach
    c. Ensuring flexible adaptation of standardised solutions
3. **Implementation phase**
    a. Define an implementation plan tailored to local socio-cultural context
    b. User-centred and iterative feedback approach
    c. Ensuring co-ordinated implementation phase to maximise impact and minimise risks
4. **Evaluation phase**
    a. Identify evaluation strategies that fulfil local, national and international needs.
    b. Iterative feedback approach
    c. Ensuring evaluation processes meet local needs and beyond
5. **Maintenance phase**
    a. Identify critical success factors and ensure continual improvement
    b. Iterative feedback approach
    c. Ensuring continual improvement for better and safer patient care

Figure 3: below provides a flowchart illustrating this process. The SOP will guide users through these five phases.

Figure 3: SOP flowchart



1.6 Time-resource considerations

A suggested time-resource chart (Figure 4) has been included below for consideration. Time and resource requirements will need serious consideration prior to the commencement of processes for clinical handover improvement. In this time-resource chart, the length of the bars represents the estimated time required and the height of the bars represents the estimated resources required. The chart illustrates that the resource requirement is significantly more intense at the beginning of the project. The time requirement, however, is significantly more important during the implementation phase. Please note: the time resource displayed in the chart is greater than 100% due to the periods of overlap across the five phases.

1. **Preparation phase**
   This phase is resource intensive. The project team will need to obtain the views of as many users as possible. The project team will also have to promote the handover improvement initiative to as many users as possible. Due to regular movement of staff, it is very important to build the momentum within a short time frame.

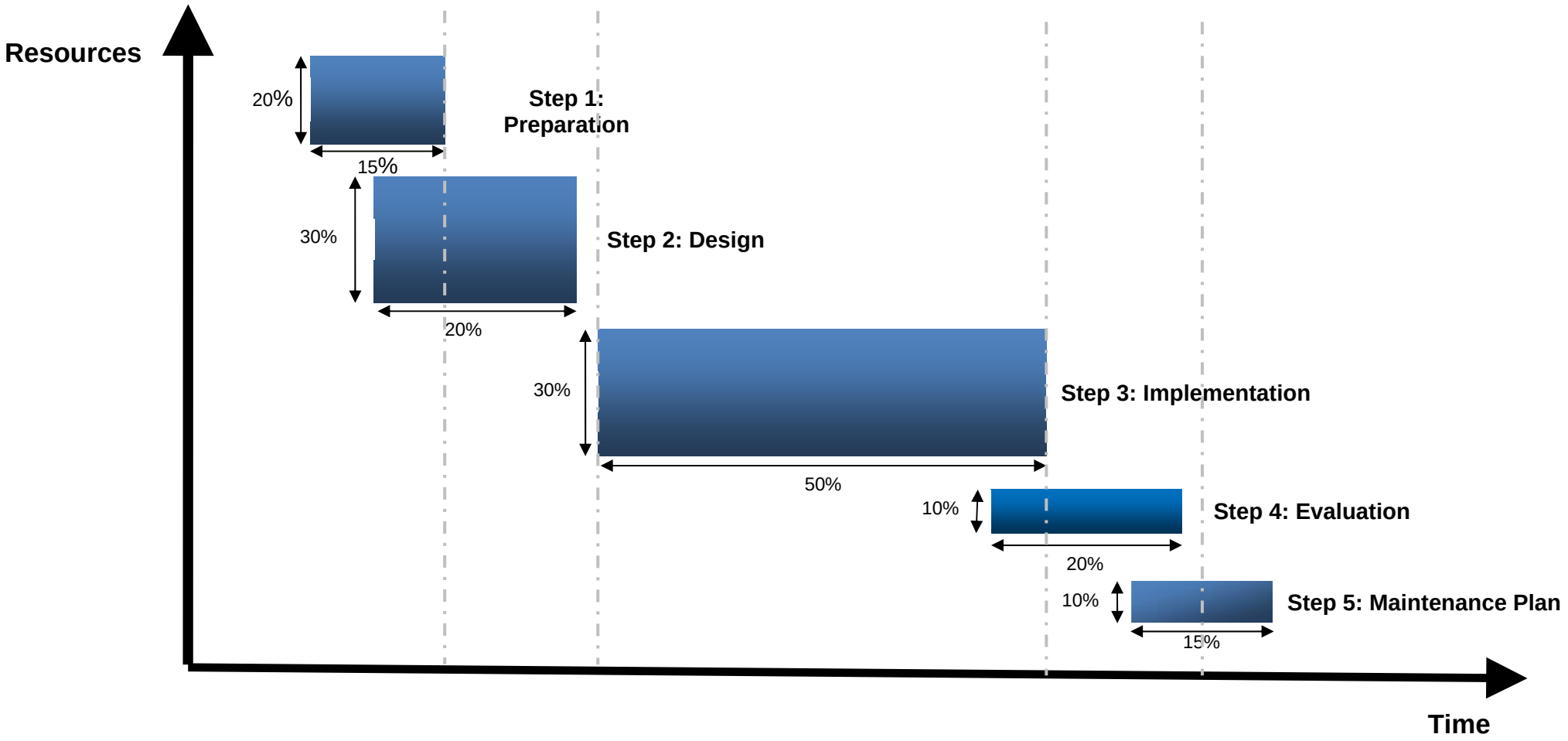
2. **Design phase**
   This is the most resource intensive phase. In order to achieve user-centred design principles, the success of this phase is dependent on the number of end-users who have input into the design. More importantly, the differences in opinion from users and the tension between a standardised solution and local innovation need to be balanced in order to achieve the appropriate outcomes.

3. **Implementation phase**
   This phase is time-consuming. For staff to incorporate new practices into their routine work requires time and constant reminders and support. It is very important that evaluation does not happen early in the implementation phase as it will not reflect the real impact of the program.

4. **Evaluation phase**
   The evaluation phase requires resources and time. Evaluation of local needs may require less effort but will require the same length of time.

5. **Maintenance phase**
   It is important to emphasise that for the purpose of this SOP, this phase is the design and planning of future maintenance for improvement. The continual improvement plan will ensure future iteration fulfil the function of adapting to changing clinical contexts and practices.

Figure 4: Time-resource chart



1.7 Establishment of a team

This SOP is designed for use by a team of individuals working together to achieve the goal of clinical handover improvement. While individual enthusiasm and efforts to improve clinical handover are welcome, it is unlikely that individual efforts will be able to adopt a standardised process, or sustain a long term change for a unit or an organisation.

While the exact number of members and the skill mix within any team is variable, it is suggested that at the beginning of the project the following skill mix and membership be considered. This SOP acknowledges that different skill mixes will be required at different times. It also acknowledges and recognises some skill mixes may not be available at every unit or institution.

The team should (preferably) include expertise in the following areas:

- **Project leader**
  The project leader should be a clinician who has strong interest in the area of quality improvement and clinical handover.

- **Senior support**
  There needs to be a senior support person who can guide the team through policy frameworks and the establishment of organisational support.

- **Quality and safety expertise**
  The quality and safety expertise is important in ensuring that the project follows the local quality and safety frameworks, as well as identifies areas for collaboration with other local projects.

- **Clinician champions**
  Clinician champions should include senior clinicians and end-users. This will assist the engagement and empowerment process.

- **Education expertise**
  The SOP will require significant effort in education and training of end-users. Therefore educational expertise will assist the process.

- **Systems expertise/ Change management expertise**
  Systems expertise and change management expertise can be brought in during the implementation and adaptation phases., however it is desirable that they are involved from the beginning of the process. This is especially important if the adaptation process involves electronic systems.

  For further information, please refer to our second deliverable: the Stakeholder Engagement protocol.

2 Preparation phase

This is the first phase of the SOP and should commence once a team has been established and team members understand the rationale for the need to adapt standardised solutions to improve clinical handover. This SOP provides guidance to the team through various stages of the clinical handover improvement process starting with the preparation phase.

2.1 Objectives

It is imperative that this phase is undertaken with a clear understanding of the current clinical handover process within the specific area in order to understand the concept of flexible standardisation. This will allow for assessment of the potential impact of the standardisation process and the adaptation of a standardised solution. Importantly, the preparation phase will also create momentum for change.

The preparation phase of the project aims to achieve the following objectives:

- **Understand the local context from user's perspective**
  It is very important the current handover context is clearly defined from the users' perspectives (Wong et al, 2008b). This should include the context, content and process of current handover practices. Some individuals may have very good insights and ideas for improvement. These should all be taken into consideration in the design and implementation process.

- **Understand the rationale for change**
  For a clinical handover improvement initiative to be successful, users need to understand the rationale for change (Yee et al, 2006). This involves gathering preliminary information in a local context to construct that rationale for change. Whilst many studies support improvement in clinical handover, this information needs to be integrated at a local level. More importantly, the preparation phase should identify events or data which will engage and empower end-users for change.

- **Understand the motivators and barriers for change, through risk assessment**
  This process should include the identification of barriers and resistance to change. These may include environmental factors, technological factors and human factors (Turner et al, 2006). More importantly, motivators for change should be identified in order to assist in the process. This process should be carried out through risk assessment.

- **Identify stakeholders and change champions**
  The process of preparation and understanding should include the identification of all stakeholders involved. Stakeholders should include individuals from these different areas: clinical, administrative, quality and safety, education and training, change management and information technology. More importantly, the preparation phase should identify local change champions. These change champions should be individuals interested in improving clinical handover who command respect from their peers.

- **Identify socio-technical issues for handover improvement**
  The introduction of new processes to improve clinical handover will be affected by the current socio-cultural context within the area (Yee et al, 2006). More importantly, the socio-cultural context will determine the process of standardisation and adaptation of the

SOP. It is very important that the preparation phase identifies and seeks to understand these socio-cultural issues and how they may impact on future changes.

- **Prioritise the clinical handover improvement initiative**
  The preparation phase provides an opportunity to prioritise the clinical handover improvement within the unit. It is important that the priority is assigned from the perspectives of the end-users, administration and senior support. It is also very important to identify other quality and safety projects and potential future changes to clinical practice to avoid "change fatigue" among staff.

- **Identify resource requirements**
  Resource requirements for the implementation of the standardised solution need to be determined in the preparation phase so as to enable the identification of potential funding sources to support the clinical handover improvement initiative.

2.2 Issues for consideration

During the preparation phase, a holistic understanding of the current clinical handover practice should be established (Yee et al, 2006). It is very important to understand that the current clinical handover process may serve numerous important functions (Turner et al, 2006). It is important to retain these functions (through other means if necessary) if the implementation of a standardised solution leads to some of these functions not being fulfilled during handover. More importantly, it is important to consider the factors which may affect the handover process. Attempts should be made to design the handover process in order to minimise the impact of dynamic interactions of the factors which may affect clinical handover (Turner et al, 2006). A shift diagram should be drawn to identify handover time (see Figure 5).

More specifically, understanding of current clinical handover practice should at least cover three important inter-related aspects: the context of clinical handover, the process of clinical handover and the content of handover. These aspects are described in greater detail below.

2.2.1 Context of handover

The context of handover deals with various factors present in the clinical and environmental context which may impact directly or indirectly on the actual clinical handover process and the clinical handover content. The preparation phase should sensitise the project team to these factors and consider these factors prior to adapting and implementing standardised solutions.

- **Continuity of patient care during handover**
  As the clinical handover process often takes clinical staff away from patient care, it is very important to ensure that this process does not interfere with the continuity of patient care. It is therefore important to identify patient care needs that must be provided for during the handover process, including for example the following (ACSQHC, 2008):
    - Emergency resuscitation situations;
    - Expected arrival or physical transfer of patients, especially unstable patients;
    - Specific treatment and management which must be provided at a specific time;
    - Unexpected emergencies during handover periods;
    - Provision of patient care, such as toileting during handover periods.

The current handover processes may have mechanisms in place to deal with these scenarios, but they may not be explicitly stated. It is important to identify these mechanisms and make them explicit.

- **Multidisciplinary involvement**
  Most patient care involves more than one professional discipline. Sometimes, continuity of patient care is best delivered by a multidisciplinary handover process (ACSQHC, 2008). This is especially important in complex clinical cases or in cases in which multiple different teams of healthcare professionals interact with each other at all times in order to provide patient care. In these cases, the risk of incomplete and unsafe handover is high. Effective multidisciplinary care, however, is difficult to achieve. A good handover culture within the same profession is the foundation for multidisciplinary handover. Therefore, it is recommended that organisations attempt to improve handover for an individual profession first, prior to implementing multidisciplinary handover.

  While multidisciplinary handover may be desirable in some circumstances, it is often a time and resource intensive activity. The process can be effective and efficient if multidisciplinary care has already been well established to provide patient care, such as in an ICU setting. In circumstances where there is minimal inter-professional dependency in clinical care delivery, such as in general medicine, multidisciplinary handover needs to be balanced with the need to efficiently transfer information, responsibility and accountability. More importantly, in a multidisciplinary handover setting, the responsibility and accountability of patient care needs to be clearly delineated.

- **Documentation and relationship with patient notes**
  The current status of medical record documentation and the type of handover utilised will determine the relationship with patient notes. Handover information may be ephemeral in nature (eg. shift-to-shift handover) or may be regularly referred to as a permanent and important part of patient care (eg. discharge summaries from theatre or intensive care unit) (ACSQHC, 2008). Handover information may be taped, typed or just scribbled on a piece of paper to serve as an information artefact and memory trigger. It is imperative that a standardised handover process consider the documentation and archiving process of the standardised information as part of patient notes. The current state of the medical record (i.e. paper based, electronic or scanned records) will determine the documentation and archiving process of handover documentation.

- **Decision making and decision support in handover**
  This will vary considerably, depending on the type of handover and other processes available to assist with these functions. It is, however, very important for the standardised handover process to consider the role of handover in the detection and management of deteriorating patients.

  This is especially important in after-hours medical and nursing handovers. Handovers should be developed into a safety mechanism to trigger a MET call (Medical Emergency Team) in order to provide a clear plan for the management of a deteriorating patient. It is important to emphasise that handover should not be the only mechanism to detect deteriorating patients. The standardised practice must emphasise the transfer of up-to-date observation of patients from one team to the other as a mechanism to identify the deteriorating patient. More importantly, the process of handovers should provide junior staff with an opportunity to seek advice for decision support and decision making.

- **Involvement of patients and their families**
  Patients and their families should play a central role in managing their health. Their role in the quality and safety of healthcare should be emphasised in patient-centred care models. The effectiveness of handover communication, in some situations, may be enhanced by the participation of patients, carers and family members. This involvement should be considered in the design of these standardised handover processes. It is, however, important to note that the role of the patient within the handover context has not been clearly defined in the literature. Also, legal frameworks and legal implications should be taken into consideration in involving patients and their families in handover.

- **Educational role of handover**
  The theoretical framework of handover and the real-life practice of handover do not normally include formal teaching as a role embedded within that practice. It is very important to note that handovers, especially shift-to-shift handovers, carry a very important informal teaching role for junior staff. Students and junior staff often study the medical and nursing practices and cultures through observations and informal interactions with staff members. It is therefore very important that a standardised handover solution provide the opportunity for students and junior staff to continue learning during the process.

- **Shift overlap**
  The effectiveness and efficiency of handovers, as well as the transfer of responsibility and accountability are highly affected by the shift structure. It is very important that a clear understanding of the shift structure be developed during the preparation phase. In staggered shifts, a clear understanding of the current practice of transfer of responsibility needs to be developed.

- **Priority of clinical handover improvements**
  The success of the clinical handover improvement initiative is highly dependent on its priority within the institution, from the perspectives of senior management and the quality and safety unit, as well as the local clinical unit. The preparation phase should determine the priority of the clinical handover improvement initiative within these areas.

2.2.2 Process of handover

The current handover process should be clearly defined from the end-user's perspective utilising a combination of techniques. It is imperative that the process is therefore determined from the perspectives of policy (and therefore senior management's perspective), end-users (and their perceptions of the current process) and practice culture (i.e. do what they say they do). Table 1 (on page 22) is designed to assist in the understanding of the current clinical handover process through these perspectives. The risk assessment of the current clinical handover process is important and must focus on improving our understanding of handover through detailed observations and recordings of what it is clinicians need during handover and what it is they often lack. Leveraging from what clinicians already do will be key to advancing handover in specific contexts.

- **Factors that may affect the process of clinical handover**
  Many factors have the potential to affect the efficiency and effectiveness of clinical handover (Turner et al, 2006). These factors include interruptions, environmental factors, cultural factors and human performance factors. The impact of these factors on the process of clinical handover should be clearly identified in the preparation phase. It is

also important to note whether any preparation work is needed prior to the handover process.

- **Tools to assist the process of handover and preparation for handover**
  Various tools can be used to assist in the clinical handover process. It is important that these tools are well defined. These tools may include using a whiteboard, electronic data projectors or clear clinical handover guidelines. More importantly, the preparation phase must clearly identify the version control of these tools in order to minimise errors. The preparation time required for these tools to assist the handover process should be clearly noted.

- **Venue and time**
  It is very important that clinical handovers are conducted at a fixed time and fixed place, and that this information is clearly distributed to all parties involved in the handover process. The preparation phase should determine these issues within the current scope of practice. This aspect should be investigated from the perspective of available policies and whether these policies are adequately distributed to all parties. More importantly, from a practical aspect, the quality of the venue for handover and the culture of handover practice should be noted.

- **Attendance and leadership**
  Clinical handovers should be attended by key healthcare professionals and they should be punctual. More importantly, there needs to be clear leadership to assist in the efficiency and effectiveness of clinical handover process. The preparation phase should clearly identify the availability of policies, the knowledge of end-users and more importantly, the current cultural practices of this aspect of the clinical handover process. Characteristics of the leader for effective handover should be identified.

- **Fixed agenda and well known checklist**
  Clinical handovers should have a fixed agenda and a checklist to ensure all aspects are covered. The preparation phase should clearly identify the availability of policies, the knowledge of end-users and more importantly, the current cultural practices of this aspect of clinical handover process. It is also important to note the variability of the agenda and factors which affect the variability of the agenda.

- **Type of handover**
  The preparation phase should clearly identify the current practice of handover, i.e. office based discussions, bedside, tape recorded or electronic. It must be emphasised that face-to-face handover is preferable in most settings. It is also important to emphasise that electronic handover systems or electronic handover tools should refer to electronic systems or tools that have been designed solely for handover and allow for simultaneous access in terms of viewing and entering handover data. These tools must also allow for the transfer of responsibility and information on patient care. Use of spreadsheets and/or word processing tools should only be considered as tools used for information support.

2.2.3 Content of handover

During the handover process, there should be a clearly identifiable transfer of information, responsibility and accountability through standardised content delivery. Minimum data sets may be used by end-users during handover and it is important to understand the minimum

data sets in order to design a standardised approach. Table 2 (on page 23) is designed to assist in the understanding of the content delivery of current handover practice.

- **Verbal/written or verbal versus written**
  In handover, the sender transmits the content either verbally or in a written format, or utilises both mediums. The receiver of the handover message then either documents the message in a written form or relies solely on their memory to recall the information. These forms of communication should be clearly identified and documented.

- **Standardised format**
  The efficiency and effectiveness of the handover can be improved with a standardised format for the delivery of most information. There may already be some formal or informal standardisation of this within the current handover process. It is important to identify these formats and what their role is in handover from the perspectives of policy, end-users perceptions and current practice.

- **Information tools for consistent content delivery**
  Information tools are important to assist in a consistent delivery of content. These may include the use of a checklist, computer print outs, whiteboards or other information tools. It is important that the content in these information tools is analysed to generate a clear understanding of the current practice.

Figure 5: Shift diagram

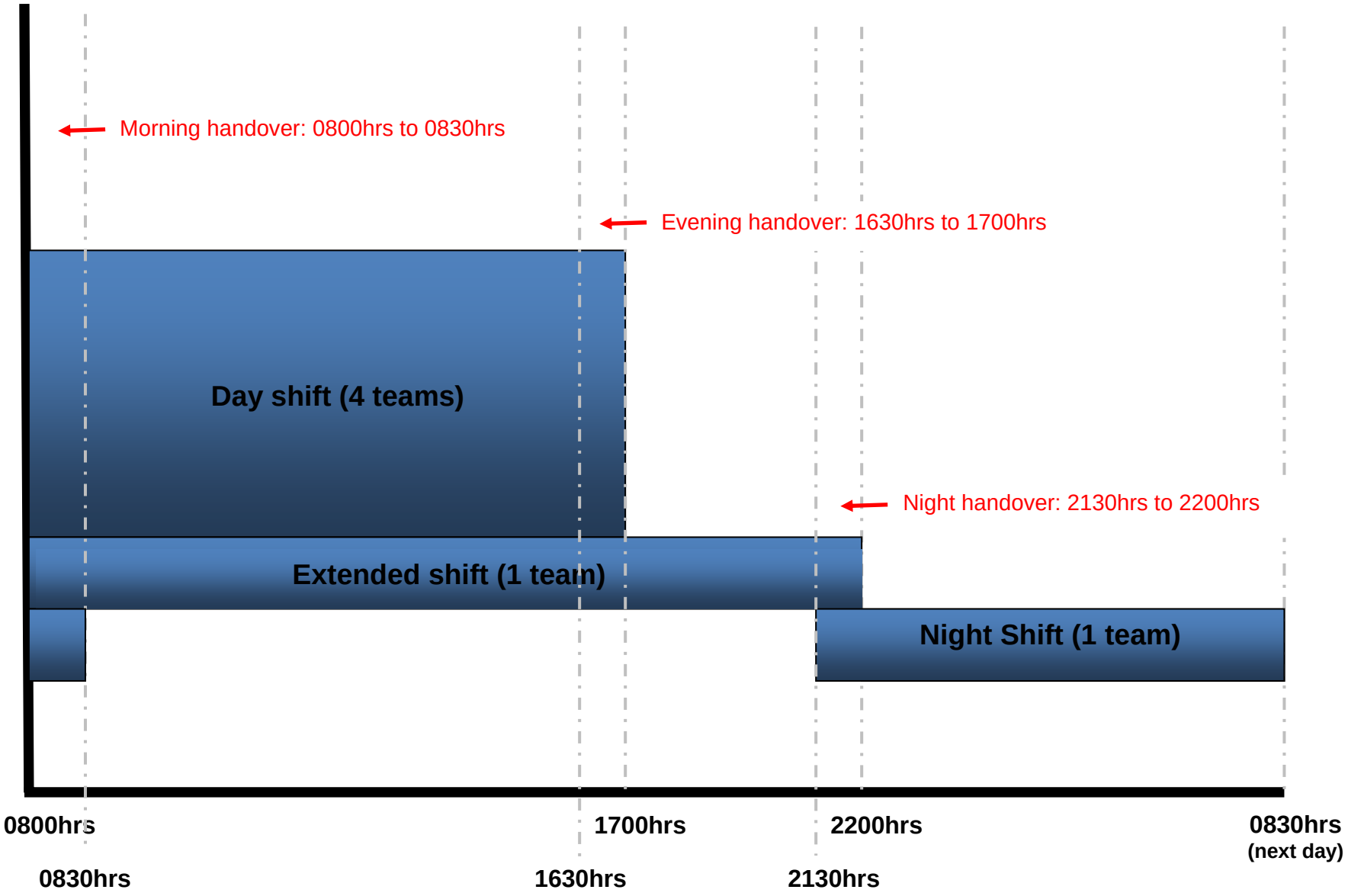


Table 1: Process table

Domain and issues	Policy	Perception from end-users	Real-life practice
Factors which may influence handover: • Environmental such as: interruption, shift overlap • Information • Human performance etc	Is there a clear policy to minimise the impact of various factors on the effectiveness and efficiency of handover?	What do end-users think about these factors? Do end-users understand the policies around them? What do end-users think they do to minimise these factors?	What are the impacts of these factors on handover? Has any policy in place been followed? Do end-users develop certain practices (work-arounds) to avoid the impact of these factors?
Tools to assist handover process: • Flow charts • Posters • Documentation of each shift	Is there a clear policy for utilisation of tools to assist the handover process? Is there a clear policy for auditing handover process?	What do end-users think about tools to assist the handover process? What do end-users need/utilise from their perspective?	What tools are utilised in real-life to assist the handover process? Are handover tools available all the time? Is there any feedback to end-users regarding the process?
Environment for handover: • Is there a fixed venue for handover? • Is there a fixed time for handover? • Who attends handover and who leads handover?	Is there a clear policy on the venue, time and duration for handover? Is there a clear policy for attendance at handover? Is there a clear policy for leadership during handover?	What do end-users think about the location, time and duration? What do end-users think about attendance? Is there a clear leader during handover?	Are the time, duration and venue of handover clearly understood? Is there a consistency in attendance? Does the leader provide good leadership?
Handover characteristics: • Type of handover • Agenda • Opportunity for clarification	Is there a clear policy for the type of handover required during each shift? Is there a clear policy on the agenda items /checklists for handover?	What do end-users think about the type of handover which is currently being used? What do end-users think about the agenda for handovers?	Is the type of handover conducted consistently? Is there any consistency in the agenda of handover process? Is there any opportunity for clarification?

Table 2: Content table

Domain and issues	Policy	Perception from end-users	Real-life practice
Verbal/written/other: • How do end-users transfer the content?	Is there a clear policy to guide handover? Is there any clear policy to guide written aspects of handover?	What do end-users think about the handover process?	What do end-users do to transfer information? Is there any consistency in their approach?
Standardisation and minimum data sets: • Is there a minimum data set? • Are there any informal rules/standardised content to be transferred? • Does the content transfer cover information, responsibility and accountability?	Is there a clear policy on a minimum data set for handover? Is there a clear policy on transfer of information, responsibility and accountability during handover?	What information do end-users need for continuity of patient care? Is there a formal/ non-formal minimum data set in use? What do end-users think about transfer of information, responsibility and accountability?	What information is transferred during handover? Is there a consistent pattern of information being transferred? Is there a clear transfer of information, responsibility and accountability?
Information tools to assist handovers: • Paper based • Electronic • Memory aids	Is there a clear policy for utilisation of information tools during handover? Is there a clear policy for achieving handover documentation?	What do end-users think about information tools to assist handover? What do end-users use/need from their perspective?	What information tools are utilised in real-life to assist handover? What do end-users do to the information/ memory aids? Are handover tools available all the time?

2.3 Frameworks and techniques

The framework for the preparation phase should be well defined as it determines the techniques that are applicable for preparing any unit/organisation for a clinical handover improvement initiative. The framework adopted by this SOP is a user-centred design framework involving users within all the different processes. Based on the user-centred design framework, techniques used to prepare the unit/organisation include observations, interviews and content analysis. This SOP does not encourage the utilisation of surveys as a primary tool to assist in the process of understanding, as there are limitations in terms of the richness of information which surveys generate. This SOP does acknowledge that there are tools published in the literature which promote the use of using surveys as a data collection technique.

2.3.1 User-centred process

This SOP emphasises the need to obtain a holistic view, but most importantly it emphasises the need to obtain a view from the perspectives of end-users (Wong et al, 2008b). It is very important the atmosphere/approach of the preparation phase is one of collaborative problem solving. Therefore, the preparation phase should actively involve and engage end-users.

End-users must be given reassurance that this process is non-judgemental and the results are not being used for personal performance evaluation or any other purposes. Extensive education and promotion of the user-centred design process needs to take place in the preparation phase. Failure to engage users at this stage will have a significant impact on future development.

Importantly, this preparation process should clearly document the differences (if any) in perception between senior management and end-users. More importantly, there are often differences between the perceptions of end-users and the real-life practice of handover. It is critical to identify and understand this gap before proceeding to the next phase, which is the design phase.

2.3.2 Observations

It has been documented in the literature that the perceptions of end-users and senior management are often quite different compared to real-life clinical practice. This difference is often a lot bigger than the Hawthorn effect, i.e. the effect of being observed (Wong et al, 2007). The preparation phase should include some observation sessions to ensure that conceptual understanding of the current handover process matches the real life clinical practice. The project team will need to consider the following issues, using observation techniques:

- **Participant observer vs non-participant observer**
  Participant observers, usually one of the change champions or one of the end-users, provide the benefit of understanding the current system and language within the healthcare system. Their view, however, may be biased. Non-participant observers, on the other hand, carry the risk of not being accepted by the unit and/or individuals within it, as well as facing difficulties of not understanding the culture and terminology utilised.

- **Structured vs Unstructured observations: Novice vs Experienced observers**
  Structured observations are easier to carry out for novice observers. The drawback of structured observations is that they may not provide a holistic picture of the phenomenon being observed. Unstructured observations can be overwhelming in terms of the volume of data and/or difficulty of understanding, especially for novice observers, but the results may reveal much more detail/insight. Experienced researchers, however, may be difficult to find and their views may also be biased and/or too academically focused without a strong awareness of practical implications.

- **Number of observations required**
  The number of sessions required is highly variable; however, as a guide at least 10 sessions are generally required to reach a clear and deep understanding of the range of existing practices.

- **Observation framework: risk assessment framework**
  The following risk framework is intended to capture drivers, constraints and trade offs and how they are created in the clinical setting, a situation that is highly variable on a daily basis.
  a. For each of the handover scenarios, describe what clinicians do, based on the information gathered through observation sessions;
  b. Identify for each handover scenario specific ways that the process could break down or fail due to gaps in handover;
  c. Identify and analyse how such gaps are identified (or not);
  d. State the effect of the breakdown on information, responsibility and accountability transfer;
  e. Identify what clinicians do to recover from discontinuities in handover.

2.3.3 Interviews

Interviews serve two purposes. Firstly, interviews serve to understand the perception of the handover process and content from the perspective of the end-users. Secondly, the interviews serve to engage end-users to participate in the change process. It is therefore important to ensure that interviewees are given opportunities to describe the current process and to make suggestions for future improvements.

- **Structured, unstructured or semi-structured interviews**
  There are various methods to conduct interviews: structured interviews, unstructured interviews and semi-structured interviews. The structured interview is a time efficient process but may not provide a holistic perspective. Unstructured interviews, while often revealing useful insights may not provide all relevant information. This SOP recommends semi-structured interviews as the preferred methodology. It, however, acknowledges that this particular technique requires the interviewer to have some experience in the conduct of interviews.

- **Novice or experienced interviewers**
  This SOP suggests that experienced interviewers may be a lot more productive in generating a holistic perspective of the current clinical handover process. It is acknowledged that experienced interviewers may not be available and in the event that novice interviewers are used, the project team will need to consider strategies for professional development and skill development to master the technique.

- **Number of interviews required**
  The number of interviews required is highly variable; however, it is recommended that in any unit/organisation sufficient interviews should be conducted to acquire insights and engagement with all levels of seniority and all specialities in order to ensure the generation of a deep and thorough understanding of the range of perspectives on the current situation.

2.3.4 Content analysis

The current handover process may incorporate local content that is not part of the standardised content. In this instance, prior to the adoption of a standardised solution, the project team will need to ensure that the process of standardisation does not eliminate the important delivery of local content during handover.

Current handover notes and verbal handover conversations should be collected and analysed to ensure that the current content transfer is well understood by the team. At least 50 handover messages from randomly selected patients should be analysed. This will ensure that an approach that is incorporates 'flexible standardisation' can be achieved.

2.3.5 Professional development and skill development

This SOP deploys qualitative field techniques together with information systems and clinical expertise. These techniques have proved important in ensuring the adaptation and implementation of this SOP. It is recommended that any project team therefore ensure that they have adequate resources and a range of experienced staff to guide the process.

This SOP provides numerous tools and guides to assist a team to gain knowledge about the techniques used and to simplify the process to make the approach easier to adapt and implement. It is, however, very important to acknowledge that the objective transfer of some of these skills and knowledge is a far more challenging process. This SOP recognises that along with the tools and techniques provided, tacit understanding will need to be acquired as an important aspect of the process.

Professional development and skill development of the project team, especially the individuals who are leading the project, needs to be achieved in order to facilitate successful adaptation and implementation of this SOP. These can be achieved through training sessions and expert advice from consultants to provide the necessary up-skilling and professional development.

2.4 Local considerations

There are some issues that the project team will need to consider in any local context. The list below is a guide of issues that the project team should consider in the preparation phase.

2.4.1 Preparation techniques

The SOP suggests specific techniques for understanding the current handover process that require particular skills and knowledge. Locally there may be experts who have alternate

skills and knowledge that can be deployed to derive a similar understanding of handover. In these circumstances it is recommended the project team consider these as a potential alternative approach to acquiring understanding.

2.4.2 Time frame

The time frame for this project is dependent on a range of different factors, especially the resources available, the preparedness of the unit/organisation and/or individuals available to commit to the project, the size of the unit/organisation, the number of steps required to implement the protocol and other factors. It is recommended that the time frame be at least 12 months for the whole project.

2.4.3 Resources requirements

It is important to commit resources in the preparation phase. In the preparation phase, resource requirements should also be identified for the remaining phases of the clinical handover improvement initiative. It is important that resources such as staff, communication requirements, tool requirements, training requirements and other requirements be taken into account.

2.4.4 Skill mix and training

A skills mix is required to implement this SOP in a manner that will ensure its successful adaptation to any unit/organisation. But it is important to note that many of the skills and principles utilised are also applicable to other quality and safety improvement initiatives. Therefore, the up-skilling process and professional development process may benefit the organisation as a whole.

2.4.5 Academic rigor versus practicality

This SOP applies many techniques that are used in academia. This SOP, however, aims to deliver a practical guide to staff requiring practical solutions. As a result this SOP avoids the academic arguments surrounding ontological & epistemological discussions, validity & reliability discussions and/or theoretical conceptualisations. These issues have been addressed in academic publications by the authors of this report. However, any local project team will need to consider the relative importance of academic rigor (ie. the desire to publish) versus practicality of implementation of a standardised solution to improve practice.

2.5 Tools and guidance

This SOP includes guidelines and tools to assist in the preparation phase. These guidelines and tools are as follows:

- **Handover process guide (see Table 1 on page 24)**
  This is a summary table displaying the process of handover from the perspective of policies available, end-user's perceptions and practice.

- **Handover content guide (see Table 2 on page 25)**
  This is a summary table displaying the content of handover transfer from the perspective of policies available, end-user's perception and practice.

- **Observation guide (see Table 3 on page 31)**
  This is a list of suggested items that should be collected during the observation phase, for every observation and every handover scenario.

- **Risk assessment guide (see Table 4 on page 32)**
  This is a risk assessment table to determine current problems of handover and its potential risks to patient safety.

- **Handover interview questions (see Table 5 on page 33)**
  This is a list of suggested interview questions which will assist in the engagement and empowerment of end-users.

- **Clinical handover SOP design checklist (see Table 6 on page 34)**
  This is a checklist to highlight clinical handover design, which contains 25 questions.

Table 3: Observation guide (adapted from ACSQHC, 2008)

Common data that need to be recorded in each work domain where clinical handover is observed:
a. The standard time(s) for handover
b. The location(s) in the work area where handover is conducted
c. The participants in handover communication (outgoing and incoming)
d. The length of time taken for handover (a range in minutes)
e. Whether a common structure or set of rules are employed (eg. read-back)
f. The minimum information transferred (clarity, brevity, and level of filtering required)
g. What is excluded from handover (and the existence of other means for addressing what is not included)
h. The level of interaction between staff members (ie. the form of handover, for example, do new caregivers ask questions and receive responses?)
i. The functionality of tools used (electronic media, checklists, handover sheets) and
j. The type of durable record is used and how is it accessed by the health care team

Table 4: Risk assessment guide (Adapted from ACSQHC, 2008)

Process steps (from flowchart)	Potential Failure Mode	Probable Effect	Frequency of failure*	Discover-ability*	Severity of effect*	RPN**	Possible Causes	Controls/ Protections
Provide for care of patient during handover	Insufficient staff to do handover and attend to patient							
	Lack of clear understanding of emergency resuscitation process during handover							
Convene participants	Participants not available							
	Participants distracted							
Information transfer	Incomplete information							
	Required documents not available							
Responsibility transfer and clarification	Responsibility not clearly transferred							
	No opportunity for clarification							
Accountability transfer	The incoming team does not understand/accept accountability for care.							
Conclusion of handover	Unanswered questions or ambiguity							

*Recommend simple 3-point (high, medium, low) or 5-point scale **Risk priority number = Frequency x Discoverability x Severity

Table 5: Interview questions

Section 1 – Perceptions of Clinical Handover
1. What is your definition of clinical handover?
2. What are the functions of clinical handover?
3. According to the AMA guidelines, handover is "*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*." What do you think the transferring of responsibility and accountability during handover means?

Section 2 – Handover processes in respective departments
1. Can you please discuss how handover is currently conducted in your department?
2. What do you think are the positive aspects of your current handover process?
3. What do you think are the negative aspects of your current handover process?
4. How do you think your current handover process can be improved?
5. What information do you require for continuity of patient care during your shift?

Section 3 – Handover Education and Training
1. Have you been formally taught how to do handover?
2. How did you learn how to do handover?
3. Do you think handover should be taught?
4. If yes, how do you think handover should be taught?

Section 4 – Handover and Information Technology
1. What do you think about using information technology to support clinical handover?

Table 6: Clinical handover checklist (adapted from ACSQHC, 2008)

Organisation support for handover	1. Is there adequate organisation support to improve handover? 2. Is there a system commitment to clinical handover at the senior executive and senior clinician level to ensure lines of accountability are clear and that appropriate resources (particularly staff time) are allocated for the handover? 3. Are there enough shift overlaps to conduct effective and efficient handover?
Continuity of patient care during handover	4. Is there a clear-cut plan for continuity of patient care during handover? The following patient care needs must be continued during handover: • Emergency resuscitation situations • Expected arrival or physical transfer of patients, especially unstable patients • Specific treatment and management which must be provided at a specific time • Unexpected emergency during handover time • Provision of patient care, such as toileting during handover time
Patient	5. Has the involvement of patients and carers in the handover been considered? • Their participation is particularly important when there are transitions in care, changes in routine, movement of patients or if the handover forms a focus for making new management decisions. Patients and/or carers must also be kept informed of changes in clinical understanding and management plans (eg. medications and procedures), and this communication should be recorded in the medical record. 6. Does the handover include the patient's concerns and relevant psycho-social issues?
Clinical Teams	7. Is it possible or appropriate to use the interaction during handover to provide an opportunity for active participation and decision making by relevant members of the health care team? 8. Is a multi-professional handover appropriate? • Some handovers should include all members of the health care team. This is particularly important where a patient is being cared for by multiple clinical teams of differing clinical specialities.
Clinical handover process	9. Is there a fixed location and time for handovers to take place? 10. Does the handover process have a clear agenda? 11. Is there a leader for the handover process? 12. Are factors that affect the effectiveness and efficiency of handover minimised? These may include interruption, unavailability of staff, formal teaching programs etc.

Have the minimum requirements for handover been met?	13. Is information shared about patients, both historical, and most importantly, about likely future events? 14. Is there the opportunity to ensure that the staff taking over understand the information? 15. Is the transfer of accountability and/or responsibility for a patient or group of patients clear? • Face-to-face handover is safer, and should be used whenever possible (electronic or paper tools should only be support tools)
Task and Technology	16. Does the handover information contain an explicit practical minimum data set that is agreed upon and understood by all participants (SBAR and the NZ JUMP can provide more detailed guidance)? a. This data set must include correct and accurate identification of the patient, together with a brief history. b. The data set should emphasise recent changes in the patient's care. 17. Can the handover information be made accessible to staff to refer to when needed?
Individual Clinical staff	18. Are clear lines of accountability and responsibility for care established and understood? 19. Is the senior clinician responsible for the patient's care clearly identified at all times?
Work Environment	20. Is workplace training in clinical handover (including teamwork and communication) available?
Evaluation and maintenance	21. Is it possible to develop methods for ongoing observation, monitoring and evaluation of handover as part of normal work? • These should form part of the continual improvement process • There should be a maintenance plan • There should be a mechanism for continual iteration and improvement
Institutional Context	22. Do staff share an understanding about the ethical and relevant legislative requirements to ensure appropriate confidentiality of patient information during the handover? • The safety of handover can be reduced by concerns arising from misconceptions about these requirements, unnecessarily restricting the transfer of information. 23. Should the handover information be stored permanently, as part of the medical record, or in other ways?

3 Design phase

The design phase follows the preparation phase in this SOP. After obtaining sufficient data to gain an understanding of the handover process, the project team is ready to start the design phase. There will be a slight overlap between the design phase and the preparation phase as illustrated in the timeline diagram (see Figure 4 on page 15). By the end of the design phase, the project team will have set a date for implementation and have all the tools ready for the implementation of the standardised solution. The standardised solution should include standardised content and a standardised process. This SOP allows significant flexibility in the design phase to incorporate other techniques to improve clinical handover. Many of these other techniques are currently in development through the Australian Commission on Safety and Quality in Health Care National Clinical Handover Initiative.

3.1 Objectives of this phase

This SOP has emphasised the importance of local context and flexible adaptation of standardised solutions. This phase of the project is especially designed to achieve flexible adaptation. The process guide, content guide, information tools, education and training tools designed and developed through this process should contain standardised features incorporating a strong local context.

The design phase of the project aims to achieve the following objectives:

- **Engage end-users in the design of a standardised handover process, which retains flexibility in adapting standardised practice guides**
  This phase aims to design a standardised handover process, which has adapted standardised practice, but retains local flexibility that best serves the purpose of the process within the local socio-cultural setting.

- **Engage end-users in the design of a standardised content transfer, which retains flexibility in adapting available minimum data sets**
  This phase also aims to design a standardised content transfer during handover, based on a standardised minimum data set with local variations.

- **Engage end-users in the design of process tools to assist in the implementation of standardised content transfer**
  Various tools may help the implementation phase of the standardised process and these tools have to fit into the socio-cultural settings of the unit or organisation. End-users' engagement in the design of these tools is very important.

- **Engage end-users in the design of information tools to assist in the implementation of standardised content transfer.**
  This phase should include the design of information tools to assist in the implementation and familiarisation of the standardised content transfer format. Information tools may consist of electronic documents and printed documents, as well as memory aids located near handover areas in order to engage and encourage end-users to adapt to the new standardised content transfer with ease.

- **Engage end-users in the design of an education and training program to implement the standardised process and content of handovers.**

The introduction of a new process and new standardised content transfer will require education and training of all the end-users involved. The education and training should involve all current staff and potential future staff, especially where staff are on a rotational roster. While the education and training program will vary from unit to unit, it is recommended that some staff be trained through the "master trainer" scheme and therefore are available to train other staff on a regular basis.

3.2 Issues for consideration

There are various issues that the project team should consider during the design phase. The main issue involves designing the standardisation of the handover process as adapted to the localised context and process identified through during this phase.

3.2.1 Process flowchart

The first step to design the standardised clinical handover process is to develop a flow chart of the current handover process. The current flow chart should then be compared with the standardised flow chart to assist with the adaptation of this standardised protocol. Through this flow chart, the team can work through the necessary steps and develop a new process for implementation. A flow chart and the explanation of each step and design features are provided and explained below (see Figure 6 on page 43).

The process should include five steps:

- **Preparation for handover**
  This step should include preparing for the continuity of patient care while handing over and preparing the handover list and/or patient information list.

- **Handover structure**
  The handover process should have a clear starting time, place and maximum duration of time allowed. Attendance of key staff should be determined and clear leadership during handover should be defined.

- **Environmental awareness**
  All handovers, regardless of type, should provide the incoming team with a clear idea of the environment and situation that they are working in. This step should include clear guidelines on the detection of deteriorating patients.

- **Individual patient handover incorporating minimum data sets**
  This step may involve a range of different formats. However, this SOP emphasises that face-to-face handover is the preferred option. It also emphasises the need to allow interaction and clarification during handover.

- **Meeting closure**
  This may include any important announcements that may affect the incoming team.

3.2.2 Process tools

Once a new process has been designed and agreed upon, the team should inform all members of this new process. There should be process tools available to assist the implementation of the new process. These process tools should be designed during the design phase. These may

include posters, guidelines and step-by-step guides that can be displayed in appropriate places to optimise dissemination of information. A sample step-by-step guide is provided below.

3.2.3 Content through minimum data set adaptation

The handover of individual patient information, responsibility and accountability must be achieved through a standardised content delivery. This standardised content delivery for each unit needs to be designed in order to take into account local variations. A minimum data set is provided here which may be adapted into the local context.

It is important to emphasise that this SOP aims to complement the minimum data sets to ensure the transfer of information, responsibility and accountability. The standardised content delivery should include the following elements:

- **Environmental awareness**
  A standardised method and content in order to inform the incoming team of the working environment should be developed. This should at least provide the incoming team with an overview of deteriorating patients and patients requiring immediate attention.

- **Patient identification**
  All handover standardised content delivery should consist of a clear patient identification process. All patients should be identified by, at least, two identifiers.

- **Information transfer**
  The standardised content delivery should include essential information transfer, i.e. background issues, current issues and impending issues.

- **Transfer of responsibility, risk management and action plan**
  The tasks required to be completed by the next team of healthcare professionals, as well as pending investigations and management need to be included in the standardised content delivery.

- **Transfer of accountability**
  The standardised content should include transfer of accountability, and when and where appropriate, the incoming team should document and accept responsibility and accountability, and this should be archived with patient notes.

3.2.4 Information tools

Once the team has adapted the minimum data set and developed a standardised content delivery for local needs, information tools should be developed in order to assist end-users to adapt to the new standardised content delivery format. These information tools range from simple printed forms to complicated computer generated documents. The design of these information tools has to fit into the local practice to achieve the best outcomes. There should be tools to assist end-users to tick off standardised content, such as laminated information sheets. These information tools should be easily available and should be used at every handover session.

3.2.5 Education and training program

The design phase will need to include the development of education and training programs to assist in the implementation process. The program should provide enough information to allow the adaptation of the process and the standard content delivery. The design of these educational programs should be simple and competency-based. The following sections should be included in the education and training program during the design process:

- **Patient safety requires both systems resilience and a safety culture**
  It is very important that the education and training program emphasises the conceptual understanding of patient safety, system factors in patient safety and socio-cultural factors in patient safety. This provides the necessary introduction and rationale in order to adapt to new changes introduced as part of handover improvement. In order to achieve safer healthcare delivery, both systemic interventions (in order to build system resilience) and socio-cultural interventions (to promote safety culture) are required to work in a complementary manner. The handover SOP aims to achieve this through standardised process and content, as well as the promotion of a culture of safe handover.

- **Handover is a high risk area for patient safety**
  The education and training program should emphasise the importance of clinical handover in ensuring safe patient care. Local case studies may be appropriate for illustration purposes. It is important to emphasise that handover should be conducted using the standard process and content for every patient during every shift.

- **Handover is a priority for patient safety improvement, nationally and internationally**
  The program should emphasise that the clinical handover improvement program is a high priority patient safety area both nationally and internationally. The initiatives and the leading role of the Australian Commission on Safety and Quality in Health Care should be acknowledged. The program should also emphasise the fact that clinical handover is one of the top five priority areas within the World Health Organisation framework. The importance of national and international initiatives cannot be over-emphasised, as these examples often generate momentum among staff.

- **The local standardised process for handover**
  The education program must go through the standardised process of handover in a step-by-step manner until all participants understand the process.

- **The local standardised content for handover**
  The education program must go through the standardised content of handover in a step-by-step manner until all participants understand the content and all participants have the ability to use the standardised content for handover.

- **Techniques to improve communication/team work during handover**
  The project team should decide whether team work training and communication techniques training are appropriate in their local clinical context. The inclusion of these training modules may be beneficial to the final outcomes of clinical handover improvement.

- **Local implementation plan, including considerations for e-learning**
  The education and training program should include a local implementation plan and provide contact details for feedback. More importantly, the project team should consider whether an e-learning platform is appropriate for local use in order to complement and support the implementation plan.

3.3 Frameworks

This design phase requires three different frameworks. The design of process and tools, especially the process and content of handover are based on the user-centred design framework. Due to the difficulties in predicting the effects of an intervention within the healthcare system, this SOP strongly suggests the need to adopt an iterative feedback framework with rapid prototyping and revision. The importance of this process cannot be over-emphasised. The education and training program should be designed based on an adult educational framework. These frameworks are described briefly below in order to guide the project team.

3.3.1 User-centred framework

This SOP emphasises the need for a user-centred focus and user engagement as part of the quality improvement process. During the design phase, this framework is most important to engage and involve as many users as possible in order to create a collaborative atmosphere among staff (Wong et al, 2007). The methods to engage users and staff may include collaborative design workshops, participatory design workshops, consultations and voluntary trialling of processes and standardised content formats. It is very important to emphasise that during the design phase, all comments and recommendations should be taken onboard. The project team will then need to balance conflicting views and the availability of resources to achieve the optimal outcomes.

3.3.2 Iterative feedback framework

Due to the complexity of the healthcare system, it is very important to recognise that any intervention, especially systemic interventions, such as the implementation of information tools or process improvement initiatives may deliver unintended consequences (Wong et al, 2008b). This SOP emphasises the need to take socio-cultural factors into consideration. The iterative feedback process is especially important in the design phase. The iterative feedback process not only ensures continual and increasing engagement of end-users but also allows the system to adapt to the dynamic nature of healthcare delivery and respond to changing circumstances and/or consequences.

The iterative feedback process is shown in Figure 1 (see page 10). The project team will need to provide a prototype for end-users to provide feedback on. The recommendations and feedback will then be incorporated into the next iteration. The project team may find this process time-consuming and at times frustrating. It is, however, very important that the iterative feedback process be conducted in order to engage users, maintain their commitment and optimise the possibility for best outcomes.

3.3.3 Adult educational theory

Adult educational theory is the theoretical framework for education and training design used in this SOP. Malcolm Knowles' adult educational theory emphasises that adults learn very differently and learning is best achieved through self-directed learning (Kaufman, 2003). Assumptions underpinning this concept include: adult learners are self-directed, motivation to

learn is internal and that adult learning is directed to problem-centred learning which will be immediately applicable to their role (see section 1.3.2 for more detail).

It is important that the education and training program provides practical direction and skills transfer to learners so that they can immediately put their skills to practice. It is also important that the education and training program maximises the potential to draw on the existing experience of learners in order to obtain the best outcomes.

3.4 Local considerations

There are a few issues that the project team needs to consider during the design phase. These issues will impact on the handover improvement process but are likely to be highly dependent on local clinical settings.

3.4.1 Design technique and end-users' involvement

The SOP advocates user-centred design techniques, using participatory workshops. This design method requires a certain understanding of the user-centred approach. The local team can understand the technique relatively quickly in order to carry out the workshops. Alternatively, there may be local experts with other related skills and techniques through which the team could derive similar design outcomes.

3.4.2 Time frame and iterative cycles

The time frame for this phase is highly dependent on user feedback. It is suggested some high-value end-users, who are very keen to provide feedback, be given time off during work to provide insights and feedback regarding the process and content during the design phase. The number of iterative feedback cycles required is dependent on the initial understanding of the socio-cultural context. If the project team has an in-depth understanding and are able to integrate that with standardised solutions, the iterative cycles may be reduced.

3.4.3 Resources requirements

While this phase will not produce a large number of outputs, it is important to realise that this phase is resource-intensive. The project team will need to be able to communicate with end-users continuously and be able to establish rapport with end-users in order to obtain useful feedback for the design of tools and systems.

3.4.4 Skill mix and training

Different skills will be required in this phase, these will include communication skills, design skills, skills for conceptualisation and interpersonal skills. These skills will be useful in many other projects, especially quality and safety projects. Knowledge and skills to design education and training programs may be available through local nurse educators and tertiary educational institutions.

3.4.5 Theoretical design arguments versus practicality

This SOP applies design techniques that are underpinned by a sound theoretical framework to support their use. This SOP acknowledges that there are many other design frameworks that investigate systems and the system-human interaction. This SOP avoids arguments over the relative validity of different design frameworks. This SOP aims to provide a practical guide to design processes and content that supports flexible standardisation. The project team may consider these theoretical aspects if there is a desire to pursue an academic discussion on the relative merits of different design methods.

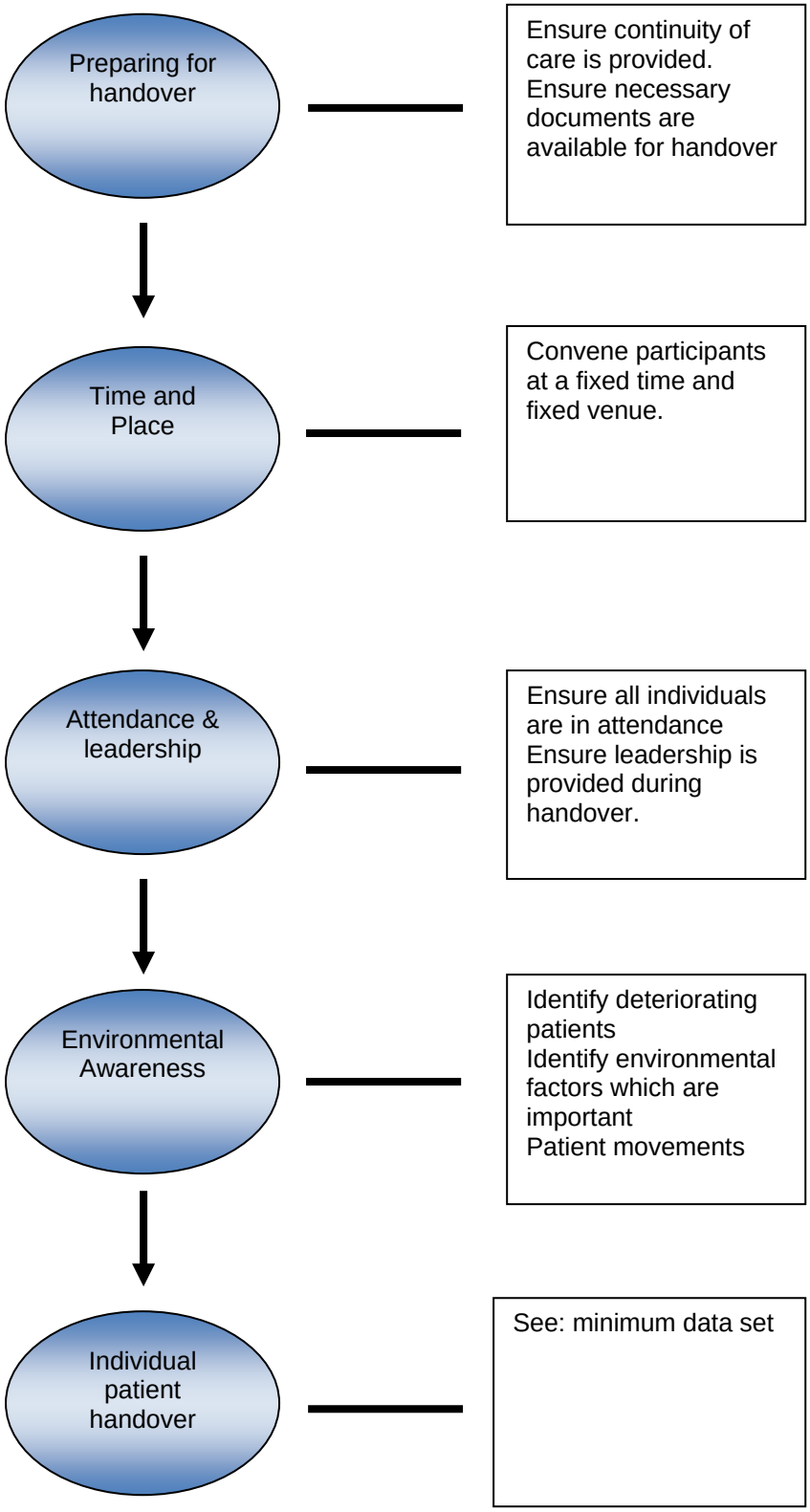
3.5 Tools and guidance

- **Process flowchart (see Figure 6 on page 43)**
  This process flow chart summarises essential steps for the clinical handover process in a diagrammatic form. This is followed by a detailed explanation of all the steps presented.

- **Minimum data set flowchart (see Figure 7 on page 45)**
  This diagram illustrates the process of utilising the minimum data set. An explanation of the various steps is illustrated in Table 7 on page 44.

- **Suggested minimum content for an education and training program (see Table 8 on page 47)**
  This is the suggested minimum content for clinical handover education and training program focussed especially on the Australian Healthcare context.

Figure 6: Process flowchart



Process steps	Details	Issues to consider
1. Prepare for handover	Obtain and update necessary documents to support the handover. This may include name lists, handover sheets, electronic handovers or other necessary preparations. Ensure continuity of patient care during the handover.	Do staff have time to complete handover preparation? Are staff assigned for emergency and continual patient care?
2. Time and place	Convene participants in the handover process (may include specifying time to meet, anticipated duration, and location)	It is important to decide whether handover should happen at bedside or office.
3. Attendance and leadership	The handover process should be attended by individuals who will assist in the care of the patient. It is very important that the handover meeting has a leader.	It is important to decide whether multidisciplinary involvement is an effective process. The handover must have a leader who ensures all relevant agenda items are covered in a timely fashion.
4. Environmental awareness	Identify patients who are deteriorating and patients who have the potential to deteriorate. Identify any environmental or other issues which may affect the shift. Identify any patient movements which are likely to happen in the next shift.	MET call criteria should be emphasised and handover may serve as a reminder for MET call. Patient movements especially from ICU should be clearly handed over.
5. Patient identification	Identify patients using at least two identifiers: one should be the name, and the other should be numerical.	This will ensure the culture of correct patient identification.
6. Information	Includes background, current issues and anticipated changes.	The background and current issues are very important for clear handover.
7. Responsibility, risk management and action plan	For actions, ongoing care requirements and monitoring.	Includes all pending investigation results and abnormal results.
8. Accountability	Transfer of accountability and responsibility must be explicit and documented in institutional procedures. A policy about communication to the senior in charge needs to be understood.	The duties and responsibilities of after-hours or cover teams need to be made clear. Adequate staff must be provided to ensure staff can fulfil these duties.
9. Clarification	There must always be an opportunity for clarification, and not necessarily just at the end but as appropriate during	This is one reason that handover should be done face-to-face (as staff are

	process steps 5, 6, 7 and 8.	leaving the institution). Electronic tools may help ensure details are not forgotten.

Figure 7: Minimum data set flowchart

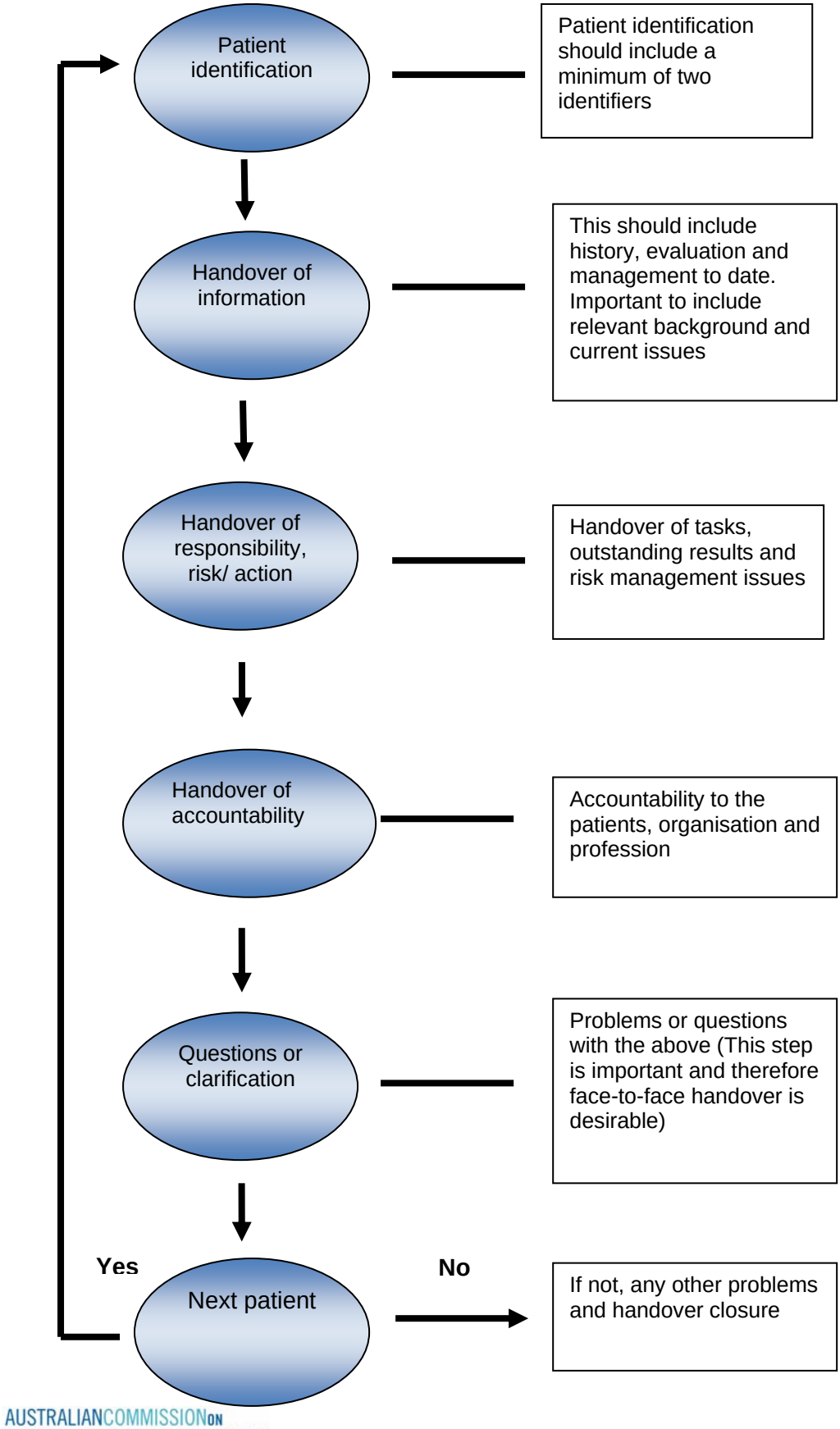


Table 7: Overarching minimum data set

Step 1: Environmental awareness (see Figure 6 on page 43)

- Alert and safety
- Advanced notice (especially high risk patient movements)
- Attention (to sick/deteriorating patients)

Step 2: Patient identification

- Textual identification (at least surname)
- Numerical identification (hospital unique identifier or date of birth)
- Wrist band check or other demographic data

Step 3: History, evaluation and management

- History (presenting problem, relevant past history and current issues)
- Evaluation (physical examination findings, investigation findings and current diagnosis)
- Management to date

Step 4: Responsibility, risk management and action plan

- Tasks to be completed (include the tasks as well as recommendations)
- Outstanding or abnormal results and observations (include a list, as well as actions and recommendations)
- Risk management

Step 5: Accountability

- Patient (code status, MET status, other relevant information)
- Organisation (discharge planning)
- Profession and colleagues (treating and responsible doctors, charts and clarifications)

Table 8: Suggested contents for an education and training program

Patient safety and medical errors

- Medical errors are common.
- Communication problem is one of the major causes of medical errors.
- Error reduction and patient safety require systems interventions and a safety culture.
- In a handover situation, standardisation is the systemic intervention.
- The success of the process, however, requires everyone to learn it, embrace it and encourage other people to follow it.

Handover is a high risk area for patient safety

- Local case study should be included here.
- Some data and statistics from the literature, but should tailor to the local clinical context (nursing versus medical, specific wards).
- One of the reasons that it is high risk is because of lack of standardisation.

Handover is a priority for patient safety improvement, nationally and internationally

- Handover is a high priority area for patient safety improvement internationally
- Handover is a high priority area for patient safety improvement in Australia; the program should acknowledge the leading role of the Australian Commission on Safety and Quality in Health Care and the current initiatives in this area.
- Handover is a priority area for improvement within the local setting.

The local standardised process for handover

- Current handover process and problems associated with it.
- The rationale for the new process.
- The new standardised process of handover must be introduced in a step-by-step manner until all participants understand the process.

The local standardised content for handover

- Current content of handovers and problems associated with it.
- The rationale for a minimum data set.
- Minimum data set introduction.

Techniques to improve communication and team work during handover

- Any techniques which may be introduced, such as team work or communication techniques.

Local implementation plan, including consideration for e-learning

- Overview of implementation plan.
- Date that it will start.
- Feedback and other problems: contact number for the team.

4 Implementation phase

Each handover scenario will have an associated handover process. While there is general agreement that the quality and safety of health care depends on the availability of accurate patient information, the information transfer only forms part of the handover process. More importantly, while healthcare professionals often suggest that handovers should be standardised both in terms of process and content, the standardisation process may be resisted if it is not planned and executed in a systematic manner with:

- appropriate guidance,
- allocation of resources,
- provision of education and training,
- provision of support tools,
- engagement of participants,
- empowerment of participants and,
- importantly, positive feedback and celebration of successes.

4.1 Objectives of this phase

This SOP emphasises the need to engage end-users and to promote a user-centred approach through flexible adaptation of standardised solutions. This phase of the project is crucial in order to engage users for sustainable change. The implementation process should ensure that end-users feel empowered and engaged to make changes. Support in the form of education, memory triggers and information tools should be provided and these support tools should fit into the clinical organisational context. More importantly, end-users should understand the rationale for change. The implementation process should ensure end-users embrace the change and be able to receive positive feedback and celebrate successes with the project team.

The implementation phase of the project aims to achieve the following objectives:

- **Establish a project implementation team which consists of all necessary members**
  The project implementation phase should have a project implementation team with clearly delineated responsibilities and expertise. This project implementation team will assist the implementation of the standardised solution.

- **Establish a project implementation work plan so that the implementation process is coordinated**
  This step should include a master work plan to identify the major tasks and milestones relevant to all of the handover scenarios/units. A more detailed work plan is required for each unit participating in the process. All professional disciplines and relevant experts should be represented in developing the master work plan.

- **Establish a risk management strategy for the project to ensure smooth implementation**
  The implementation plan should have a risk registry to ensure all risks to the project have been considered and appropriate steps have been taken in order to minimise the impact of these risks on the progress of the project. While many unexpected barriers and problems may occur during the implementation phase, there are some risks which can be pre-determined and these risks should be considered prior to the implementation phase.

- **Pilot the standardised handover process and contents**
  This SOP advocates that the implementation team focus on one specific handover type as a pilot site for the implementation of the standardised solution. The complexity of medical practice and the large number of healthcare professionals involved in this process make the outcome of implementation less predictable. It is therefore important to start with a simple site and spread rapidly once the standardised solution is thought to be well-accepted and suitable for the local clinical context.

- **Establish a spread methodology once the standardised process and contents have been revised based on initial feedback**
  There should be a clearly-defined spread methodology for the implementation of standardised solutions. The spread methodology should be clearly co-ordinated with adequate resources allocated for the purpose.

- **Establish a communication and engagement strategic plan**
  The project implementation team will need to establish a plan for dissemination of information regarding the implementation of these standardised solutions to all end-users. The communication method must be relevant and must be able to engage with users. More importantly, regular updates and feedback are necessary to ensure empowerment and continual engagement of staff.

- **Establish an inter-disciplinary, inter-departmental continual learning strategy**
  The project implementation team will need to establish a plan for an inter-disciplinary and inter-departmental continual learning strategy. Initially this process should involve engaging champions and staff at pilot sites to demonstrate their achievements and provide guidance and support to other sites. As the standardisation process spreads to other units/scenarios, it is important that there are opportunities for experience-sharing and collaborative learning. This strategy is important to ensure continual improvement.

4.2 Issues for consideration

There are many issues that should be considered by the project team during the implementation phase. This phase is time-consuming for the project team. The project team, however, needs to spread the workload to other clinical champions during this phase in order to maintain enthusiasm for the project. Therefore, while the project is time-consuming, the resource requirements from the perspectives of the project team should be less intense.

4.2.1 Project implementation team

At this phase of the project, a separate project implementation team to oversee the implementation phase is required. For each of the wards or units involved, there needs to be a separate project implementation team for that unit. This is to ensure that the implementation process, while standardised across different units and scenarios, maintains local engagement and will be accepted within the local socio-cultural context. The project team should meet on a regular basis in order to ensure smooth implementation of the project. A graphical representation of the implementation team is shown in Figure 8 (see page 58).

This SOP advocates that the overall project implementation team consist of at least five members. The following steps guide the assembly of a project implementation team:

1. **Governance Group**
   The first step is the identification of the Governance Group for the implementation of the project. This group should be the governing body which provides senior leadership. The Governance Group should consist of at least one clinician.

2. **Senior administrative leader**
   A senior administrative leader should be assigned to provide direct guidance to the implementation activities, assignment of staff, allocation of time for staff to do the work, and allocation of other resources. The senior administrative leader should have the ability and authority to source equipment and other resources necessary to implement the standardised process and content.

3. **Project leader**
   The project implementation team needs to have a project leader. This person may come from the initial project team. The project leader should be very familiar with the standardised process and content. The project leader should have a good understanding of change management principles. The project leader will provide guidance to project champions.

4. **Project champions**
   The project team needs to identify units most appropriate for adapting these standardised solutions. For each of the handover scenarios or units, there needs to be one or more representatives of the professional disciplines involved in that type of handover to guide the design, testing, and roll-out of the standardised process and to serve as role models and "champions" of the new process for their respective disciplines or unit.

5. **Project officer**
   The project implementation phase will need an assigned facilitator - a person with knowledge of communication methods and project management skills - to develop and manage the project work plan.

4.2.2 Project implementation work plan

A master work plan should be developed in this phase. This master work plan aims to guide the implementation process for each individual unit or clinical handover scenario. A more detailed work plan should be developed for each of the clinical units or clinical handover scenarios that are adapting the standardised approach. All professional disciplines should be represented on the team that develops the master work plan. These work plans should include relevant milestones and targets.

1. **Master work plan**
   The master work plan is the main document that the project implementation team should refer back to. It should consist of a good overview of the whole project, especially dealing with the approach adapted for the implementation of standardised solutions for multiple scenarios across different clinical areas. The master work plan should include a well developed task list for the approval of the process design, the approval of the content design, information tools, testing of information tools, training program, implementation, support, measurement, feedback and revision. The master work plan should identify dependencies and the time frame for each unit/scenario, and identify deliverables and due dates for these. More importantly, resources should be assigned to each of the units and scenarios. A sample master work plan has been developed in the next section to assist the implementation team (see Table 9 on page 59).

2. **Individual work plan**
   An individual work plan will need to be developed for each of the handover scenarios and each of the clinical units. The individual work plan should include approval of the process, approval of the contents, availability and approval of information tools, testing requirement, education and training, implementation date, implementation support, measurement, feedback, revision and reporting. Details will vary from one area to another. The individual work plan should identify dependencies and time frames for each task, and identify deliverables and due dates for each task. More importantly, resources should be assigned to each of the tasks. A sample work plan has been developed and presented in the next section to assist the implementation team (see Table 10 on page 60).

3. **Relevant milestones**
   Both the master work plan and individual work plan should identify important milestones for implementation. The milestones should include the following (ACSQHC, 2008):
   i. Approval of the master project work plan, which should include all clinical areas and handover scenarios adapting the standardised solution
   ii. Approval of the project work plans for each of the handover scenarios and each clinical unit. These individual work plans may run concurrently or sequentially, as appropriate to the complexity and resource availability of the organization.
   iii. Approval of the process and content design for standardisation
   iv. Approval of the information tools available to support the implementation
   v. Approval of the education and training program
   vi. Approval of the pilot test strategies
   vii. Set “Go-live” dates for the pilot tests
   viii. Ensuring information tools are available for implementation
   ix. Ensuring education and training programs are provided to the majority of staff
   x. Ensuring staff engagement is adequate and clear communication is established
   xi. “Go-live”
   xii. Presentation of pilot test results to the oversight group
   xiii. Presentation, feedback and revision
   xiv. “Go-live” date for full implementation

4.2.3 Risk registry and risk management strategies

The implementation team should keep a risk registry for the implementation phase. There are multiple risks which may affect the successful implementation of the standardised solution. It is important that the implementation team understands these risks and assigns a risk score to each of the risks. More importantly, the implementation team should identify risk minimisation strategies to enhance the probability of timely completion of all the tasks.

More specifically, the following risks and risk management strategies should be considered by the implementation team:

1. **Availability of staff**
   Many clinical staff, especially junior staff may be on constant rotation. The skills and knowledge of certain staff, therefore, may not be available at all times. The lack of appropriate and adequate human resources is a very important consideration. Risk management strategies should include the involvement of more than one clinical champion per unit or handover scenario to ensure corporate knowledge is maintained.

2. **Competing demands and interests**
   Many clinical staff who are interested in quality and safety initiatives will often be asked to be involved in multiple projects simultaneously. The conflict of multiple competing demands and interests may negatively impact on the project outcomes. It is important that project team members be given specific time commitments by the organisation to implement the project.

3. **Inadequate resources**
   The implementation team should be aware that resources required during the implementation vary significantly from unit to unit. The scale of implementation and the number of staff involved in the process will determine resource requirements. The implementation team should be aware that the resource implications of staff time, stationary costs, printing costs, engagement activities and any other activities should all be clearly considered.

4. **Delay delivery of information tools and support tools**
   The organisation and the project implementation team should consider the pros and cons of involving external parties in the production of information tools and support tools. Regardless of the decision, it is important that there is flexibility for potential delays in the delivery of information tools and support tools.

5. **Education and training of staff**
   The implementation team must consider the scale of education and training activities required. More importantly, the working patterns of staff need to be considered. It may be more difficult to provide training to staff working part-time or on a casual roster. The "train the trainer" strategy and e-learning strategy should be considered in order to reduce the reliance on certain individuals being available for training.

4.2.4 Pilot testing

It is very important that the implementation team consider pilot testing the standardisation process. Despite all efforts to understand the local context and to carry out a socio-technical integrated design, unintended consequences may result in real life clinical practice. It is, therefore, very important for the implementation team to pilot test the standardisation process and to revise the plan according to feedback from the pilot test.

The following issues should be considered during pilot testing.

1. **Clinical areas and handover scenario**
   It is recommended that the implementation team consider no more than 5 areas for pilot testing. More importantly, the selection of pilot areas is crucial for the success of the whole implementation process. These areas should be areas which have a high likelihood of successful implementation, especially in areas with enthusiastic leaders and staff.

2. **Engagement of pilot clinical areas**
   Full engagement of the pilot areas is essential. Staff should be actively encouraged at the first opportunity. A full engagement of these areas will ensure that they become the ambassador for full implementation and its spread to other areas of the organisation in the future.

3. **Every shift versus specific shift**
   The implementation team needs to consider whether the standardisation process should immediately be applicable to all shifts or handovers or only to specific shifts or handovers. An example may be that the shift-to-shift standardisation process will start with the morning shift, as that is the shift with the most number of senior staff available to assist in the event of unpredicted problems.

4. **Meaningful evaluation**
   The implementation process in these areas should be measured and documented clearly, in regard to the timeliness and consistency of implementation, the impact on other activities and the impact on patient care.

5. **Iteration and revision**
   The feedback and evaluation from staff should be clearly considered by the implementation team and iteration and revision of the initial process, contents or tools should be developed.

6. **Further pilot**
   The implementation team should consider the need for further pilots, especially if the revision makes significant changes to the initial process, contents or tools.

7. **Positive continual engagement of pilot site**
   Staff from the pilot sites should be rewarded and their positive comments should be documented and used as part of any spread strategy.

4.2.5 Spread methodology

Once the pilot projects have been completed and feedback has been incorporated into a revised process, contents and information tools, the implementation team should then consider the spread methodology.

The following issues should be considered:

1. **Sequential versus concurrent implementation**
   While concurrent implementation may have a bigger impact on patient safety, it may also cause significant problems as each ward is slightly different from the other. This SOP therefore, advocates sequential rather than concurrent implementation. Sequential implementation not only allows adequate preparation and design of the process, contents and tools, but also allows adequate oversight and coaching during the early implementation phase and monitoring of any potential problems.

2. **Sequence and timing**
   Firstly, all handovers or all shifts of the pilot areas should utilise the standardised process every time a handover takes place. Secondly, the implementation team will need to decide the selection, sequence and timing of other wards and clinical units for the specific handover scenario. The team will also need to consider the implementation of other handover scenarios within the same ward. The timing and sequence is important to ensure successful spread. This protocol suggests that wards with enthusiastic leaders be included in the initial phase as these leaders can then assist in future spread.

3. **Utilisation of a successful site as the ambassador**
   Pilot clinical areas which have successfully implemented the SOP should be engaged to be ambassadors for the process. More importantly, the collective knowledge and skills of the pilot areas should be engaged to assist the spread of the standardisation process.

4. **Scope creep**
   Communications issues identified during the handover project are likely to be broader in scope than the intended objectives of the SOP. The implementation team and the project team will need to be aware of scope creep and be able to maintain focus on specific areas of handovers to be addressed.

5. **Heterogeneity in socio-cultural and technical factors**
   The implementation team should be aware of the heterogeneity in socio-cultural practice of handover as well as technical capacity of different wards. Major adjustments to time frames, protocols, contents and information tools may need to happen which will have significant impacts on the time-frame and resource requirements of the project.

4.2.6 Communication and engagement plan

Miscommunication is a real risk to the implementation phase of the project as it has the potential to create misunderstandings of the process and therefore negatively impact on the implementation plan. Multiple communication strategies should be considered by the implementation team. End-user engagement is essential in the implementation of standardised solutions. Disengagement of end-users is a formula for failure. Disengagement of certain staff not only creates apathy but also may affect the perception of other staff. Multiple engagement strategies should be considered by the implementation team.

1. **Communication platform**
   The communication platform should ideally be up-to-date, continuous and cost-effective. Electronic media will fulfil most of these criteria. It is important that the implementation team consider computer literacy of staff involved and therefore ensuring that communication strategies reach most, if not all, staff concerned. Practical solutions may include website, emails, newsletters, pamphlets, workshops and other communication strategies.

2. **Content coverage**
   The implementation team should consider the following contents (ACSQHC, 2008):
   i. Announcement of the organisation's decision and commitment to implement standardised handover communication.
   ii. Rationale for participation in the initiative:
      a. Description of the problem to be addressed (inconsistent handover communication)
      b. The proposed solution (standardised handover communication)
      c. The costs and benefits of participation
      d. Incentives to clinical staff to participate (efficiencies and lower risk exposure for staff)
      e. Anticipated outcomes (patient safety)
   iii. Support and resources allocation from the organisation for the standardisation process.

3. **Update and feedback**
   It is important that staff receive regular updates from the implementation team regarding the progress of the project work plan. Regular feedback should be provided to staff on the data collected and analysed through the project implementation phase.

4. **Recognition and continual engagement**
   The project team should ensure that due recognition of the contributions and successes of all staff participating in the project are made public. This will provide incentives to staff to continually improve and champion the process.

5. **Innovative engagement**
   The communication and engagement process should include innovative methods. These may include stationery which could be used for handover and patient care, activities to raise awareness of the project, activities to generate the sense of social belonging within the project and team-building engagement strategies.

4.2.7 Inter-disciplinary, inter-departmental continual learning strategy

Despite the complexity of the healthcare system and the heterogeneity of socio-cultural and technical issues for each ward, there are some underlying similarities when process improvement projects are being put in place. It is important that the experience of each ward and unit is shared with other wards and units implementing the same standardisation process. This continual learning strategy not only serves as a platform to develop solutions through collective understanding, but also serves as a strategy to continue the engagement and empowerment of staff.

1. **Pilot site show case**
   It is important that successful pilot areas be identified and a show-case session be organised with other units or clinical areas encouraged to visit and understand the improvement achieved. This will allow inter-disciplinary, inter-departmental learning and an exchange of ideas. It will also ensure continual engagement of pilot clinical areas.

2. **Regular seminars by clinical champions**
   The implementation team should consider organising regular seminars for all clinical champions in order to continually provide up-skilling and engagement. Professional isolation can be reduced and problem solving strategies can be shared. The seminars should include the following contents:
   i. Feedback and continual evaluation from wards and units
   ii. Expansion and spread, and anticipated expansion and spread
   iii. Success stories and experiences
   iv. Problems faced and challenges
   v. Suggestions for future improvement

3. **Annual handover awareness campaign**
   This standardisation operating protocol (SOP) advocates that the implementation team consider annual handover awareness campaigns for the whole organisation. There should be activities organised to show-case successful standardisation and improvement but also activities organised to acknowledge the work of all staff involved. It is important the awareness campaign triggers a new sense of enthusiasm and continual improvement so that handover does not become simply a symbolic ritual within the scope of clinical practice.

4.3 Framework

4.3.1 Iterative feedback framework

Due to the complexity of the healthcare system, it is very important to recognise that systemic interventions may deliver unintended consequences. This SOP emphasises the need to take socio-cultural factors into consideration (Wong et al, 2008b). The clinical handover work of the Royal Hobart Hospital and University of Tasmania deploys a holistic socio-technical approach to understanding and improving clinical handover. This approach relies on the benefits and synergies of interactions across the streams to optimise transferability and sustainability (see

Figure 1 on page 10).

The iterative feedback process is very important in the implementation phase. The iterative feedback process should be extensively adapted through the pilot implementation and the spread methodology. The iterative feedback process not only ensures continual and increasing engagement of end-users but also allows the systems to adapt to the dynamic nature of healthcare delivery.

4.4 Local considerations

There are some issues that the project team will need to consider for local needs. This list is a guide to some of the issues that the project team should consider in the implementation phase.

4.4.1 Alignment with the organisational strategic plan

The implementation team has to consider the alignment of the SOP for handover with the organisation's vision and strategic plan. The handover improvement process should not be an isolated effort. It should, however, be a priority program for patient safety improvement within the organisation.

4.4.2 Time frame

The time frame for the implementation phase is dependent on multiple factors, especially resources available, availability of individuals who are committed to this project, the size of the organisation, the number of wards or units participating in the process and the number of handover scenarios involved. The implementation team may consider a staggered approach to reduce the time frame requirements.

4.4.3 Resources requirement and allocation

It is important that the organisation commits resources, especially human resources to the implementation phase. Staff who are actively participating in this phase should be allocated

time for the work. The project success should not be dependent on the goodwill of staff involved. More importantly, resources such as communication requirements, tools requirements, training requirements and other requirements must be taken into account.

4.4.4 Skill mix and training

Many skills are required for successful implementation of this program. These include change management skills, communication skills, interpersonal skills, time management skills and project management skills. It is important to note that many of these skills and principles are applicable to many other quality and safety improvement initiatives. The implementation team should ensure that staff with the relevant mix of skills are available.

4.4.5 Evidence-based debate versus practicality

It is important for the implementation team to note that research providing a strong evidence base for practice within the scope of handover are limited. Furthermore, the traditional bio-medical model of double-blinded controlled trial might not apply in process improvement strategies due to the complexity of the healthcare system. Therefore, evidence-based practice should be practically focused. The academic debate on evidence-based practice may impede the process of implementation.

4.5 Tools and guidance

- **Project implementation team diagram (see Figure 8 on page 58)**
  This is a diagrammatic representation of the suggested project implementation team to assist the process of clinical handover improvement.

- **Master work plan (see Table 9 on page 59)**
  This is a suggested master work plan for organisations interested in clinical handover improvement programs.

- **Individual work plan (see Table 10 on page 60)**
  This is a detail individual work plan for each site/clinical area which is interested in implementation of the standardised process.

- **Risk management plan (see Table 11 on page 62)**
  This is the risk management registry with some generic suggestions for risk management strategies.

Figure 8: Project implementation team

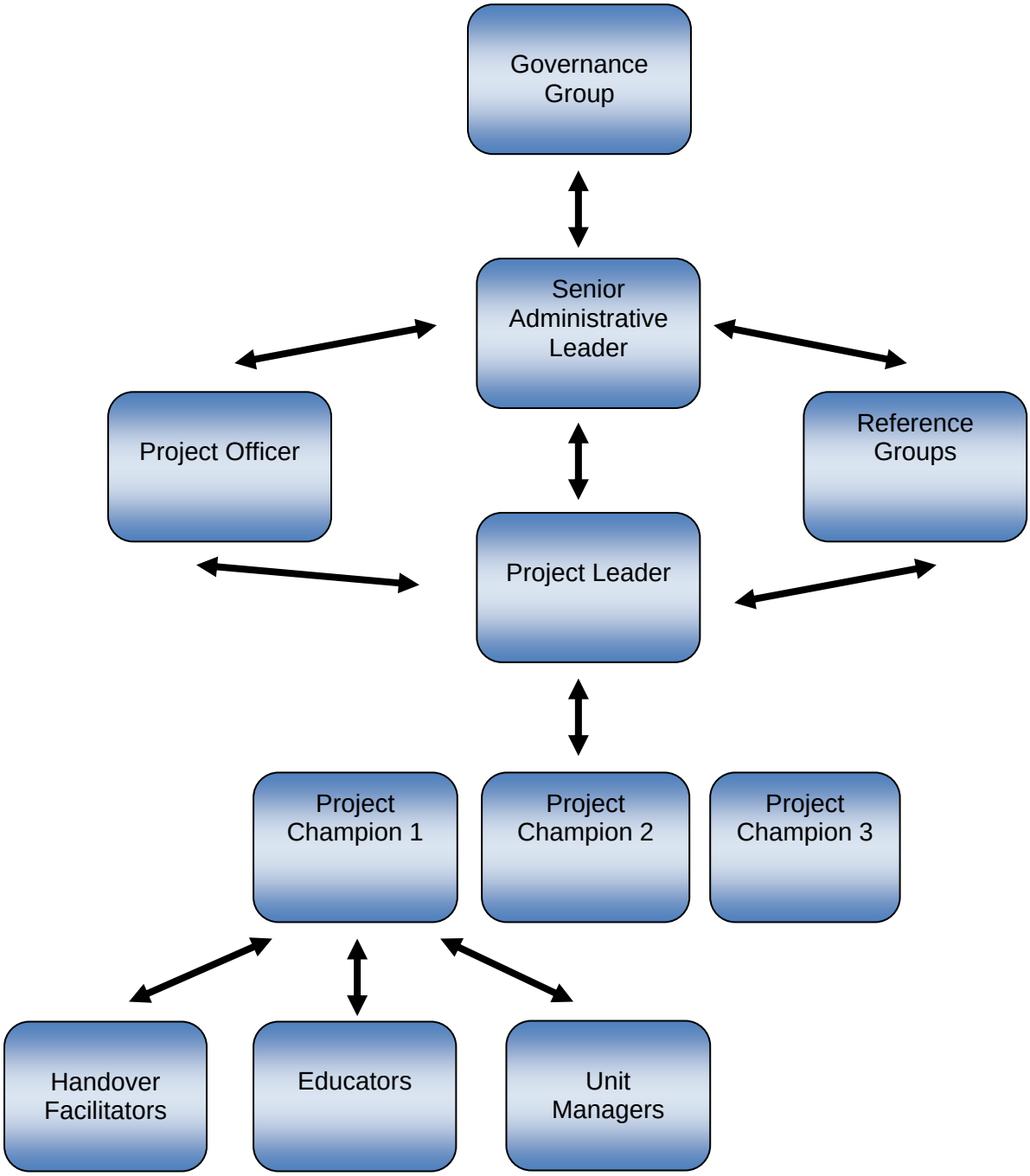


Table 9: Master work plan (adapted from ACSQHC, 2008)

Task name	Duration	Start date	Finish date	Dependencies	Resources
Define and assign governance structure					
Identify governance group					
Identify senior administrator 'contact' for resource decisions					
Assign representatives from each professional discipline					
Assign facilitator					
Development & approval of work plan					
Initial draft of master work plan and plans for individual scenarios					
Review and revision of plans					
Approval of the work plans					
Risk assessment of the process to be implemented					
Identification & prioritization of failure risks					
Proposal for adaptation or redesign of the process					
Approval of adaptation/redesign					
Pilot test of the process					
Identify test sites/units					
Project plan for pilot site					
Determine spread methodology					
Evaluation strategy					

Determine evaluation plan					
Maintenance Strategy					
Determine maintenance plan					

Table 10: Individual work plan (adapted from ACSQHC, 2008)

Task name	Duration	Start date	Finish date	Dependencies	Resources
Define and assign a governance group					
Identify governance group					
Identify senior administrator 'contact' for resource decisions					
Assign representatives from individual groups					
Assign facilitator					
Development & approval of work plan					
Initial draft of work plan					
Review and revision of plan					
Approval of the work plan					
Development of approval of process					
Review the initial draft					
Revision of standardised process if necessary					
Approval of the process					
Approval of the tools to assist implementation					
Development of approval of standardised content					
Review the initial draft					
Revision of standardised content					
Approval of standardised content					
Approval of information tools					
Risk assessment of the process to be					

implemented					
Identification & prioritisation of failure risks					
Proposal for adaptation or redesign of the process					
Approval of adaptation/redesign					
Pilot test of the process					
Identify pilot test protocol					
Set a “go live” date					
Ensuring all tools available for pilot					
Communication strategy					
Initial communication					
Update newsletters					
Other communication platforms					
Evaluation					
Structure evaluations					
Process evaluations					
Content evaluations					
Outcomes evaluations					
Dissemination of results					
Maintenance plan					
Initial draft of maintenance plan					
Review and revision of plan					
Approval of the maintenance plan					

Table 11: Risk management registry (adapted from DHHS, 2008)

Id	Description of Risk	Impact	Likelihood/ Seriousness	Grade	Mitigation Actions (Preventative or Contingency)
1	Stakeholder commitment / Stakeholder buy-in				• Encourage stakeholder commitment and buy-in. • Multiple communication strategies and information dissemination.
2	Availability of the project team for the entire duration of the project				• Ensure that all members of the project team have skills to keep project ongoing.
3	Competing demands				• Ensure more than one champion is available per site.
5	Inadequate resources				• Source from other appropriate institutions.
6	Budget blow-out				• Tight control and regular updates of expenditure.
7	Delay in delivery of information tools				• Ensuring that there are information tools delivered 2 weeks prior to starting date
8	Low acceptability of SOPs in clinical practice				• Ensure continued stakeholder involvement. • Ensure sound and effective communication.
9	Difficulties in education and training of staff				• Use “train the trainer” process. • Use other media for teaching and training .

** Assign low/medium/high risk to “Impact” and “Likelihood/Seriousness” column**

Grade A: High/High
Grade B: High/Medium or Medium/Medium
Grade C: All others

5 Evaluation phase

After the implementation phase, the project team should consider the evaluation phase, not only to inform local improvement, but also to inform national and international learning. This SOP provides a simple evaluation framework for the project team to consider. It is acknowledged that there are a lot of evaluation frameworks and strategies. It is also acknowledged that evaluation framework in some instances should include the evaluation of theoretical conceptualisations. These aspects of evaluation, however, are outside the scope of this SOP. This SOP acknowledges that there are other evaluation techniques and methodologies which are currently in development as part of the National Clinical Handover Initiative of the Australian Commission on Safety and Quality in Healthcare. The outcomes of these other initiatives will strengthen the evaluation phase of this protocol. The national learning and experience-sharing of all projects will provide further evidence to support an evidence-based protocol in the future.

5.1 Objectives of this phase

This SOP has emphasised the importance of local context and flexible adaptation of standardised solutions. This emphasis continues to be the main focus of this SOP in the evaluation phase.

The evaluation phase of the project aims to achieve the following objectives:

- **Development of an evaluation framework and evaluation plan for the implementation of standardised solutions**
  The evaluation phase aims to develop an approach through the adaptation of the framework used for other standardised solutions. This framework will help derive the evaluation plan for local clinical handover initiatives that best serves the purpose of the process within any local socio-cultural setting.

- **Development tools to assist the evaluation of the implementation of standardised solutions**
  This evaluation phase also aims to design tools to assist in the evaluation of the implementation of standardisation in clinical handover. These tools should allow for comparison across different disciplines and clinical units, while at the same time retaining sensitivity to the local socio-cultural setting.

- **Strategies to disseminate evaluation data locally, nationally and beyond**
  The evaluation phase should include the development of strategies to disseminate evaluation data. The dissemination of evaluation data should provide guidance for future improvement within the local setting but also should inform national learning and beyond.

5.2 Issues for consideration

There are many issues that should be considered by the project team during the evaluation phase. While the evaluation phase consumes less time and resources, it requires significant intellectual effort in order to ensure the evaluation can assist future improvement. It is important to emphasise that the current evaluation framework is practically focused. The Australian Commission on Safety and Quality in Health Care has funded evaluation projects that will further inform this phase.

5.2.1 Evaluation framework

The project team should decide on the purpose of the evaluation and adapt an evaluation framework that will help guide the process. The issues which should be considered include:

- Local needs versus national learning
- Practicality versus conceptualisation
- Technical process and content measures
- Outcome measures
- Socio-cultural parameters

5.2.2 Pre-implementation and post-implementation consideration

The project team should consider comparison of pre-implementation and post-implementation measures. During the preparation and design phase, the methodology utilised to collect essential information can be used as pre-implementation data collection or post-implementation data collection for comparison.

5.2.3 Ongoing analysis during the implementation phase

The iterative feedback process dictates that periodic and continual analysis of the data is required in order to revise the implementation process. The project team, however, may wish to set specific intervals for data collection in order to provide interval comparisons as part of the evaluation framework.

5.2.4 Evaluation content

This SOP advocates that the project team consider the following essential measures:

- **Structural measures**
  In order to conduct comparative evaluation of the standardised handover processes across different participating units, it will be necessary to collect certain demographic and structural data about the respective units and handover processes.

- **Process measures**
  There should be a clear process measure developed and it should include:
  - Consistency in the performance of critical steps in the new process
  - Level of participation of staff as specified in the process design
  - Completeness of key steps
  - Time for completion of the new handover process
  - Effectiveness (follow-up calls for additional information or clarification)

- **Content measures**
  There should be a clear content measure developed and it should include:
    - Consistency of delivery of all minimum required content
    - Consistency of transfer of information, responsibility and accountability
    - Completeness of delivery of standardised content
    - Efficiency of the content transfer
    - Effectiveness

- **Outcome measures**
  There may be some benefit in looking at the frequency of specified patient care adverse events involving handover as a factor. However, the complexity of patient care can make it difficult to correlate error rates with the degree of harm to patients, due to possible gaps in the continuity of patient care resulting from breakdowns at handover. More importantly, in a robust and resilient system, there should be other barriers to avoid breakdown in handover that may result in patient harm. In terms of outcome measures, it may be as useful to examine breakdowns in information flow at handover and how staff respond to and anticipate events.

- **Socio-cultural measures**
  It is important to note that handover serves many other functions, beyond ensuring the continuity of patient care. It is also important to note that happy and satisfied employees are likely to be more productive employees. Therefore, in assessing the impact of standardisation on handover processes, socio-cultural aspects of clinical practice need to be considered during the evaluation phase.

5.2.5 Evaluation techniques

Different data collection processes and techniques can be used in this phase. The project should consider the pros- and cons- of various techniques. It is important to note often a combination of techniques can be beneficial in order to evaluate various aspects of the project. Techniques which can be used include:

- Direct observations
- Interviews with participating staff
- Retrospective audit of documentation
- Prospective audit of documentation
- Incident reporting
- Mortality and risk estimation techniques
- Reflective methods, such as video-reflective ethnographic methods

5.2.6 Evaluation plan

The project team should develop detailed measure specifications and data collection protocols. The project team should also consider training staff to evaluate the program as well as in the development of tools to assist the evaluation phase.

5.2.7 Dissemination of evaluation data

The project team should consider dissemination of evaluation data in various ways. The evaluation phase should enable the provision of regular reports of aggregated and analysed data to the governance group and to all staff for future improvement. The project team

should also consider dissemination for national learning and/or improvement in conceptual understanding through academic publications or conference presentations.

5.3 Framework

5.3.1 Iterative feedback framework

The framework underlying the evaluation plan is one of an iterative feedback framework. It is very important to emphasise that this SOP is designed for local quality and safety improvement (Wong et al, 2008b). The changes implemented will therefore continue to evolve through the implementation and evaluation phase due to iterative feedback cycles. It is very important to note that the continuous and regular feedback will ensure the successful adaptation of the standardised solutions into local practice. The process is demonstrated in

Figure 1: Iterative feedback process on page 8.

It is acknowledged that these constant iterations and changes to the intervention make evaluation difficult. This is especially the case if the conceptual approach is one of a quantitative-positivist view. This SOP emphasises that the dynamic nature of clinical practice makes the double-blinded controlled trial evaluation methodology very difficult to utilise effectively and meaningfully.

5.4 Local considerations

There are some issues that the project team will need to consider in relation to local needs. This list is a guide of issues that the project team should consider in the evaluation phase.

5.4.1 Alignment with local needs

The project team has to consider the alignment of the evaluation plan with local needs. The acuity of patient care, the volume of patients within the clinical setting as well as the number of staff involved in the process should all be considered in the design of evaluation tools.

5.4.2 Time frame

The time frame for evaluation is variable. It is, however, recommended that evaluation be conducted at least 8 weeks after the initial implementation in order to avoid capturing data during the initial teething issues post implementation. The project team should consider short term and longer term evaluation in order to understand the impact of cultural change over time.

5.4.3 Resource requirements and allocation

The actual human resources and other resources required during the evaluation phase vary according the techniques utilised. It is, however, important to consider the data entry

requirements as well as intellectual contributions and requirements in order to fully understand the implications of the evaluation phase on resources.

5.4.4 Skill mix and training

Many skills are required for successful evaluation of the program and these are dependent on the techniques to be used. These may include survey design, interview techniques, observation techniques, risk analysis techniques and reflective techniques. The project team should ensure adequate staff, with the relevant mix of skills, are available to conduct the evaluation.

5.4.5 Traditional evidence-based concept vs iterative outcome concept

It is important for the project team to note that the traditional interventional trial concept may not be applicable in these circumstances. This is especially important in large academic centres in which the rigours of evaluation may be challenged. It is important to note that there are increasing amounts of data that support the view that traditional interventional trial concept is not ideal to assess these aspects of human interactions.

5.5 Tools and guidance

- **Evaluation plan (see Table 12 on page 70)**
  This is a suggested evaluation plan for clinical handover improvement programs.

Table 12: Evaluation plan (adapted from ACSQHC, 2008)

NB. Parameters - must be determined by the institution and based on their observational work prior to implementing a SOP

Measures	Parameters	Collection method	Evaluation interval (sample answers)	Reporting (sample)
Structural measures:				
Type of organization (urban/rural; public/private; community/academic; etc.)				
Size of organization (beds; visits)				
Specific types of handovers where an SOP has been implemented and number of locations (eg. number of wards)				
Process measures:				
% of staff who understand the SOP (practice and theory)		Survey and/or direct questioning of staff	After training, then at 3,6,12 months Repeated after alterations to SOP	All staff
% of handovers completed according to protocol		Observation	Weekly for first month and then monthly	Random handovers
% of handovers interrupted		Observation	Weekly for first month and then monthly	Random handovers
% of handovers without needed documentation		Observation	Weekly for first month and then monthly	Random handovers
Average time for handover (and cost of this time)		Observation	Weekly for first month and then monthly	Random handovers
Participant and patient satisfaction.		Survey and interview	Monthly	Monthly

Outcome measures:				
Have clinical errors occurred due to insufficient information? (Does analysis point to a specific problem with a handover scenario where an SOP has been implemented?)		Observational Incident monitoring	Observational work in high risk areas (eg ED, ICU) weekly for first month and then monthly. Incident monitoring	Random shifts Continuous
Are clinical responsibilities clearly handed over?		Observational Incident monitoring	Observational work in high risk areas (eg ED, ICU) weekly for first month and then monthly. Incident monitoring	Random shifts Continuous
Is information handed over acted on?		Observational Incident monitoring	Observational work in high risk areas (eg ED, ICU) weekly for first month and then monthly. Incident monitoring	Random shifts Continuous
Has clinical accountability been clearly handed over?		Observational Incident monitoring	Observational work in high risk areas (eg ED, ICU) weekly for first month and then monthly. Incident monitoring	Random shifts Continuous
If handover SOPs are instituted very widely and effectively, length of stay (and possibly mortality) will be reduced and could be monitored (together with the costs).			Continuous	Continuous
Staff awareness of the patient safety aspects of clinical handover (assessed by survey and interview).		Survey	After training, then at 3,6,12 months	All staff
Staff satisfaction survey about the handover process		Survey	Continuous, 6 monthly interval	All staff

6 Maintenance phase

The maintenance phase of the standardisation of handover processes and contents is beyond the scope of this SOP. However, there are a few very important issues that should be considered by the project team as part of any strategic plan for the maintenance of handover initiatives:

- **Maintenance phase is time and resource intensive**
  The maintenance phase typically utilises significant resources and staff time and can be as much or even more than the combination of the five phases discussed above. Adequate human resources and other resources will need to be allocated for the maintenance phase, including continual supply of support tools and continual engagement of staff. It is suggested that once the SOP for handovers have been implemented throughout the organisation, regular monitoring of key parameters should continue for at least three years.

- **Identification of 'drifting' and 'deviations' early**
  The maintenance phase should include mechanisms to identify evidence of 'drifting' and 'deviations' from the intended procedures early. These events should be analysed to identify the reasons and to determine an appropriate response.

- **Identification of potential unintended consequences**
  The project team should consider regular monitoring to ensure that potential unintended consequences are detected early. These unintended consequences may include a prescriptive protocol that inhibits communication by limiting information capture; increased data entry work for staff; distraction from other tasks due to additional time spent on handover; and gaps in the patient record due to the creation of handover forms that are not integrated.

- **Continual education and training of staff**
  Within the clinical environment, there is often a regular turnover of staff. Typically, there will be new interns and junior staff, including medical, nursing and other allied health professionals, joining or leaving the unit or organisation. The maintenance phase should include mechanisms to ensure all staff are provided with the opportunity to acquire the knowledge and skills prior to commencement of employment. Furthermore, continuing staff will need regular refresher courses in order to continue delivering best practice and best performance.

- **Continual iterations to achieve current best practice**
  The clinical care delivery is a dynamic, time-dependent process. Clinical practices are evolving continuously, due to advancements in medicine and technology and improved understanding of clinical practices. The maintenance phase must consist of mechanisms to ensure the process allows and integrates with current clinical practice. More importantly, as evidence continues to emerge on best handover practices, the maintenance phase must provide opportunities to incorporate new improved practices and to act upon these opportunities where they are determined to be appropriate for local socio-cultural and technical settings.

7 Examples of Working Documents

This report has provided an overarching Standard Operating Protocol (SOP) to improve clinical handover. The project team has also developed SOPs for the specific areas listed below:

- Medical handover (Department of General Surgery)
- Medical handover (Department of Emergency Medicine)
- Nursing handover (Department of Emergency Medicine)
- Nursing handover (General Medical Ward)
- Nursing handover (General Surgery Ward)

Please contact the Australian Commission on Safety and Quality in Health Care (ACSQHC) if you are interested in obtaining these SOPs.

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