

Report to Victorian Quality Council

Clinical Handover: The next steps

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Report to Victorian Quality Council, June 2008 Clinical Handover: The next steps

Executive Summary

Introduction

Within the last two years there have been two significant projects addressing junior medical staff clinical handover in Victoria: the VQC Clinical Handover Pilot in 2007 and the ongoing Royal Children's Hospital JMS Handover Project, which was supported by the Victorian Travelling Fellowship Program.

Aim

The aims of this report are to

- Combine and summarise lessons learned from the VQC Handover Guidelines pilot and the RCH JMS Handover Project (including the travel phase).
- Develop a plan of potential projects to further address and improve handover within Victorian hospitals.

Method

Reports from both projects were read and analysed to extract lessons learned and to identify gaps to direct future projects.

Results

In Victoria we currently have the following knowledge and resources concerning Junior Medical Staff Handover

- Practical guidelines on the content, process and documentation of handover from RCH and the VQC.
- Tools to assist organizations in addressing handover
- Useful suggestions for handover policy.
- A strong understanding of the essential components of handover improvement process:
 - Widespread engagement and involvement
 - Measurement of handover
 - Sufficient resources for the effective local development and implementation of improvements

Potential Future Projects

Four potential future projects have been identified from analysis of gaps in the current body of knowledge and experience within Victoria regarding clinical handover. These include:

1. Development of a Clinical Handover Mapping Tool for health care institutions
2. Production of a single set of Clinical Handover Improvement tools
3. Development of an electronic solution to documentation incorporated into Healthsmart
4. Adaptation and pilot of tools in other handover settings

The first two projects are described in some detail including suggested project plans.

1. Introduction

An objective of the 2005 –2008 strategic plan of the Victorian Quality Council was to enhance continuity of care through clinical handover. The VQC surveyed health services across Victoria about clinical handover process and identified shift-to-shift handover and inter-hospital transfer as two significant areas of concern. A set of standardised clinical handover tools was developed based on the outcome of a clinical handover workshop with health services representatives. In 2007 a pilot project was conducted in four health services trialing the tools for shift-to-shift medical handover.

The Royal Children's Hospital Junior Medical Staff handover project commenced in mid-2006 and was supported by the Victorian Travelling Fellowship Program. Phase 1 of the fellowship was undertaken in January and February 2007 and included travel to the USA, Canada and the UK to observe handovers and meet with experts in quality improvement and change management. Phase 2 of the fellowship was completed in late 2007 and included the development and pilot of a Handover Improvement Toolkit.

The development and implementation of safe handover practices is complicated and there are few simple solutions. Much can be learned from the successes and failures within these Victorian projects. Combining the lessons learned is an important next step in determining potential future directions in improving the quality of handover in Victorian health care settings.

2. Aims

The aims of this report are to

- Combine and summarise lessons learned from the VQC Handover Guidelines pilot and the RCH JMS Handover Project (including the travel phase).
- Develop a plan of potential projects to further address and improve handover within Victorian hospitals.

3. Background: Clinical Handover Projects – RCH and VQC

3.1 ROYAL CHILDREN'S HOSPITAL JMS HANDOVER PROJECT

This project commenced in July 2006 and was supported by the Victorian Travelling Fellowship Program 2006-08. Steps taken thus far include:

Review of practice:

- Literature review
- Audit of morning ward junior staff handover practices (Sept 2006)
- Scoping of international best practice (USA, Canada, UK) through the Victorian Travelling Fellowship Program (Jan-Feb 2007)
- Observations of afternoon Specialty Medicine junior staff handovers (May 2007)

Development of a Handover Improvement Toolkit:

- Background on safe handover
- Readiness checklist
- Safe Handover Guidelines – process, content, documentation
- Safe Handover Improvement Process
- Sample templates for content – inpatient reviews and new admissions

Implementation of Handover Improvement Toolkit:

- Establishment of a Steering Committee and Working Group for the project
- Selection of trial setting: Speciality Medicine Morning Handover (SMMH)
- Implementation of 2-week pilot of Specialty Medicine Morning Handover in July 2007, including change of working practices to logistically enable a handover, senior and junior specialty medicine staff engagement and support, and recruitment of supervisors
- Evaluation of pilot against agreed KPIs and through staff surveys
- Report to Steering Committee and Executive on the results of the pilot
- Further three month trial (August to October 2007) of changes with 2 week audit in October
- Permanent embedding of changes to SMMH in November 2007 (approximate annual cost of changes \$62,000).
- Long term sustainability plan developed March 2008 including regular audits, supervisor recruitment process and lines of reporting

Current situation:

- 10 day audit of Specialty Medical afternoon to evening handover practices reported to Junior Medical Staff Committee April 2008
- 2008-09 program under development and likely to include afternoon handover.

3.2 VICTORIAN QUALITY COUNCIL: CLINICAL HANDOVER PILOT PROJECT

The Victorian Quality Council began work on clinical handover with a survey of health services across Victoria about clinical handover process. Shift-to-shift handover and inter-hospital transfer were identified as two significant areas of concern. A set of standardised clinical handover tools was developed based on the outcome of a clinical handover workshop with health services representatives. A pilot project conducted in four health services trialled the tools for shift-to-shift medical handover. The pilot project aimed to evaluate the appropriateness and

acceptability of VQC Clinical Handover Tools in the health care setting. The tools were:

- Clinical Handover Organisational Readiness Checklist
- Suggested content for clinical handover policy
- Suggested content for clinical handover protocol/guidelines
- Suggested clinical handover KPIs
- Clinical Handover Template (minimum data set)

Three metropolitan and one regional health service trialled these tools over a six month period. They were asked to involve senior leadership in the trial and select two appropriate areas in which to trial the tools at a night handover. Data collection requirements included baseline data collection, pre- and post-observational audits of 3 handovers each and KPI collection. A questionnaire regarding the tools was also included.

The health services reported back to the VQC in December 2007.

4 Method

Table 1 lists the reports that were read and analysed. These reports should be considered as the references for this report. As the aim was to combine and summarise lessons learned from both projects, comments in this report have not been specifically referenced.

Table 1: Reports included in review of RCH and VQC Handover projects

Date of report	Source/Author	Title of report
February 2006	Victorian Quality Council	Clinical Handover Information Sheet
June 2006	Victorian Quality Council	Clinical Handover: Results arising from a clinical handover survey circulated to all Victorian public health services
Feb 2007	K McLean	VTFP Phase 1 Travel Report
Dec 07	Bayside Health, Clinical Governance Unit	VQC Clinical Handover Pilot Project Final Report
Dec 07	West Gippsland Healthcare Group	VQC Clinical Handover Pilot Project Final Report
Dec 07	N Lawley, Clinical Handover Project Officer, Melbourne Health	VQC Clinical Handover Pilot Project Final Report
Dec 07	The Northern Hospital	VQC Clinical Handover Pilot Project Final Report
March 2008	K McLean, B Ziffer, Z Stark	Lessons Learned: RCH JMS Handover Project Learnings

The focus was on the extraction of comments or observations that can be widely applicable in the improvement of clinical handover. The domains were broadly separated into the change management process of handover improvement and the actual handover itself. Both elements are essential; without an understanding of effective handover, improvement is unlikely. However, without excellent implementation handover will not improve simply on the basis of good understanding of best practice. Furthermore, goodwill will be lost, inhibiting future attempts to readdress problems.

Lessons learned from successes and failures were entered into a table under sub-headings. Once all documents had been reviewed, the extracted information was combined to present the lessons in a useable format as presented in the Results section.

Future projects were identified from gaps in the current knowledge and practice amongst Victorian hospitals.

5 Results

This section summarises the information in Appendix 1 into three main sections:

5.1 Handover: Process, Content and Documentation

- lessons learned in these projects about the practice of handover

5.2 Implementation of JMS Clinical Handover Improvements

- lessons learned about how to implement change in the area of junior medical staff handover
 - Engagement
 - Membership of handover improvement team
 - Measurement of clinical handover
 - Resources required
 - Sustainability

5.3 Victorian Handover Improvement Tools

- lessons learned about the various tools used in both projects

5.1 HANDOVER: PROCESS, CONTENT AND DOCUMENTATION

Most of the lessons learned in these domains arose from the travel phase and have already been reported on (see

http://www.health.vic.gov.au/travelfellowships/downloads/k_mclean_final_report.pdf) They formed the basis of the Guidelines section of the Handover

Improvement Toolkit (Appendix 1). The implementation phase at RCH and the VQC pilot reinforced some of these lessons including:

- Process: Structured handover practices do improve content and efficiency
- Process: A senior trainee can act as a handover supervisor and facilitate education.
- Process: The attendance of multi-disciplinary staff at morning handovers can facilitate discharge planning.
- Content: It is always important to adapt suggested content to local contexts for effective uptake by users.

5.2 IMPLEMENTATION OF JMS CLINICAL HANDOVER IMPROVEMENTS

5.2.1 Engagement

There is little doubt that engagement is crucial to effective implementation of changes to handover. Engagement is necessary at all levels throughout the hospital:

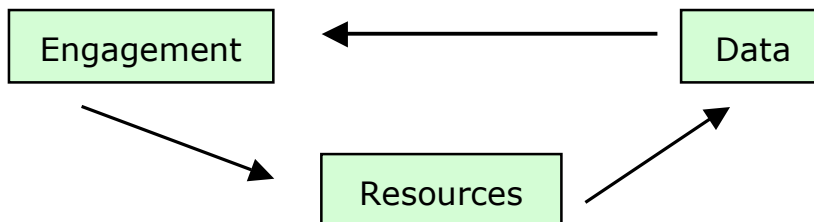
- Members of the hospital executive are key in setting hospital policy and direction. They have greater ability to access required resources and to engage senior medical staff when it may be difficult for project officers or junior medical staff to do.
- Senior medical staff must be engaged as changes will impact upon the day-to-day work practices of junior doctors that directly report to them. Senior medical staff also provide essential clinical perspective to the content and ideally supervision which optimises education.
- Junior medical staff are those upon whom the changes will have the greatest impact. They have the most knowledge of current practices and often very good ideas of how improvements might be made. Without their input, change will be very difficult; unfortunately junior doctors are often suspicious of change imposed by those who are not medical.

Widespread engagement was a particular strength of the RCH project. This is most likely because of the use of JMS staff to drive and run the RCH project. The

benefits of any changes must be evident to those required to change, and involving JMS in defining and solving handover problems smooths this process.

The availability of preliminary data early in the RCH project also aided engagement. There is a strong relationship between engagement, data and resources, as depicted in figure one.

Figure One:



Without engagement, it is difficult to access adequate resources to design and effectively implement changes. Data is a significant catalyst to engagement; when the problem is quantified the argument for change is much more powerful. However, it can be difficult to produce the appropriate data without some resource allocation to enable collection and analysis.

5.2.2 Membership of handover improvement team.

It is clear from both projects that frontline users, in this case junior medical staff, must be involved to maximise success. However, not all junior medical staff need be convinced and involved initially; the use of a representative, leader or 'champion' can be very effective.

As outlined previously, senior and junior medical staff should be involved in junior medical staff handover as changes affect both parties and important clinical perspectives can be gained from both. However, the extent of the work required to make successful changes means that most medical staff currently employed within the public hospital system, senior or junior, would find it difficult to lead such a project unless they were released from some other duties. Participation in the change process is facilitated if appropriate time is allocated for clinical staff.

The use of a project officer to manage the project can be very helpful. Few medical staff have had training or much experience in driving change or improvement projects but these skills are central to success.

Multidisciplinary involvement is ideal where this mirrors work practices at the institution.

At least one member of the project team will need to have sufficient sway with staff at hospital involved in rostering as rosters may need to change to accommodate appropriate supervision or overlap.

5.2.3 Measurement of clinical handover

Measurement is key in the successful implementation of handover improvements because:

- Data drives engagement

- Data quantifies the need for resources
- Data enables assessment of effectiveness of changes

Finding appropriate measures or key performance indicators is difficult. Ideally, outcome measures would be used. If handover is defined as

"the transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis" (Australian Commission for Safety and Quality in Health Care, 2008).

then a successful outcome would be that professional responsibility and accountability has been transferred. This is not something for which a good measure has been found.

In the RCH project, satisfaction surveys were used to survey all staff involved in the context of the improvements – both the givers and recipients of handover. By involving all junior staff, numbers were sufficient to provide reasonably robust data about whether those at the front-line were finding the processes effective in enabling them to carry out their work.

The VQC project included some surveys, but there were fewer participants in the surveys and as such less robust data. It was also difficult to see change as not infrequently participants claimed to be satisfied with the pre-improvement practices.

MET calls were used as an outcome measure in the VQC project with no success. All sites reported that the number of MET calls was too few to be able to see any change. Many commented that they did not believe that there would be a direct correlation between the quality of handovers and the number of MET calls.

Process measures are another effective way to measure the impact of changes, although measurements should be made prior to the design and implementation of changes to produce robust data. Process measures should be specific to the context of handover, for example:

- The attendance rate of those who are required to attend
- The duration of handover
- The adherence to specified content per session or per patient

The use of process measures was more successful in the RCH project than in the VQC project, primarily because of the number of observations (10 handovers before and after compared with 3). It is important to have sufficient observations to know whether a real change in practice has occurred. The process measures at RCH were also developed by the clinicians involved in the change process, and as such they were specific to the context.

5.2.4 Resources required

Adequate resources are essential to the success of the project. The start-up costs of the improvements at RCH cost approximately \$30,000. This included:

- Personnel to run the project
 - Junior medical staff and project management staff
 - Tasks included:
 - Preliminary data collection
 - Engagement of staff
 - Oversight of decision-making about required changes
 - Development of implementation and communications plans

- Education of participants
- Introduction and monitoring of changes
- Collection, analysis and reporting of data
- Salaries for extended JMS hours for a trial of the changes (including payment of a supervisor)

Ongoing requirements now include:

- Long term process owner
- Intermittent (annual) audit of practice
- Education of participants
- Recruitment and payment of supervisors, and payment of the additional JMS hours (approximately \$62,000 pa)
- Dedicated space available that is large enough for all participants, conveniently located and free from interruption

The VQC sites were allocated \$35,000 and not all sites reported that this was sufficient to carry out the project.

5.2.5 Sustainability

Neither RCH nor the pilot sites are yet in a position to make claims about long-term sustainability. However, several themes came through from both projects about how it might be achieved:

- The inclusion of handover practices in orientation to the hospital for junior medical staff
- The ongoing involvement of junior medical staff in handover, as champions or leaders advocating and supporting quality practices
- Ongoing audit and feedback to the appropriate persons
- Clear ownership of handover processes so that in the event of deterioration of practice, this will be detected and acted upon.

5.3 VICTORIAN HANDOVER IMPROVEMENT TOOLS

5.3.1 VQC Tools

These included:

- The Organisational Readiness Checklist
- Suggested handover protocols/guidelines
- Suggested handover policy
- Suggested Key Performance Indicators
- Clinical Handover Template for ward patients

The checklist, protocol/guidelines, policy and template were all found to be useful by the four sites. One problem identified with the organisational readiness checklist was inconsistent responses from different senior staff and members of executive in the one institution. This highlights the potential discrepancy between what actually occurs and what should be occurring. It is probably of greater value to have front-line users completing parts of the readiness checklist.

The suggested KPIs were generally not found to be useful. Issues around measurement have been addressed earlier in this report.

5.3.2 RCH Handover Improvement Toolkit

The toolkit was developed and has been piloted at RCH. There is some overlap with the VQC tools e.g. content templates, readiness checklist but the Toolkit has more detail on the background and change management process and less of a policy focus. The trial of the Toolkit at RCH has resulted in strong data that the handover is now more comprehensive and efficient with more consistent content. There is a high level of user satisfaction with the improved handover processes. It is not possible to separate out which parts of the Toolkit contributed most to the improvements.

5.4 Summary: Clinical Handover in Victoria: Current Knowledge

From the work completed thus far in Victoria it is clear that junior medical staff handover is being done well in particular settings within some institutions. However, no single institution seems to have addressed JMS handover across all its manifestations.

The recent Victorian projects together with international literature and observed practice provide a wealth of locally relevant experience. Key elements include:

- Practical guidelines on the content, process and documentation of handover.
 - Handover Improvement Toolkit: Guidelines and templates
 - VQC tools: Suggested Content for Clinical Handover protocol/guidelines and Clinical handover template for ward patients
- Tools to assist organizations in addressing handover
 - Handover Improvement Toolkit: Readiness Checklist, Improvement Flowchart,
 - VQC tools: Clinical Handover Organisational Readiness Checklist
- Useful suggestions for handover policy.
 - VQC: Suggested Content for Clinical Handover Policy
- A strong understanding of the essential components of handover improvement process:
 - Widespread engagement and involvement
 - Executive level
 - Provide credibility to the project, empowering the project team to liaise with busy departmental heads/SMS
 - Provide resources
 - Senior Medical Staff level
 - To enable change of practices for 'their' junior medical staff which might impact upon traditional working practices
 - To ensure changes are clinically appropriate
 - To provide education and supervision
 - Junior medical staff
 - To enable a good understanding of current work practice

- To ensure changes are relevant to work practices and realistic, with no or minimal increased workload and maximal benefit to users
 - To persuade peers of need to change
- Involvement of staff with project management skills
- Measurement of handover
 - Process measures are most reliable key performance indicators to validate work and enable sustainability
 - Staff satisfaction surveys provide some outcome measures
 - Any Key Performance Indicators need to be adapted to local context to be meaningful
 - Sufficient observations are required to have power in the data to interpret results
- Sufficient resources required for the effective local development and implementation of improvements

6 Potential Future Projects

Four potential future projects have been identified from analysis of gaps in the current body of knowledge and experience within Victoria regarding clinical handover. These include:

1. Development of a Clinical Handover Mapping Tool for health care institutions
2. Production of a single set of Clinical Handover Improvement tools
3. Development of an electronic solution to documentation incorporated into Healthsmart
4. Adaptation and pilot of tools in other handover settings

Projects 1 and 2 are the most readily achievable and a suggested project plan has been outlined below. The estimated time frame will depend upon the extent to which the project officers have previously been involved in handover improvement.

6.1 Development of a Clinical Handover Mapping Tool for health care institutions

There is no available measure to apply to a hospital to assess handover practices. An internet search of various bodies with accreditation powers for healthcare institutions (whether as a provider of healthcare or a training provider) did not yield any standards for handover in Australian hospitals, including:

- Post-graduate Medical Council of Victoria
- Australian Council of Healthcare Standards
- Royal Australasian College of Physicians (although they do state that for periods of night shift to be accredited towards training, morning handover should be supervised by a consultant physician).
- Royal Australasian College of Surgeons
- Australasian Association for Quality in Healthcare

While the VQC Clinical Handover Organisational Readiness Checklist goes some way to addressing this need, the pilot study demonstrated wide variations in responses within a single institution dependent upon who completed the checklist. There is a need for a tool which will help the hospital map out the contexts in which handover is required and how each context is performing in regards to process, content and documentation. Such a tool will be useful at all stages within the handover improvement process, from an initial assessment to identify priorities for change to ongoing audit to ensure sustainability of implemented changes.

Areas that might be included are:

- A template or spreadsheet for JMS rosters to enable identification of handover points
- KPIs for each handover context
- Regular handover audits
- Identification of who is responsible for handover and reporting lines and processes
- User satisfaction surveys

Suggested project plan for production of Mapping Tool:

Task	Expected Outcome	Estimated Time required
Investigation and Analysis Use reports from 4 VQC pilot sites and RCH project along with available literature to determine all components of junior medical staff handover across an institution.	List of all components of JMS handover that ought to be addressed within the Mapping Tool.	5-10 days
Solution design Development of mapping tool to enable a hospital to identify all contexts of JMS handover across their hospital and to benchmark their practices (may include user satisfaction survey). Tool to include information on who should be involved in completion.	Junior Medical Staff handover Mapping Tool	10-15 days
Pilot of Mapping Tool for JMS Handover Pilot tool in 3 or more institutions to assess usefulness and identify areas that require adjustment. Refine as indicated.	Information regarding usefulness of tool and required adjustments.	2 – 4 months
Reporting To the Victorian Quality Council	Written report including Mapping Tool and outcomes of pilot.	1 month
Expansion of Mapping Tool Repeat the process, using the JMS Handover Mapping Tool as a template, to expand the tool to include all forms of handover within an institution (Senior Medical Staff, Emergency Department, Intensive Care Units, patient transfer and discharges etc)	As per phases above.	Depends upon extent of expansion

6.2 Single Set of JMS Clinical Handover Improvement Tools

The tools available currently have some overlap and could be combined into one set of tools. Ideally the Mapping Tool described above would be developed first and also included. It may be appropriate to also include information on the quantity of resources (particularly financial and personnel) required to make such changes.

Any tools will require local application by front-line users to ensure that relevant changes are designed and implemented.

The production of a single set of tools should be combined with a communications plan to ensure that the appropriate persons within all Victorian health care institutions employing Junior Medical Staff are aware of the resource and how to access it.

Suggested project plan:

Task	Expected Outcome	Estimated time required
Investigation and Analysis Use reports from 4 VQC pilot sites and RCH project along with available literature to determine useful components of existing tools and gaps in existing tools. May also require direct communication with those involved in previous projects.	List of all tools that will be included and gaps that need to be filled.	10 days
Solution design Development of single toolkit and plan to communicate about the toolkit throughout Victorian hospitals.	Victorian Junior Medical Staff Clinical Handover Improvement Tools Communications Plan	15-20 days
Implementation Implementation of the communications plan.	Effective communication about tools as per plan.	2 weeks.
Post-implementation monitoring Monitoring of uptake of the tools and surveys of healthcare institutions	Understanding of effectiveness of communication and usefulness of tools	Over 12 month period – 4 weeks FTE
Reporting To the Victorian Quality Council	Written report including survey data	1 month

It will be important to consider that without resource allocation within health-care institutions towards the improvement of JMS handover, this project is unlikely to have a positive effect.

6.3 Development of an electronic solution to documentation incorporated into Healthsmart

It is clear from many sources that documenting handover is an extremely challenging issue. The greatest barrier is the increased workload required for participating staff where there is no electronic handover solution. Staff already have full workloads and will only embrace change that is going to be time-neutral or time-saving, unless the change is perceived to be of great direct benefit to themselves or their patients. Since documentation of handover enables quality control and investigation of adverse events it is not perceived to be a high priority for front-line users.

There is an opportunity to incorporate an electronic solution into the Healthsmart project which will be implemented throughout the Victorian health system. This would require the input of the Healthsmart team along with junior medical staff to optimise the chances of success. Input from medico-legal practitioners would also be essential.

6.4 Adaptation and pilot of tools in other handover settings

Clinical handover occurs in multiple settings beyond JMS shift-to-shift handover. While JMS shift-to-shift handover was seen to pose the greatest safety risk because of a frequently wide gap between reality and best practice, it is likely that other areas of handover would greatly benefit from a similar formalised analysis and improvement process.

Areas that might be considered include:

- Emergency Department shift change handovers
- Intensive Care handovers
- Senior Medical Staff handovers
- Nursing handovers
- Allied Health handovers
- Patient transfers within hospital (e.g. ED to ward, ward to radiology, theatre to ward)
- Patient transfers between institutions or to/from community

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ROYAL CHILDREN'S HOSPITAL, MELBOURNE

**WARD JUNIOR MEDICAL STAFF SHIFT-TO-SHIFT
HANDOVER**

IMPROVEMENT TOOLKIT

OVERVIEW

The purpose of this toolkit is to provide the guidelines, process and suggested documentation for a safe and effective handover for junior medical staff on the wards.

The toolkit has been developed using the best available evidence about good quality handover, from literature, from Phase 1 of the Victorian Travelling Fellowship Program and the Victorian Quality Council Draft Generic Clinical Handover Tools (See Appendix 1 for references).

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BACKGROUND

What is Safe handover?

A safe handover enables the recipient to adequately care for the patients under their care during the subsequent shift. The content should be succinct and relevant.

"Clinical handover refers to the transfer of information from one health care provider to another when:

- *A patient has a change of location of care, and/or*
- *When the care of a patient shifts from one provider to another".*

(Australian Council for Safety and Quality in Health Care (ACSQHC) May 2005)¹

"The fundamental aim of any handover is to achieve the efficient transfer of high quality clinical information at times of transition of responsibility of patients."

(Junior Doctors Committee, British Medical Association 2004)²

Clinical handover is a vital part of health care, particularly in the hospital setting. The change of work patterns for junior medical staff over recent decades has increased the frequency of change of medical responsibility for inpatients from once to three times per day.

The quality and effectiveness of clinical handover relates significantly to patient safety.¹⁻⁵ Sentinel Event Program Annual Reports, Health Service Inquiries and Coroner's Recommendations have targeted the need for improvements in clinical handover as a part of addressing communication issues³. Ineffective handover can lead to incorrect or delayed patient management, compromised patient safety, increased patient complaints, and increased costs to the health system (including prolonged length of hospital stay).^{1,3} Inadequate handover processes can contribute to a lack of available information about handover content when investigating the cause of an adverse event.¹

Current knowledge

The 2005 ACSQHC Literature Review Report regarding clinical handover and patient safety demonstrated that evidence for best practice is in scarce supply.¹ Both the ACSQHC and the VQC argue that further research is needed to develop evidence-based guidelines.^{1,3} Despite a lack of evidence, there are recurring themes in available literature about the components of effective handover. These include suggestions on content, location, timing, methods, IT support, and leadership.^{2,6,7}

Achieving a safe handover

Achieving high quality and safe clinical handover for ward junior medical staff depends upon addressing the process, content and documentation. The variety of patient issues and unit work practices, even within the same institution, mean

that solutions need to be developed and/or modified to each particular context to maximise uptake and sustainability of safe and high quality handover.

Barriers to handover include a lack of standardized procedure, lack of training on how to hand over, lack of time (for preparation and handover itself), and limited policy development.³

READINESS CHECKLIST

The following checklist should be applied prior to the commencement of using the Safe Handover Guidelines and the Safe Handover Improvement Process to improve the quality of a specific handover context. It includes organisational and governance issues that need to be addressed to maximise effective implementation and long-term sustainability of improvements.

The improvement of the quality and safety of junior medical staff handover is not going to happen without some cost. At the very least, designing and implementing improvements will cost the time of those involved. In some settings, junior and senior medical staff rosters and work practices may need to change to maximise the potential for improvement. However, the benefits to the quality and efficiency of patient care should outweigh these costs. A lack of acceptance of the costs by all levels of staff involved will impede implementation and continuation of improvements.

Before using the toolkit, check that the following personnel and system supports are in place:

- Executive level
 - Recruit a member of Executive to be the sponsor and who will support and promote quality improvements for junior medical staff handover, as well as engage in ongoing monitoring of the process
- Senior medical staff
 - Assign interested staff who will champion, support and participate in the quality improvements (ensures that the clinical component is appropriate for the context).
- Junior medical staff
 - Engagement of the leaders amongst junior medical staff who have access to the wider body of junior medical staff (e.g. Chief Resident/Registrar)
 - Ensure access to junior medical staff – flexibility in meeting times to permit attendance by the givers and receivers of handover in the specific context.
- Nursing/allied health
 - Engage nursing and allied health leadership to enable exploration of most appropriate multi-disciplinary involvement in handover
- Assign a process owner – i.e. specified person within the relevant department that will provide/support ongoing monitoring of handover and report to relevant senior medical staff and executive e.g. CQ&S project officer.
- Liaise or involve those with experience in outcome measurement.
 - Design and/or agree measures to assess how outcomes are being achieved;
 - Ensure process is in place to capture / monitor / report outcomes easily
 - Decide the most appropriate mechanism for feedback of outcomes to all relevant parties.
- Devise rosters to ensure overlapping shift times between relevant junior medical staff rosters
- Ensure all appropriate resources have easy (usually electronic) access to patient lists, pathology results, medical imaging results.

SAFE HANDOVER GUIDELINES

There are three main elements to handover: **process, content and documentation**. The **process** of handover includes both the broad requirements (e.g. time, place, who attends) and how the handover session will be conducted (e.g. supervision, use of written or printed documents, electronic handover tools). The **content** of handover addresses what sort of information should be included at both the level of each patient discussed and the level of subcategories of handover (e.g. outstanding tasks, sick patients needing review, new admissions). Finally, **documentation** of handover is important to facilitate monitoring of handover practices and to permit future investigation should complaints, critical incidents or medicolegal action require it.⁸

These guidelines have been developed using the best available evidence about good quality handover, from literature, from Phase 1 of the Victorian Travelling Fellowship Program and the Victorian Quality Council Draft Generic Clinical Handover Tools (See Appendix 1 for references). They are designed to assist those improving ward junior medical staff shift-to-shift handover.

PROCESS

When and where should handover take place?

- Paid overlapped time is essential. The required duration is usually 30 – 60 minutes, depending upon patient load.
- Shifts between the different units that are simultaneously cross-covered after hours need to be aligned.
- Junior medical staff handover times need to be well known to others in the hospital to exclude interruptions other than emergencies.
- Location
 - Ideally handover will take place face-to-face.
 - A dedicated location must comfortably hold all participants and minimise interruptions.
 - There should be access to patient lists, pathology results and radiology images.
 - The location needs to be central to resident quarters' and clinical areas.

Who should be involved in handover?

- **Junior medical staff**
 - All outgoing and incoming junior medical staff responsible for a defined group of patients must attend.
- A senior clinician present at handover should be designated as leader to ensure that process is followed (either a consultant, a senior nurse or experienced member of the junior medical staff).
- **Senior medical staff**
 - Senior medical staff attendance maximises decision-making and the establishment of clear management plans for the next shift.

- Senior medical staff attendance maximises educational opportunities
- The attendance of senior staff often requires a change to consultant work practices, however, creative use of technology may enable involvement of senior medical staff not present in the hospital using tele-conference or video-conferencing (e.g. VOIP).
- The relevant member of senior medical staff or medical executive should be responsible for ensuring that handover is taking place as expected.
- Multidisciplinary attendance allows for clarification of management plans and agreement of 'daily goals' between disciplines
- Relevant ward nurse attendance can provide valuable information about the current status of patients
- Inclusion of night nursing co-ordinators in night handover maximises the possibility that all unstable patients are known to both nursing and medical staff
- The inclusion of bed management representatives aids communication of demand issues.
- The inclusion of the ICU registrar especially at night handover can improve subsequent communication about unstable patients

How should handover happen?

- Handover practices will vary depending upon the time of day, the units involved and whether or not face-to-face handover is possible.
- Handover needs to be protected from interruption as much as possible – a method for dealing with pages/phone calls should be pre-determined.
- Rules of handover enable efficient process (e.g. units hand over in order of arrival).
- Passing over written/printed information can minimise the risk of key information not being handed over. Supplementation with verbal discussion will maximise the quality of information transfer.⁹
- A sign-in sheet may be helpful particularly for out-of-hours handovers to then communicate with switchboard which doctors are on the incoming shift.
- Where possible (depending upon time available), additional functions of handover should be included – education, peer support, debriefing, feedback about patient outcomes.

Electronic handover systems

- Electronic handover tools can be useful if available. A number of tools are in use around the world, most making use of an inpatient database with varying amounts of additional information available (whether manually entered or automatically uploaded from other hospital electronic systems e.g. pathology results). The simplest versions permit a table including patient details to be printed; the more complex information technology solutions incorporate hand-held computers that are synchronised at the change of shifts. Features that are useful to handover include an ability to select or highlight particular patients and enter tasks.
- Electronic handover tool/software – if available, should include the following requirements:

- Usable software must be developed with close involvement of senior and junior medical staff.
- Flexibility is useful – one database can produce patient lists with different levels of detail for different users.
- An electronic handover system must be integrated with other databases/software in use at the hospital e.g. pathology results, electronic prescribing etc. Ideally updating one system would also update the other simultaneously. If updates are intermittent, they must be regular and frequent, and the time of the most recent update must be included on any report.
- Templates for patient information should have some flexibility to address different needs across different units.
- Manual entry into an electronic tool has the potential to be out-of-date – especially if it is an additional task for junior doctors. Monitoring and feedback regarding the quality of information will be key to maintaining currency.
- Regular back-ups of electronic handover permit easy documentation of the content of handover.
- Privacy legislation must be considered when designing a system using electronic patient lists.

CONTENT

The information required at handover is that which will enable the recipient to adequately care for the patients under their care during the subsequent shift. It should be succinct and relevant.

- This information required for a safe handover will vary at different shift changes and across different units, however the following categories and sub-categories should be considered:
 - **Unstable patients** that were reviewed during the shift and/or require review in the next shift
 - Patient name, UR, location, current problems, why they need(ed) review, current management plan, ICU involvement (including transfer in/out of ICU)
 - **New patients that were admitted out of hours** (when handing back to the regular team for the unit).
 - Name, age, UR, location, presenting problem/diagnosis, relevant other problems, current management plan, relevant results, outstanding tasks
 - **Outstanding tasks from the preceding shift**, including urgency
 - Patient name, UR, location, task to be done including context (e.g. day 3 of 7 day course of IV antibiotics for pyelonephritis, needs a new IV within 6 hours).
 - **Potential problems that may arise with particular patients** during the next shift and the management plan ie “If... then ...” (e.g. Johnny Smith, 1234567 is 3yo under neurology on 8th floor, if he has a GTCS > 10 minutes give IM midazolam)
 - **Expected/known admissions not yet seen**
 - Include planned elective admissions
 - **Patients that could be discharged** during the next shift and the criteria that need to be met prior to discharge
 - **Who to call** (responsible consultant) when needed

Using a checklist for clinical information about individual patients handed over maximises consistency and enhances patient safety. Reliance on memory is

reduced, and it is easier for recipients to process information when it is always delivered in the same order. A checklist can free participants to concentrate on the non-routine elements of a particular handover.

- Checklists should be adapted to fit each context, but the more consistency between checklists (particularly within the one institution) the easier it will be as junior medical staff rotate between different units.
- 'Safe' handover requires definition in each context prior to any checklist development.
- A checklist should be as short as possible.
- After using the checklist, there needs to be an opportunity for extra information to be given when necessary (there is no perfect checklist).
- May choose to always include drugs, fluids, allergies, resuscitation status etc.

It is important to consider that good documentation in the patient notes reduces the amount of information that should be handed over. This is particularly relevant in large or complex institutions where the doctor:patient ratio out of hours may be low; provided that up-to-date management plans are well documented in accessible patient notes, it is not necessary (nor practical) to hand over information regarding every patient.

Using read-back for tasks to be done by the incoming team is a useful safety check that the information has been correctly received.

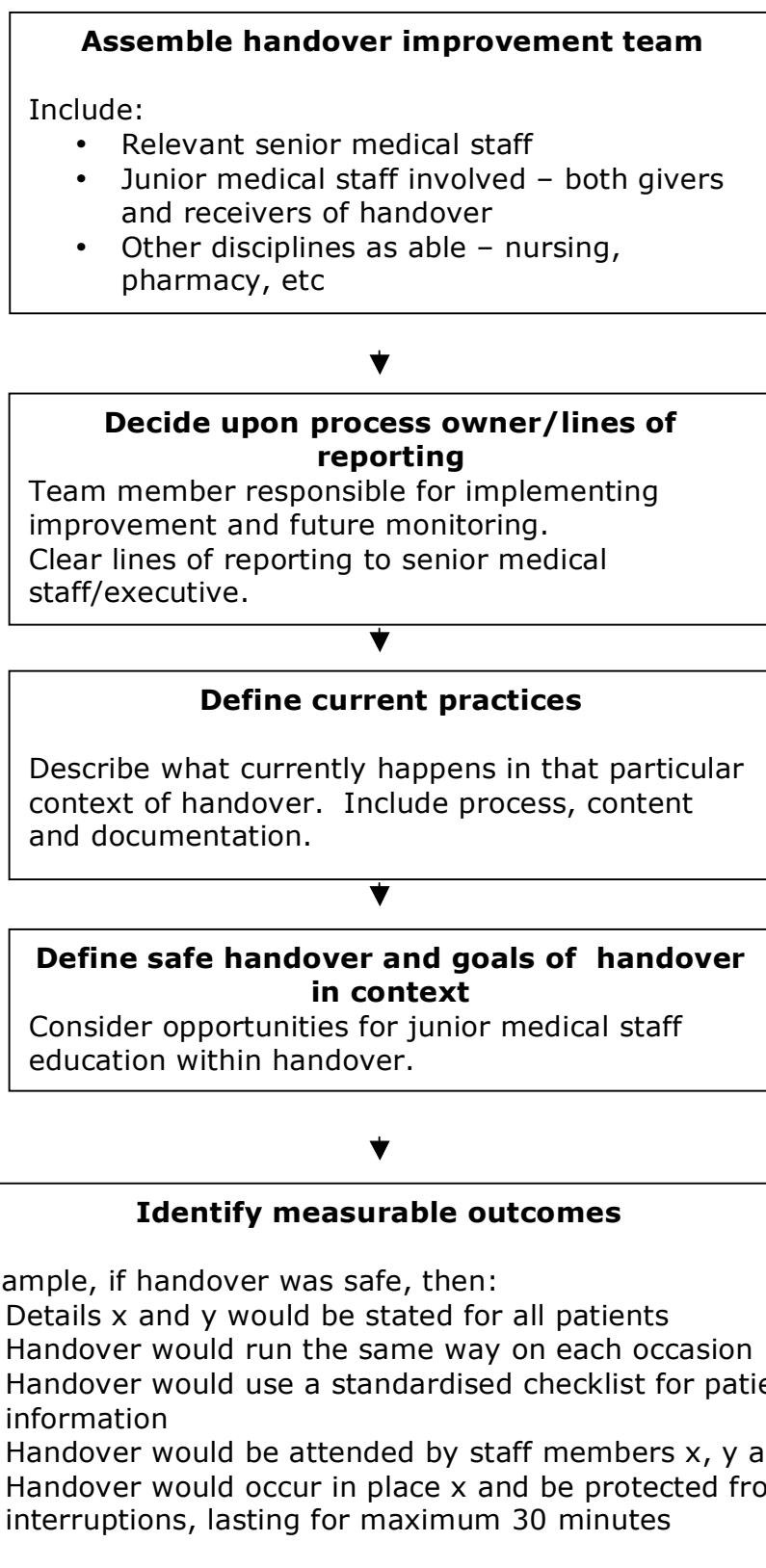
- NB if new or locum members of the team are present will need to ensure that they are aware of hospital geography and how to carry out tasks expected of them (e.g. how to request investigations, how to use paging system)

DOCUMENTATION

A record of what information was passed on at handover should be created. This is more straightforward where an electronic handover tool is in use, but a paper based filing system is also possible.

- The documentation practices need to be integrated with junior medical staff current work practices and not add to them (for sustainability).

SAFE HANDOVER – IMPROVEMENT PROCESS





Measure current practices

Audit current practices against the measurable outcomes to further understanding of current practices. Identify whether the process is working as it should, whether there are redundancies present, what complexities exist.

How does the current process differ from the ideal?



Map out how to achieve measurable outcomes, goals and safe handover in particular context

Consider:

- Where and when handover should occur
- Who should attend
- How it will run – verbal/written, order of handover etc
- General categories of what will be handed over – sick patients, outstanding tasks, admissions etc
- Minimum dataset/checklist for patients handed over (new vs review)
- How to enable use of checklist (e.g. templates, word document)
- How to document handover



Determine timing of pilot

Consider:

- need for education of both givers and recipients of handover
- external factors e.g. change in rotation, public holidays etc.



Introduce changes as pilot/trial

Include education.

Measure outcomes as pilot is run



Feedback and review

Report back to all stakeholders on the outcome of the pilot. Review process, content and documentation based upon feedback and refine as needed.



Implementation and ongoing sustainability

While adjustments are being made, continue to regularly measure outcomes, reporting back to all stakeholders (steering group and users).

Appropriate education must be built into orientation to the unit/hospital.

When new methods are stable, review on intermittent basis and report to process owner.

WARD JUNIOR MEDICAL STAFF SHIFT-TO-SHIFT HANDOVER SAMPLE TEMPLATE

Patient admission: written template

Name, Age, UR	Unit		Location
	Consultant		
	INFORMED: Y/N		
Reason for admission: (diagnosis or diagnostic/ management problem)			
Past medical history			
Brief history of presenting complaint			
Investigations & results			
Management (e.g. drugs, fluids)			
Plan for ongoing management & discharge criteria			
Outstanding tasks			
Need for review (circle)	Urgent, <30 minutes	Within 1 -2 hours	On routine ward round

NEW ADMISSION: CHECKLIST FOR VERBAL HANDOVER

- Patient details: Name, age, UR, Unit, Consultant, location
- Reason for admission
- PMHx
- HPC
- Ix & results
- Mx
- Plan & discharge criteria
- Outstanding tasks
- Urgency of review

WARD JUNIOR MEDICAL STAFF SHIFT-TO-SHIFT HANDOVER SAMPLE TEMPLATE

Patient review: written template

Name, Age, UR	Unit		Location
	Consultant		
	INFORMED: Y/N		
Reason for admission (diagnosis or diagnostic/management problem)			
Relevant other history			
Reason called to review patient			
Assessment of problem e.g. examination findings			
Management (Ix, drugs, fluids, procedures)			
Outstanding tasks (pending results?)			
Need for further review (circle)	Urgent, <30 minutes	Within 1 -2 hours	On routine ward round

REVIEWED PATIENT: CHECKLIST FOR VERBAL HANDOVER

- Patient details: Name, age, UR, Unit, Consultant, location
- Reason for admission
- Other relevant history
- Reason called to review patient
- Assessment of problem
- Management (Ix, drugs, fluids, procedures)
- Outstanding tasks
- Urgency of review

Appendix 1: References

1. Australian Council for Safety and Quality in Health Care. Clinical Handover and Patient Safety: Literature Review Report. 2005
2. Junior Doctors Committee 2004. Safe Handover: safe patients – guidance on clinical handover for clinicians and managers. London: British Medical Association
3. Victorian Quality Council. Clinical Handover: A Challenge for Patient Safety. 2006: Victorian Quality Council, Safety and Quality in Health Care.
4. Cook R, Render M, Woods D. Gaps in the continuity of care and progress on patient safety. *BMJ* 2000. 320: 791-4
5. Barach P, Moss F. Delivering safe health care. *BMJ* 2001; 323:585-586
6. Junior Doctors Committee (2003). Making IT work for hospital Juniors: Supporting Working Practices and Training within the New Contract and the EWTD. London: British Medical Association.
7. Royal College of Physicians Handover Reference <http://www.rcplondon.ac.uk/pubs/handbook/gpt/index.htm> accessed April 19, 2006
8. N. Sabir, S. M. Yentis, A. Holdcroft. A national survey of obstetric anaesthetic handovers. *Anaesthesia* 2006; 61(4): 376–380.
9. Pothier D. Monteiro P. Mooktiar M. Shaw A. Pilot study to show the loss of important data in nursing handover. *British Journal of Nursing* 2005; 14(20):1090-3.

General References

Arora V, Johnson J. A model for building a standardised hand-off protocol. *Journal on Quality and Patient Safety* 2006; 32(11): 646-655.

Cheah L-P, Amott DH, Pollard J, Watters DAK. Electronic medical handover: towards safer medical care. *MJA* 2005; 183:369-72.

Kerr MP. A qualitative study of shift handover practice and function from a socio-technical perspective. *Journal of Advanced Nursing* 2002; 37: 125-134.

McLean, K. Clinical Handover: improving junior doctor shift-to-shift handover: VTFP Phase 1 Report. 2007. Accessed May 23, 2007 from: http://www.health.vic.gov.au/travelfellowships/downloads/k_mclean_final_report.pdf.

Victorian Quality Council: Draft Generic Clinical Handover Tools. 2007.