



# MEDICATION RECONCILIATION TOOLKIT

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**Clinical Excellence Commission**

Board Chair: Associate Professor Brian McCaughan, AM  
Chief Executive Officer: Professor Clifford F Hughes, AO

Any enquiries about or comments on this publication should be directed  
Clinical Excellence Commission  
Locked Bag 8  
Haymarket NSW 1240  
Phone: (02) 9269 5500  
Email: [cec-medicationsafety@health.nsw.gov.au](mailto:cec-medicationsafety@health.nsw.gov.au)

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# GLOSSARY OF TERMS

## Best Possible Medication History (BPMH)

As accurate a list as possible of a patient's current medications taken prior to admission. The BPMH should be compiled from an interview with the patient or the patient's carer whenever possible and confirmed with at least one other source of medicines information.

## Continuity of Medication Management (CMM)

Continuity of quality use of medicines in medication management as consumers move from one episode of care to another. It is achieved when a series of medication management cycles, each of which corresponds to an episode of care, is linked so that information is transferred between cycles.

## Medication Management Plan (MMP)

An approved, standardised form used to facilitate accurate documentation and communication of information related to medicines. This form is used to record medications taken prior to admission, changes to medications during admission, medication reconciliation on admission and any medication issues and actions taken during the patient's episode of care. This information can be referred to during the patient's episode of care and used to inform the preparation of the discharge summary and prescriptions at the time of discharge. This form must be kept with the active medication charts throughout the patient's admission.

## Medication Reconciliation

A systematic process that ensures patients receive all intended medicines by making sure accurate, current and comprehensive medication information follows them at all transfers of care. It is described as the formal process of obtaining, verifying and documenting an accurate list of a patient's current medicines on admission and comparing this list to the admission, transfer and discharge orders, to identify and resolve discrepancies. At the end of each episode of care the verified information is transferred to the patient and next care provider.

## Quality System Assessment (QSA)

A clinical risk management program with a focus on learning and improvement. It helps to identify clinical risks and deficiencies in practice and highlights exemplary practice in clinical quality and patient safety. The QSA program has four components (1) completion of a self-assessment at different organisational levels (2) verification of the self-assessment through external audit (3) feedback and reporting to participating organisations, as well as the NSW health system and (4) development of improvement plans in response to the findings of the self-assessment.

# INTRODUCTION

The Medication Safety and Quality Unit of the Clinical Excellence Commission (CEC) has been established to assist local health districts (LHDs) and hospitals to improve their medicines' use systems. This is achieved by enabling them to comply with medicines-related national standards for quality and safety, and to identify and respond to existing and emerging risks to the safety and quality of medicines use.

The CMM program aims to improve the safety and quality of medicines use when patients transfer between and within healthcare settings. This toolkit has been developed to support LHDs and individual hospitals implement continuity of medication management strategies to achieve this aim.

Medication reconciliation has been chosen as the focus of this CMM program as formalised medication reconciliation processes have been recognised internationally as a strategy to improve patient safety and the continuity of medication management.

## Current Position

Unintentional changes to patients' medicines at transfers of care can result in considerable harm and have been linked to poorer health outcomes, increased hospital readmissions and mortality.<sup>1,2</sup> This problem of discontinuity affects health systems around the world. The Australian Commission on Safety and Quality in Health Care (ACSQHC) has identified this as an issue for patient safety and has included continuity of medication management and medication reconciliation in the National Safety and Quality Health Service (NSQHS) Standards.<sup>3</sup> All health services are required to meet these standards.

In NSW, the 2013 State-wide QSA found that only 56 percent of NSW LHDs had put in place a policy framework to guide the practice of medication reconciliation in their services, departments and clinical units. However, responses from services were slightly better with between 65 to 70 percent having a policy framework on admission and discharge and between 55 to 66 percent on transfer between care teams or institutions. Therefore up to 45 percent of facilities or units do not have formal medication reconciliation processes leaving their patients at risk of medication related harm.

Baseline evaluations at three pilot hospitals that had not implemented formal medication reconciliation processes (using a retrospective audit of 110 patients discharged between 21 January and 20 March 2013) found that only:

- 46 percent of patients had a clear medication history recorded within 24 hours, (i.e. medication name, dosage and frequency was clearly identified)
- 1 percent of these could be recognised as a BPMH (i.e. had evidence of a confirmation process, such as using two sources of information)
- 55 percent of patients had all their medicines taken prior to admission which were intended to continue prescribed on their medication chart, with documented reason/s for any change
- 37 percent of discharge summaries contained an accurate medication list
- 7 percent of patients were provided with an accurate medication list on discharge.

## Vision

Through the implementation of formal processes of medication reconciliation, patients will receive better care and avoid harm resulting from unintentional changes in their medicines.

## Background

Medication reconciliation is a formal process of obtaining, verifying and documenting an accurate list of a patient's current medications on admission and comparing this list to the admission, transfer, and/or discharge medication orders to identify and resolve discrepancies. At the end of the episode of care the verified information is transferred to the patient and next care provider.<sup>3</sup>

By formalising the processes of medication reconciliation, medication errors and adverse drug events can be prevented.<sup>4</sup> The types of errors prevented include inadvertent omission of current medicines, commencement of medicines that are no longer taken, duplication of the same or similar medicines, failure to restart withheld medications after surgery, transfer or discharge and errors in transcribing medicines information, for example the incorrect drug or dose being prescribed. Reductions in these errors can reduce readmissions<sup>2</sup> and length of stay.<sup>5</sup>

Although straightforward in concept the process of implementing medication reconciliation across health services is complex. It relies upon multidisciplinary team work and effective communication.

## Broad Measures of Performance

Due to the complexity of the medication reconciliation process, measuring whether medication reconciliation is occurring in a health service and whether it is achieving the desired outcomes is difficult. Having clear goals and being able to measure whether these goals have been achieved however is essential to facilitate any improvement strategy. As studies have already demonstrated that formal medication reconciliation processes reduce medication errors and adverse drug events, process measures (which are easier to collect) are recommended.

The CMM Expert Advisory Group has agreed on the following process goals and measures relating to medication reconciliation:

1. A BPMH is documented for every patient within 24 hours of admission
2. All medicines taken prior to admission which were intended to continue were prescribed on the patient's medication chart, with documented reason/s for any change
3. On discharge, the discharge summary contains an accurate medication list
4. On discharge, the discharge summary contains the reason/s for any change in medicines
5. On discharge the patient is provided with an accurate medication list.

Tools to assist health services monitor the achievement of these goals are discussed in the *Monitoring Practice* section of this toolkit.

## Guiding Principles

The CEC has developed the CMM program in line with the principles set in:

1. The National Safety and Quality Health Service Standards – ACSQHC
2. The Australian Safety and Quality Goals for Health Care – ACSQHC
3. The Guiding Principles to Achieve Continuity in Medication Management – Australian Pharmaceutical Advisory Council (APAC)

These standards, goals and principles have shaped the structured formal processes that the CEC's CMM program seeks to support within the NSW health system.

## Medication Reconciliation Toolkit

This toolkit has been developed to support LHDs and individual hospitals with their medication reconciliation efforts. As health services will vary from having no, some or good medication reconciliation processes the resources may be adapted to suit local needs i.e. for initial implementation, to review and improve current practices or support current practice. The toolkit has been divided into five sections to provide a guide for services incorporating medication reconciliation processes into everyday practice (Table 1.)

All tools are available for download from the CEC's *CMM program webpage*. Health services can choose the sections or tools of the toolkit that best meet their needs and adapt these as necessary.

A number of internationally produced kits were reviewed during the development of this kit; concepts from these kits have been incorporated and adapted to the Australian context.

Health services requiring further information can refer to the:

Society of Hospital Medicine. *MARQUIS Implementation Manual: A Guide for Medication Reconciliation Quality Improvement* (2011)

Agency for Healthcare Research and Quality. *Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation* (2012)

ISMP Canada. *Medication Reconciliation in Acute Care: Getting Started Kit* (2011)

North Carolina Center for Hospital Quality and Patient Safety. *Medication Safety Reconciliation Toolkit*, 2006

European Union Network for Patient Safety and Quality of Care – *Safe Clinical Practice and Implementation Process for Work Package 5 Tool Box: Medication Reconciliation* (2013)

We hope that this toolkit meets the needs of all services no matter where they are in the medication reconciliation implementation process. Though an attempt has been made to make it useful for metropolitan, regional and rural acute care services more specific tools may also be required. Therefore, feedback on the usefulness of the toolkit or suggestions for improvement is encouraged.

*Table 1. Summary of Toolkit Contents*

Section	Tools	Purpose
1. Establishing Governance	Committee Brief Template	To help gain executive support
	Guide to Engaging a Multidisciplinary Quality Improvement Project Team	To assist in forming a multidisciplinary quality improvement project team
	Readiness Assessment Tool	To assist in determining practical and realistic changes that can be successfully implemented
	Gap Analysis	Encourages formation of specific improvement targets and action plans to achieve those targets
	Implementation Flowchart	Provides an overview of the steps required to implement strategies
2. Improving Practice	Framework for Medication Reconciliation	Provides an overview of the medication reconciliation process, including the benefits to patients and what action is required to achieve these benefits
	Guide to Mapping your Current Medication Reconciliation Process	To assist in identifying current medication reconciliation processes
	Guide for Determining Roles, Responsibilities and Documentation Requirements	To assist in clearly defining roles, responsibilities and documentation requirements for each health care team member
	Local Operating Procedure	To assist in defining the desired process and the specific procedure that should be applied
	Frequently Asked Questions	Provides answers to commonly asked questions regarding medication reconciliation
	MMP Example	Provides an example of how to complete the MMP
	Patient Medication List Examples	Provides examples of the format of patient medication lists
3. Education	Obtaining a BPMH Presentation	Provides a standardised process for collecting and confirming a medication history
	BPMH Interview Guide	To encourage a structured approach when interviewing patients or carers
	Medication Reconciliation Presentation	Provides an overview of the medication reconciliation process and the MMP
	Medication Reconciliation: Beyond Admission Presentation	Provides an overview of the medication reconciliation process at transfers of care, other than admission
4. Monitoring Practice	Comprehensive Audit Tool	To assist services collect detailed data relating to the quality of the medication information in the patient record
	Comprehensive Audit Tool User Guide	Provides instructions on how to collect detailed data
	Audit Tool Data Spread Sheet	To assist services with the analysis of the detailed data collected
	Baseline Audit Summary Template	Provides an example of a baseline audit summary to use for presentation of detailed baseline data
	Snapshot Audit Tool	To assist services collect data to provide an indication of process improvements
	Snapshot Audit Tool User Guide	Provides instructions on how to collect data to provide an indication of process improvements
	MMP User Evaluation	To assist services to gather qualitative data on the use of the MMP
5. Sustaining and Spreading	Posters	To raise awareness of medication reconciliation and promote key messages
	Spreading Medication Reconciliation Improvements Presentation	Provides an example of how to present updates on the progress of improvement strategies to encourage spread
	Run Chart	Provides a run chart example which can be used to provide a quick visual presentation on improvement results

# 1. ESTABLISHING GOVERNANCE

Clear commitment and direction from the highest level of the organisation has been recognised as one of the key factors for successful implementation of any quality improvement strategy. Therefore the first step to implementing formal medication reconciliation processes is to secure senior leadership support. This can be done by engaging an executive sponsor directly or through a relevant committee (e.g. Drug and Therapeutic Committee or Patient Safety and Quality Committee).

Engaging an executive sponsor or the relevant committee will require providing a strong argument to mobilise action. A brief or business case for the initiative highlighting current deficiencies, evidence for change and achievable recommendations will assist. Strengthen the brief by using or linking to:

- Local incident or audit data
- Patient safety initiatives
- Standard 4: Medication Safety of the NSQHS Standards
- Preparation for electronic medication management systems
- Operational efficiencies e.g. part of multifaceted approach to reduce length of stay and readmissions.

To facilitate this process a [Committee Brief Template](#) (Appendix A) has been provided that can be adapted by the project coordinator of the quality improvement team. Information from literature regarding risks to patients or resource justification which may assist with gaining executive support has also been provided and can be found in the appendices of the [Guide to Engaging a Multidisciplinary Quality Improvement Project Team](#) (Appendix A)

Once executive support has been obtained all stakeholders need to be identified and a reporting process for the initiative established (usually through the relevant committee). Identifying stakeholders will assist with selecting the key people in the service that should form part of the multidisciplinary quality improvement project team. Depending on whether the service is implementing, or improving an established medication reconciliation process will determine whether the multidisciplinary members of the project team are selected from a small area of the hospital, that is chosen to initiate the improvement, or across the hospital. Refer to the [Guide to Engaging a Multidisciplinary Quality Improvement Project Team](#) (Appendix A) for further information.

The role of the multidisciplinary quality improvement project team includes:

- Evaluating current medication reconciliation processes
- Identifying and enlisting clinical champions
- Establishing general goals
- Developing, implementing and evaluating improvement strategies
- Disseminating results and findings.

A number of pre-implementation tools have been developed to help guide the multidisciplinary quality improvement project team.

The [Readiness Assessment Tool](#) (Appendix A) guides teams to explore their current processes in order to determine practical and realistic changes that can be successfully implemented in their services.

The [Gap Analysis](#) (Appendix A) looks specifically at each process task of medication reconciliation. It assists teams to identify where they would like to be (their target) and where they are now. Improvement strategies can then be tailored, commencing with one or two tasks or targeting the areas of greatest need.

Determining the current status for each of the specific process tasks of medication reconciliation may be challenging for some services where this data is not routinely collected. Improving data collection to increase

robustness of improvement reporting should form part of the action plan. Refer to the *Monitoring Practice* section for examples of data collection tools.

For services that are commencing implementation of formal medication reconciliation processes an [Implementation Flowchart](#) (Appendix A) has been provided as a guide.

Some teams may find that these tools provide them with sufficient information to develop strategies and design new processes. Others may need to conduct a more detailed diagnosis of the issues or barriers to specific medication reconciliation tasks. The next section of this toolkit explains how quality improvement methods can be used to achieve this.

## 2. IMPROVING PRACTICE

Whether you already have a medication reconciliation process in place or not, quality improvement methods can be used to either implement or strengthen the process of medication reconciliation. Quality improvement involves a review of current practices to identify factors contributing to the problem and the development of targeted strategies to minimise or reduce these factors to achieve desired improvements.

Prior to improving practice it is essential that the medication reconciliation process is clearly defined. A clear understanding of the process will provide a common vision for what the future process should be. It will assist in identifying gaps in current practice and with identifying solutions to close those gaps.

Medication reconciliation can be described as a formal four step process:

1. Collecting information to compile a list of each patient's current medications (each medication must be clearly identified and have clear directions i.e. name, dosage, frequency and route)
2. Confirming the accuracy of the information collected to achieve a BPMH
3. Comparing the BPMH with prescribed medicines at every transfer of care; identifying and rectifying any discrepancies
4. Supplying accurate medicines information to the patient and next care provider.

The four steps of the medication reconciliation process can prevent:

- Prescribing errors of omissions, incorrect dosage or frequency
- Failure to restart withheld medications after surgery, discharge or transfer
- Duplication of therapy after discharge.

A [Framework for Medication Reconciliation](#) (Appendix B) has been developed to guide services in incorporating formal medication reconciliation processes. It outlines how these processes will benefit patients, and what action is required to achieve these benefits.

Refer to the *Education and Training* section for educational tools to assist with communicating the definition and role of medication reconciliation in improving patient care to all members of the health care team.

A [Guide to Mapping your Current Medication Reconciliation Process](#) (Appendix B) has been developed to assist teams to identify their current medication reconciliation process. Reviewing current practice will enable teams to identify what they are currently doing well and recognise the areas for improvement. Where there are a number of gaps identified the team may need to choose which to tackle first. Further analysis of the chosen gap may be required.

For example, a BPMH may not always be documented for a patient. As there may be multiple factors contributing to this gap and each health care team member may have differing opinions as to what these issues are and how they are contributing, teams will need to follow a system of prioritisation. A number of quality improvement tools can be used to assist with identification and prioritisation. These tools include defining SMART (specific, measurable, aspirational, realistic, time based) goals, brainstorming, Ishikawa diagrams, multi-voting, weighted voting and the Pareto chart. A description of these tools can be obtained from the CEC's *Clinical Practice Improvement Training program* webpage.

Once the gaps are analysed and issues prioritised, the team should agree upon improvement strategies for each issue. The team will then need to:

- Determine the actions required to implement the strategy
- Assign a team member to lead the actions
- Agree on the timeline for actions to be completed

- Define the measures to be collected and assign responsibility for collection to a team member, to ensure the strategy is in place and is producing the desired effect (Refer to the *Monitoring Practice* section).

The overall goal of medication reconciliation is to ensure patients receive all intended medicines and that accurate, current and comprehensive medicines information follows them at all transfers of care. Though initial medication reconciliation efforts may focus on the processes occurring at admission, the strategies need to consider the link between medication processes at admission and those required at transfer and discharge (Refer to the *Medication Reconciliation: Beyond Admission Presentation* in the *Education and Training* section).

Although straightforward in concept the process of implementing medication reconciliation across health services is complex. A multidisciplinary approach that involves medical, nursing and pharmacy staff is required to achieve effective medication reconciliation across health services. The roles and responsibilities for each participant in the process need to be clearly defined. These roles and responsibilities may change depending on the dependency or vulnerability of the patient, the transfer of care being undertaken and the clinical mix of available staff. As practice differs between and within hospitals no one process design will meet the needs of all hospitals or areas within hospitals.

When redesigning current practice to incorporate medication reconciliation some consideration must be given to determining the roles and responsibilities of each member of the health care team and the documentation requirements for each step of the process. A [Guide for Determining Roles, Responsibilities and Documentation Requirements](#) (Appendix B) has been developed to assist quality improvement teams with this task. It outlines the process, provides the knowledge and skill requirements for the clinician undertaking the task and the requirements for documentation.

The following resources have been included to assist services with improving their medication reconciliation processes:

- [Local Operating Procedure](#) (Appendix B) assists services define the medication reconciliation process and the specific procedure that should be applied
- [Frequently Asked Questions](#) (Appendix B) provides answers to commonly asked questions regarding medication reconciliation which may be posed by the quality improvement team and other frontline staff
- [MMP Example](#) (Appendix B) provides an example of how to complete the MMP, and how it can be used to document essential steps of the medication reconciliation process.
- [Patient Medication List Examples](#) (Appendix B) provides two examples of patient medication lists. The first is an example that incorporates aspects that have been recognised to increase correct interpretation of directions by patients (currently not available in electronic applications). The second is an example of a patient medication summary that can be produced by pharmacists using the i.Pharmacy application.

### 3. EDUCATION

As mentioned previously, it is essential that the medication reconciliation process is clearly defined and communicated to all members of the health care team. Though each member of the team may not be responsible for each step of the process, they need to be aware of the overall goal of the process and how their actions contribute to providing excellent care.

Collecting a medication history and confirming its accuracy can be two of the most difficult steps of the medication reconciliation process, yet are crucial for providing accurate medicines information. Standardising the way clinicians collect and/or confirm the accuracy of a medication history will improve the capture of accurate medicines information.

The following tools have been provided to assist health services with standardisation of the first two steps of medication reconciliation:

- [Obtaining a BPMH Presentation](#) (Appendix C) describes a standardised process that can be used when interviewing patients. It identifies the types of medication sources that can be used to collect a medication history and confirm its accuracy. The presentation may require some adaptation or the addition of local processes to suit local training needs
- [BPMH Interview Guide](#) (Appendix C) provides a structured approach and useful tips that can be used when interviewing patients described in the above presentation.

Many clinicians may not be aware of the term ‘medication reconciliation’ or may have differing opinions to what it means. The [Medication Reconciliation Presentation](#) (Appendix C) describes continuity of medication management, how medication reconciliation improves continuity and describes the systematic process of medication reconciliation. It also explains the MMP and how it can be used to facilitate the process of medication reconciliation. This tool can be used by health services to ensure a common understanding of medication reconciliation and its goal amongst its clinicians.

Many initial medication reconciliation efforts may focus on admission processes. Though it is essential to get the admission processes right it is also important that the gains on admission are not lost due to poor processes at other transfers of care. The [Medication Reconciliation: Beyond Admission Presentation](#) (Appendix C) provides an overview of medication reconciliation during internal hospital transfers, hospital to hospital transfers and discharge.

## 4. MONITORING PRACTICE

An essential element of any quality improvement strategy is the ability to monitor and evaluate how successful or unsuccessful the strategy has been in achieving the desired outcome. Prior to commencing the improvement strategy, the quality improvement team should consider what they will measure. As the overall aim of medication reconciliation is to ensure patients receive all intended medicines during their care and that accurate, current and comprehensive medicines information follows them at all transfers of care, the chosen measures should demonstrate the achievement of this aim.

The following measures have been recommended by the CMM Expert Advisory Group:

1. A BPMH is documented for every patient within 24 hours of admission
2. All medicines taken prior to admission which were intended to continue were prescribed on the patient's medication chart, with documented reason/s for any change
3. On discharge, the discharge summary contains an accurate medication list
4. On discharge, the discharge summary contains the reason/s for any change in medicines
5. On discharge the patient is provided with an accurate medication list.

Where possible the quality improvement team should designate one or two members to collect, collate, plot and manage the data.

If planning to trial strategies in a particular area of the hospital, this area needs to be included in the initial data collection. The initial data collection will provide a baseline for data comparison and assist to identify areas requiring focused attention. Data from the initial collection can be used to engage organisational and clinician support for improvement.

There are two audit tools and associated user guides available for services to use.

The first is a [Comprehensive Audit Tool](#) (Appendix D) and [Comprehensive Audit Tool User Guide](#) (Appendix D). This audit tool requires the collection of detailed data and provides an indication of the quality of the medication information in the patient record. It separately captures information regarding regularly prescribed medications, 'prn' prescribed medications and non-prescribed medications, as well as demographic information of the patient sample to enable stratification of findings.

To assist with the analysis of the detailed data collected from the comprehensive audit an [Audit Tool Data Spread Sheet](#) is available for health services to download on the CEC's *CMM Program webpage* under the *Monitoring Practice* section. A [Baseline Audit Summary Template](#) (Appendix D) is also provided to assist in presenting detailed baseline data.

The second is a [Snapshot Audit Tool](#) (Appendix D) and [Snapshot Audit Tool User Guide](#) (Appendix D). This is an observational audit tool that collects information on whether all components of continuity of medication management are evident for each patient. It provides a quick overview of the processes which are occurring and identifies processes that are not being completed. It does not provide detail regarding the quality of the information in the patient record, nor does it provide details of whether the patient is actually receiving all medicines which were intended.

Other indicators and tools which can be used to provide an indication of whether processes of medication reconciliation are occurring can be found in the [National Quality Use of Medicines Indicators for Australian Hospitals](#) (available on the ACSQHC, NSW Therapeutic Advisory Group or CEC websites).

## 5. SUSTAINING AND SPREADING

The organisational change required to implement medication reconciliation across a health service is challenging as there are numerous organisational and individual factors that influence each health care team member's behaviour. A multifactorial approach which is flexible to the needs of the service will therefore be more effective in improving sustainability and spread. Spreading improvements and ensuring that they are sustained over time requires an investment in time, resources and commitment at all levels of the organisation, and at all stages of implementation.

As indicated earlier, elements of the implementation process that have been shown to contribute to sustainability include:

- Standardisation (work processes, roles and responsibilities, documentation)
- Training and education of all clinicians involved in medication management
- Measurement and evaluation to monitor progress.

Ensuring that each of these elements is included and done well during implementation will increase the likelihood of the change being sustained over time.

Other strategies that can be used to sustain improvements include:

- Incorporating education and training into existing training activities and ensuring processes are in place to train all new staff
- Encouraging feedback on the improvement strategies from all members of the team
- Continually reviewing processes and refining them
- Integrating changes into every day work practice.

To spread the improvement, effective communication and promotion of the initiative and its results is required. A series of [Posters](#) (Appendix E) have been developed to assist health services increase the awareness of medication reconciliation and provide a clear vision of how it can be achieved. The first four posters provide simple clear messages for health care professionals that reinforce the major steps involved in the medication reconciliation process. They can be used together as a series or introduced one at a time if using a gradual approach. The fifth poster encourages patients to be involved in the medication reconciliation process by keeping an up to date medication list.

Providing frequent updates on the development and progress of the improvement strategies at executive or committee meetings will assist in promoting the value of the initiative and support its spread. A [Spreading Medication Reconciliation Improvements Presentation](#) template (Appendix E) has been provided to assist quality improvement teams with their updates. Teams will need to insert their local relevant content and adapt the presentation to suit their reporting needs.

Run charts can provide a quick visual presentation of improvement results and can be used to provide timely feedback to those involved in the improvement strategy. A [Run Chart](#) example is available for health services to download from the CEC's *CMM program webpage* under the *Sustaining and Spreading* section.

These last two tools can be used to share learnings from the initial ward/unit with the quality improvement team in the next ward/unit, improving the rate of spread and demonstrating the value of the improvement strategy.

# OTHER RESOURCES

Other resources are available to health services that may assist with medication reconciliation efforts and supplement the tools available in this kit.

## Australian

- Australian Commission on Safety and Quality in Health Care *Medication Reconciliation*  
<http://www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/>
- Australian Commission on Safety and Quality in Health Care NSQHS Standards *Standard 4 Medication Safety*  
<http://www.safetyandquality.gov.au/publications/national-safety-and-quality-health-service-standards/>
- NPS MedicineWise Get it Right! *Taking a Best Possible Medication History Online Learning Module*  
<http://learn.nps.org.au/mod/page/view.php?id=5436>
- Health Education and Training Institute *Continuity in Medication Management Online Learning Modules*  
<http://www.heti.nsw.gov.au/hetionline/learning-paths/current-learning-tracks/continuity-in-medication-management/>
- Society of Hospital Pharmacists of Australia *Standards of Practice for Clinical Pharmacy Services: Medication Reconciliation*  
<http://jppr.shpa.org.au/scripts/cgiip.exe/WService=SHPAJP/ccms.r?PageID=10077>

## International

- Society of Hospital Medicine MARQUIS *Implementation Manual: A Guide for Medication Reconciliation Quality Improvement*  
[http://www.hospitalmedicine.org/Web/Quality\\_Innovation/Implementation\\_Toolkits/Medication\\_Reconciliation/Web/Quality\\_Innovation/Implementation\\_Toolkit/MARQUIS/Overview\\_Medication\\_Reconciliation.aspx?hkey=d00190a6-20cf-4ba2-b6a2-1cba94d002e3](http://www.hospitalmedicine.org/Web/Quality_Innovation/Implementation_Toolkits/Medication_Reconciliation/Web/Quality_Innovation/Implementation_Toolkit/MARQUIS/Overview_Medication_Reconciliation.aspx?hkey=d00190a6-20cf-4ba2-b6a2-1cba94d002e3)
- Agency for Healthcare Research and Quality *Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation*  
<http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/match/index.html>
- North Carolina Center for Hospital and Patient Safety *Medication Reconciliation Toolkit* (USA)  
<https://www.ncqualitycenter.org/share-providers/toolkits/archived-toolkits/>
- Institute for Safe Medication Practices Canada *Medication Reconciliation*  
<http://www.ismp-canada.org/medrec/>
- Canadian Patient Safety Institute *Safer Healthcare Now! Medication Reconciliation*  
<http://www.saferhealthcarenow.ca/EN/Interventions/medrec/Pages/default.aspx>
- World Health Organization *High 5s Medication Reconciliation Project*  
<https://www.high5s.org/Main/WebHome>

- European Union Network for Patient Safety and Quality of Care *Medication Reconciliation*  
<http://www.pasq.eu/Wiki/SCP/WorkPackage5ToolBoxes/MedicationReconciliation.aspx>
- Royal Pharmaceutical Society *Getting the Medicines Right*  
<http://www.rpharms.com/previous-projects/getting-the-medicines-right.asp?>

## Patient

Patients are an integral part of the health care team and should be engaged in understanding their role in the medication reconciliation process. Encouraging patients to increase their understanding of the medicines they are taking (i.e. able to identify what they are, why they take them and how they take them) and to keep a list of their current medications will contribute to improving the capture of an accurate medication history when they present to a health service. NPS MedicineWise have a number of resources designed for patients to assist in continuity of medicines.

- NPS MedicineWise  
<http://www.nps.org.au/topics/how-to-be-medicinewise/managing-your-medicines>

## REFERENCES

1. Cornish PL, Knowles SR et. al. (2005). Unintentional medication discrepancies at the time of hospital admission. *Arch Intern Med* 165: 424-429.
2. Gillespie, U., A. Alissaad, et al. (2009). A comprehensive pharmacist intervention to reduce morbidity in patients 80 years or older: A randomized controlled trial. *Archives of Internal Medicine* 169(9): 894-900.
3. Australian Commission on Safety and Quality in Health Care (2012). Safety and quality improvement guide standard 4: medication safety. Sydney, ACSQHC.
4. Mueller SK, Sponsler KC et al. (2012). Hospital-based medication reconciliation practices: a systematic review. *Arch Intern Med* 172(14): 1057-1069.
5. Australian Commission on Safety and Quality in Health Care (2013). Literature review: medication safety in Australia. Sydney, ACSQHC.

# APPENDICES

## APPENDIX A

This appendix contains the following tools which may assist with establishing governance:

- Committee Brief Template
- Guide to Engaging a Multidisciplinary Quality Improvement Project Team
- Readiness Assessment Tool
- Gap Analysis
- Implementation Flowchart

# COMMITTEE BRIEF TEMPLATE

## Purpose

To highlight patient safety risks associated with discontinuity of medication management and to recommend that the committee takes a lead role in governance of improvement activities to address these risks.

## Background

- Unintentional changes to patients' medicines at transfers of care can result in considerable harm and have been linked to poorer health outcomes, increased hospital readmissions and mortality.
- Discontinuity of medication management affects health systems around the world, and addressing this issue is a World Health Organisation patient safety priority.
- The Australian Commission on Safety and Quality in Health Care, National Safety and Quality Health Service Standards requires all health services to introduce medication reconciliation processes to improve patient care and minimise harm.
- Implementation of medication reconciliation processes across a health service can be complex; a key element of successful international implementation programs is the use of quality improvement methodology.

## Issues

(Select issues below relevant to your health service and where possible insert local data from incident reports or audits to support the case for change)

- Currently the service does not have in place policies, procedures and/or protocols on reconciling medicines.
- There is no consistency on the way medication histories are obtained or documented in the medical record. Often histories are taken by multiple clinicians, documented in various areas of the medical record and often not corresponding.
- A recent audit showed that only (insert percentage of patients) had a clear medication history documented that had been verified for accuracy in some way i.e. at least two sources of medicines information where used.
- Incident reports demonstrate that patients are experiencing harm from unintentionally changing or not recommencing important preadmission medicines e.g. (insert examples)
- An audit of discharge summaries found that only (insert percentage of discharge summaries) had an accurate medication list, and only (insert percentage of discharge summaries) included the reason/s for any change that occurred.
- Medicines information was interspersed throughout the medical record making it difficult and time consuming to determine the plan for medication management on discharge.

## Recommendations

That this committee notes the patient safety risks highlighted and contributes to the improvement activities by:

(list actions required of this committee, see list below for examples)

- Identifying stakeholders
- Establishing reporting and approval processes
- Identifying areas (wards/units) of the health service to initiate the improvement process
- Supporting the formation of a multidisciplinary quality improvement project team to:
  - Evaluate current medication reconciliation processes
  - Identify and enlist clinical champions
  - Establish general goals
  - Develop, implement and evaluate improvement strategies
  - Disseminate results and findings.
- Assist with overcoming barriers to implementation

Contact: (insert name of person co-ordinating the improvement activities)

Phone:

Date:

# GUIDE TO ENGAGING A MULTIDISCIPLINARY QUALITY IMPROVEMENT PROJECT TEAM

## MEDICATION RECONCILIATION TOOLKIT

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# INTRODUCTION

*“A new model of teamwork will be required to replace the old individual and independent ‘silos’ of professional care.”<sup>1</sup>*

Commissioner Garling saw the need for multidisciplinary teams to work together to provide good patient care. This vision of a multidisciplinary team is especially important when we start thinking about medication reconciliation, since so many different clinicians are involved in this part of patient care and are often not working together or communicating effectively.

Implementation of processes to improve medication reconciliation can be complex and requires careful planning. Involving the efforts of a multidisciplinary quality improvement project team will help promote the concept of teamwork and make sure that implementation is successful. It will also drive the concept of multidisciplinary care teams made up of the frontline clinicians who carry out patient care daily.

Ensuring the continuity of medication management is the responsibility of all clinicians. It is important that responsibility for each task is clearly allocated within the multidisciplinary team in order to reduce duplication of effort and to ensure that no steps in the process are missed.

Research has shown that an ‘inter-professional team approach’ is best for implementing processes to achieve continuity in medication management.<sup>2</sup>

In order to promote the proposed changes and encourage multidisciplinary care teams to participate in these changes, it is important that a multidisciplinary quality improvement project team is first engaged. This team will be critical in engaging frontline clinicians and driving the changes required.

This Guide has been developed to help form a multidisciplinary quality improvement project team. Specific steps in forming the team include:

- Identifying a project coordinator
- Engaging organisational support
- Engaging multidisciplinary members of the team
- Organisation of team meetings and project goals.

# THE PROJECT COORDINATOR

## Rationale

For every successful project, there needs to be a strong leader to both coordinate and manage the project team, and guide the quality improvement process. It is therefore paramount that the most appropriate project coordinator is selected to lead the necessary practice changes in each service.

## Role of Project Coordinator

The project coordinator has a number of roles within the project team. These include:

- Leading and coordinating project team members
- Managing the project team, project schedules and task allocation
- Driving the quality improvement strategy
- Liaising with the Clinical Excellence Commission and improvement teams in other sites.

# ENGAGING ORGANISATIONAL SUPPORT

## Rationale

Obtaining support from organisational leaders is important, as it enhances the likelihood of project success. The executive sponsor and the clinical champion are the two team members who are most important in gaining the support needed from others within the organisation.

## The Executive Sponsor

### *Qualities*

An executive sponsor could be in the form of a:

- General Manager
- Director of Medical Services
- Director of Clinical Governance

This sponsor should have the influence to impact on the success of the project, be in a position to allocate resources where necessary, authorise guidelines to shape standardised processes, and empower frontline clinicians.

### *Role*

The role of the executive sponsor is to:

1. Engage other hospital leaders
2. Place priority on the project service-wide
3. Remove implementation obstacles
4. Mobilise resources (where possible)

The executive sponsor should receive regular updates regarding project progression, attend some team meetings, and be an advocate of the project to other hospital leaders.

## The Clinical Champion

### *Qualities*

A Clinical Champion is a well-respected senior clinician within the service. This clinician often leads initiatives within a hospital and/or is person who provides opinion or direction to others. A specific interest in medicine use, medication safety or continuity of care is important.

### *Role*

The engagement of a Clinical Champion will assist in engaging frontline clinicians and informing them of the project and the need for change.

The Clinical Champion should be more involved than the executive sponsor, by attending most team meetings and acting as an advocate of the project to both hospital leaders and frontline clinicians.

There may be more than one clinical champion that is identified and engaged, such as clinicians from various clinical specialities, for example an ED physician, Geriatrician, Surgeon etc. OR from clinical groups, for example a Senior Medical Officer and a Nurse Unit Manager.

## How to Engage

In order to engage an executive sponsor and clinical champion(s), meetings should be set up to discuss the proposed project and the current state of practice.

Facts should be discussed regarding the current deficits and risks to patients, which can either be attained from literature (see Appendix 1), or local data obtained from studies and audits.

Some aspects for discussion that may be relevant to such members may include:

- Adverse drug events (ADE) in the service - particularly mention cases that involved a lack of continuity of medication management. This can be gained by reviewing local Incident Information Management System (IIMS) data, or by conducting an audit locally.
- Potential cost benefits to service associated with ADE reduction (see Appendix 2)
- Reduction in length of stay and associated costs
- Reduction in re-admission rates and associated costs
- Other organisational benefits, such as reduction of duplication of effort, improved patient care etc.

# ENGAGING THE PROJECT TEAM

## Rationale

As mentioned, the formation of a multidisciplinary project team is essential to implementation success and project uptake. Engaging such a team will drive change within the service and encourage the uptake of the proposed processes by frontline clinicians.

Forming a team with clinicians from different backgrounds and experiences broadens the perspective of the team, and allows them to view problems from different angles and identify workable solutions.

## The Members

A number of members are proposed to form a robust multidisciplinary quality improvement project team, with a number of up to 7 members. Please note this list is only a guide; not each of these need to be represented at each service, an (\*) marks members that are strongly recommended.

### Suggested Project Team Members (identify up to 7 members)

Project Leads
Project Coordinator*
Executive (Project) Sponsor*
Clinical Champion (respected senior clinician)*
Medical Clinical Group
Junior Medical Officer (JMO) Representative* ( <i>unless holds role of Project Coordinator</i> )
Emergency Department Physician (staff specialist / trainee / registrar)
Geriatrician (staff specialist / trainee / registrar)
Other: Surgeon, Intensivist, Physician, Paediatrician (staff specialist / trainee / registrar)
Nursing Clinical Group
Nurse Representative* ( <i>unless holds role of Project Coordinator</i> )
Nurse Unit Manager Representative
Clinical Nurse Consultant (CNC) Representative
Clinical Nurse Educator (CNE) Representative
Emergency Department Nurse
Aged Care Unit Nurse
Pharmacy Clinical Group
Pharmacist Representative* ( <i>unless holds role of Project Coordinator</i> )
Emergency Department Pharmacist
Aged Care Unit Pharmacist
Discharge Liaison Pharmacist
Other
Discharge Planner
Quality and Safety Manager
Ward Clerk
Patient Safety Representative

The majority of these members are frontline clinicians. The importance of their input and support is paramount for the following reasons:

- Provide feedback on the practicality of the proposed changes
- Provide knowledge regarding current practices
- Minimise workflow disruptions
- Act as advocates/promote uptake of changes service-wide
- Facilitate change among their peers

Additional clinicians can be consulted by the project team to offer expert advice and valuable input.

## Responsibilities of the Project Team

The Project Team is responsible for a number of different duties and tasks. Some of these may include:

1. Planning and scoping  
This entails determining the scope of the project i.e. whether implementation will be aimed service-wide or only at specific patients and/or units. A detailed plan needs to be developed to suit each service, addressing the best approach to implementation and taking into account available resources and staff. If service-wide implementation is not decided upon, a time-frame of achieving this should be set.
2. Collecting Baseline Data  
Initial baseline data should be collected to determine the current practices and processes within a service.
3. Engagement, Communication, and Education  
A plan determining how frontline clinicians will be engaged and educated regarding the proposed changes needs to be completed. Who is responsible for this communication, and how best to carry it out needs to be determined.
4. Data Collection  
The members responsible for collection of data need to be determined.
5. Review and Evaluation  
The team should collectively review results and assess what improvements have been made, what further work needs to be undertaken, and what strategies have or have not worked well. The communication of results should be wide-spread throughout the service.
6. Formalisation of Processes  
Determine who is responsible for formalising the proposed processes within the service in order to make them sustainable.

## *The Care Team*

The care team is defined as the team of frontline clinicians who undertake daily care of the patient. These clinicians work on units/wards and share responsibility for patient care on a daily basis. The project team have the role of engaging these clinicians to uptake the proposed process changes into standard practice. They should also encourage a multidisciplinary approach to the uptake of processes.

This may indeed be the most difficult role of the project team. The project team must together determine how best to encourage these frontline clinicians to integrate the changes into their standard practice. This task also calls for members of the project team to act as project advocates, encouraging their peers of the benefits of the changes proposed. This highlights the importance of project team members to be clinicians of influence and ones highly regarded by their peers.

## **How to Engage**

Two different approaches may be taken to engage the formation of the project team, or both methods used in unison:

1. Approach identified clinicians who have a keen interest in continuity of medication management, previous quality improvement experience and/or may drive change due to their influence and good reputation
2. Send out a service-wide expression of interest requesting nomination and/or participation on the project team by interested clinicians

The team members chosen should be committed, enthusiastic and able to implement and drive change amongst their peers.

# TEAM RULES AND GUIDELINES

## Rationale

It is vital to set rules and guidelines early on so that the team can work collaboratively and effectively to achieve the desired quality improvement outcomes. It is also necessary so that all members are respected and are able to contribute to the project.

## Team Meetings

Ground rules should be established for team meetings to guide effective collaboration and create an environment where team members feel free to present their point of view.

Some examples of rules may include:

- Meetings to start and finish on time
- Members to attend meetings regularly
- Each team member can speak freely and in turn
- Each member must be heard – no one person should dominate
- Issues can be discussed and analysed, not team members

Additional rules should be added as deemed appropriate. These rules should be set by the project coordinator and proposed to all members.

## Set Project Goals

A number of resources have been developed to assist project teams in assessing the current state of medication reconciliation processes and where they hope to be.

Project goals should be clearly defined and set by the project team, with short-term and long-term goals established.

These goals should be 'SMART'

- Specific
- Measurable
- Aspirational
- Realistic
- Timely

The scope of project implementation should also be discussed and established, that is, will the focus be on implementation for high-risk patients only, specific wards/units or at certain points of care i.e. admission only (phased implementation), or will service-wide implementation take place? If a narrow scope of implementation or phased implementation is chosen initially, service-wide implementation should be set as a long-term goal within a dedicated time schedule.

## Data Reports and Analysis

The collection and analysis of data should be carried out by dedicated team members as determined during initial team meetings.

There are a number of audit tools available from the CEC that can assist with data analysis and aid in data reporting and benchmarking comparisons.

Data reports should be discussed by the project team to determine the stage of implementation and what work needs further development. It is also beneficial to periodically report to the service on any developments that have been made and the current areas of success and deficit. Who should communicate and how this is best communicated should be established by the project team

# APPENDICES

## Appendix 1 - Literature Facts and Figures

"In up to two thirds of patients there are variances between the medicines they take prior to admission and the medication ordered at the point of admission"<sup>1</sup>

"10-67% of medication histories contain at least once error"<sup>1</sup>

"Incomplete medication histories at the time of admission have been cited as the cause of at least 27% of prescribing errors"<sup>2</sup>

"The most common error is the omission of a regularly used medicine"<sup>3</sup>

"Around half of the medication errors that happen in hospital occur on admission or discharge"<sup>4</sup>

"30% of these errors have the potential to cause harm"<sup>3,5</sup>

"At least one in six patients have had one or more clinically significant medication differences on transfer, for example on transfer from intensive care to a general ward"<sup>6-8</sup>

"15% of medications intended for continuation were omitted on discharge prescriptions"<sup>9</sup>

"12% of patients had one or more errors in their medication prescriptions"<sup>10</sup>

"Patients with one or more medications omitted from their discharge summary have 2.31 times the usual risk of readmission"<sup>11</sup>

"At discharge, patients often did not know what medications were prescribed, when their follow-up appointments should take place and, in some cases, why they were hospitalised in the first place"<sup>12</sup>

"Patients who have a clear understanding of their post-discharge care plan, including how to take their medicines, were 30% less likely to be readmitted or present to an emergency department than patients who lacked this information"<sup>13</sup>

"Patients prescribed medications for chronic diseases were at risk for potentially unintentional discontinuation after hospital admission. Admission to the ICU was generally associated with an even higher risk of medication discontinuation."<sup>14</sup>

## References

1. Tam V, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. (2005). Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *CMAJ* 173:510-5.
2. Dobrzanski S, Hammond I, Khan G, Holdsworth H. (2002). The nature of hospital prescribing errors. *Br J Clin Govern* 7:187-93.
3. Cornish PL, Knowles SR, Marchesano R, Tam V, Shadowitz S, Juurlink DN, Etchells EE. (2005). Unintended medication discrepancies at the time of hospital admission. *Arch Intern Med* 165:424-9.
4. Sullivan C, Gleason KM, Rooney D, Groszek JM, Barnard C. (2005). Medication reconciliation in the acute care setting: opportunity and challenge for nursing. *J Nurs Care Qual* 20:95-8.
5. Vira T, Colquhoun M, Etchells EE. (2006). Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 15:122-6.
6. Pronovost P, Weast B, Schwarz M, Wysiel RM, Prow D, Milanovich SN, et al. (2003). Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care* 18:201-5.
7. Lee JY, Leblanc K, Fernandes OA, Huh JH, Wong GG, Hamandi B, et al. (2010). Medication reconciliation during hospital transfer and impact of computerised prescriber order entry. *Ann Pharmacother* 44:1887-95.
8. Santell JP. (2006). Reconciliation failures lead to medication errors. *Jt Comm J Qual Patient Saf* 32:225-9.
9. Coombes ID, Storie WJ, Radford JM, Pillans PI. (2001). Quality of medication ordering at a large teaching hospital. *Aust J Hosp Pharm* 31:102-6.
10. Duguid M, Gibson M, O'Doherty R. (2002). Review of discharge prescriptions by pharmacists integral to continuity of care [letter]. *J Pharm Pract Res* 32:94-5.
11. Stowasser D, Collins D, Stowasser M. (2002). A randomised controlled trial of medication liaison services - patient outcomes. *J Pharm Pract Res* 32:133-40.
12. Reengineering hospital discharge process could improve care. Agency for Healthcare Research and Quality. AHRQ Patient Safety E-Newsletter. 2007 Aug 6;(34). Available at: <http://archive.ahrq.gov/news/ptsnews/ptsnews34.htm#2>
13. Jack B et al. (2009). A Reengineered Hospital Discharge Program to Decrease Rehospitalization, A Randomized Trial. *Annals of Internal Medicine* Vol. 150 No. 3.
14. Bell CM, Brener SS, Gunraj N, Huo C, Bierman AS, Scales DC, Bajcar J, Zwarenstein M, Urbach DR. (2011). Association of ICU or hospital admission with unintentional discontinuation of medications for chronic diseases. *JAMA* 306;8: 840-47.

## Appendix 2 - Time and Cost Benefits

### *Time Savings*

Rozich JD et al. Medication Safety: one organisations approach to the challenge. J Clin Outcomes Manag 2001; 8(10):27-34.

Implementing a systemic approach to reconciling medications found to decrease:

- Nursing time at transfer by 20 minutes per patient
- Pharmacist time at hospital discharge by more than 40 minutes per patient.

To calculate approx. time benefit:

- Nursing time: (20 minutes) x (approx. number of transfers per day)
- Pharmacist time: (40 minutes) x (approx. number of discharges per day).

This time saving benefit can be resources to other areas of need, used to improve patient care and/or reduce the time constraints currently experienced by many hospital clinicians.

### *Cost Savings to Health Care System*

Karapinar-Carkit F et al. Effect of medication reconciliation on medication costs after hospital discharge in relation to hospital pharmacy labor costs. Ann Pharmacother. 2012 Mar;46(3):329-38.

- Correcting hospital formulary changes saved €1.63 per patient in medication costs at 1 month after discharge and €9.79 at 6 months
- Optimising pharmacotherapy saved €20.13 per patient in medication costs at 1 month and €86.86 at 6 months
- The associated labour costs for performing medication reconciliation were €41.04 per patient
- Medication cost savings from correcting hospital formulary-induced changes and optimising of pharmacotherapy (€96.65 per patient) outweighed the labour costs at 6 months extrapolation by €55.62 per patient.

## *Cost Savings to Service*

Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Chapter 1:  
Build the Project Foundation: Gaining Leadership Support Within the Organization.

Financial model developed by Steven B. Meisel, PharmD, Director of Medication Safety at Fairview Health Services in Minneapolis, Minnesota.

Number of discrepancies per patient

- x Number of patients per year that one person can reconcile
- x Percent of patients with discrepancies that would result in an adverse drug event
- x Percent effectiveness of process
- x Cost of an average adverse drug event
  - = Annual gross cost savings
    - Salary of employee
  - = Annual net savings

Example:

1.5 (discrepancies per patient admitted)

- x 6000 patients (average of 20 minutes per patient to complete medication reconciliation)
- x 0.01 (1% of admissions experience discrepancies that would result in an adverse drug event)
- x 0.85 (85% of discrepancies avoided through medication reconciliation process)
- x \$2500 (conservative cost of an adverse drug event)
  - = \$191 250 annual gross savings
    - \$45 000 (salary and benefits)
  - = \$146 250 annual net savings

## REFERENCES

1. Garling P (2008). Final Report of the Special Commission of Inquiry Acute Care Services in NSW Public Hospitals.
2. Greenwald J et al. (2010). Making inpatient medication reconciliation patient centered, clinically relevant and implementable: a consensus statement on key principles and necessary first steps. Journal of Hospital Medicine Vol 5 No.8.
3. Fernandes O, Shojania K. (2012). Medication reconciliation on the hospital: what, why, where, when, who and how? Healthcare Quarterly Vol 15.



# READINESS ASSESSMENT TOOL

MEDICATION RECONCILIATION TOOLKIT

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# INTRODUCTION

Implementation of processes associated with medication reconciliation are complex, requiring both careful planning and thorough multidisciplinary collaboration.

The Readiness Assessment Tool guides project teams to explore their current processes in order to determine practical and realistic changes that can be successfully implemented in their service.

Each service will have a unique approach to implementation of the proposed strategies – there is no right or wrong way. Each section of this tool encourages exploration of a fundamental element associated with implementation success. Project teams are encouraged to review these elements, and collectively and systematically plan their approach.

For each of the questions posed the most appropriate answer that reflects the services current situation should be selected. The following recommendations apply to each of the possible responses:

- If a ‘no’ response is chosen direct action is required
- If a ‘somewhat’ response is chosen further action is required.
- If a ‘yes’ response is chosen no further action is required.

A list of suggested strategies divided into corresponding sections has been provided in the Appendix. Project teams are encouraged to select or develop local strategies to address any identified weaknesses.

Leadership			
	Yes	Somewhat	No
Senior management is supportive and involved in the implementation of medication reconciliation processes?			
There is an executive sponsor for the implementation of medication reconciliation processes			
A clinical champion has been identified and involved in the implementation of medication reconciliation processes?			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			

Formalising Medication Reconciliation			
	Yes	Somewhat	No
There is a common definition and understanding of the steps required to perform medication reconciliation by clinicians in the service?			
d) Medical officers			
e) Nursing staff			
f) Pharmacists			
Roles and responsibilities are clearly defined for clinicians involved in the medication reconciliation process?			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			
When roles and responsibilities are clearly defined, staff are involved in the medication reconciliation process?			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			
At what transfers of care does medication reconciliation occur?			
a) Admission			
b) Transfer			
c) Discharge			
d) Admission and discharge			
e) All transfers (admission, transfer and discharge)			

## Reflective Questions

- (i) How can awareness and understanding of medication reconciliation be improved?
- (ii) Who is responsible for outlining the roles and responsibilities?
- (iii) What barriers exist to adopting the necessary roles and responsibilities in the organisation?
- (iv) How can a multidisciplinary approach be promoted within the organisation?
- (v) How to spread medication reconciliation to all transfers of care?

Collect and Confirm a Best Possible Medication History (BPMH)			
	Yes	Somewhat	No
Clinicians are trained to take a BPMH?			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			
Patients and/or carers are routinely interviewed when collecting a medication history			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			
Medication histories are constructed from multiple information sources to confirm accuracy of the information sourced			
a) Medical officers			
b) Nursing staff			
c) Pharmacists			
Patients BPMH's are adequately documented to ensure accessibility by all clinicians involved in patient care?			

## Reflective Questions

- (i) How can patient and/or carer interviews be better promoted in the organisation when collecting a patient's medication history?
- (ii) How can communication with community health care providers be better promoted in the organisation when collecting a patient's medication history?
- (iii) What training opportunities need to be explored?
 

JMO Orientation	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
JMO Tutorials	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Nursing Orientation	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Ward Meetings	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Grand Rounds	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Division Meetings	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Team Meetings	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
Pharmacy Meetings	<input type="checkbox"/>	for	BPMH	<input type="checkbox"/>
- (i) Where are BPMH histories documented?
 

Dedicated MMP	<input type="checkbox"/>
Patient's progress notes	<input type="checkbox"/>
Front of NIMC	<input type="checkbox"/>

Other: \_\_\_\_\_

Comparing the BPMH with Prescribed Medicines			
	Yes	Somewhat	No
Clinicians are trained to reconcile medications at all transfers of care (admission, transfer and discharge)?			
d) Medical officers			
e) Nursing staff			
f) Pharmacists			
Clinicians compare the BPMH with medications prescribed at admission to identify discrepancies?			
d) Medical officers			
e) Nursing staff			
f) Pharmacists			
Clinicians compare the BPMH, pre-transfer medications and transfer medications to identify and rectify discrepancies at all transfers of care?			
d) Medical officers			
e) Nursing staff			
f) Pharmacists			

## Reflective Questions

- (ii) What training opportunities need to be explored to adequately train clinicians to reconcile medications at all transfers of care?
- JMO Orientation
- JMO Tutorials
- Nursing Orientation
- Ward Meetings
- Grand Rounds
- Division Meetings
- Team Meetings
- Pharmacy Meetings
- (iii) How can the process of medication reconciliation be formalised at admission?
- (iv) How can the process of medication reconciliation be formalised at all transfers of care?

Supplying Accurate Medicines Information			
	Yes	Somewhat	No
Medical officers are trained to adequately complete discharge summaries (including providing an accurate and current medication list, with the reason/s for any change)			
Discharge medication lists are documented in a standardised form that allows clear communication to community health care providers			
Medications lists are provided to patients at the point of discharge			

## Reflective Questions

- (i) What form of medication lists are provided to patients?
- Medication cards
- Medication profiles
- Computerised lists
- Discharge summary copy

Other: \_\_\_\_\_

# APPENDIX

## List of Strategies

Consider the questions with a 'no' or 'somewhat' response and tick an applicable improvement strategy from the list below:

Leadership	
	Engage managerial / executive support
	Engage clinical champion/s
	Obtain commitment from executive to remove barriers, help with resources and provide accountability
Formalising Medication Reconciliation	
	Have a definition for medication reconciliation
	Increase the awareness of the medication reconciliation steps amongst clinicians
	Clarify roles and responsibilities of all staff
Collecting and Confirming a BPMH	
	Train clinicians in taking medication histories
	Improve the confirmation of medication histories
	Clarify roles and responsibilities of all staff
	Document the BPMH in an area that is accessible to all clinicians involved in patient care
Comparing the BPMH with Prescribed Medicines	
	Train clinicians in reconciling medications at transfers of care
Supplying Accurate Medicines Information	
	Training in providing accurate and current medication lists with reason/s for any change in discharge summaries
	Use a standard form or format to document discharge medication lists in discharge summaries
	Introduce a tool to produce a medication list at discharge for the patient which meets health literacy guidelines
	Increase the number of patients receiving a medication list at discharge



## GAP ANALYSIS

MEDICATION RECONCILIATION TOOLKIT

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# INTRODUCTION

Reflect on the following scenario:

A customer puts in an online order for some groceries to be home delivered:

2 red apples	
2 bananas	
1 bottle of milk	
1 loaf of bread	
Half a dozen donuts	
1 box of Fab washing powder	

The staff member packing the order decides to make some changes (with good intentions):

4 red apples (they were at a good price)	
2 pears (the bananas were a little over-ripe)	
1 bottle of milk	
No bread (forgot to add that into the bag)	
6 low-fat snack bars (much healthier than those donuts!)	
1 box of Cold Power washing powder (ran out of Fab)	
1 tin of dog food (accidental addition – the customer doesn't even have a dog)	

The packing order reads the following:

<b>4 x red apples</b>	<b>\$2.00</b>
<b>2 x pears</b>	<b>\$2.50</b>
<b>1 x bottle of milk</b>	<b>\$2.95</b>
<b>6 x snack bars</b>	<b>\$3.50</b>
<b>1 x Cold Power (Fab out of stock)</b>	<b>\$7.00</b>

How would this customer feel when they unpacked their order?

A little confused and very upset perhaps. Some changes have been explained, but most have not.

Now imagine how patients feel when they move across health care settings, for example from home to hospital, then back again. Multiple medication changes may have occurred during their stay in hospital resulting in their medications on discharge differing to those they were taking prior to admission. Some of these changes may have been explained, others not, the majority of changes are a result of decisions made for better patient care, but errors do occur. These errors, unlike in the scenario above, may cause the patient harm. Miscommunication or incomplete information may contribute to the risk of something going wrong.

Medication reconciliation is exceedingly more complex than preparing a grocery order. It requires communication and collaboration between multiple clinicians, during multiple stages of medication management. Medication reconciliation relies on the formalisation of processes to ensure that patients receive all intended medicines during their care and that accurate and current medicines information follows them on transfer and discharge, regardless of which care setting they are in and who is overseeing that care.

These formal processes include:

- Collecting information to compile a list of each patient's current medications
- Confirming the accuracy of the information collected to achieve a Best Possible Medication History (BPMH)
- Comparing the BPMH with prescribed medicines at every transfer of care; identifying and rectifying any discrepancies
- Supplying accurate medicines information to the patient and next care provider.

Though these processes occur the consistency in which they occur for patients can vary between and within services.

The Gap Analysis has been developed to encourage services to review their current medication reconciliation processes and identify areas for improvement. It encourages the formation of an action plan to bridge the gap between where services would like to be (their target) and where they are now. As medicines are managed by clinicians from differing disciplines, the Gap Analysis is best completed by a multidisciplinary team.

To assist with identification of improvement strategies the Gap Analysis been divided into specific process tasks enabling services to tailor their action plans, commencing with one or two tasks or targeting the areas of greatest need. Determining the current status for each of the specific process tasks may be challenging for some services where this data is not routinely collected. At these services an approximation of current status relying on an agreed educated guess may be used as a starting point. Improving data collection to increase robustness of improvement reporting should form part of the action plan. The audit tools developed by the CEC may assist in collecting some of the required data.

# THE BEST POSSIBLE MEDICATION HISTORY (BPMH)

## Rationale

Putting together a BPMH is very important for continuity of care.

Knowing what medicines a patient is regularly taking is important in planning their care. Decisions can be made about whether medicines need to be;

- Continued: because they are important for the long-term (or even short term) health of the patient (e.g. medicines to treat diabetes)
- Changed: because they are causing side-effects, or aren't working well enough (e.g. blood pressure medicines that are causing low blood pressure, or aren't reducing blood pressure enough)
- Withheld: because they are needed in the long term, but may cause problems in the short term (e.g. antiplatelet or anticoagulant medicines that might cause bleeding during surgery)
- Stopped: because they are causing side effects that are unacceptable.

Without a BPMH, decisions about treatment are not as good as they could be, and patients can suffer short term and long term harm.

Taking a BPMH is a process that involves:

- (i) Collecting information about the medicines that a patient usually takes. This is usually done by interviewing the patient and/or their carer; and
- (ii) Confirming the information that has been collected by gathering information from other sources (e.g. looking at the patient's own medicines, talking with their community pharmacy or GP, finding information from previous admissions to hospital).

This process is important since we know from studies that in up to two thirds of patients there are differences between the medicines they take prior to admission and the medication ordered at the point of admission<sup>4</sup> and that around 30% of these differences have the potential to cause harm.<sup>3,4</sup>

In practice, the first medication history taken may not be the BPMH due to a variety of factors. The patient may not be able to provide complete information, the carer may not be available, and other information sources may be inaccessible. In these cases processes must be in place to ensure a BPMH is completed as soon as possible, ideally within 24 hours of admission. The patient may require frequent monitoring until the BPMH is completed and the patient's regular medications ordered.

## Gap Analysis

Target	Current Status	Action Plan
A BPMH is taken for ____% of patients		
____% of clinicians receive training on how to take a BPMH		
Other:		

## Comments

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Other considerations may include:

- Where the BPMH is documented?
- Whether a multidisciplinary approach is required

# MEDICATION RECONCILIATION

## Rationale

Medication reconciliation is the process of comparing the medications that are prescribed on a patient's inpatient chart to their BPMH, to make sure that no accidental errors have been made, for example an:

- Omission, such as accidentally leaving out a medication that controls seizures
- Error, such as prescribing sotalol instead of sorbitol
- Addition, such as adding patient A's medications to patient B's inpatient chart
- Change, such as prescribing irbesartan 300mg instead of 150mg.

Any differences that are intentional, as a result of a decision by the treating doctor should be clearly documented, with an explanation as to why the difference exists e.g. atenolol stopped due to low blood pressure. This documentation reduces confusion, may prevent extra work and may reduce potential medication errors. All plans for medicines, including continuation, should be documented.

Any differences that are accidental should be corrected immediately so that no harm occurs to the patient. Medication reconciliation should happen at several times during a patient's hospital stay. This is particularly important during admission to hospital as described above, but also during:

- Transfer within the hospital (e.g. between wards/units) – comparison between current inpatient charts, previous inpatient charts and the BPMH
- Discharge back home or other community care setting – comparison between inpatient charts, discharge summary, discharge prescription and the BPMH, and
- During other error prone times, such as when medication charts are re-written.

## Gap Analysis

Target	Current Status	Action Plan
Medication reconciliation is undertaken for ____ % of patients ( <i>Circle relevant</i> ): On Admission / Transfer / Discharge / Other		For example, introduce dedicated form to facilitate medication reconciliation, provide training to clinicians, and determine roles and responsibilities.
____ % of clinicians receive training on how to conduct medication reconciliation		For example, introduce training into orientation programs
Other:		

## Comments

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Other considerations may include:

- Where completion of medication reconciliation is documented
- Whether a multidisciplinary approach is required

# INTRA-HOSPITAL TRANSFER

## Rationale

When a patient is transferred between wards/units, or even when a new medical team takes over their care, that patient is exposed to the risk of medication errors. This is because information may not be effectively communicated to the clinicians taking over care.

Studies have found that at least one in six patients have had one or more clinically significant medication differences on transfer, for example on transfer from intensive care to a general ward.<sup>5-7</sup>

Particular concern exists when patients are transferred between:

- Intensive Care Unit (ICU) and general wards
- Operating Theatres / recovery and general wards
- General wards and rehabilitation units.

Carrying out medication reconciliation processes are just as important during this phase of patient care, as they are during admission and discharge. Good processes to support continuity of medicines management make sure that medications are continued as planned, and any changes that have been made deliberately are not reversed.

## Gap Analysis

Target	Current Status	Action Plan
____% of transfer documents include a complete list of current medicines		
____% of transfer documents include information about all recent changes to a patient's medications		
____% of clinicians receive training on how to communicate and seek information regarding current treatment plans on patient transfer		
Other:		

## Comments

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Other considerations may include:

- How do clinical teams ensure continuity of care at patient transfer?
- What are high risk areas of transfer in your service?

# DOCUMENTATION

## Rationale

Clear documentation of the following is important to continuity of care:

- What medications a patient is on
- Future plans regarding medications (including short-term medications and monitoring/review requirements)
- The reason behind decisions that have resulted in changes to the patient's medications.

Documentation needs to be accurate, complete and placed somewhere easily accessible by all clinicians involved in the patient's care.

The information provided needs to be easy to follow and understand. Having this information clearly documented reduces the time spent searching for relevant information and preparing documents such as the discharge summary.

## Gap Analysis

Target	Current Status	Action Plan
Documentation of relevant medicines information and decisions is completed for ____% of patients		For example, policies and procedures are developed, documentation is standardised
____% of clinicians receive training on how to adequately document information to benefit the entire clinical team looking after the patient		For example, introduce training into orientation programs
Other:		

## Comments

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Other considerations may include:

- How do clinical teams ensure continuity of care at patient transfer?
- What are high risk areas of transfer in your service?

# AFTER-HOURS RE-CHARTING

## Rationale

Patients who remain in hospital for extended periods of time eventually need to have their medications re-written/recharted on a new medication chart.

This process of re-charting orders has been identified as a high risk time, when errors can be introduced. Of particular concern is re-charting after-hours. After-hours re-charting is often done by medical officers unfamiliar with the patient and their treatment plans. Errors such as transcription errors, omission of therapy, duplication of therapy, and accidental changes to medication may easily occur. These doctors are also often very busy and are likely to be frequently interrupted.

Processes to ensure continuity are important when medicines are recharted. Taking a moment to double check re-written orders against the previous orders and the BPMH, can prevent serious errors.

The need to re-chart after-hours should be an area of concern and efforts should be made to reduce after-hours re-charting.

The following may be ways to try and reduce after-hours re-charting:

- Dedicated re-charting times and/or days
- The need for re-charting is communicated to the attending medical team in advance by nursing staff (e.g. through the use of an 'issues list').

## Gap Analysis

Target	Current Status	Action Plan
To reduce the incidence of after-hours re-charting to ____ %		For example, policies and procedures are developed, documentation is standardised
When after-hours charting does occur, reconciliation occurs ____ % of the time		For example, introduce training into orientation programs
Other:		

## Comments

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Other considerations may include:

- How to engage clinicians to re-chart medication orders during working hours e.g. 'pager-free' time dedicated for re-charting

# INFORMATION ON DISCHARGE

## Rationale

When a patient is discharged from the hospital it is important to remember that their care is being transferred to community health care providers, such as general practitioners, community pharmacists, community nurses, residential aged care service staff etc.

It is important that these community health care providers receive accurate and current information so that they are able to continue to care for the patient appropriately. This occurs through making sure that:

- All medications that are to continue are documented in the medication list in the discharge summary
- Monitoring requirements are documented and communicated in the discharge summary e.g. checking INR levels, when antibiotic courses should be finished
- That the patient has an adequate supply of medicines to continue treatment.

Thorough information, including an explanation of why medications have been stopped, changed or started, should be provided.

This practice will also help medical officers to double check the information they are providing. This is important as one study showed that 15% of medications intended for continuation were omitted on discharge prescriptions<sup>8</sup>, and another showed that 12% of patients had one or more errors in their medication prescriptions<sup>9</sup>. Most significantly, it has been found that patients with one or more medications omitted from their discharge summary have 2.31 times the usual risk of readmission<sup>10</sup>.

It is therefore important that the correct information is given so that patient care continues after hospital discharge.

## Gap Analysis

Target	Current Status	Action Plan
____% of discharge summaries include an accurate list of the patient's medicines		
____% of discharge summaries contain an explanation of any changes made to the medication regime		
____% of medical officers receive training on how to complete a thorough discharge summary		
Other:		

## Comments

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Other considerations may include:

- Have electronic discharge summaries been implemented service-wide?
- Who can support medical officers to complete discharge documents?

# PATIENT EDUCATION

## Rationale

Providing education to patients and giving them information about their medications before they are discharged home or back into community care is very important to continuity of care.

Studies have found that at discharge, patients often did not know what medications were prescribed, when their follow-up appointments should take place and, in some cases, why they were hospitalised in the first place.<sup>11</sup>

Studies have also shown that patients, who have a clear understanding of their post-discharge care plan, including how to take their medicines, were 30% less likely to be readmitted or present to an emergency department than patients who lacked this information.<sup>12</sup>

It is important that patients and/or carers are given the following before they leave the hospital:

- A medication list containing all the medications they are to continue taking, how to take them, and what they are for
- Education regarding any changes to their medications, including if any have been stopped, changed or newly started.

Giving patients and/or carers the right information and counseling is important to continuity of medication management, and allows patients and their carers to play an active role in their treatment plans.

## Gap Analysis

Target	Current Status	Action Plan
____% of patients are educated and/or given medicines information at discharge		
____% of patients receive a medication list at discharge		
____% of clinicians receive training on the principles of clear health communication		
Other:		

## Comments

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Other considerations may include:

- Are sufficient resources available for delivery of this process?
- Whether a multidisciplinary approach is required

# GAP ANALYSIS SUMMARY

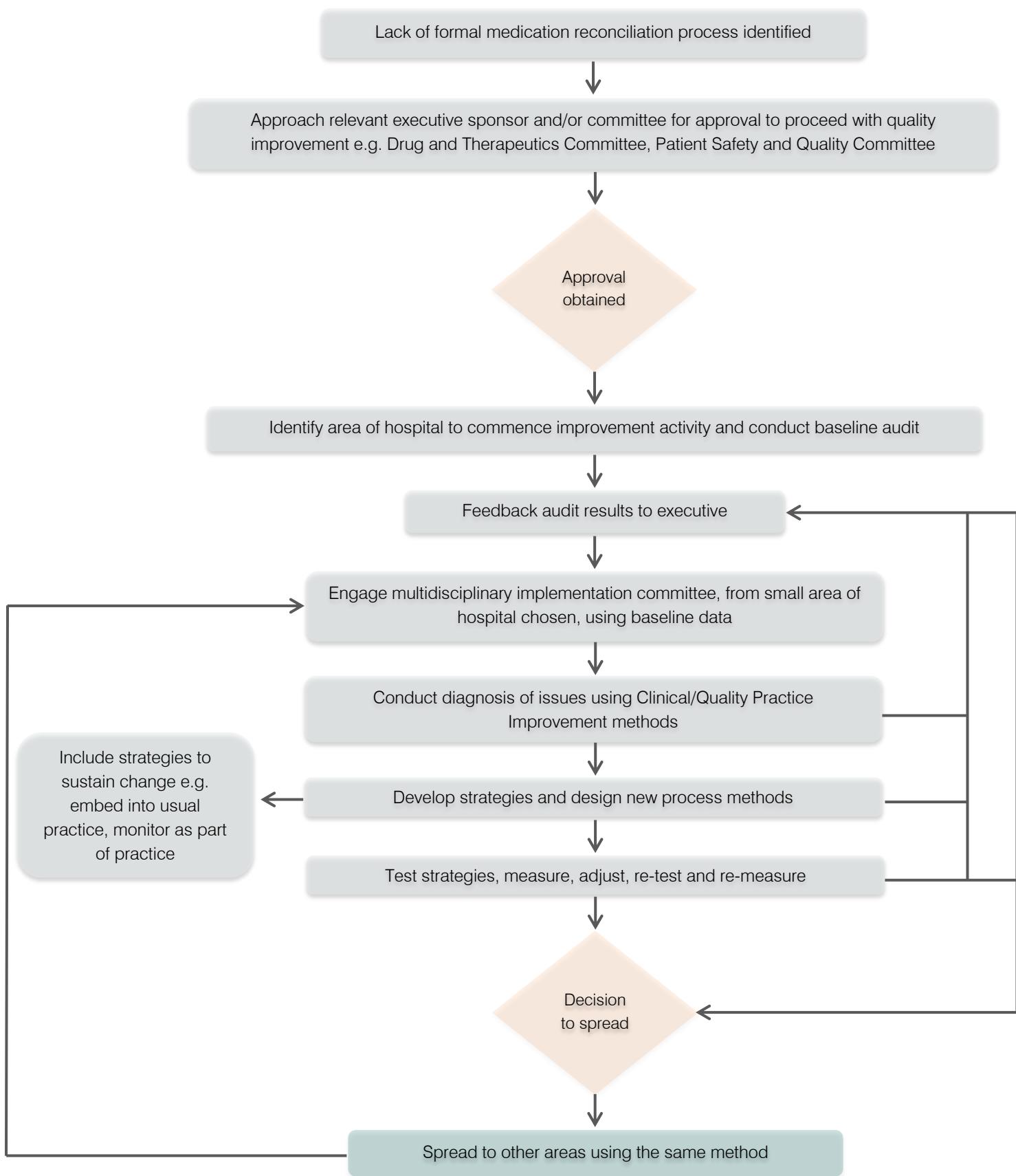
Target	Current Status	Action Plan
A BPMH is taken for ____% of patients		
____% of clinicians receive training on how to take a BPMH		
Medication reconciliation is undertaken for ____% of patients <i>(Circle relevant):</i> On Admission / Transfer / Discharge / Other		
____% of clinicians receive training on how to conduct medication reconciliation		
____% of transfer documents include a complete list of current medicines		
____% of transfer documents include information about all recent changes to a patient's medications		
____% of clinicians receive training on how to communicate and seek information regarding current treatment plans on patient transfer		
Documentation of relevant medicines information and decisions is completed for ____% of patients		
____% of clinicians receive training on how to adequately document information to benefit the entire clinical team looking after the patient		
To reduce the incidence of after-hours re-charting to ____%		

Target	Current Status	Action Plan
When after-hours charting does occur, reconciliation occurs ____% of the time		
____% of discharge summaries include an accurate list of the patient's medicines		
____% of discharge summaries contain an explanation of any changes made to the medication regime		
____% of medical officers receive training on how to complete a thorough discharge summary		
____% of patients are educated and/or given medicines information at discharge		
____% of patients receive a medication list at discharge		
____% of clinicians receive training on the principles of clear health communication		

## REFERENCES

1. Fernandes O, Shojania K. (2012). Medication reconciliation on the hospital: what, why, where, when, who and how? *Healthcare Quarterly* Vol 15.
2. Greenwald J et al. (2010). Making inpatient medication reconciliation patient centered, clinically relevant and implementable: a consensus statement on key principles and necessary first steps. *Journal of Hospital Medicine* Vol 5 No.8.
3. Coffey M et al. (2009). Implementation of admission medication reconciliation at two academic health sciences centres: challenges and success factors. *Healthcare Quarterly* Vol 12.
4. Vira T, Colquhoun M, Etchells EE. (2006). Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 15:122-6.
5. Pronovost P et al. (2003). Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care* 18:201-5.
6. Lee JY et al. (2010). Medication reconciliation during hospital transfer and impact of computerized prescriber order entry. *Ann Pharmacotherapy* 44:1887-95.
7. Santell JP et al. (2006). Reconciliation failures lead to medication errors. *Jt Comm J Qual Patient Saf* 32:225-9.
8. Coombes ID, Storie WJ, Radford JM, Pillans PI. (2001). Quality of medication ordering at a large teaching hospital. *Aust J Hosp Pharm* 31:102-6.
9. Duguid M, Gibson M, O'Doherty R. (2002). Review of discharge prescriptions by pharmacists integral to continuity of care [letter]. *J Pharm Pract Res* 32:94-5.
10. Stowasser D, Collins D, Stowasser M. (2002). A randomised controlled trial of medication liaison services - patient outcomes. *J Pharm Pract Res* 32:133-40.
11. Reengineering hospital discharge process could improve care. Agency for Healthcare Research and Quality. AHRQ Patient Safety E-Newsletter. 2007 Aug 6;(34). Available at: <http://archive.ahrq.gov/news/ptsnews/ptsnews34.htm#2>
12. Jack B et al. (2009). A reengineered hospital discharge program to decrease rehospitalization, A randomized trial. *Annals of Internal Medicine* Vol. 150 No. 3.

# IMPLEMENTATION FLOWCHART



## APPENDIX B

This appendix contains the following tools which may assist with improving practice:

- Framework for Medication Reconciliation
- Guide to Mapping Your Current Medication Reconciliation Process
- Guide for Determining Roles, Responsibilities and Documentation Requirements
- Local Operating Procedure
- Frequently Asked Questions
- MMP Example
- Patient Medication List Examples

# FRAMEWORK FOR MEDICATION RECONCILIATION

This Framework has been developed to guide NSW Health Services in formalising medication reconciliation processes

Ensuring Continuity of Medication Management	What this Means for Patients	Actions Required by NSW Health Services
<b>Collect Information to Compile a Medication History</b> 	Enables patients to communicate how they actually use their medications	<ol style="list-style-type: none"><li>1.1 A system is in place which ensures all patients admitted to hospital have a medication history interview conducted by the end of the next calendar day</li><li>1.2 A standardised form for documenting the information obtained from the interview should be made available to clinicians</li><li>1.3 Clinicians are trained in how to compile a Best Possible Medication History (BPMH)</li><li>1.4 The information documented is made available at the point of care</li></ol>
<b>Confirm Accuracy of the History</b> 	Medication treatment decisions are made in reference to accurate, current and comprehensive medicines information	<ol style="list-style-type: none"><li>2.1 A system is in place which ensures a medication history is confirmed with at least one additional source of medicines information</li><li>2.2 There is a procedure for documenting the source/s and date of the medication history confirmation</li></ol>
<b>Compare</b> Medication history with prescribed medicines and identify and rectify any discrepancies 	Patients receive all medications intended to continue while in hospital	<ol style="list-style-type: none"><li>3.1 A system is in place for documenting and reconciling current medicines at all transfers of care, including:<ul style="list-style-type: none"><li>- Admission</li><li>- Transfer</li><li>- Discharge</li></ul></li><li>3.2 There is a procedure for documenting and communicating any discrepancies which have been identified or rectified</li><li>3.3 Roles and responsibilities for each health care team member are assigned</li></ol>
<b>Supply</b> Accurate medicines information to the patient and next care provider 	Patients and their next care provider receive accurate medicines information when concluding an episode of care	<ol style="list-style-type: none"><li>4.1 A system is in place that generates and distributes a current and comprehensive medication list, including any explanation of changes and any ongoing medication management requirements</li><li>4.2 A current and comprehensive medicines list is provided to the patient and/or carer in a patient friendly format</li><li>4.3 A current and comprehensive medicines list is provided in the discharge summary for the next care provider</li></ol>
<b>Monitor Practice</b> 	Health services monitor performance and strive to improve processes	<ol style="list-style-type: none"><li>5.1 Annual audit to determine compliance with obtaining patients' BPMH</li><li>5.2 Annual audit to determine compliance with providing medication lists to patients</li><li>5.3 Annual audit to determine quality of medication information provided to patients and community health care providers</li><li>5.4 Results of audit and review are reported back to clinicians to drive change</li><li>5.5 Clinicians are educated on the need for a formal medication reconciliation process</li></ol>

# GUIDE TO MAPPING YOUR MEDICATION RECONCILIATION PROCESS

Mapping your current medication reconciliation process will identify (1) current roles and responsibilities of each member of the health care team at admission, transfer and discharge; (2) current successful medication reconciliation practices; (3) potential failures and (4) unnecessary gaps in the process.

The flowchart created from the mapping activity will inform redesign and improvement strategies.

## Mapping session

In order to successfully map out and create a flowchart of the process all members of the health care team with a role in medication management should be involved. This includes those who prescribe, dispense, administer, or supply medication or medicines information.

Organise a session time that will suit the majority of identified clinicians. Ensure that you provide enough time to complete the mapping process and for planning follow up sessions. If possible, engage a facilitator who is familiar with quality improvement tools and experience in previous mapping sessions.

### Suggested materials

Producing the process map during the session is made easier by using the following materials:

- Butchers paper
- Post-it notes
- Marker pens
- Blue tack

## Creating the flowchart

The aim of process mapping is to have a clear common understanding of what is actually occurring, not what should be or what participants would like to see happen. It can be useful to start with a high level flow map (five to ten steps), to outline the scope of the process before completing a more detailed map (see Flowchart example overleaf).

### Mapping session questions

The following questions may be used during the mapping session to probe for information:

- What process is followed to obtain the medication history?
- What sources of information are used?
- If a thorough history cannot be obtained what occurs?

### Mapping session questions continued

- By whom, where and how is the medication history documented?
- Who documents the plan for the pre-admission medications and where is it documented?
- When and by whom is the inpatient medication chart written?
- Is the medication history compared to the medications ordered on the medication chart – during the prescribing, administering or reviewing process?
- How are identified discrepancies documented and actioned?
- Where are explanations regarding changes to medications documented during the admission?
- How is the plan for medicines communicated when the patient is transferred to another ward?
- When is the plan for medicines on discharge decided and how and where is it documented?
- When and by whom is the discharge summary medication list prepared?
- Are the medicines on the medication history, medication chart and discharge plan used to compile/check the discharge medication list?
- Is the discharge summary medication list verified by another clinician?
- How are patients who would benefit from a patient medication list identified?
- Who is responsible for providing this list and how is it produced?
- Who is responsible for counselling patients about new/changed/ceased medications on discharge?
- Is there a difference in the process on weekends compared to weekdays?

After the session is complete the flowchart created in the mapping session should be confirmed by the health care team. A flowchart (produced in Word® or Visio® if available) should be created and distributed to all session participants and to any team members that were not able to attend for confirmation and further comment.

## Analysing the process

Once the flowchart has been agreed upon the team should analyse the process map. Questions to ask include:

- What are the things that can go wrong within each step?
- How much error correction/re-work is being carried out?
- Are we doing the right things in the process?
- Are we doing things in the right order?
- Are the right/best people doing it?
- Is the process producing the results we want?
- Is the process cost and time effective?

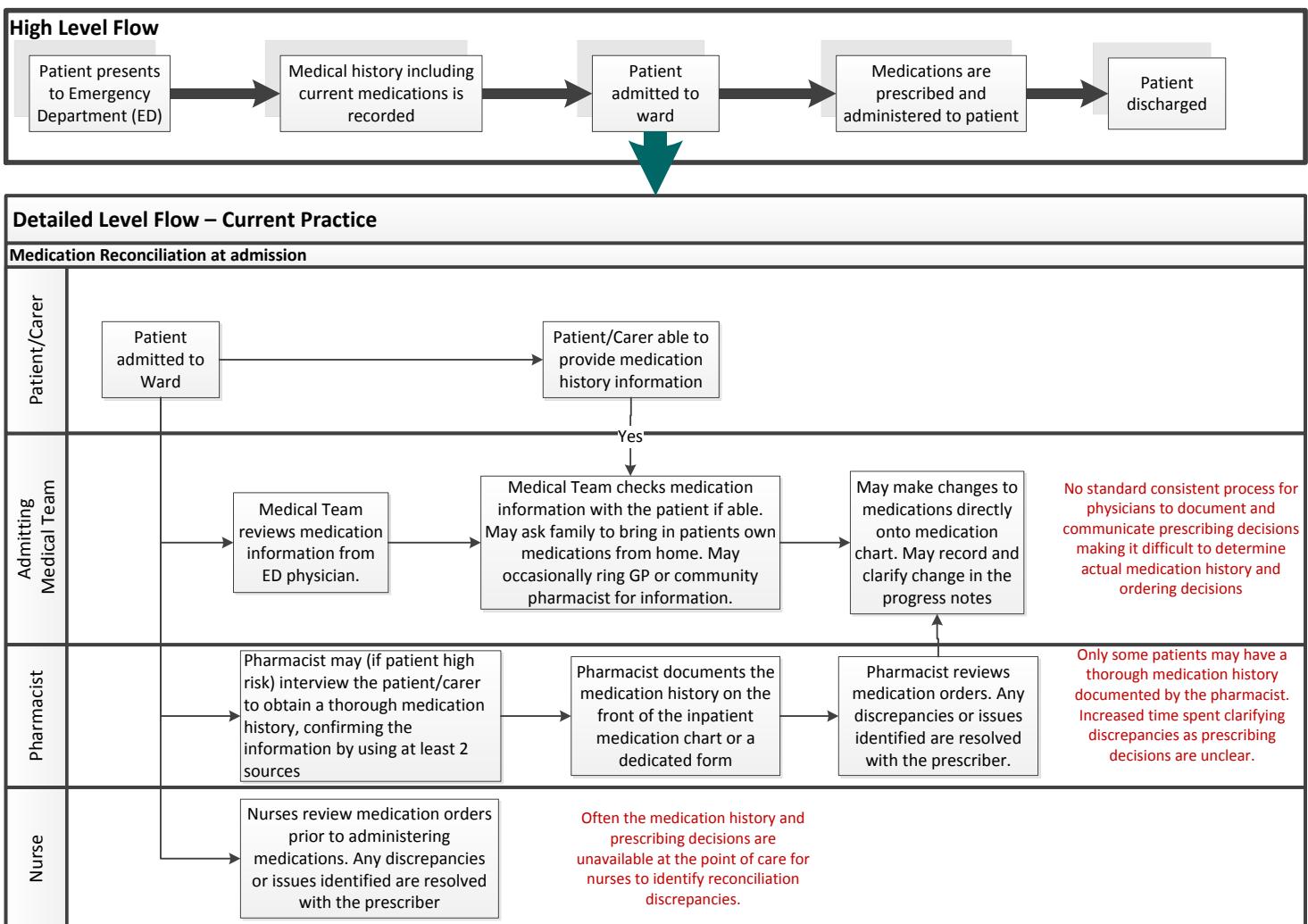
## Redesigning the process

The potential failures and gaps in the process identified during the analysis should be prioritised and used to redesign the process. A number of quality improvement tools can be used to assist with identification and prioritisation (refer to the [CEC CPI Program](#) for quality tools).

Key aspects to consider when redesigning the process are:

- Having a single list of medicines as the source of truth available to all members of the team
- Outlining the roles and responsibilities of team members in each ward/ unit
- Standardising and simplifying the process
- Making the right thing to do the easiest thing to do.

## Flowchart example



# GUIDE FOR DETERMINING ROLES, RESPONSIBILITIES AND DOCUMENTATION REQUIREMENTS

## MEDICATION RECONCILIATION TOOLKIT

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Rationale .....
Process Required .....
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# INTRODUCTION

Though straightforward in concept, the process of implementing medication reconciliation across health services is complex. It relies heavily upon multidisciplinary teamwork and effective communication. The roles and responsibilities for each participant in the process need to be clearly defined. These roles and responsibilities may change depending on the needs or vulnerability of the patient, the transfer of care being undertaken and the clinical mix of available staff. Each clinical area should determine the roles and responsibilities for each member of their health care team.

This guide is designed to be used by health care teams to assist them to clearly define the team roles and responsibilities with respect to medication reconciliation at admission and discharge. All members of the health care team who have a role in medication management should be involved in the decision making process. This includes those who prescribe, dispense, administer, or supply medication or medication information.

Clearly defining roles and responsibilities will ensure that all essential steps of the medication reconciliation process are completed for every patient. This guide assists team members to recognise who is accountable for each step, who has delegated responsibility and who has a shared responsibility in ensuring the step is completed. This will reduce errors and patient harm that occurs from incomplete, haphazard processes that are reliant on individual health care professionals. The guide also prompts health care teams to consider roles and responsibilities at vulnerable times, that is, times when continuity may be at risk e.g. after hours, on weekends and on public holidays.

This guide will assist members of the health care team understand that they are jointly and individually responsible for making sure that each step of the medication reconciliation process is completed.

## Definitions

### *Accountable*

Required or expected to justify actions or decisions of assigned responsibilities, cannot be delegated.

### *Delegated Responsibility*

Having an obligation to do something as part of one's job or role (may or may not be accountable for the responsibility).

# ADMISSION

When a patient is admitted to hospital, it is important that a best possible medication history (BPMH) is obtained at the time of admission, or as early as possible in the episode of care. This will make sure that appropriate medication management is in place, and continuity is achieved.

This history forms a fundamental part of the patient's medication management plan during admission, and should be consulted and reconciled against prescribed medicines and treatment plans.

Several processes are required during this phase of transition to ensure continuity of medication management. These include:

1. Obtaining and documenting a BPMH
2. Documenting plans for medications on admission
3. Comparing the BPMH to prescribed medicines and resolving discrepancies

NB: The BPMH is more comprehensive than a primary medication history which may be the initial history taken in the Emergency Department.

## **Obtaining and Documenting a BPMH**

### *Rationale*

The first step to achieving continuity of medication management is to take a BPMH.

Putting together the BPMH is very important for continuity of medication management since information about the medications taken prior to admission, previous adverse drug events and other related information affects treatment options and decision making throughout the patient's care.

Taking a BPMH requires that the most accurate and complete medication history be taken at the point of admission, or as early as possible in the episode of care.

### *Process Required*

Obtaining a BPMH involves collecting medication information (this should include a patient/carer interview whenever possible) and confirming the information obtained with at least one other source of information. Information obtained includes:

- Information about previous adverse drug events and allergies
- A list of medications and the source of the information.

### *Knowledge and Skills Required*

The clinician responsible for obtaining and documenting the BPMH should have:

- A general knowledge of types and names of medications, medication related information and requirements for a BPMH (e.g. generic/brand name, strength, dose, dose form, route, administration schedule as actually taken by the patient, duration of therapy and indication according to the patient)
- Patient interviewing skills for obtaining an accurate medication history
- An awareness of the sources of medication history information and their limitations
- Communication skills for contacting community health care providers to obtain a medication history (e.g. general practitioners, community pharmacist, specialists)
- An ability to gather information from a collection of sources and decipher what is actually taken by a patient
- An ability to probe the patient/carer about medications that may have been omitted (e.g. by using a checklist) and an ability to recognise omissions from knowledge of a patient's medical conditions (e.g. patient has asthma but there are no inhalers documented)
- An ability to know when sufficient information has been gathered to compile a BPMH
- An ability to recognise the inability to validate a BPMH and to communicate this to other team members for follow up
- An ability to communicate and work within a multidisciplinary team.

### *Clinician Responsible for Obtaining and Documenting a BPMH*

Health care teams should decide who is accountable for ensuring the BPMH is documented (this accountability cannot be delegated), who has the delegated responsibility to undertake the process (i.e. collect, confirm and document the BPMH) and who has a shared responsibility to ensure these steps are completed. This decision should be made in collaboration with all team members. The proposed decision should be communicated to all clinicians within the team to make sure everyone is aware of their role and responsibilities.

The team member responsible may differ depending on the time of day or week. Consider who is responsible after hours, on weekends and on public holidays. The clinician responsible for taking a BPMH may be different to the clinician who takes the initial medication history.

Time	Clinician/s Responsible
Business Hours	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>
After Hours	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>
Weekend and Public Holidays	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>

### *Potential Areas for Documentation*

The BPMH must be documented so that it is available at the point of care. It needs to be readily available in a consistent location to all team members so that they are able to access it for information, to compare it with prescribed medicines at every transfer of care and to be able to contribute to decision-making. Considering this the health care team should decide where and how the BPMH is documented.

Please note that the National Safety and Quality Health Service (NSQHS) Standards recommend the use of a standard form with prompts to guide obtaining a BPMH.

U = already used in standard practice and considered appropriate

N = used in standard practice but not meeting needs

R = considered appropriate and requires incorporation into standard practice

Potential Areas for Documentation	Implementation (U/N/R)
NSW Medication Management Plan (MMP)	
Other endorsed form: _____	
Front of the National Inpatient Medication Chart (NIMC)	
Electronic form (e.g. PowerForm)	
Other: _____	

## Documenting Plans for Medications on Admission

### Rationale

A patient's medications are frequently changed when they are admitted to hospital. The majority of these changes are a result of decisions made for better patient outcomes. Errors, however, do occur. Documenting intentional changes made to medications reduces confusion, reduces rework and improves detection of unintentional changes.

Documenting the intention for each medication in the BPMH (i.e. whether the medication is to continue, continue with changes, cease or be withheld) facilitates reconciliation with the active medication orders. Ensuring each medication is accounted for reduces common errors of omission.

Documenting the reasons for changes made to medications facilitates the communication of this information at discharge. Informing the next health care provider of the rationale for the changes made reduces the likelihood of these changes being reversed.

### Process Required

The prescriber should use the BPMH when determining the medications to be prescribed on admission. Each medicine in the BPMH should be considered in the context of the patient and their presenting condition. Prescribing decisions should be clearly documented in a consistent manner, preferably next to each medication in the BPMH.

### Potential Areas for Documentation

The health care team should discuss all available options and decide on what practice should be used as the standard to ensure consistency. As it is preferable that the prescribing decision is documented for each medication in the BPMH the health care team may wish to choose the same document that has been selected to document the BPMH.

Please note that the NSQHS Standards recommend the use of a standard form to support the reconciliation process.

U = already used in standard practice and considered appropriate

N = used in standard practice but not meeting needs

R = considered appropriate and requires incorporation into standard practice

Potential Areas for Documentation	Implementation (U/N/R)
NSW Medication Management Plan (MMP)	
Other endorsed form: _____	
Front of the National Inpatient Medication Chart (NIMC)	
Electronic form (e.g. PowerForm)	
Other: _____	

## Comparing the BPMH to Prescribed Medicines and Resolving Discrepancies

### Rationale

Once a BPMH has been obtained and the plan for each medication documented, it should be compared against any prescribed medicines to make sure that no unintentional omissions, additions or changes have been made to the patient's medication regimen. Any discrepancies identified should be discussed with the prescriber and resolved with accompanying documentation as relevant.

### Process Required

The BPMH should be reconciled (or compared) against prescribed medicines taking into consideration the plan that has been determined for each medication.

Any unexplained discrepancies should be further explored and/or discussed with the appropriate clinician. The discrepancy should be rectified by the prescriber by adjusting the order or by documenting the reason for the change if it is intentional.

Documenting that the process of reconciliation has been completed reduces rework.

NB: Though the prescribing medical officer should routinely reconcile the BPMH during prescribing, if possible, a clinician independent to the prescriber should undertake the formal reconciliation process, ideally within 24 hours of admission. Documentation should ideally be made where the BPMH is also documented.

### Knowledge and Skills Required

The clinician responsible for comparing the BPMH to prescribed medicines should have:

- A general knowledge of medications, their indications and appropriate dosing
- Knowledge of the patient's medical conditions – both the patient's past medical history and his or her presenting condition upon hospital arrival
- An understanding of what constitutes a medication discrepancy
- An ability to review the BPMH, documented planned changes to medications and active inpatient medication orders to identify medication discrepancies
- An ability to determine when and how to contact a prescriber about a discrepancy (clinical judgment regarding the urgency of the discrepancy)
- An ability to communicate discrepancies to the prescriber and facilitate resolution of the discrepancy.

### Clinician Responsible for Comparing the BPMH to Prescribed Medicines and Resolving Discrepancies

Health care teams should decide who is accountable for ensuring the BPMH is compared to the prescribed medicines, who has the delegated responsibility to undertake the comparison, identification and resolution of discrepancies, and who has a shared responsibility to ensure this step is completed. This decision should be made in collaboration with all team members. The proposed decision should be communicated to all clinicians within the team to make sure everyone is aware of their role and responsibilities.

The team member responsible may differ depending on the time of day or week. Consider who is responsible after hours, on weekends and on public holidays.

The health care team should also discuss how to trigger the completion of this step as it is reliant on the completion of the previous step (obtaining a BPMH) and the completion of the inpatient medication orders.

Time	Clinician/s Responsible
Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
After Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
Weekend and Public Holidays	Accountable:  Delegated Responsibility:  Shared Responsibility:

How will the person delegated responsibility for completing this step be informed that the required information (i.e. BPMH and inpatient medication orders) is available?

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# DISCHARGE

Patients/carers and community health care providers must be supplied with accurate medicines information at discharge to enable them to continue the safe and effective use of medicines.

Several processes are required at the point of discharge to ensure continuity of medication management.

These include:

1. Reconciling discharge medications
2. Communication of medication changes and plans
3. Supply of medicines information to patients/carers

## Reconciling Discharge Medications

### Rationale

Just as reconciling medications soon after admission is important to continuity of care and making sure the right medications are given during the patient's stay, reconciling medications prior to discharge is important in making sure the patient leaves the hospital on the right medications. It ensures that medications are continued as they need to be, and promotes clinical review of medications prior to discharge i.e. checking if certain medications should be re-started or stopped before discharge.

This process will reduce the potential of adverse events associated with medication errors and subsequent readmissions.

### Process Required

The process of medication reconciliation at discharge should include comparison of the patient's medication list upon admission (the BPMH), the current medication orders, any ongoing plan for medicines at discharge and the discharge medication order/summary. The MMP (or other sources of information) should be referred to in order to determine changes to 'prior to admission' medications and the reason for the change during the admission.

The following should be considered when reconciling medications prior to discharge:

1. Need to re-start any medications that had been withheld
2. Need to cease any medications that were specific to inpatient treatment
3. Need to review currently prescribed medications and the plan for discharge
4. Any unexplained discrepancies that are found should be further explored and/or discussed with the prescriber. The discrepancy should be rectified by the prescriber adjusting the discharge summary or by documenting the reason for the change if it is intentional.

To prevent delays on discharge, the medication plan for discharge should occur at the time the discharge decision is made.

NB: Though the prescriber is responsible for reviewing the medications at discharge and determining the plan for ongoing management, if possible a clinician independent to the prescriber should undertake the formal reconciliation process.

### Knowledge and Skills Required

The clinician responsible for reconciling discharge medications should have:

- Advanced knowledge of medicines, their indications and appropriate dosing
- Knowledge of the patient's medical conditions – both the patient's past medical history and his or her current discharge condition
- An understanding of what constitutes a medication discrepancy
- An ability to review a BPMH, documented planned changes to medications, current medication orders at discharge and the discharge medication order/summary to identify medication discrepancies
- An ability to recognise in-hospital formulary changes and medications specific to inpatient treatment
- An ability to communicate discrepancies to the prescriber and facilitate resolution of the discrepancy
- An ability to identify changes to 'prior to admission' medications.

### *Clinician Responsible for Reconciling Discharge Medications*

Health care teams should decide who is accountable for ensuring that medications are reconciled on discharge, who has the delegated responsibility to undertake the reconciliation and resolution of discrepancies, and who has a shared responsibility to ensure this step is completed. This decision should be made in collaboration with all team members. The proposed decision should be communicated to all clinicians within the team to make sure everyone is aware of their role and responsibilities.

The team member responsible may differ depending on the time of day or week. Consider who is responsible after hours, on weekends and on public holidays.

The health care team should also discuss how to trigger the completion of this step as it is reliant on the decision to discharge, the ongoing plan for management and the completion of the discharge medication order/summary.

Time	Clinician/s Responsible
Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
After Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
Weekend and Public Holidays	Accountable:  Delegated Responsibility:  Shared Responsibility:

How will the person delegated responsibility for completing this step be informed about the decision to discharge and that the required information (i.e. ongoing plan and discharge summary) is available?

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## **Communication of Medication Changes and Plans**

### *Rationale*

Information on the patient's medication regimen should be communicated to community health care providers at the point of discharge, in a way that is simple to comprehend, and in a timely manner. Clinicians such as GPs, community pharmacists and residential aged care facility nursing staff, require clear, accurate and comprehensive medicines information to provide continuity of care and reduce the risk of a medication error occurring.

Providing clear information will help community health care providers support their patients with their ongoing medication management needs and avoid unplanned readmissions due to medication errors.

### *Process Required*

The following information should be provided on the discharge summary:

1. A verified list of the patients most current medications (after discharge reconciliation) including medication name, strength, dose, frequency, route and indication for use
2. A list of any 'prior to admission' medications ceased during the admission
3. A clear explanation of any medication changes that have occurred e.g. rationale for ceasing, changing doses or initiating new medications
4. Monitoring or clinical review requirements
5. Recommendations for improving medication management e.g. dose administration aids, home medicines review (HMR)
6. Ongoing medication management plans e.g. date to restart or cease medication, the need to titrate to optimal treatment dose etc.
7. Any adverse drug reactions.

NB: Although the prescriber is responsible for completing the discharge summary and confirming the medication list and plan at discharge, the verification and compilation of the discharge medication list and medication plan may be a shared responsibility between the prescriber and other members of the clinical team.

### *Knowledge and Skills Required*

The clinician responsible for communicating medication changes and plans should have:

- The same knowledge and skills required for reconciling discharge medications
- An ability to recognise and communicate patient specific continuing medication management needs.

### *Clinician Responsible for Communicating Medication Changes and Plans*

Health care teams should decide who is accountable for ensuring the medication plan is communicated, who has the delegated responsibility to document all the medication information required, and who has a shared responsibility to ensure this step is completed. This decision should be made in collaboration with all team members. The proposed decision should be communicated to all clinicians within the team to make sure everyone is aware of their role and responsibilities.

The team member responsible may differ depending on the time of day or week. Consider who is responsible after hours, on weekends and on public holidays.

The health care team should also discuss how to trigger the completion of this step as it is reliant on the completion of the previous step (reconciling discharge medications).

Time	Clinician/s Responsible
Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
After Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
Weekend and Public Holidays	Accountable:  Delegated Responsibility:  Shared Responsibility:

How will the person delegated responsibility for completing this step be informed that the discharge reconciliation has occurred (i.e. the list of the patient's current medications has been verified)?

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## **Supply of Medicines Information to Patients / Carers**

### *Rationale*

Providing medicines information to patients and/or carers is very important in ensuring continuity of medication management and the safe and quality use of medicines following discharge.

Several studies have shown that patients provided with the appropriate knowledge have a reduced risk of medication adverse events and associated hospital readmissions.

It is important that patients and/or carers know why certain medications have changed, why new medications have been started and why old medications have been stopped. Giving them this information makes sure they know how to take their medication when they leave the hospital and reduces the chance of medication misadventure.

### *Process Required*

Patients/carers should be provided with information about their medication at the time of discharge. Two areas should be addressed:

1. What medications need to be continued, have changed and/or ceased following discharge
2. Specific information regarding new and/or high risk medications.

Of particular consideration are patients who have had new medication/s initiated during their admission; those with multiple medications (more than five); those who have had medication related adverse events; or those requiring treatment with a high-risk medication.

Medication lists/profiles or cards should be provided to patients; including information on the medications to be taken, how to take them and what they are for.

### *Knowledge and Skills Required*

The clinician responsible for supplying medicines information should have:

- An ability to communicate effectively with patients and caregivers with varying levels of health literacy
- An ability to use the ‘teach back’ technique to confirm understanding
- An ability to determine the most important information required by the patient/carer to ensure safe ongoing medication management
- An ability to identify and refer patients that may require additional assistance with their medication in the community.

### *Clinician Responsible for Supply of Medicines Information*

Health care teams should decide who is accountable for ensuring patients are provided with medicines information, who has the delegated responsibility to provide this information, and who has a shared responsibility to ensure this step is completed. This decision should be made in collaboration with all team members. The proposed decision should be communicated to all clinicians within the team to make sure everyone is aware of their role and responsibilities.

The team member responsible may differ depending on the time of day or week. Consider who is responsible after hours, on weekends and on public holidays.

Time	Clinician/s Responsible
Business Hours	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>
After Hours	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>
Weekend and Public Holidays	<p>Accountable:</p> <p>Delegated Responsibility:</p> <p>Shared Responsibility:</p>

### *Potential Resources for Provision of Patient Medication Lists*

There are several methods to provide patients /carers with medication lists. The care team should discuss all available options and decide which to incorporate into standard practice.

The list provided to the patient should be in a patient friendly format i.e. easily understood, have no abbreviated directions or Latin, and contain an easy to follow administration schedule. Lists provided to patients must match the list on the discharge summary provided to their community health care provider.

Clinicians should be aware of and have access to the resources available to provide specific information on new and/or high risk medications e.g. Consumer Medicine Information leaflets, warfarin booklets, instructions for medication device use etc.

U = already used in standard practice and considered appropriate

N = used in standard practice but not meeting needs

R = considered appropriate and requires incorporation into standard practice

Potential Resources	Implementation (U/N/R)
Computer generated medication lists/profiles	
Medication cards with written information	
Access to specific medication information is available to clinicians e.g. via CIAP or NPS MedicineWise	

Other comments:

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# ROLES AND RESPONSIBILITIES SUMMARY

Role	Time	Clinician/s Responsible
Who can obtain and document a BPMH?	Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
	After Hours	
	Weekend and Public Holidays	
Who can compare the BPMH with prescribed medicines and resolve discrepancies?	Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
	After Hours	
	Weekend and Public Holidays	
Who can complete medication reconciliation on discharge?	Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
	After Hours	
	Weekend and Public Holidays	
Who can communicate medication changes and plans at discharge?	Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
	After Hours	
	Weekend and Public Holidays	
Who can supply medicines information to patients/carers?	Business Hours	Accountable:  Delegated Responsibility:  Shared Responsibility:
	After Hours	
	Weekend and Public Holidays	



# LOCAL OPERATING PROCEDURE

**MEDICATION RECONCILIATION TOOLKIT**

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## PREAMBLE

Unintentional changes to patients' medications at transfers of care can result in considerable harm and have been linked to poorer health outcomes, increased hospital readmission and mortality.<sup>1</sup> Medication reconciliation is a strategy that has been shown to improve the continuity of medicines management, reducing medication errors by 70% and adverse events by over 15%.<sup>2</sup>

The Australian Commission on Safety and Quality in Health Care has identified discontinuity of medication management as an issue for patient safety and has included medication reconciliation in the National Safety and Quality Health Service Standards. In line with these standards, NSW Health has adopted medication reconciliation as best practice, and has included the process in their medication management policy (PD2013\_043 Medication Handling in NSW Public Health Facilities).

This local operating procedure specifies how NSW public health services can apply and achieve medication reconciliation in line with National Standards and NSW Health policy.

## SCOPE

This local operating procedure applies to staff that prescribe, dispense, administer or supply medication or medication information to hospital inpatients. These include:

Medical Officers (MO)  
Nurse Practitioners (NP)  
Pharmacists  
Registered Nurses (RN)

This local operating procedure details the process of medication reconciliation, a key component in continuity of medication management. It should be applied in conjunction with any local policy or procedures pertaining to medication reconciliation and read in the context of wider medication management policy.

# OVERVIEW

Medication reconciliation is a process that ensures patients receive all intended medicines by making sure accurate, current and comprehensive medicines information follows them at all transfers of care. It reduces adverse drug events by mitigating common errors of transcription, omission, commission and duplication.

Medication reconciliation involves four steps:

1. Collecting information to compile a Best Possible Medication History (BPMH)
  - This should include whenever possible a structured interview conducted at admission with the patient and/or carer by an appropriately trained clinician to obtain and document the patient's current pre-admission medications, including previous adverse drug reactions and allergies, and any recently ceased or changed medications.
2. Confirming the accuracy of the information
  - Using at least one additional source of medication information to verify the information obtained.
3. Comparing the history with prescribed medicines at every transfer of care
  - Compare the patient's BPMH with their prescribed inpatient medication orders on admission, transfers between wards/units, transfers between hospitals and on discharge. Check that changes are clinically appropriate and documented
  - Where there are discrepancies, these should be discussed with the prescribing medical officer then rectified by the medical officer either by, adjusting the currently prescribed medication to reflect the intended treatment (unintentional), or by documenting the reason for the changes to the therapy (intentional).
4. Supply accurate medicines information to the patient and next care provider
  - An accurate and complete list of the patient's medications is supplied to the patient and/or carer and the next care provider
  - Information about any changes that have been made to medicines and any ongoing therapeutic plan for medicines is also supplied.

Medical officers, nurses, pharmacists and patients/carers all have a role in the medication reconciliation process.

# DEFINITIONS

## **Best Possible Medication History (BPMH)**

As accurate a list as possible of a patient's current medications taken prior to admission. The BPMH should be compiled from an interview with the patient or the patient's carer whenever possible and confirmed with at least one other source of information.

## **Medication Discrepancy**

A divergence or disagreement between medication lists that includes transcriptions, omissions, commissions, duplications and undocumented changes.

## **Medication Management Plan (MMP)**

An approved standardised form used to facilitate accurate documentation and communication of information related to medicines. This form is used to document medications taken prior to admission, changes to medications during admission, medication reconciliation on admission and any medication issues and actions taken during the patient's episode of care. This information can be referred to during the patient's episode of care and used to inform the preparation of the discharge summary and prescriptions at the time of discharge. This form must be kept with the active medication charts throughout the patient's admission.

# PROCEDURE

This procedure outlines the steps required to complete a formal medication reconciliation process and provides guidelines for documentation of medication reconciliation. Roles and responsibility for each step will need to be defined locally as this may vary depending on the workforce skill mix available in each ward/unit.

Medical officers, nurse practitioners, pharmacists and registered nurses undertaking medication reconciliation shall as a minimum have completed training in taking a BPMH and completed the HETI online learning modules on Continuity in Medication Management. It is highly recommended that all staff undertaking medication reconciliation be assessed as competent before being assigned roles and responsibilities. Registered nurses may require further training and support from pharmacy and medical staff.

## Step 1 – Collect Information

1. Conduct a medication history interview with the patient or carer at the time of admission or as soon as possible in the episode of care. (Responsibility – medical officer, nurse practitioner, pharmacist or registered nurse).
  - 1.1. To facilitate the interview, patients should be encouraged to bring all medications, prescriptions and repeats with them into hospital. These medications should not be sent home with relatives/carers, but should be stored securely for review/reissuing/relabelling by the pharmacist on discharge.
  - 1.2. Follow an interview guide (refer to the CEC BPMH Interview Guide), use a checklist and language that the patient/carer understands.
  - 1.3. Document the information obtained from the interview on a standardised form such as the MMP (or electronic equivalent).
    - 1.3.1. Record:
      - Patient details
      - Date of documentation
      - Information about previous adverse drug reactions and allergies
      - All medications taken prior to admission: generic name, trade name, strength, form, dose, frequency, indication and duration
      - Any recently changed or ceased medications
      - Information source(s) used to elicit the medication history
      - Name of person who recorded the medication history
      - Whether the patient's own medicines were brought into hospital
      - Medication compliance or concordance issues
      - Any other relevant information
      - GP and community pharmacy name and contact.
  - 1.4. Compare the medication history with the patient's medical history. Identify and clarify any anomalies. For example, a patient is asthmatic and there are no medications identified to control or prevent asthma symptoms.

## Step 2 – Confirm Accuracy

2. Confirm the medication history taken where appropriate with the patient's community health care provider. (Responsibility – medical officer, nurse practitioner, pharmacist or registered nurse).
  - 2.1. All histories are to be confirmed with a second source if possible. Examples of sources include:
    - Community pharmacist
    - General practitioner
    - Patient's own medicines
    - Residential care facility.
  - 2.2. Record the source and date of the confirmation on the MMP (or electronic equivalent).

**Note:** If confirmation cannot be obtained this must be communicated and delegated to a member of the treating team for follow up. The 'issue identified' section of the MMP may be used to record such communication.

## Step 3 – Compare with Prescribed Medicines

3. Compare the medication history with prescribed medicines at every transfer of care (Responsibility – medical officer, nurse practitioner, pharmacist or registered nurse).
  - 3.1. In order to compare the medication history with the prescribed medicines the treating medical team's medication plan needs to be recorded.
    - 3.1.1. On admission record the plan for each medication on the MMP (or electronic equivalent). **Note:** The treating team's plan is not always readily available. If there is no documentation or evident clinical reason for change, the treating team should be contacted for clarification.
    - 3.1.2. The plan for each medication should be considered in the context of the patient's current presenting complaint and clinical condition. Any drug related problems identified should be followed up with the treating team. For example, a patient has been admitted with a gastrointestinal bleed and the patient's anticoagulant therapy has not been withheld.
    - 3.1.3. During the admission record explanations for any further changes to pre-admission medications in the 'medication changes during admission' section of the MMP.
  - 3.2. **On admission** compare each medication in the BPMH with the medication orders charted on the National Inpatient Medication Chart (NIMC). Any discrepancies identified must be clarified.
    - 3.2.1. Clarify by:
      - Referring to the treating team's plan on admission (on MMP or in clinical notes)
      - Contacting the prescribing medical officer.
    - 3.2.2. If the discrepancy cannot be clarified or resolved, document this in the 'issues identified' section of the MMP for follow up. **Note:** Any urgent medication issues should be brought to the attention of the medical officer as soon as possible.
    - 3.2.3. Any discrepancies identified as an intentional change should be documented on the MMP.
    - 3.2.4. Once the medication reconciliation process for each medication has been completed, tick the 'reconcile' column on the MMP.

A training presentation on how to use the MMP is available on the Australian Commission on Safety and Quality in Health Care's website: <http://www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/nmmp/>

3.3. **On transfer** from another ward/unit compare the BPMH with the medication orders charted on the National Inpatient Medication Chart (NIMC).

3.3.1. The treating medical team should consider whether:

- Withheld/ceased medications are to be restarted
- Medications prescribed in previous ward/unit are still required
- Medications are to be adjusted or commenced.

3.3.2. Any resulting changes to medications must be documented on the NIMC (e.g. ceased – no longer required) and on the MMP in the 'medication changes during admission' section, if the change relates to a pre-admission medication.

3.3.3. The registered nurse (prior to administration after transfer) or the pharmacist (reviewing medication orders after transfer) must clarify any changes between the BPMH and the medication orders charted on the NIMC that have not been documented. Any medication related problems should be followed up with the treating medical team. For example, withheld medications not restarted despite a change in the patient's condition.

If the transfer is between the ICU and the ward any electronic medication management system used by the ICU should be referred to for clarification of medication changes or plans.

3.4. **On transfer** from another hospital compare the patient's BPMH (communicated by the referring hospital), previously prescribed medications (i.e. copy of the medication chart at the previous hospital) with the medications that are to continue (from transfer documents).

3.4.1. Prior to ordering medications on the NIMC the accepting treating medical team should identify and clarify any changes made and any ongoing medication management plan.

3.4.2. The registered nurse (prior to administration after transfer) or the pharmacist (reviewing medication orders after transfer) must clarify any changes between the BPMH, previous orders and the current NIMC that have not been documented. Any medication related problems should be followed up with the treating medical team.

3.4.3. If the transferring hospital was unable to provide a BPMH, the medical officer, nurse practitioner, pharmacist or registered nurse at the receiving hospital should make a concerted effort to obtain the BPMH from the patient/carer or their community health care provider.

3.5. **At discharge** compile the list of medications the patient should continue with at home.

3.5.1. Medical officers should refer to the BPMH and medications prescribed on the NIMC when completing a discharge prescription and/or discharge summary.

3.5.1.1. Prior to completing the discharge prescription and/or discharge summary the medical officer should consider whether:

- Withheld/ceased medications are to be restarted
- Medications changed due to formulary restrictions are changed back

- Medications commenced during the hospital stay are still required (e.g. medications specific for inpatient treatment)
- Medications need to be adjusted or commenced on discharge.

3.5.1.2. Any changes made at discharge must be documented either on the NIMC or the MMP.

3.5.2. Prior to supplying discharge medications or providing discharge counselling the pharmacist or nurse should compare the BPMH and NIMC at discharge with the discharge prescription and/or discharge summary. Any discrepancies must be clarified and resolved.

3.5.2.1. Clarify by:

- Referring to the treating medical teams plan on discharge
- Contacting the prescribing medical officer.

## Step 4 – Supply Accurate Medicines Information

4. Supply accurate medicines information to the patient and next care provider.

4.1. On discharge, once step 3.5 above is completed, provide an accurate and complete list of the medications the patient is to continue with at home to the patient and next care provider.

4.1.1. The medical officer should include the accurate and complete list of the patient's medications in the discharge summary for the next care provider. **Note:** where the medication list is completed by a pharmacist the medical officer must review and confirm it correlates to the proposed treatment plan on discharge.

4.1.2. The medical officer, nurse or pharmacist should provide an accurate and complete list of the patient's medications to the patient in a patient friendly format, free of medical jargon and complying with health literacy principles. **Note:** the medication list provided to the patient must correspond with the medication list provided in the discharge summary.

4.2. Include information about any changes that have been made to medicines and any ongoing therapeutic plan. To identify changes that have been made to medicines, compare the BPMH with the list of medications created at discharge. An explanation of the changes should be documented on the NIMC, MMP or clinical notes.

4.2.1. The medical officer should include information regarding changes that have been made to medicines (new, ceased or changed) and an explanation for these changes in the discharge summary.

4.2.2. The medical officer should include any information regarding the ongoing medication management requirements in the discharge summary for the next care provider.

4.2.3. The medical officer, nurse or pharmacist should include information regarding changes that have been made to medicines and an explanation for these changes in the medication list provided to the patient.

4.2.4. The medical officer, nurse or pharmacist should include information regarding the ongoing medication management requirements in the medication list provided to the patient.

## FURTHER INFORMATION

5. Related policies/procedures/guidelines:

- 5.1. PD2013\_043 Medication Handling in NSW Public Health Facilities.
- 5.2. NSW Poisons and Therapeutic Goods Act 1966.
- 5.3. NSW Poisons and Therapeutic Goods Regulation 2008.
- 5.4. CEC Continuity of Medication Management: Medication Reconciliation Toolkit.

5.5. Australian Commission on Safety and Quality in Health Care's:

- 5.5.1. Guide on how to complete the MMP
- 5.5.2. MMP training presentation
- 5.5.3. Get it right! Taking a BPMH training video.

## COMPLIANCE EVALUATION

6. Compliance evaluation:

- 6.1. Annual audit to determine compliance with obtaining patients' BPMH (e.g. NIMC audit).
- 6.2. Annual audit to determine compliance with providing medication lists to patients.
- 6.3. Annual audit to determine quality of medication information provided to patients and next care providers.

## REFERENCES

1. Cornish PL, Knowles SR et. al. (2005). Unintentional Medication Discrepancies at the Time of Hospital Admission. *Arch Intern Med* 165: 424-429.
2. Whittington J, Cohen H. (2004). OSF Healthcare's Journey in Patient Safety. *Quality Management in Health Care* 13: 53-59.

# FREQUENTLY ASKED QUESTIONS

## Question 1. What is medication reconciliation?

The process of collecting, confirming and documenting an accurate list of a patient's current medications on admission and comparing this list to the admission, transfer and/or discharge medication orders to identify and resolve discrepancies. At the end of the episode of care the verified information is transferred to the next care provider. This process of medication reconciliation facilitates continuity of medication management and decreases the risk of medication-related harm.

Medication reconciliation involves four steps:

1. Collecting information to compile a list of each patient's current medications
  - This should include whenever possible a structured interview conducted at admission with the patient or patient's representative by an appropriately trained healthcare professional to obtain and document the patient's current pre-admission medications, including previous adverse drug reactions and allergies, and any recently ceased or changed medications.
2. Confirming the accuracy of the information collected to achieve a Best Possible Medication History (BPMH)
  - Using at least one additional source of medicines information to verify the information obtained.
3. Comparing the history with prescribed medicines at every transfer of care
  - Compare the patient's medication history with their prescribed inpatient treatment on admission, transfers between wards/units, transfers between hospitals and on discharge. Check that changes are clinically appropriate and explanation for changes documented.
  - Where there are discrepancies the clinician performing the reconciliation must ascertain whether discrepancies in therapy are intentional or unintentional and then document any resulting changes.
4. Supply accurate medicines information to the patient and next care provider
  - An accurate and complete list of the patient's medications is supplied to the patient and/or carer and the next care provider.
  - Information about any changes that have been made to medicines and any ongoing therapeutic plan for medicines is also supplied.

## Question 2. Why introduce formal, systematic medication reconciliation processes?

It ensures that patients receive all intended medicines and that accurate, current and comprehensive medicine information follows them at all transfers of care. Unintentional changes to patients' medicines at transfers of care can result in considerable harm and have been linked to poorer health outcomes, increased hospital readmissions and mortality.

### Question 3. Do all medication histories need to be confirmed?

Yes. To ensure accuracy and completeness of the medication history confirmation with at least one additional source is recommended. Examples of sources of medicines information include the patient's GP, community pharmacist and the patient's own medicines. This may not be possible in all cases but a concerted effort should be made.

### Question 4. Who is responsible for completing the four steps of medication reconciliation?

Medication reconciliation is the responsibility of medical officers, nurses, and pharmacists. Each has a role in the process. Responsibility for each of the four steps may differ at each site, based on local resources and workflow.

#### *Example on admission*

*For a patient admitted to the hospital via the emergency department, the ED pharmacist (or nurse trained in taking a structured medication history) takes the medication history and confirms it. The medical officer then makes and documents the decisions on which medicines to continue, adjust or cease and writes up the medication chart. With this information, a pharmacist or nurse can reconcile the medication history with the medication chart to ensure no unintentional omissions/discrepancies occur.*

#### *Example on transfer*

*For a patient transferred to another hospital, the referring medical team communicates the patient's current medications, changes that have been made together with a copy of the patient's medication history and any ongoing medication management plan. The medical officer accepting the patient compares the medication history with the patient's current medications and clarifies any changes and the ongoing plan with the referring team*

#### *Example on discharge*

*For a patient discharged home, the pharmacist (or nurse trained in reconciling medications on discharge) compares the patient's medication history, the patient's medications at discharge, the discharge plan and the discharge medication list. Any discrepancies are clarified with the medical officer and the discharge medication list adjusted or an explanation for changes provided. The pharmacist (or nurse) provides the patient and/or carer with a discharge medication list with an explanation of changes in a format which can be easily understood.*

### Question 5. Where is the BPMH documented?

Ideally the BPMH should be documented so that it is at the point of care, accessible to all members of the health care team. A standardised form such as the *Medication Management Plan* (or electronic equivalent) that can be used to guide taking a medication history and can be kept with patients' active medication chart is recommended. Alternatively the dedicated section of the national inpatient medication chart may be used.

### Question 6. How do you engage medical officers?

Medical officers are the members of the health care team who have responsibility for writing admission medication orders and discharge summaries. Include them in redesigning processes to minimise rework and streamline workflow. Apart from delivering safer patient care, benefits to medical officers include, having an accurate baseline of medications for treatment decisions, reduction in calls/pages from pharmacists needing to clarify initial medication orders and better access to information to complete the discharge summary.



SMR130007

<input checked="" type="checkbox"/> ADVERSE DRUG REACTIONS (ADR)		GIVEN NAME <b>WENRY</b>		MEN 1234567	
<input type="checkbox"/> Male <input checked="" type="checkbox"/> Female		D.O.B. <b>13/12/1937</b>			
Drug (or other) <input type="checkbox"/> Prescription Drugs <input checked="" type="checkbox"/> Non-prescription Drugs		ADDRESS <b>29 Harris Street</b>			
		LOCATION / WARD <b>HAPPYVALE 6321</b>			
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE					
First clinic to print patient details <b>WENRY STONES</b>					
MEDICINES TAKEN PRIOR TO PRESENTATION TO HOSPITAL					
Medicine Generic name (Trade name) / Strength / Form / Route	Dose	Frequency	Indication (confirm with patient)	How long on when prescriber started	
<b>D. Nitazepam 180mg cd</b>	one	mane	Hypertension/ angina	2 yrs <b>SM</b>	
<b>Nicorandil 10mg</b>	one	bd	Angina	1 yr <b>SM</b> Δ↑	
<b>Pantoprazole 10mg</b>	one	mane	Hypertension 5 yrs	DM ✓	
<b>Metformin 15 mg</b>	one	mane	Amoxicillin 6 weeks	DM X	
<b>Atorvastatin 40mg</b>	one	noche	Paracetamol 6 weeks	DM ✓	
<b>Pantoprazole 20mg</b>	one	mane	Weeks/burn 4 mth	DM Δ ↑	
<b>Aspirin 100mg</b>	one	mane	Prevent + metformin 2 yrs	DM W ✓	
<b>Guaifenesin 1000mg</b>	one to	mane	Arthritis 1yr	DM W ✓	
<b>Guaifenesin 1000mg</b>	one to	mane	Angina 2 yrs	DM ✓	
<b>Brimonidine 0.2% eye drops</b>	one drop bid	both eyes	Paracetamol 2 yrs	DM ✓	
<b>Latanoprost eye drops</b>	one drop once QHS	both eyes	Guaifenesin 5 yrs	DM ✓	
30 minutes ago					
RECENTLY CEASED OR RECENT CHANGES TO MEDICINES (refer to presentation to hospital)					
NOVA					
SOURCES OF MEDICINE LIST					
Source	Confirmed by	Date	Source	Confirmed by	Date
<input checked="" type="checkbox"/> General Practitioner	<b>SM</b>	<b>4/2</b>	<input type="checkbox"/> Own Medicines	<b>SM</b>	<b>4/2</b>
<input type="checkbox"/> Community Pharmacist			<input type="checkbox"/> Community Nurse		
<input checked="" type="checkbox"/> Patient / Carer	<b>SM</b>	<b>4/2</b>	<input type="checkbox"/> Patient List		
<input type="checkbox"/> Nursing Home			<input type="checkbox"/> Previous Admission		
GENERAL INFORMATION					
Medicines usually administered by: <input checked="" type="checkbox"/> Self <input type="checkbox"/> Other (if other, specify):					
Did patient bring own medicines? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Patient's immunisation up to date? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
General Practitioner details					
Community Pharmacist details					
Residential Care Facility details					
MEDICATION RISK IDENTIFICATION					
Level of independence					
Lives alone <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>					
Lives in residential care facility <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Uses dose administration device i.e. spacers, inhaler devices <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Uses administration aid (specify): <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Uses medication list <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Swallowing issues <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Has impaired hearing <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Has impaired vision <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>					
Other information:					
MEDICATION HISTORY CHECKLIST					
Prescription medicines <input checked="" type="checkbox"/>					
Sleeping tablets <input checked="" type="checkbox"/>					
Inhalers, puffers, sprays, sublingual tablets <input checked="" type="checkbox"/>					
Oral contraceptives, hormone replacement therapy <input checked="" type="checkbox"/>					
Over-the-counter medicines <input checked="" type="checkbox"/>					
Analgesics <input checked="" type="checkbox"/>					
Gastrointestinal drugs (e.g. reflux, heartburn, constipation, diarrhoea) <input checked="" type="checkbox"/>					
Complementary medicines (e.g. vitamins, herbal or natural therapies) <input checked="" type="checkbox"/>					
Topical medicines (e.g. creams, ointments, lotions, pastilles) <input type="checkbox"/>					
Inhaled medicines (e.g. nose/ear/nose drops, pens, inhalers, suspensions) <input type="checkbox"/>					
Recently completed courses of medicine <input type="checkbox"/>					
Other people's medicine <input type="checkbox"/>					
Social and recreational drugs <input type="checkbox"/>					
Intermittent medicines (e.g. weekly or twice weekly) <input type="checkbox"/>					

KEEP WITH ACTIVE MEDICATION CHART - DO NOT REMOVE

Page 2 of 4

KEEP WITH ACTIVE MEDICATION CHART - DO NOT REMOVE

Page 3 of 4

## MEDICATION MANAGEMENT PLAN

#### LOCATION CHANGES DURING ADMISSION

**COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL**

NSW GOVERNMENT	
<b>Facility:</b>	<b>Health</b>
	<u>Nursing Home</u>
<b>ADDRESS</b>	3A Victoria Street
<b>FAMILY NAME</b>	JONES
<b>GIVEN NAME</b>	WEARIE
<b>D.O.B.</b>	13/12/1937
<b>ALO.</b>	
<b>MRN</b>	1234567
<input type="checkbox"/> <b>MALE</b>	<input type="checkbox"/> <b>FEMALE</b>

## MEDICATION DISCHARGE CHECKLIST

- |   |                 |                  |
|---|-----------------|------------------|
| <input checked="" type="checkbox"/> Reconciled on discharge   | Sign: <u>DM</u> | Date: <u>6/2</u> |
| <input checked="" type="checkbox"/> Own medicines returned  | Sign: <u>DM</u> | Date: <u>6/2</u> |
| <input checked="" type="checkbox"/> Permission for disposal of medicines  | Sign: <u>DM</u> | Date: <u>6/2</u> |
| <input checked="" type="checkbox"/> Medication supply   | Sign: <u>DM</u> | Date: <u>6/2</u> |
| <input checked="" type="checkbox"/> Dose administration aid   | Type: _____     |                  |
| <input checked="" type="checkbox"/> Script given to patient (if applicable)   |                 |                  |
| <input checked="" type="checkbox"/> Discharge Medication Record given/sent to: <input checked="" type="checkbox"/> Patient <input checked="" type="checkbox"/> G.P. <input type="checkbox"/> Pharmacy <input type="checkbox"/> Other: _____ |                 |                  |

RECOMMENDING HOME MEDICINES REVIEW REFERRAL: SURVEY RESULTS

- Consider recommending a Home Medicines Review referral because:**

  - Difficulty managing medicines
  - Suspected non compliance
  - Medication requiring therapeutic monitoring
  - Inability to manage drug related therapeutic devices
  - Taking more than 12 doses per day
  - Significant changes to medication regimen during admission

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BINDING MARGIN - NO WRITING

Patient Medication List Pharmacy Department, My Hospital Patient EXAMPLE MRN 1234567 DOB:12/03/56 Date:16/10/13

Name of medicine	Brand names	Used for	Daily time table				Change	Comments
			Morning	Noon	Evening	Bedtime		
Perindopril arginine 10mg tablet	Coveryl Prexium	Treating high blood pressure	Take 1 tablet in the morning.	1			unchanged	
Pantoprazole 20mg tablet	Somac Salglaz	Treating heartburn	Take 2 tablets in the morning.	2			increased dose	To be reviewed by GP after 1 week.
Aspirin 100mg tablet	Astrix Cardiarin Cartia	Preventing stroke and heart attack	Take 1 tablet in the morning.	1			unchanged	Take with breakfast
Metformin 500mg tablet	Diabex Diformin	To control amount of sugar in the blood	Take 1 tablet in the morning 1 tablet at noon And 1 tablet in the evening.	1	1	1	unchanged	Take during or immediately after food
Glycerol trinitrate 5mg/24 hours transdermal patch	Transiderm-Nitro 25 Nitro-Dur	Treating chest pain	Apply 1 patch in the morning And remove at night.				unchanged	Apply to hair free area of chest or upper arm
Paracetamol 500mg tablet	Panadol Panamax	To reduce pain	Take 2 tablets every 4 to 6 hours when needed for pain. Do NOT take more than 8 tablets in a day.			Remove	unchanged	

The following medicines were CEASED. Do not take these medicines without further advice.

Name of medicine	Brand names	Date ceased	Explanation
Meloxicam 15mg tablet	Mobic Movalis	4/12/2013	Making heartburn worse

### Allergies and adverse drug reactions

Date	Medicine/causal agent	Reaction
	No known drug allergies	

**Patient Medication Summary**  
**Pharmacy Department, My Hospital**  
**For Patient EXAMPLE**

Date: 16/10/2013

MRN: 1234567

PRODUCT DESCRIPTION	BREAKFAST	LUNCH	TEA	BEDTIME	COMMENTS
CYCLOSPORIN (NEORAL) 100MG CAPSULES	1		1		Unchanged. To prevent graft or organ rejection.
MYCOPHENALATE (CELLCEPT) 250MG CAPSULES	3		3		Unchanged. To prevent graft or organ rejection. Do not crush tablets. Can be taken with or without food.
GLICLAZIDE MR (APO-GLICLAZIDE MR) 30MG TABLETS	1		1		Unchanged. To control blood sugar. Take with or immediately after food.
WARFARIN (COUMADIN) 1MG, 2MG, 5MG TABLETS			See 'comments'		Dose changed. Current dose at 16/10/2013 is 5.5 mg in the evening. Dose to be adjusted by GP on 21/10/2013.
PARACETAMOL (PANADOL OSTEo) 665MG TABLETS	2	2	2		Unchanged. To reduce pain.
SIMVASTATIN (LIPEX) 80MG TABLETS				1	Unchanged. To lower cholesterol
The following medicine was CEASED. Do not take this medicine without further notice: <b>AMLODOPINE (NORVASC) 5mg</b>					CEASED as causing dizziness. GP to review need at next visit.
No known allergies or adverse drug reactions.					

Please bring this chart with you to each visit to your Doctor, Pharmacist, Dentist or other Health Care Professional

Prepared by: Sue Smith

## APPENDIX C

This appendix contains the following tools which may assist with education:

- Obtaining a Best Possible Medication History (BPMH) Presentation
- BPMH Interview Guide
- Medication Reconciliation Presentation
- Medication Reconciliation: Beyond Admission Presentation

# Continuity of Medication Management

## Obtaining a Best Possible Medication History

Hospital  
Presenter  
Month YYYY



## What is a Best Possible Medication History (BPMH)?



## What is a BPMH?

- An accurate and complete medication history, or as close as possible
- Uses at least one other source of medicines information to verify
- More comprehensive than a routine primary medication history



## Contents of a BPMH

- Includes prescription, non-prescription and complementary medicines
- Details the following:
  - Medication name, strength, dose, route and frequency
  - How long the patient has been taking the medications
  - Patient's understanding of indication for use
  - Any recently ceased or changed medications
  - Any allergies or adverse drug reactions



## Why Take a BPMH?

- 10-67% of medication histories contain at least one error<sup>1</sup>
- Incomplete medication histories at the time of admission have been cited as the cause of at least 27% of prescribing errors in hospital<sup>2</sup>
- The most common error is the omission of a regularly used medicine<sup>3</sup>
- Around half of the medication errors that happen in hospital occur on admission or discharge<sup>4</sup>
- 30% of these errors have the potential to cause harm<sup>3,5</sup>



## How to Obtain a BPMH



## Obtaining a BPMH

- **Collect** a medication history
  - Patient/carer interview when possible AND/OR
  - Other sources of medicines information e.g. community healthcare provider
- **Confirm** the obtained information
  - Use a secondary source to verify the information OR
  - Using two or more sources of information to obtain and verify the medication history
- These two steps may occur in succession or concurrently



## Sources of Medicines Information

- Sources may include:
  - Patient/carer interview (wherever possible)
  - GP medication list, referral letter, phone call
  - Patient medication list
  - Community pharmacy dispensing history
  - Residential Aged Care Facility (RACF) medication chart
  - Patient's own medications, prescriptions or dose administration aids
  - Previous hospital discharge summary



## Patient / Carer Interview

- Other sources of information should never replace a thorough patient and/or carer interview (if possible)
- For patients that bring in their own medication supply and/or a medication list, verify each medication and how they take it
- Important since patients:
  - Frequently take medications differently than what is prescribed on the medication label
  - May not update medication lists with newly initiated medications, dose changes or ceased medications
  - May not bring in or list all of their medications  
e.g. eye drops/inhalers



## Structured, Systematic Process for Interview

1. Review relevant patient information
2. Introduce yourself and explain the purpose of the interview
3. Ask about previous adverse drug events or allergies
4. Ask about prescription, non-prescription and complementary medicines
5. Use a checklist
6. Assess patient's understanding, attitude and adherence
7. Organise and document medicines information



## 1. Review Patient Information

- Types of information that may be useful:
  - Age, gender, ethnic background/religion, social history
  - Ability to communicate, cognition, alertness
  - Previous medical history
  - Laboratory results or other findings
  - Presenting condition
  - Working diagnosis
- Identifies issues to focus during the interview
- Aids in prioritisation of patients if required



## 2. Introduction

- Provide clear introduction
- Explain purpose of interview
- Respect patient's right to decline interview
- Determine person responsible for administration and management of medicines
- Obtain patient consent before requesting information from other healthcare providers or carer



### 3. Previous Allergies or Adverse Drug Events

- Document previous allergies or adverse drug events
  - On the National Inpatient Medication Chart (NIMC)
  - In the patient's medical record according to hospital policy
- Document specifically:
  - Drug
  - Type of reaction
  - Date of reaction



### 4. Prescription, Non-Prescription and Complementary Medications

- Obtain specific details of all medications
  - Name, strength, dose, route, frequency, duration and perceived indication
  - Any recently started, ceased or changed medications

#### Hints

- Treat each medication separately i.e. obtain all information before moving onto the next medication
- Document as you go
- Do not rely on memory!



## 4. Prescription, Non-Prescription and Complementary Medications

- Begin with open-ended questions
  - *What medicines do you take?*
  - *What medicines do you take when you need?*
  - *Do you take any medicines for pain/to help with sleep/heartburn?*
- Ask about medications for specific conditions identified from the medical history
  - *What medicines do you take for your diabetes/high blood pressure?*
- End with specific prompts
  - *How often do you take your pain medicine?*
  - *Do you take that in the morning or at night?*



## 5. Use a Checklist

- To avoid omitting relevant details use a written or mental checklist
- Each patient's perception of what a medicine is will vary
- Ask about:
  - Injectable medicines
  - Once weekly or intermittent medicines
  - Topical medicines e.g. eye drops, creams, patches
  - Puffers, sprays or inhalations
  - When needed medications for pain/sleep/constipation etc.
  - Oral contraceptives, hormone replacement
  - Social and recreational drugs



## 6. Assess Patient's Understanding, Attitude and Adherence

- Elicit patient's understanding of:
  - Their illness
  - Indication of each medicine
  - Perceived effectiveness
  - Perceived problems attributable to medicines
  - Current monitoring of disease/medicine
- Assess adherence by asking:
  - *People often have difficulty taking their medicines for one reason or another...Have you had any difficulty taking your medicines?*
  - *How often would you say you miss taking your medicines?*



## 7. Organise and Document Medicines Information

- Document the BPMH according to hospital policy
  - Front of the National Inpatient Medication Chart (NIMC)
  - Dedicated form e.g. NSW Medication Management Plan (MMP)
  - In the electronic medical record
- Ensure availability at point of care e.g. with the current NIMC
- Ensure the following details are clearly documented:
  - Patient details
  - Date (and time) of documentation
  - Name and contact details of clinician completing history
  - List of medicines (name, strength, dose, route, frequency, duration and indication)
  - Source/s of information
  - Information about previous adverse drug events or allergies
  - Recently started, ceased or changed medications



## Use the BPMH to Reduce Adverse Events on Admission

- Prescribers should use the BPMH when determining the medications to be prescribed for the patient on admission
  - Considering each medicine in the BPMH, the patient and the presenting condition
  - Determining and documenting the plan for each medicine e.g. to continue, change dosage or frequency, withhold or cease



## NSW Examples - Medication Errors

Patient with HT on irbesartan 150mg. Charted for 300mg.	Patient from RACF, notes indicate recent seizures. Regular clonazepam drops omitted.	Patient with AF. All regular medications omitted, including digoxin.
<ul style="list-style-type: none"><li>- Higher dose given</li><li>- Patient hypotensive</li><li>- Error rectified</li></ul>	<ul style="list-style-type: none"><li>- Patient developed seizures during admission</li><li>- Clonazepam charted</li><li>- Seizures controlled</li></ul>	<ul style="list-style-type: none"><li>- Patient developed rapid AF</li><li>- Required IV digoxin</li><li>- Subsequent patient death</li></ul>
Error reached patient, and caused temporary harm	Error reached patient, and caused temporary harm requiring intervention	Error reached patient, and may have contributed to patient's death



## Patient / Carer Engagement

- Importance of carrying a current medication list
- Medication list options include:
  - Hand-written lists
  - Computer-generated lists or smart phone applications
  - Hospital-acquired medication cards or profiles
  - Consumer resources from other organisations e.g. NPS
- Inform patient that the list needs to be updated regularly, and include ALL medications taken or used



## Common Pitfalls when Obtaining a BPMH



## Patient / Carer Interview

- Patients on multiple medications may not recall all medications
- Non-English speaking patients
- Non-adherent patients may not reveal how they really take medications
- Acutely ill or confused patients unable to provide accurate or any information

### How to overcome pitfalls?

- Ask family and/or carers where relevant and possible
- Utilise an interpreter
- Use a non-judgemental and open approach
- Use other sources to gather information



## GP Medication Lists / Referral Letters

*"86% of GP referral letters included a medication list with inaccurate information regarding medications taken and medication doses"<sup>6</sup>*

- Patients on multiple medications may not recall all medications
- Non-English speaking patients
- Non-adherent patients may not reveal how they really take medications
- Acutely ill or confused patients unable to provide accurate or any information

### How to overcome pitfalls?

- Go through the list with the patient
- Ask about medications other doctors may have prescribed or non-prescription items



## Patient Medication Lists

- May not be updated
  - Medications newly initiated not added
  - Ceased medications not deleted
- May not contain all medications e.g. complementary, non-prescription, when required
- May not contain non-oral medications e.g. puffers, eye drops
- May indicate old dosage regimens that have changed

### How to overcome pitfalls?

- Go through the list with the patient and ask about each medication
- Ask what other medications they may take apart from the ones written



## Community Pharmacy Dispensing History

- Patient may pick up medications from multiple pharmacies
- Patient may be taking medications differently to the directions in the dispensing record
- May contain ceased medications
- Does not contain non-prescription medications

### How to overcome pitfalls?

- Ask about non-prescription items
- Check if patient only uses one pharmacy
- Go through the list with the patient



## Nursing Home / Hostel Charts

- May contain ceased medications
- Sometimes illegible
- May not send all current charts

### How to overcome pitfalls?

- Check dates on chart
- Thoroughly check for ceased medications
- Check with the pharmacy that supplies the nursing home/hostel



## Patient's Own Medications

- Some medications may be ceased
- Not all medications may be brought in
- Directions on labels may be incorrect
- Medication may be placed in incorrect packaging
- Relative's medications may be brought in

### How to overcome pitfalls?

- Check patient's name on packaging
- Ask the patient how they take each medication
- Check contents
- Check date of dispensing



## Dose Administration Aids

- Does not contain non-oral medications
- May not contain all medications e.g. when needed, weekly medications, medications with special storage requirements
- May have more than one dose administration aid
- May not indicate the name and strength of what is inside

### How to overcome pitfalls?

- Check contents against list if available
- Ask about other medications not included in the dose administration aid
- Ask who packs the dose administration aid



## Previous Hospital Discharge Summaries

- May be outdated
- Changes may have occurred post-discharge
- May have been incorrect when completed

### How to overcome pitfalls?

- Check dates
- Confirm that changes have not been made post-discharge
- Go through the list with the patient



## How to overcome pitfalls...

Consider:  
is it complete  
is it current  
is it what the patient is actually taking?

Avoid relying on one source of information



## Conclusion

- A BPMH is vital for ensuring continuity of care:
  - Helps reduce the risk of medication errors
  - Has patient safety and organisational benefits
- A dedicated form (e.g. MMP) may facilitate the process of documenting a BPMH
- Be aware of the limitations with sources of medicines information
- For more information on the MMP visit the ACSQHC website [www.safetyandquality.gov.au](http://www.safetyandquality.gov.au)



## References

1. Tam V, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *CMAJ* 2005;173:510-5.
2. Dobrzanski S, Hammond I, Khan G, Holdsworth H. The nature of hospital prescribing errors. *Br J Clin Govern* 2002;7:187-93.
3. Cornish PL, Knowles SR, Marchesano R, Tam V, Shadowitz S, Juurlink DN, Etchells EE. Unintended medication discrepancies at the time of hospital admission. *Arch Interned* 2005;165:424-9.
4. Sullivan C, Gleason KM, Rooney D, Groszek JM, Barnard C. Medication reconciliation in the acute care setting: opportunity and challenge for nursing. *J Nurs Care Qual* 2005;20:95-8.
5. Vira T, Colquhoun M, Etchells EE. Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 2006;15:122-6.
6. Taylor S, Welch S, Harding A, Abbot L, Riyat B, Morrow M, et al. The general practitioner referral letter – Is the medication regimen accurate or not? [Unpublished article] 2009.



## Bibliography

1. SHPA Committee of Specialty Practice in Clinical Pharmacy. SHPA standards of practice for clinical pharmacy. *J Pharm Pract Res* 2005;35 (2): 122-46.
2. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Commonwealth of Australia 2005.

## Questions



## Role Play

- The following role play can be used prior to the presentation and again after the presentation if time allows
- You will need a:
  - Volunteer as the interviewer
  - Facilitator as the patient (provide them with a list of medications)



## A Case

- Mrs C.P.
- 78 year old female
- From home (independent)
- Presenting problem
  - Chest pain (7/10)
  - No history of IHD



## Medical History

- Hypertension
- Diabetes
- Asthma
- Chronic back pain
- Osteoporosis



## Undertake Role Play

- Audience to record medications during the role play
- Use the NSW MMP or equivalent form in use within the hospital



## Compare List



## Medications

- Aspirin 100mg mane
- Telmisartan 80mg mane
- Lantus 50 units nocte
- Novorapid 10 units tds
- Amlodipine 5mg mane
- Latanoprost (Xalatan) 1 drop each eye nocte
- Seretide 250/25microg 2 puffs bd
- Ventolin 100mcg prn (usually around 2 puffs BD)
- Panadol Osteo 2 tablets tds
- Rabeprazole 20mg daily



## Medications Continued

- Buprenorphine Norspan patch 5mg weekly on Mondays
- Calcium 600mg nocte
- Cholecalciferol 1000 units mane
- Risedronate 35mg weekly on Sundays
- Glucosamine 1 bd
- Fish Oil 1 tds
- Movicol sachets 2 prn (usually once or twice a week)



# BEST POSSIBLE MEDICATION HISTORY INTERVIEW GUIDE

A patient/carer interview, when possible, is a crucial aspect of obtaining a best possible medication history. The structured approach to interviewing a patient/carer provided in this guide is intended to encourage standardisation and improve the capture of important accurate medication information. Clinicians may need to adapt the approach used in this guide depending on circumstances.

## 1. Review relevant patient information

Background information about the patient's health and social status can assist in establishing the existence of, or potential for, medication related problems.

For example, age - the younger and older patients are at most risk of medication-related problems. A patient's age will indicate their likely ability to metabolise and excrete medicines which has implications for appropriate selection of drug and dosage.

For example, *presenting condition* - could their symptoms be adverse effects related to their prescribed medicines or complementary medicines? Or could lack of symptom control indicate poor adherence, inadequate dose or inappropriate agent?

Establishing this background information will allow you to identify issues to focus on during the interview, provide insight into the types of medications the patient may be taking and will assist in assessing the appropriateness of therapy (especially if your role in the patients care includes reviewing and/or prescribing medications).

## 2. Introduce yourself and explain the purpose of the interview

Provide a clear introduction to the interview. Determine the individual responsible for the administration and management of medicines, if this is the patient and they are able to communicate, confirm the time is convenient and adopt a suitable position to enable the interview to take place.

If the patient is not responsible an interview with the carer should be organised.

## 3. Ask about previous adverse medication events or allergies

Confirming an allergy or adverse medication event often requires more than one question as often patients do not understand what an adverse event is e.g. you might ask "...are there any medicines you are allergic to or have had a bad reaction to?"

To document an accurate and comprehensive allergy and adverse medication event history, confirm the details of any medication allergies or adverse reactions with the patient/carer and document details of the drug, reaction and date of the reaction (if known) on the medication chart and in the patient's medical record according to hospital policy.

Comprehensive information is important as it may be used to determine whether re-exposure could be clinically appropriate when alternatives are not available.

## 4. Ask about prescription, non-prescription and complementary medicines

Include information about the brand, strength, form, route, dose and frequency, duration of therapy and indication i.e. why the patient thinks they are taking the medication. Remember to ask specifically about prescription, non-prescription and complementary medications.

The medication list should include recent changes to medicines including dose increase/decrease) and any recently ceased medicines. Reasons for any change should also be recorded, where known.

The medication list should include recent changes to medicines including altered medicines (e.g. dose increase/decrease) and any recently ceased medicines.

Reasons for any change should also be recorded, where known.

Don't assume that if a patient brought in a medicine that they are actually taking it.

Guide the interview responses by treating each medication separately, obtaining all information before moving onto the next medication. This reduces confusion and facilitates accurate documentation.

## 5. Use a checklist

Use of a checklist will improve the accuracy and completeness of the medication history. It reduces the likelihood of omitting relevant details. It prompts the patient's memory of medications that they did not bring with them or where not brought in by the paramedics (e.g. medications stored in the refrigerator), they use on occasion only or had not perceived as a medication.

### Medication History Checklist

- Prescription medications
  - Sleeping tablets
  - Inhalers, puffers, sprays, sublingual tablets
  - Oral contraceptives, hormone replacement therapy
- Non-prescription medications e.g. OTC medicines
- Complementary medications e.g. vitamins, herbal or natural therapies
- Analgesics
- Gastrointestinal medications e.g. for reflux, heartburn, constipation or diarrhoea
- Topical medications e.g. creams, ointments, patches
- Inserted medications e.g. nose/ear/eye drops, pessaries, suppositories
- Inject medications
- Recently completed courses of medication
- Other people's medicines
- Social and recreational drugs
- Intermittent medications e.g. weekly.

## 6. Assess patients understanding, attitude and adherence

Seek information on the patient's:

- Understanding of rationale for treatment
- Perception of the purpose of the medicines and their effectiveness
- Perception of potential adverse effects
- Understanding of monitoring of disease/medicine.

These perceptions may impact on the patient's adherence to prescribed treatment.

To obtain honest, open responses regarding a patient's adherence choose questions which are non-judgemental and normalise non-adherence.

### Assess Adherence

- *'People often have difficulty taking their medicine for one reason or another... Have you had any difficulty taking your medicine?'*
- *'About how often would you say you miss taking your medicine?'*

## 7. Organise and record medicines information

It is important that the medication history is documented in a way that allows it to be readily accessed by all members of the healthcare team.

Suitable areas include the front of the National Inpatient Medication Chart, the NSW Medication Management Plan or similar form and in the electronic medical record.

The information gathered during the patient interview, as listed, should be documented clearly and succinctly. This includes the other sources of information used to clarify and validate the information obtained during the interview.

### Tips

Begin with open ended questions:

- *'What medicines do you take or use regardless of how you feel?'*
- *'What medicines do you only take or use when you need them?'*
- *'Do you take or use any medicines for pain/to help you with sleep/heartburn/allergies?'*

Ask about medications for specific conditions identified from the medical history:

- *'What medicine do you take or use for your diabetes/high blood pressure etc.?'*

End with specific probing questions:

- *'How often do you take or use your pain medicine?'*
- *'Do you take that in the morning or at night?'*

Use prompts to assist the patient's memory e.g. medication lists or patient's own medications. Provide the patient opportunity to recall the name, how they take it and the purpose of the medicine. Do not read the list or label aloud asking if it is correct.

# Continuity of Medication Management

## Medication Reconciliation A Systematic Process to Reduce Adverse Medication Events

Hospital  
Presenter  
Month YYYY



## Continuity is an Issue in Health Care

- 10-67% of medication histories contain at least one error<sup>1</sup>
- Incomplete medication histories at the time of admission have been cited as the cause of at least 27% of prescribing errors in hospital<sup>2</sup>
- The most common error is the omission of a regularly used medicine<sup>3</sup>
- Around half of the medication errors that happen in hospital occur on admission or discharge<sup>4</sup>
- 30% of these errors have the potential to cause harm<sup>3,5</sup>

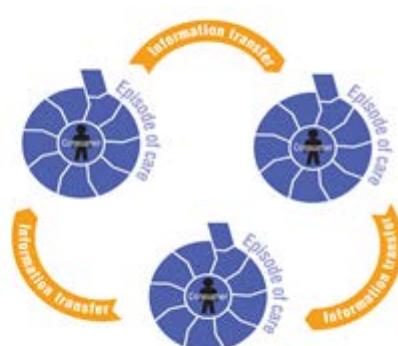


## NSW Examples - Medication Errors

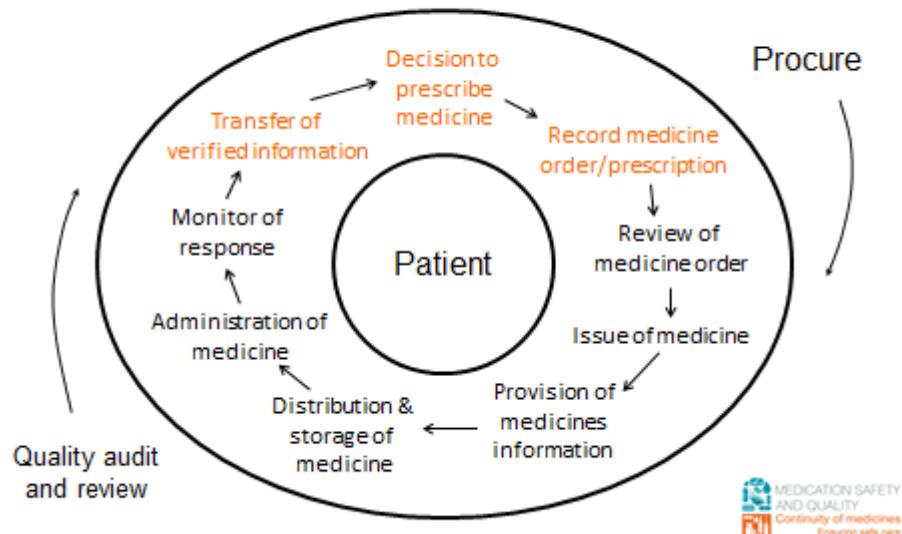
- |   |   |   |
|---|---|---|
| Aspirin and clopidogrel ceased in ICU and not recommenced when patient transferred to ward        | Patient suffered sudden cardiac arrest resulting in death                               | May have contributed to patient's death         |
| Patient prescribed ramipril 1.25mg daily, medication chart was rewritten as ramipril 12.5mg daily | Patient suffered pre-syncope episode, was transferred to HDU and required noradrenaline | Caused temporary harm and required intervention |
| Patient initiated on new cardiac medication, discharged with no summary or medicine               | Patient became acutely unwell and was re-admitted                                       | Caused temporary harm and required intervention |

## Continuity of Medication Management

Continuity of medication management is achieved when a series of medication management cycles, each of which corresponds to an episode of care, is linked so that information is transferred between cycles (APAC 2005)



## Medication Management Pathway



## Medication Reconciliation

- A process to reduce adverse medication events by:
  - Ensuring patients receive all intended medicines
  - Mitigating common errors of transcription, omission, commission and duplication
  - Ensuring accurate, current and comprehensive medication information follows patients on transfer and discharge



# Medication Reconciliation

## 4 Simple Steps to Improve Patient Safety

1. Collect a comprehensive medication history
2. Confirm the accuracy of the history
3. Compare the history with prescribed medicines
4. Supply accurate medicines information



### 1. What is a Best Possible Medication History (BPMH)?

- An accurate and complete medication history, or as close as possible
- Uses at least one other source of medicines information to verify
- More comprehensive than a routine primary medication history



## 1. Collect a BPMH

- Gather an accurate as possible medication history, using a combination of sources of medicines information:
  - Patient/carer interview when possible  
AND/OR
  - Other sources of medicines information e.g. community healthcare provider



## 2. Confirm the Accuracy of the History

- Verify the obtained information
  - Use a secondary source to confirm the interview information OR
  - Use two or more sources of information to obtain and verify the medication history
- Explore inconsistencies between the different sources
- The collecting and confirming steps may occur in succession or concurrently



## Sources of Medicines Information

- Sources may include:
  - Patient/carer interview (wherever possible)
  - GP medication list, referral letter, phone call
  - Patient medication list
  - Community pharmacy dispensing history
  - Residential Aged Care Facility (RACF) medication chart
  - Patient's own medications, prescriptions or dose administration aids
  - Previous hospital discharge summary



## 3. Compare the history with prescribed medicines

- Use the BPMH when determining the medications to be prescribed on admission:
  - Decide and document the plan for each medicine e.g. to continue, change, withhold or cease
  - Check the medicines that have been prescribed follow the plan
  - Compare pre-admission and current medications at every transfer of care



## 4. Supply Accurate Medicines Information

- Between wards, hospitals and at discharge consider:
  - Are all medicines prescribed still relevant?
  - Do any pre-admission medicines withheld/changed need to be recommenced/changed back?
  - Are the changes, including reasons clearly documented?
  - Is the list complete and clear for your patient, your team and the next care provider?



## A Tool to Facilitate Medication Reconciliation

### NSW Medication Management Plan (MMP)

A photograph of the NSW Medication Management Plan (MMP) form. The form is a two-page document. The left page is titled 'Area to record medicines taken prior to presentation'. The right page is titled 'CUT OFF SECTION' and contains sections for 'RECENTLY CEASED', 'RECENTLY CHANGED', 'GENERAL INFORMATION', and 'RECENTLY ADDED'. There are also sections for 'RECENTLY ADDED' and 'RECENTLY CHANGED' on the right side of the left page. A red box highlights the text 'Area to record medicines taken prior to presentation'.

#### Prompts for:

- Dose
- Frequency
- Indication
- Duration
- Recently ceased
- Recently changed
- Sources of list
- Checklist



Dr's Plan column enables comparison with the medication chart at admission

MMP

The MMP form displays a grid of medications. A red circle highlights the 'Dr's Plan' column, which contains handwritten notes such as 'Take 1 tablet qid', 'Take 1 tablet bid', and 'Take 1 tablet qid'. The 'Route' column includes entries like 'Oral', 'Rectal', and 'Topical'.

Medication Chart

The Medication Chart shows a similar grid of medications. A red circle highlights the 'Status' column, which includes entries like 'Rx'd', 'Pended', 'Pending', and 'Not Rx'd'. The 'Route' column includes entries like 'Oral', 'Rectal', and 'Topical'.

## Reconciliation Complete on Admission

The MMP form is identical to the one above, showing a grid of medications with handwritten 'Dr's Plan' notes. An orange box contains the instruction: 'Tick reconcile column once complete'.

## Identifying and Tracking Issues

Area to record:

- Identified medication related problems
- Action required
- Person responsible
- Result of action



## Assisting Discharge

As well as containing a list of the patient's pre-admission medications for comparison at discharge the MMP can:

- Capture medication changes during admission
- Capture comments e.g. medication administration and supply requirements
- Provide a discharge checklist
- Identify patients for home medicines review



## National and International

- The Australian Safety and Quality Goals for Health Care:
  - Recognise continuity of medication management as an area of priority
  - Identify care transitions (admission, transfer and discharge) as an area of concern
  - Define patient populations that are at an increased risk of adverse medication events
- The World Health Organisation (WHO) names medication reconciliation as one of its 'High 5' patient safety solutions



## Key Points

- A BPMH results in safer prescribing
- Documenting a BPMH and plan
  - Improves communication between the health care team
  - Reduces error, confusion and re-work
  - Reduces time and error at discharge
- Reconciling at admission, ward/hospital transfer and discharge reduces medication errors and patient harm
- Providing accurate information at transfer/discharge results in safe ongoing care



## References

1. Tam V, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *CMAJ* 2005;173:510-5.
2. Dobrzanski S, Hammond I, Khan G, Holdsworth H. The nature of hospital prescribing errors. *Br J Clin Govern* 2002;7:187-93.
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5. Vira T, Colquhoun M, Etchells EE. Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 2006;15:122-6.



# Continuity of Medication Management

## Medication Reconciliation: Beyond Admission

Hospital  
Presenter  
Month YYYY

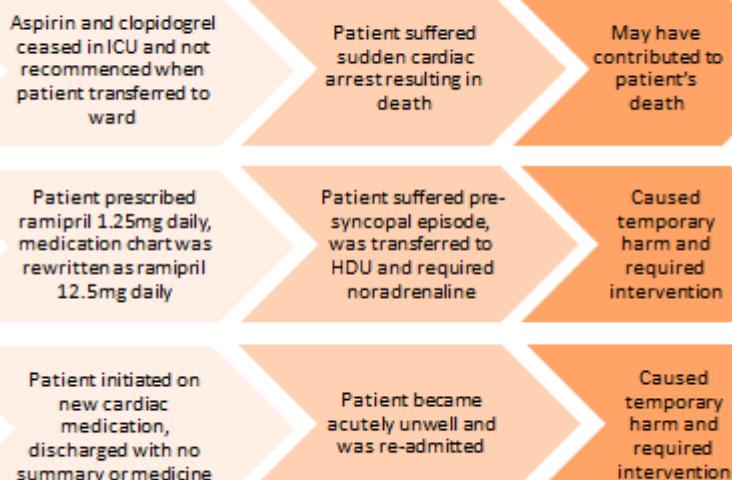


## Continuity is an Issue in Health Care

- 10-67% of medication histories contain at least one error<sup>1</sup>
- Incomplete medication histories at the time of admission have been cited as the cause of at least 27% of prescribing errors in hospital<sup>2</sup>
- The most common error is the omission of a regularly used medicine<sup>3</sup>
- Around half of the medication errors that happen in hospital occur on admission or discharge<sup>4</sup>
- 30% of these errors have the potential to cause harm<sup>3,5</sup>



## NSW Examples - Medication Errors



## Medication Reconciliation

- A process to reduce adverse medication events by:
  - Ensuring patients receive all intended medicines
  - Mitigating common errors of transcription, omission, commission and duplication
  - Ensuring accurate, current and comprehensive medication information follows patients on transfer and discharge



**MEDICATION RECONCILIATION**

**4 easy steps**

- 1 Collect**  
Information to compile a Medication History
- 2 Confirm**  
the accuracy of the information
- 3 Compare**  
the history with prescribed medications at every transfer of care
- 4 Supply**  
accurate medicines information to the patient & next care provider

NSW GOVERNMENT  
Ministry of Health  
NSW Health

NSW MEDICATION SAFETY AND QUALITY  
Continuity of medicines  
Ensuring safe care

Complete Step 3 and Step 4

at transfers between:

- ICU to ward
- ED to ward
- Ward to ward
- Hospital to hospital
- Hospital to home or aged care facility and
- When re-writing or reviewing medication charts



## NSW Medication Management Plan (MMP)

Facilitates Medication Reconciliation at Transfers

**CUT OFF SECTION**

Area to record medicines taken prior to presentation

Contains a list of the patient's pre-admission medications for comparison.

It is available at the point of care.

Know where to find the most accurate list of your patient's pre-admission medications, commonly referred to as the Best Possible Medication History (BPMH)

NSW MEDICATION SAFETY AND QUALITY  
Continuity of medicines  
Ensuring safe care

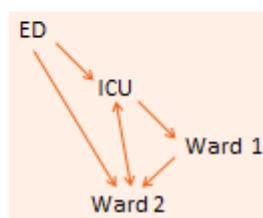
## Re-Writing or Reviewing Medication Charts

- Consider re-writing an opportunity to review a patient's medications:
  - Pre-admission medications with
  - Prescribed medications
- Consider:
  - Medications to be re-started
  - Medications no longer required
  - Medications to be adjusted or commenced
- Check:
  - New chart with previous chart
  - Any changes made have been documented



## Change in Clinical Setting / Ward

- Compare:
  - Pre-admission medications with
  - Prescribed medications
- Consider:
  - Medications to be re-started
  - Medications no longer required
  - Medications to be adjusted or commenced
- Communicate:
  - Medications that are to be continued
  - Any changes that have been made
  - Any ongoing plan



## Hospital to Hospital

- Referring hospital to:
  - Communicate
    - Medications that are to be continued
    - Any changes that have been made
    - Any ongoing plan
  - Provide a copy of
    - Pre-admission medications (to facilitate identification of changes)
    - Prescribed medications (as a reference for the new treating team)



## Hospital to Hospital

- Accepting hospital to:
  - Compare
    - Medications that are to be continued with previously prescribed medications and pre-admission medications
  - Identify and clarify
    - Any changes that have been made
    - Any ongoing plan



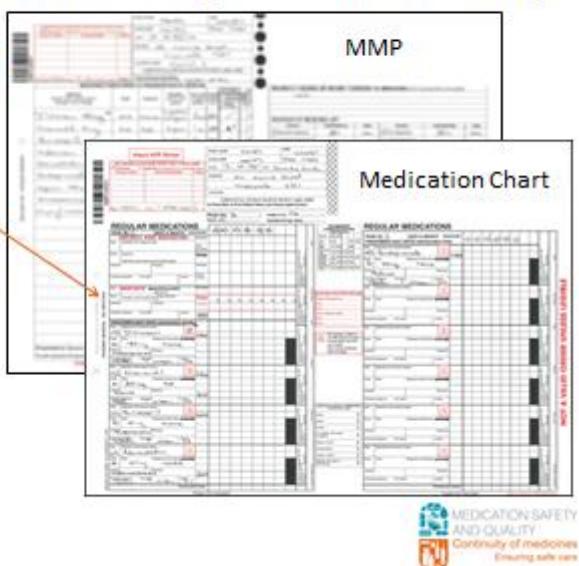
## Hospital to Home or Aged Care Facility

**Compare:**

- Pre-admission medications with
  - Prescribed medications

### Consider:

- Pre-admission medications to be restarted
  - Prescribed medications no longer required
  - Medications to be adjusted or commenced



## Hospital to Home or Aged Care Facility

- Communicate to the next care provider and patient:
    - Medications that are to be continued
    - Any changes that have been made
    - Any ongoing plan

## Example of a medication list for the patient

Pharmacy Department, My Hospital			Patient EXAMPLE	MRN: 1134567	DOB: 12 March 1956	Date: 16/10/2013
Name of medicine	Brand name	Strength		Daily dose table		
Paracetamol (single strength)	Paracetamol	500 mg tablet	Taking 1 tablet every 4 hours as required.	Take 1 tablet in the morning.	1	Charge unchanged.
Homatropine (single strength)	Sparine	1% eye drops	Taking 1 drop in each eye every 4 hours.	Take 1 drop in each eye in the morning.	1	Unchanged dose.
Aspirin (enteric tablets)	Aspirin	Acetylsalicylic acid 500 mg tablet	Priseing 1 tablet after meals and at night.	Take 1 tablet in the morning.	1	No fee remitted (as per other 1. waste fees with breakfast).
Motilium (single tablet)	Motilium	0.05 mg tablet	Take 1 tablet after meals.	Take 1 tablet in the morning.	1	Unchanged.
Urtigot (antacids)	Urtigot	100 mg tablet	Take 1 tablet after meals.	Take 1 tablet in the morning.	1	Take during or immediately after food.
Urtigot (antacids) 24 hour	Urtigot 24 hours	100 mg tablet	Take 1 tablet after meals.	Take 1 tablet in the evening.	1	Unchanged.
Paracetamol tablet	Paracetamol	500 mg tablet	Taking 1 tablet every 4 hours as required.	Take 1 tablet every 4 hours as required.	无数次	Apply to fever free areas or chest or upper arm.
<b>The following medicines were CEASED. Do not take these medicines without further advice.</b>						
Name of medicine	Brand name	Strength		Daily dose table		
Motilium (long acting)	Motilium	0.05 mg tablet	Take 1 tablet every 24 hours.	Take 1 tablet every 24 hours.	无数次	Unchanged.
<b>Allergies and adverse drug reactions:</b>						
Date	Medication/agent	Reaction				
16/10/2013	Paracetamol agent					

## A Final Check

- Ensure the same medicines information is provided on the:
  - Discharge summary
  - Discharge order/prescription
  - Discharge medicine labels
  - Patient medication list
- Ensure the patient understands the changes that have been made



## Key Points

- Medication errors and patient harm can be reduced by reconciling medicines when re-writing medication charts and at transfers between:
  - ICU and ward
  - ED to ward
  - Ward to ward
  - Hospital to hospital
  - Hospital to home or aged care facility
- Providing accurate information at transfers/discharge results in safer ongoing care



## References

1. Lee JY, Leblanc K, Fernandes OA, et al. Medication reconciliation during internal hospital transfer and impact of computerized prescriber order entry. *Ann Pharmacother.* 2010;44:1887-1895.
2. Santell JP. Reconciliation failures lead to medication errors. *Jt Comm J Qual Patient Saf.* 2006;32:225-229.
3. Elliott RA, Tran T, Taylor SE, et al. Impact of a pharmacist-prepared interim residential care administration chart on gaps in continuity of medication management after discharge from hospital to residential care: a prospective pre- and post-intervention study (MedGap Study). *BMJ Open* 2012; 2:e000918.
4. Stowasser DA, Collins DM, Stowasser M. A randomised controlled trial of medication liaison services—patient outcomes. *J Pharm Pract Res* 2002; 32:133-40.



## APPENDIX D

This appendix contains the following tools which may assist with monitoring practice:

- Comprehensive Audit Tool
- Comprehensive Audit Tool User Guide
- Baseline Audit Summary Template
- Snapshot Audit Tool
- Snapshot Audit Tool User Guide
- MMP User Evaluation

# COMPREHENSIVE AUDIT TOOL

Audit Period:	Hospital:	
Date of Audit:		
Patient Number:	Auditor/s names:	Additional Notes:
Male/Female (circle) Age:		
Department/Ward:		

## Section 1: Best Possible Medication History (BPMH)

1.1 Admission date: / /	Admission time:	
1.2 Discharge date: / /	Discharge destination:	
1.3 Was this patient on <b>regular medications</b> prior to admission? (if <b>No</b> , do not proceed with data collection)		
<input type="checkbox"/> Yes <input type="checkbox"/> No If <b>No</b> , was 'patient on nil medications' documented?		
<input type="checkbox"/> Yes If <b>Yes</b> , where was it documented? <input type="checkbox"/> No		
1.4 Has a <b>medication history</b> been <b>documented</b> ? (if <b>No</b> , do not proceed with data collection)		
<input type="checkbox"/> Yes <input type="checkbox"/> No		
1.5 Who documented the <b>most comprehensive</b> medication history? (select only one)		
<input type="checkbox"/> ED medical officer	<input type="checkbox"/> Admitting medical team	<input type="checkbox"/> Pharmacist
<input type="checkbox"/> Registered nurse	<input type="checkbox"/> Nurse practitioner	<input type="checkbox"/> Multidisciplinary team
Other (provide details):		
<b>N.B.</b> Use the most comprehensive medication history to complete data collection		
1.6 Date and time (if available) medication history was documented		
Date: / /	Time:	
1.7 Where was the medication history documented?		
<input type="checkbox"/> History section of NIMC	<input type="checkbox"/> MMP	<input type="checkbox"/> Other dedicated form
<input type="checkbox"/> Paper progress notes	<input type="checkbox"/> Electronic progress notes	<input type="checkbox"/> Medication table
Other (provide details):		
1.8 a) Were the patient's <b>allergies, adverse drug reactions, or lack of, documented</b> as part of the history?		
<input type="checkbox"/> Yes <input type="checkbox"/> No		
1.8 b) Were <b>details documented</b> ? (i.e. type of reaction or nil or not known)		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable		
1.9 a) Number of <b>regular prescribed</b> medications?		Comments:
1.9 b) Number with name, dose and frequency?		Comments:
1.10 a) Number of <b>prn prescribed</b> medications?		Comments:
1.10 b) Number with name, dose and frequency?		Comments:
1.11 a) Number of <b>non-prescribed</b> medications?		Comments:
1.11 b) Number with name, dose and frequency?		Comments:
1.12 a) Was/were the <b>source/s</b> of the information obtained for the medication history documented? <input type="checkbox"/> Yes <input type="checkbox"/> No		
b) Were <b>2 or more</b> sources used? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable		

# COMPREHENSIVE AUDIT TOOL

Audit Period:	Hospital:	
Date of Audit:	Auditor/s names:	Additional Notes:
Patient Number:		
Male/Female (circle) Age:		
Department/Ward:		

Section 2: Medication Reconciliation on Admission	Response
This section compares the medications taken prior to admission to those prescribed on the medication chart	
2.1 Number of <b>regular and prn prescribed</b> medications taken prior to admission with a <b>documented plan?</b> (i.e. to continue, change, withhold or cease)	
2.2 Number of <b>non-prescribed</b> medications taken prior to admission with a <b>documented plan?</b>	
2.3 a) Number of <b>regular prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)
2.4 a) Number of <b>regular prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy (name, dose, route, form, frequency)</b> without reason documented and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)
2.5 a) Number of <b>prn prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)
2.6 a) Number of <b>prn prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy (name, dose, route, form, frequency)</b> without reason documented and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)
2.7 a) Number of <b>non-prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)
2.8 a) Number of <b>non-prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy (name, dose, route, form, frequency)</b> and not identified or rectified within 48 hours of admission?	a)
b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	b)

Comments: \_\_\_\_\_

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# COMPREHENSIVE AUDIT TOOL

Audit Period:	Hospital:	
Date of Audit:		
Patient Number:	Auditor/s names:	Additional Notes:
Male/Female (circle) Age:		
Department/Ward:		

Section 3: Medication Reconciliation on Discharge	Response
This section compares the medications taken prior to admission and those prescribed on the medication chart with the medications listed on the discharge summary or patient medication list	
3.1 Was a <b>discharge summary</b> completed for this patient? (if <b>No</b> , do not proceed with data collection)	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.2 Number of medications to be <b>continued on discharge</b> , determined by reviewing medications taken prior to admission, the medication chart, discharge prescriptions (if available) and any documented plan for continued therapy?	
3.3 Number of medications <b>omitted</b> from the discharge summary?	
3.4 Number of medications included on the discharge summary with a <b>discrepancy</b> ( <i>name, dose, route, form, frequency</i> )?	
3.5 Number of <b>unexplained extra</b> medications on the discharge summary?	
3.6 a) Number of medications the patient had been taking prior to admission <b>ceased</b> ? (i.e. not to be continued on discharge)	a)
b) Number of these <b>documented as ceased</b> on the discharge summary?	b)
3.7 a) Number of medications to be continued on discharge <b>either new, or differing in strength, dose or frequency</b> ?	a)
b) Number of these <b>documented</b> on the discharge summary <b>as either new, or differing in strength, dose or frequency</b> ?	b)
3.8 Number of <b>new, changed or ceased</b> medications that had <b>reason/s for change</b> documented on the discharge summary?	
3.9 Was the patient provided with a <b>medication list</b> on discharge? (if <b>No</b> or <b>Not Applicable</b> do not proceed with data collection)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
3.10 Number of medications <b>omitted</b> from the patient medication list that had been identified as to continue on discharge?	
3.11 Number of medications included in the patient medication list with a <b>discrepancy</b> ( <i>name, dose, route, form, frequency</i> )?	
3.12 Number of <b>unexplained extra</b> medications on the patient medication list?	
3.13 Number of medications <b>documented as ceased</b> on the patient medication list?	
3.14 Number of medications <b>documented</b> on the patient medication list <b>as either new, or differing in strength, dose or frequency</b> ?	
3.15 Number of <b>new, changed or ceased medications</b> that had <b>reason/s for change</b> documented on the patient medication list?	
3.16 Does the list of medications in the <b>patient medication list</b> correspond identically with the list of medications in the <b>discharge summary</b> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Comments: \_\_\_\_\_

# COMPREHENSIVE AUDIT TOOL USER GUIDE

## MEDICATION RECONCILIATION TOOLKIT

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# INTRODUCTION

System improvement activities are supported by the collection of relevant data to motivate health services and professionals. This guide has been developed to assist hospitals conduct audits to establish a baseline for data comparison, meet indicator criteria for accreditation (NSQHS Standards 4.6, 4.8 and 4.12), identify areas for improvement and monitor improvement over time.

## AUDIT TOOLS

The CEC has developed two audit tools for hospitals to use. The first is a Comprehensive Audit Tool, which will be referred to as the Audit Tool throughout this document. It is the focus of this user guide and collects key information to determine whether:

- A Best Possible Medication History (BPMH) is documented for every patient within 24 hours of admission
- All medicines taken prior to admission which were intended to continue were prescribed on the patient's medication chart, with documented reason/s for any change
- On discharge, the discharge summary contains an accurate medication list
- On discharge, the discharge summary contains the reason/s for any change in medicines
- On discharge the patient is provided with an accurate medication list.

This audit tool requires the collection of detailed data and provides an indication of the quality of the medicines information in the patient record. It captures, separately, information regarding regular prescribed medicines, prn medicines and non-prescribed medicines, as well as demographic information of the patient sample to enable stratification of findings.

The second is a Snapshot Audit, an observational tool that collects information on whether all components of continuity of medication management are evident for each patient. This provides a quick overview of the processes which are occurring and those which are not. It does not provide detail regarding the quality of the information in the patient's medical record.

Other indicators and tools which can be used to provide an indication of whether processes of medication reconciliation are occurring can be found in the National Quality Use of Medicines Indicators for Australian Hospitals.

# METHOD

The number of medical records reviewed will depend on the site. It is recommended that at least 20 randomly selected records, distributed evenly across the wards/units to be included in the quality improvement activity, be reviewed. Frequent small samples have been shown to be more manageable and provide sufficient data to support ongoing quality improvement activities. However, the proportion of patient records audited at a site may be altered depending on the purpose of the audit (i.e. more records may be required for accreditation purposes).

The following patients should be excluded from the audit:

- Admitted for less than 24 hours
- Transferred from other hospitals (other than direct from ED to ED)
- Died during the admission
- Were provided palliative care only
- Admitted directly to ICU (unless specifically targeting these patients).

Auditing may be conducted by intern and registered pharmacists, registered nurses and doctors who are familiar with the concepts of medication reconciliation and quality improvement methodology. They must familiarise themselves with the audit instructions and definitions as well as complete at least two audit forms with an experienced auditor or complete two audit tool examples (see Appendix 1).

## Modular Audit Tool

As continuity of medication management spans across the entire patient's inpatient stay, the audit tool has been developed to capture medication data from admission to discharge for a typical patient journey (i.e. admitted through ED or directly to the ward from their place of residence). The tool has been divided into three sections to enable various modes of data collection.

Depending on the area being targeted, sites can select which sections of the audit tool to complete. For example if the aim is to improve the number of patients that have a BPMH documented, only Section 1 of the tool requires completion. If the aim is to improve medication reconciliation on admission, Section 1 and 2 would require completion. Both Section 1 and Section 2 may be completed prospectively or retrospectively. If the entire journey is being audited (i.e. completion of all three sections) the audit can only be completed retrospectively (after discharge).

## Audit Instructions

1. Read this Audit Tool User Guide. Familiarise yourself with the definitions and audit tool questions and definitions.
2. Read/revise local guidelines and procedures regarding medication history taking, recording medication-related information and transfer of medicines information on discharge or make enquiries in regards to current practices.
3. Decide on the wards/units and number of medical records to review. Decide whether to include all types of medication or regular prescribed medication only. If only regular prescribed medications are chosen the following audit questions do not require completion and should be struck out on the Audit Tool; Q1.10, 1.11, 2.5, 2.6, 2.7 and 2.8.

4. Decide whether to use the Audit Tool to collect data and then enter responses into the Audit Tool Data Spread Sheet (preferable) or enter responses directly into the Audit Tool Data Spread Sheet using the Audit Tool as a guide.
5. Demographic data including patient randomised number, gender, age, department/ward, name of hospital and auditor/s names will need to be entered for each medical record. If using the paper Audit Tool to collect data the audit period i.e. discharge date range of the records audited and the audit date will also need to be entered.
6. When entering data into the Audit Tool Data Spread Sheet, responses should be entered underneath each question in a horizontal direction. The response for a question (yes, no or not applicable) should be selected from the drop-down list in the column marked for that question.
7. A response should be entered for each question. If the question is not applicable and this option is not available, a '0' should be entered.
8. For questions that require items to be counted, enter the total number 'count' in the column underneath the section marked for that question.
9. For example:
  - If the response for Q1.7 is 'MMP', click on the box and select 'MMP' from the drop-down list underneath the column for Q1.7 in the row corresponding to the responses for that record
  - If the response for Q1.8a) is 'Yes', click on the box and select 'Yes' from the drop-down list underneath the column for 'Q1.8a)' in the row corresponding to the responses for that record
  - If the response for Q1.9 is '5', enter the digit '5' in the box underneath the column for Q1.9 in the row corresponding to the responses for that record.

NOTE: Do not enter any spaces or symbols after digits, and only enter data into the WHITE section of the Data Entry Sheet of the Audit Tool Data Spread Sheet. If a wrong response is entered, it can be cleared by using the 'delete' or 'backspace' keys, or re-select the correct response by clicking on the box again. Also note that the BLUE section labelled, 'Time to history' needs to be MANUALLY selected for each patient record from the drop-down list.

10. Data from the Data Entry Sheet should automatically feed into the Data Analysis Sheet within the Audit Tool Data Spread Sheet. Click the Data Analysis Sheet to ensure that each coloured section has been filled in with a value, including '0'. Do not alter any of the values within this sheet.
11. Click the Tables and Graphs Sheet within the Audit Tool Data Spread Sheet to view selected data from the Data Analysis Sheet in tabular or graphical format.

# DEFINITIONS

The following terms and definitions are used throughout the Audit Tool:

Best Possible Medication History	A medication history that has each medicine clearly identified and with clear directions i.e. dose and frequency; allergies and/or adverse drug reactions recorded; and evidence of at least two sources used
Regular prescribed medication	A medicine that would require a prescription or would normally form part of a prescribed treatment plan (e.g. aspirin in a patient with cardiovascular risk factors). This excludes medicines used only when necessary
prn prescribed medication	A medicine used only when necessary that would require a prescription
Non-prescribed medication	A medicine that does not require a prescription or form part of a prescribed treatment plan e.g. over-the-counter medicines, vitamins and complementary medicines
Discrepancy	An omission or change in a medication that has no documented reason and has not been identified or rectified within 48 hours.
Unintentional discrepancy	A discrepancy that has not been identified by the auditors as probably intentional due to the patient's condition or circumstances.

# AUDIT QUESTIONS AND DEFINITIONS

The Audit Tool allows the collection of data relating to a single patient record. It is divided into three sections.

Section 1 – Best Possible Medication History (BPMH)	
Question	Definition
1.1 Admission date and time	Enter the date in the format dd/mm/yyyy. Enter the time in 24 hour clock format i.e. 20:18 rather than 8:18pm.
1.2 Discharge date and destination	Enter the date in the same format as Q1.1. Select the discharge destination from the list provided.
1.3 Was this patient on <b>regular medications</b> prior to admission? (if <b>No</b> , do not proceed with data collection)	Select a Yes response if there is evidence in the record that the patient was on regular medications prior to admission. Select a No response if there is no evidence that they were on any medication. If No, do not proceed with data collection but indicate whether 'patient on nil medications' was documented by entering a Yes or No response. If Yes, indicate where it was documented.
1.4 Has a <b>medication history</b> been <b>documented</b> ? (if <b>No</b> , do not proceed with data collection)	Select a Yes response if there is a list of medications the patient was taking prior to admission documented in the patient record. Do not include medications entered in the administration section of the medication chart or any list provided by an external healthcare provider or patient. Select a No response if there is no documentation of a medication list in the patient record. If No, do not proceed with data collection.
1.5 <b>Who</b> documented the <b>most comprehensive</b> medication history? (select only one)	Select who documented the most comprehensive medication history for the patient from the list provided. The most comprehensive list refers to the list that includes more medications or provides the most information about the medications e.g. strength, dose and frequency. If the histories are the same select the history documented first. If the history selected is documented by more than one clinician, select 'Multidisciplinary Team.' If someone documented the medication history other than those listed, provide details in the 'Other' section.
1.6 <b>Date and time</b> (if available) medication history was documented	Enter the date and time in the same format as Q1.1. If there is no time documented then enter using free-text, Not Applicable.
1.7 <b>Where</b> was the medication history documented?	Select where the comprehensive medication history was documented from the list provided, or if other than those listed, provide details in the 'Other' section.
1.8a) Were the patient's <b>allergies, adverse drug reactions, or lack of, documented</b> as part of the history?	Select a Yes response if an allergy, adverse drug reaction, nil or not known was documented. Select a No response if there is no mention of allergies and/or adverse drug reactions either existing or not-existing.

Question	Definition
1.8b) Were <b>details documented?</b> (i.e. type of reaction or nil or not known)	<p>Select a Yes response if as well as the agent causing the allergy and/or adverse drug reaction, the type of reaction is documented, or in the case where nil or not known had been selected for Q1.8b).</p> <p>Select a No response if an allergy and/or adverse drug reaction had been documented but no details were given.</p> <p>Select a Not Applicable response if the response for Q1.8a was No.</p>
1.9a) <b>Number of regular prescribed medications?</b>	<p>Count and enter the number of medications that would require a prescription or would normally form part of a prescribed treatment plan (e.g. aspirin in a patient with cardiovascular risk factors), excluding medications used only when necessary.</p>
1.9b) <b>Number with name, dose and frequency?</b>	<p>Count and enter the number of these medications that have been clearly identified and have clear directions (generic or trade name, dose and frequency as a minimum). For combination products available in only one strength the dose can be expressed as a number e.g. two at night.</p>
1.10a) <b>Number of prn prescribed medications?</b>	<p>Count and enter the number of prescribed 'when necessary' medications (e.g. medications used only when necessary that would require a prescription).</p>
1.10b) <b>Number with name, dose and frequency?</b>	<p>Count and enter the number of these medications that have been clearly identified and have clear directions (generic or trade name, dose and frequency as a minimum). For combination products available in only one strength the dose can be expressed as a number e.g. two at night.</p>
1.11a) <b>Number of non-prescribed medications?</b>	<p>Count and enter the number of medications not included in Q1.9 or Q1.10, inclusive of over-the-counter and complementary medications.</p>
1.11b) <b>Number with name, dose and frequency?</b>	<p>Count and enter the number of these medications that have been clearly identified and have clear directions (generic or trade name, dose and frequency as a minimum). For combination products available in only one strength the dose can be expressed as a number e.g. two at night.</p>
1.12a) Was/were the <b>source/s</b> of the information obtained for the medication history documented?	<p>Select a Yes response if the source/s of information obtained for the medication history were documented.</p>
1.12b) Were <b>2 or more</b> sources used?	<p>Select a Not Applicable response if the response to Q1.12a) was No.</p>

## Section 2 – Medication Reconciliation on Admission

Question	Definition
2.1 <b>Number of prescribed</b> medications taken prior to admission <b>with a documented plan?</b> (i.e. to continue, change, withhold or cease)	Count and enter the number of prescribed medications that have a documented plan in the record to continue, change, withhold or cease. This includes both regular and prn prescribed medications. The medications do not have to be individually mentioned, a plan to ‘continue all medications’ is acceptable. ‘As charted’ does not reflect a clear plan and should not be considered a documented plan.
2.2 <b>Number of non-prescribed</b> medications taken prior to admission <b>with a documented plan?</b>	Count and enter the number of non-prescribed medications that have a documented plan as described in the definition for Q2.1.
2.3a) <b>Number of regular prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	Count and enter the number of regular prescribed medications that have been omitted from the medication chart without a documented reason for the omission. Omissions that were identified or rectified within 48 hours of admission should be excluded from the count.
2.3b) <b>Number of these possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.3a) that are possibly intentionally omitted due to obvious patient/disease factors (e.g. NSAID omitted in patient presenting with a GI bleed).
2.4a) <b>Number of regular prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy (name, dose, route, form, frequency)</b> without reason documented and not identified or rectified within 48 hours of admission?	Count and enter the number of regular prescribed medications that have been written on the medication chart with a change that has no documented reason for the change. Medication changes that had no documented reason that were identified or rectified within 48 hours of admission should be excluded from the count.
2.4b) <b>Number of these possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.4a) that are possibly intentionally changed due to obvious patient/disease factors.
2.5a) <b>Number of prn prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	Count and enter the number of prn prescribed medications that have been omitted from the medication chart without a documented reason for the omission. Omissions that were identified or rectified within 48 hours of admission should be excluded from the count.
2.5b) <b>Number of these possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.5a) that are possibly intentionally omitted due to obvious patient/disease factors.
2.6a) <b>Number of prn prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy (name, dose, route, form, frequency)</b> without reason documented and not identified or rectified within 48 hours of admission?	Count and enter the number of prn prescribed medications that have been written on the medication chart with a change that has no documented reason for the change. Medication changes that had no documented reason that were identified or rectified within 48 hours of admission should be excluded from the count.

Question	Definition
2.6b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.6a) that are possibly intentionally changed due to obvious patient/disease factors.
2.7a) Number of <b>non-prescribed</b> medications taken prior to admission <b>omitted</b> from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	Count and enter the number of non-prescribed medications that have been omitted from the medication chart without a documented reason for the omission. Omissions that were identified or rectified within 48 hours of admission should be excluded from the count.
2.7b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.7a) that are possibly intentionally omitted due to obvious patient/disease factors.
2.8a) Number of <b>non-prescribed</b> medications taken prior to admission written on the medication chart with a <b>discrepancy</b> ( <i>name, dose, route, form, frequency</i> ) and not rectified or identified within 48 hours?	Count and enter the number of non-prescribed medications that have been written on the medication chart with a change that has no documented reason for the change. Medication changes that had no documented reason that were identified or rectified within 48 hours of admission should be excluded from the count.
2.8b) Number of these <b>possibly intentional</b> due to obvious patient/disease factors?	Count and enter the number of medications identified in 2.8a) that are possibly intentionally changed due to obvious patient/disease factors.

## Section 3 – Medication Reconciliation on Discharge

Question	Definition
3.1 Was a <b>discharge summary</b> completed for this patient?	Select a Yes or No response.
3.2 <b>Number</b> of medications to be <b>continued on discharge</b> , determined by reviewing medications taken prior to admission, the medication chart, discharge prescriptions (if available), the discharge summary and any documented plan for continued therapy?	Use the Auditor's Work Sheet to determine the 'intended regimen on discharge' for each patient (see Appendix 2). List the medications taken prior to admission, the plan for admission medicines, the medications on the medication chart at admission and discharge, any documented plan for continued therapy and medications on the discharge summary. Count and enter the number of medications listed in the 'intended regimen on discharge' column of the Auditor's Work Sheet.
3.3 <b>Number</b> of medications <b>omitted</b> from the discharge summary?	Count and enter the number of medications to be continued on discharge that were omitted from the discharge summary.
3.4 <b>Number</b> of medications included on the discharge summary with a <b>discrepancy</b> ( <i>name, dose, route, form, frequency</i> )?	Count and enter the number of medications to be continued on discharge that were documented on the discharge summary with an unexplained change.
3.5 <b>Number</b> of <b>unexplained extra</b> medications on the discharge summary?	Count and enter the number of medications documented in the discharge summary that were not identified to continue on discharge.
3.6a) <b>Number</b> of medications the patient had been taking prior to admission that were <b>ceased</b> ? (i.e. not to be continued on discharge)	Count and enter the number of medications the patient had been taking prior to admission that were not to be continued on discharge.
3.6b) <b>Number</b> of these <b>documented as ceased</b> on the discharge summary?	Count and enter the number of medications identified in 3.6a) that were documented as having been ceased during the admission on the discharge summary.
3.7a) <b>Number</b> of medications to be continued on discharge <b>either new, or differing in strength, dose or frequency</b> ?	Count and enter the number of medications to be continued on discharge that were new for the patient or the patient had been taking but had been changed to a different strength, dose or frequency.
3.7b) <b>Number</b> of these <b>documented</b> on the discharge summary <b>as either new, or differing in strength, dose or frequency</b> ?	Count and enter the number of medications identified in 3.7a) that were documented as being new or changed during the admission on the discharge summary.
3.8 <b>Number</b> of <b>new, changed or ceased</b> medications that had <b>reason/s for change documented</b> on the discharge summary?	Count and enter the number of medications identified in Q3.7a) and Q3.6a) that had a documented reason for the addition, changing or ceasing of these medications on the discharge summary.
3.9 Was the <b>patient</b> provided with a <b>medication list</b> on discharge? (if <b>No</b> or <b>Not Applicable</b> do not proceed with data collection)	Select a Yes, No or Not Applicable response. A patient medication list may not be applicable in the case of inter-hospital transfers or nursing home discharge destinations.
3.10 <b>Number</b> of medications <b>omitted</b> from the patient medication list?	Count and enter the number of medications to be continued on discharge that were omitted from the patient medication list.

Question	Definition
3.11 <b>Number</b> of medications included in the patient medication list with a <b>discrepancy</b> ( <i>name, dose, route, form, frequency</i> )?	Count and enter the number of medications to be continued on discharge that were documented on the patient medication list with an unexplained change.
3.12 <b>Number</b> of <b>unexplained extra</b> medications on the patient medication list?	Count and enter the number of medications documented in the patient medication list that were not identified to continue on discharge.
3.13 <b>Number</b> of medications <b>documented as ceased</b> on the patient medication list?	Count and enter the number of medications identified in 3.6a) that were documented as having been ceased during the admission on the patient medication list.
3.14 <b>Number</b> of medications <b>documented</b> on the patient medication list <b>as either new, or differing in strength, dose or frequency</b> ?	Count and enter the number of medications identified in 3.7a) that were documented as being new or had changed during the admission on the patient medication list.
3.15 <b>Number</b> of <b>new, changed or ceased</b> medications that had <b>reason/s for change documented</b> on the patient medication list?	Count and enter the number of medications identified in Q3.7a) and Q3.6a) that had a documented reason for the addition, changing or ceasing of these medications on the patient medication list.
3.16 Does the list of medications in the <b>patient medication list</b> correspond identically with the list of medications in the <b>discharge summary</b> ?	Select a Yes or No response.

# APPENDICES

## Appendix 1 – Audit Tool Examples



Health

Facility:

## PROGRESS / CLINICAL NOTES



SMR050001

FAMILY NAME	MRN
GIVEN NAME	Emergency Department
Sure Hospital	7654321
D.O.B.	PRINTED: 04/07/13 13:49
ADDRESS	
GREEN	
Sarah Emily	
LOCATION DOB: 11JAN1911	Age: 94Y Sex: F
140 BURWOOD RD MELBOURNE VIC 3128	
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE	

Date and Time  
(use 24 hr clock)

Note: All entries must be legible, written in black pen and include the health care provider's printed name, designation and signature.

4/11/13  
1730

SB Gastro Reg

94 ♀ from home

? difficulty swallowing food over last week  
 Feels like food gets blocked  
 Epigastric pain for last 2 days  
 Able to get orange juice down  
 Has had a few episodes of regurgitation

No problems previously with food

PMH / GORD

Glaucoma

Autoimmune haemolytic anaemia

Marginal cell lymphoma

Meds / Ranitidine 300mg daily      NKA  
 Folic Acid 5mg daily  
 Iron Supplement  
 Xalatan eye drops

OE / Abdo soft  
 Epigastric tenderness

Bloods (N)

IMP / ? Corkscrew oesophagus  
 ? Food bolus  
 ? Peptic stricture  
 ? Pill oesophagitis

Holes punched as per AS15228-1999  
BINDING MARGIN - NO WRITING

PROGRESS / CLINICAL NOTES

SMR050.001

NPF00513 20011



Facility:

## PROGRESS / CLINICAL NOTES

FAMILY NAME		MRN
GIVEN NAME	Sunny Hospital	Emergency Department
D.O.B.		7654321
ADDRESS:	GREEN	PRINTED: 04/NOV/13 13:46
	Sarah Emily	
	DOB: 11/JAN/1911	Age: 94Y Sex: F
LOCATION:	ADM-BAND/013 HOD: Martin Bailey MC: 258699873	
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		

Date and Time  
(use 24 hr clock)

Note: All entries must be legible, written in black pen and include the health care provider's printed name, designation and signature.

4/11/13      Plan/ Admit & DR Gupta  
 1730      BD PPI  
 Gastroscopy tomorrow  
 IV fluids  
 NBM

Permitted # 427

Holes punched as per ASZ828-1999  
**BINDING MARGIN - NO WRITING**



SMR050001

### Cut off section



Result Type: Discharge Referral Note  
 Result Date: 06 November 2013 14:18  
 Result Status: Auth (Verified)  
 Result Title: Discharge Referral Baseline  
 Performed By: David STONE (JMO) on 06 November 2013 14:30  
 Verified By: David STONE (JMO) on 06 November 2013 16:24  
 Encounter Info: Inpatient, 04/11/2013 – 06/11/2013

#### **Discharge Referral Baseline**

Patient: GREEN Ms Sarah MRN: 7654321  
 Age: 94 years Sex: Female DOB: 11/01/1919  
 Associated Diagnoses: Dysphagia; Schatzki's ring  
 Author: David STONE

#### **Visit Information**

Facility:	Sunny Hospital	
Admission Date:	04/11/2013	To be discharged: 06/11/2013
Medical Service:	Gastroenterology	Consulting Clinician:
Attending Medical Officer:	Dr Raj Gupta	
AMO Provider No.:	12345H	Indigenous Status: Neither Aboriginal/Torres Strait is
Local Medical Officer:	Dr Catherine King	
LMO Provider No.:	23456H	
LMO Address:	Dr Catherine King 2/45 Arthur Street Happyville, 2786, NSW	
LMO Phone:	9345 9878	LMO Fax: 9345 9877
Interpreter Required:	No	Language spoken at home: English

Dear Dr Catherine King,

Thank you for reviewing Sarah Green, a 94 year old female to be discharged on 06/11/2013 from Sunny Hospital. Sarah presented to this facility with dysphasia.

#### **Summary of Care**

Ms Green presented on the 4/11/13 with dysphasia and subsequently discovered to have a mild schatzki ring.

#### **PMH**

- GORD
- glaucoma
- autoimmune haemolytic anaemia – cold type
- ?marginal cell lymphoma

No surgeries, AMI, DVT/PE

#### **Medications:**

Zantac 300mg daily  
 Folic acid 5mg daily  
 Iron supplement

Result Type: Discharge Referral Note  
Result Date: 06 November 2013 14:18  
Result Status: Auth (Verified)  
Result Title: Discharge Referral Baseline  
Performed By: David STONE (JMO) on 06 November 2013 14:30  
Verified By: David STONE (JMO) on 06 November 2013 16:24  
Encounter Info: Inpatient, 04/11/2013 – 06/11/2013

Xalatan eye drops

SHx

- retired nurse
  - lives alone in house
  - no children
  - independent in ADLs – no longer drives
- =====

HPC

- 1 week increasing difficulty swallowing food with epigastric discomfort
- 2 days of inability to completely swallow, food/liquid regurgitating
- able to manage very small amounts of liquid and saliva
- mild epigastric pain in waves, better when sitting up
- mostly comfortable at rest
- otherwise feels well (but hungry)
- background of GORD

Relevant negatives

- not regurgitating blood or green/bilious material
- no ongoing chest pain, shortness of breath, coughing, forceful vomiting, change in bowel habits, fevers
- no history of peptic ulcer disease

On Examination in ED

afebrile, obs stable and normal SBP 155, HR 80, Sat 96 RA

Resp: good air entry bilaterally, no added sounds – transmitted bowel sounds heard

CVS: heart sounds dual, no murmurs heard, JVP not elevated, mild pitting oedema to mid shin

Abdomen: soft, mild epigastric tenderness to deep palpation; no hepatosplenomegaly or masses; bowel sounds present

No focal neurology

Initial Ix

CXR – clear

FBC/EUC/LFT/CMP normal

lactate 329

Result Type: Discharge Referral Note  
Result Date: 06 November 2013 14:18  
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Performed By: David STONE (JMO) on 06 November 2013 14:30  
Verified By: David STONE (JMO) on 06 November 2013 16:24  
Encounter Info: Inpatient, 04/11/2013 – 06/11/2013

**PROGRESS**

-she was admitted under Dr Gupta  
-commenced on pantoprazole 40mg twice daily aiming to continue for 2 weeks then daily (ranitidine stopped)  
-she underwent endoscopy on the same day and tolerated the procedure well

**Endoscopy (5/11/13)**

LA Grade D (one or more mucosal breaks involving at least 75% of oesophageal circumference) oesophagitis with bleeding was found 35 to 40cm from the incisors. A mild Schatzki ring (acquired) was found in the lower third of the oesophagus. There was mild resistance initially but the scope was able to pass through easily. Contact bleeding occurred. The entire examined stomach was normal. Biopsies were taken with a cold forceps for histology. The examined duodenum was normal. A small hiatus hernia was present.

-she tolerated soft diet post endoscopy and has been upgraded successfully to full diet without further issues

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**PLAN**

-discharge home  
-continue oral pantoprazole 40mg twice daily for 2 weeks then reduce to daily  
-ranitidine ceased, continue other meds as usual  
-follow up in gastroenterology clinic with Dr Gupta on 18/Nov/13 at 3pm, staff station 2 (bring medicare card)

**Health Status**

**Principle and Other Diagnosis**

Dysphagia : SNMCT 67950018, Final Medical.

Schatzki's ring : SNMCT 111100017, Final, Medical.

**Allergies and Adverse Reactions**

No active allergies have been recorded.

**Discharge Information**

**Performed by**

Dr David Stone; Medical Officer

**Completed Action List:**

\*Performed by David STONE on 06 November 2013 14:30

\*Signed by David STONE on 06 November 2013 16:32

\*Verified by David STONE on 06 November 2013 16:32

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## **SUNNY HOSPITAL MEDICATION LIST**

PHARMACY DEPARTMENT Phone: 02 9346 7596

MEDICATION LIST for Ms Sarah GREEN MRN 7654321

Medication Period From 06/11/2013

PRODUCT DESCRIPTION	BREAKFAST	LUNCH	TEA	BED TIME	COMMENTS
PANTOPRAZOLE (SALPRAZ) 40MG EC TABLETS	ONE		ONE		NEW For relieving heartburn  Dose to be reviewed by your doctor in 2 weeks
FOLIC ACID 5MG TABLETS	ONE				Folic acid supplement
FERROUS SULFATE (FERRO- GRADUMET) 325MG MR TABLETS	ONE				Iron supplement Swallow tablet whole
LATANOPROST (XALATAN) 50MCG/ML EYE DROPS				ONE	For treating glaucoma Instil into both eyes.

Bring this list on each visit to your Doctor, Pharmacist, Dentist, or other Health Care Provider.

Prepared By: AW

Angus Winters (B.Pharm)

NOTE that while in hospital your Pantoprazole was stopped.

Continuity of Medication Management Comprehensive Audit Tool

### Auditor's Worksheet

Patient Number: 14



Medications taken prior to admission	Plan for admission medicines	Medications on medication chart at admission	Medications on medication chart at discharge	Any documented plan for continued therapy (check last medical round notes, prescriptions)	Medications on discharge summary	'Intended regimen on discharge'
Ramipril 300mg	No	—	—	cease	cease	cease
Folic acid 5mg d	No	Folic acid 5mg d	(cont)	Folic acid 5mg d	Folic acid 5mg d	Folic acid 5mg d
Iron supplement	No	Fondrad 325mg d	(cont)	Iron supplement	Fondrad 325mg d	Fondrad 325mg d
Kalzium eye drops	No	Kalzium + BE natri	(cont)	Kalzium eye drops	Kalzium eye drops	Kalzium eye drops
Pantoprazole IV 40mg	—	Pantoprazole 40mg	(cont)	Pantoprazole po 40mg	Pantoprazole po 40mg	Pantoprazole po 40mg

# COMPREHENSIVE AUDIT TOOL



Audit Period: <b>15/10 - 15/11/13</b>	Hospital: <b>Sunny Hospital</b>
Date of Audit: <b>21/11/13</b>	Auditor/s names: <b>Kim Jones Chris Collins</b>
Patient Number: <b>14</b>	Additional Notes:
Male/Female (circle): <b>Male</b> Age: <b>94</b>	
Department/Ward: <b>Medical</b>	

## Section 1: Best Possible Medication History (BPMH)

1.1 Admission date: <b>4 / 11 / 13</b>	Admission time: <b>13.40</b>
1.2 Discharge date: <b>6 / 11 / 13</b>	Discharge destination: <b>Home</b>
1.3 Was this patient on regular medications prior to admission? (If No, do not proceed with data collection) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, was 'patient on nil medications' documented? <input type="checkbox"/> Yes If Yes, where was it documented? <input type="checkbox"/> No	
1.4 Has a medication history been documented? (If No, do not proceed with data collection) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1.5 Who documented the most comprehensive medication history? (select only one) <input type="checkbox"/> ED medical officer <input checked="" type="checkbox"/> Admitting medical team <input type="checkbox"/> Pharmacist <input type="checkbox"/> Registered nurse <input type="checkbox"/> Nurse practitioner <input type="checkbox"/> Multidisciplinary team Other (provide details):	
N.B. Use the most comprehensive medication history to complete data collection	
1.6 Date and time (if available) medication history was documented Date: <b>4 / 11 / 13</b> Time: <b>17.30</b>	
1.7 Where was the medication history documented? <input type="checkbox"/> History section of NIMC <input type="checkbox"/> MMP <input type="checkbox"/> Other dedicated form <input checked="" type="checkbox"/> Paper progress notes <input type="checkbox"/> Electronic progress notes <input type="checkbox"/> Medication table Other (provide details):	
1.8 a) Were the patient's allergies, adverse drug reactions, or lack of, documented as part of the history? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1.8 b) Were details documented? (i.e. type of reaction or nil or not known) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable	
1.9 a) Number of regular prescribed medications?	<b>3</b> Comments:
1.9 b) Number with name, dose and frequency?	<b>2</b> Comments: <b>Xalatan not clear</b>
1.10 a) Number of prn prescribed medications?	<b>0</b> Comments:
1.10 b) Number with name, dose and frequency?	<b>0</b> Comments:
1.11 a) Number of non-prescribed medications?	<b>1</b> Comments:
1.11 b) Number with name, dose and frequency?	<b>0</b> Comments: <b>'Ivan supplement' not clear</b>
1.12 a) Was/were the source/s of the information obtained for the medication history documented? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
b) Were 2 or more sources used? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not applicable	

# COMPREHENSIVE AUDIT TOOL



Audit Period:	Hospital:	
Date of Audit: 21/11/13	Auditor/s names:	Additional Notes:
Patient Number: 14		
Male/Female (circle) Male: 94		
Department/Ward:		

Section 2: Medication Reconciliation on Admission	Response
This section compares the medications taken prior to admission to those prescribed on the medication chart	
2.1 Number of regular and prn prescribed medications taken prior to admission with a documented plan? (i.e. to continue, change, withhold or cease)	<input type="radio"/>
2.2 Number of non-prescribed medications taken prior to admission with a documented plan?	<input type="radio"/>
2.3 a) Number of regular prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>
2.4 a) Number of regular prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) without reason documented and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>
2.5 a) Number of prn prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>
2.6 a) Number of prn prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) without reason documented and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>
2.7 a) Number of non-prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>
2.8 a) Number of non-prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) and not identified or rectified within 48 hours of admission?	a) <input type="radio"/> b) <input type="radio"/>

Comments: Ranitidine omitted - likely intentional as started on PPI  
 Xalatan was omitted on admission, but rectified the next day (within 48 hrs).

# COMPREHENSIVE AUDIT TOOL



Audit Period:	Hospital:	
Date of Audit: 21/11/13		
Patient Number: 14	Auditor/s names:	Additional Notes:
Male/Female (circle) Age: 94		
Department/Ward:		

Section 3: Medication Reconciliation on Discharge	Response
This section compares the medications taken prior to admission and those prescribed on the medication chart with the medications listed on the discharge summary or patient medication list	
3.1 Was a discharge summary completed for this patient? (if No, do not proceed with data collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3.2 Number of medications to be continued on discharge, determined by reviewing medications taken prior to admission, the medication chart, discharge prescriptions (if available) and any documented plan for continued therapy?	4
3.3 Number of medications omitted from the discharge summary?	0
3.4 Number of medications included on the discharge summary with a discrepancy (name, dose, route, form, frequency)?	0
3.5 Number of unexplained extra medications on the discharge summary?	0
3.6 a) Number of medications the patient had been taking prior to admission ceased? (i.e. not to be continued on discharge)	a) 1
b) Number of these documented as ceased on the discharge summary?	b) 1
3.7 a) Number of medications to be continued on discharge either new, or differing in strength, dose or frequency?	a) 1
b) Number of these documented on the discharge summary as either new, or differing in strength, dose or frequency?	b) 1
3.8 Number of new, changed or ceased medications that had reason/s for change documented on the discharge summary?	0
3.9 Was the patient provided with a medication list on discharge? (if No or Not Applicable do not proceed with data collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
3.10 Number of medications omitted from the patient medication list that had been identified as to continue on discharge?	0
3.11 Number of medications included in the patient medication list with a discrepancy (name, dose, route, form, frequency)?	0
3.12 Number of unexplained extra medications on the patient medication list?	0
3.13 Number of medications documented as ceased on the patient medication list?	1
3.14 Number of medications documented on the patient medication list as either new, or differing in strength, dose or frequency?	1
3.15 Number of new, changed or ceased medications that had reason/s for change documented on the patient medication list?	0
3.16 Does the list of medications in the patient medication list correspond identically with the list of medications in the discharge summary?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Comments: \_\_\_\_\_

Cut off section

## CONTINUITY OF MEDICATION MANAGEMENT MEDICATION RECONCILIATION TOOLKIT CLINICAL EXCELLENCE COMMISSION

Patient Information		Prescription Details		Medication Details		Dosage & Frequency		Instructions	
Name	Date of Birth	Prescriber Name	Prescriber ID	Medication Name	Strength	Quantity	Expiry Date	Notes	Comments
John Doe	1985-01-01	Dr. Smith	123456	Paracetamol	500mg	10	2025-01-01	Take as required.	
Jane Doe	1988-02-02	Dr. Johnson	789012	Ibuprofen	200mg	5	2024-12-31	Take 1 tablet every 8 hours.	
Samuel Doe	1990-03-03	Dr. Lee	456789	Amoxicillin	500mg	7	2025-03-03	Take 1 tablet twice daily.	
Mary Doe	1992-04-04	Dr. White	987654	Cetirizine	10mg	3	2025-04-04	Take 1 tablet daily at night.	
David Doe	1995-05-05	Dr. Green	123456	Symptosil	100mg	2	2025-05-05	Take 1 tablet daily.	
Emily Doe	1998-06-06	Dr. Blue	789012	Fluticasone	50mcg	1	2025-06-06	Take 1 inhaler daily.	
Oliver Doe	2000-07-07	Dr. Red	456789	Aspirin	75mg	1	2025-07-07	Take 1 tablet daily.	
Isabella Doe	2002-08-08	Dr. Yellow	987654	Glucosamine	500mg	1	2025-08-08	Take 1 tablet daily.	
Frederick Doe	2004-09-09	Dr. Purple	123456	Omega-3 Fish Oil	1000mg	1	2025-09-09	Take 1 tablet daily.	
Lily Doe	2006-10-10	Dr. Orange	789012	Vitamin D3	1000IU	1	2025-10-10	Take 1 tablet weekly.	
George Doe	2008-11-11	Dr. Pink	456789	Probiotic	100mg	1	2025-11-11	Take 1 tablet daily.	
Charlotte Doe	2010-12-12	Dr. Brown	987654	Iron Supplement	100mg	1	2025-12-12	Take 1 tablet daily.	
Thomas Doe	2012-01-01	Dr. Grey	123456	Calcium	500mg	1	2025-01-01	Take 1 tablet daily.	
Elizabeth Doe	2014-02-02	Dr. Black	789012	Selenium	100mcg	1	2025-02-02	Take 1 tablet weekly.	
Matthew Doe	2016-03-03	Dr. White	456789	Chlorophyll	500mg	1	2025-03-03	Take 1 tablet daily.	
Alice Doe	2018-04-04	Dr. Blue	987654	CoQ10	100mg	1	2025-04-04	Take 1 tablet daily.	
Benjamin Doe	2020-05-05	Dr. Red	123456	Glucurone	500mg	1	2025-05-05	Take 1 tablet daily.	
Cassandra Doe	2022-06-06	Dr. Yellow	789012	Omega-3 Fish Oil	1000mg	1	2025-06-06	Take 1 tablet daily.	
Daniel Doe	2024-07-07	Dr. Purple	456789	Vitamin D3	1000IU	1	2025-07-07	Take 1 tablet weekly.	
Ella Doe	2026-08-08	Dr. Orange	987654	Probiotic	100mg	1	2025-08-08	Take 1 tablet daily.	
Felicity Doe	2028-09-09	Dr. Pink	123456	Iron Supplement	100mg	1	2025-09-09	Take 1 tablet daily.	
Garrison Doe	2030-10-10	Dr. Brown	789012	Selenium	100mcg	1	2025-10-10	Take 1 tablet weekly.	
Hannah Doe	2032-11-11	Dr. Grey	456789	Chlorophyll	500mg	1	2025-11-11	Take 1 tablet daily.	
Ivan Doe	2034-12-12	Dr. Black	987654	CoQ10	100mg	1	2025-12-12	Take 1 tablet daily.	
Jessica Doe	2036-01-01	Dr. White	123456	Glucurone	500mg	1	2025-01-01	Take 1 tablet daily.	
Karen Doe	2038-02-02	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-02-02	Take 1 tablet daily.	
Liam Doe	2040-03-03	Dr. Red	456789	Vitamin D3	1000IU	1	2025-03-03	Take 1 tablet weekly.	
Mia Doe	2042-04-04	Dr. Yellow	987654	Probiotic	100mg	1	2025-04-04	Take 1 tablet daily.	
Natalie Doe	2044-05-05	Dr. Purple	123456	Iron Supplement	100mg	1	2025-05-05	Take 1 tablet daily.	
Oscar Doe	2046-06-06	Dr. Orange	789012	Selenium	100mcg	1	2025-06-06	Take 1 tablet weekly.	
Parker Doe	2048-07-07	Dr. Pink	456789	Chlorophyll	500mg	1	2025-07-07	Take 1 tablet daily.	
Quinn Doe	2050-08-08	Dr. Black	987654	CoQ10	100mg	1	2025-08-08	Take 1 tablet daily.	
Riley Doe	2052-09-09	Dr. White	123456	Glucurone	500mg	1	2025-09-09	Take 1 tablet daily.	
Sophie Doe	2054-10-10	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-10-10	Take 1 tablet daily.	
Tucker Doe	2056-11-11	Dr. Red	456789	Vitamin D3	1000IU	1	2025-11-11	Take 1 tablet weekly.	
Ulysses Doe	2058-12-12	Dr. Yellow	987654	Probiotic	100mg	1	2025-12-12	Take 1 tablet daily.	
Vivian Doe	2060-01-01	Dr. Purple	123456	Iron Supplement	100mg	1	2025-01-01	Take 1 tablet daily.	
Wesley Doe	2062-02-02	Dr. Orange	789012	Selenium	100mcg	1	2025-02-02	Take 1 tablet weekly.	
Xavier Doe	2064-03-03	Dr. Pink	456789	Chlorophyll	500mg	1	2025-03-03	Take 1 tablet daily.	
Yasmine Doe	2066-04-04	Dr. Black	987654	CoQ10	100mg	1	2025-04-04	Take 1 tablet daily.	
Zachary Doe	2068-05-05	Dr. White	123456	Glucurone	500mg	1	2025-05-05	Take 1 tablet daily.	
Abigail Doe	2070-06-06	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-06-06	Take 1 tablet daily.	
Brynn Doe	2072-07-07	Dr. Red	456789	Vitamin D3	1000IU	1	2025-07-07	Take 1 tablet weekly.	
Caitlin Doe	2074-08-08	Dr. Yellow	987654	Probiotic	100mg	1	2025-08-08	Take 1 tablet daily.	
Dylan Doe	2076-09-09	Dr. Purple	123456	Iron Supplement	100mg	1	2025-09-09	Take 1 tablet daily.	
Ella Doe	2078-10-10	Dr. Orange	789012	Selenium	100mcg	1	2025-10-10	Take 1 tablet weekly.	
Felicity Doe	2080-11-11	Dr. Pink	456789	Chlorophyll	500mg	1	2025-11-11	Take 1 tablet daily.	
Garrison Doe	2082-12-12	Dr. Black	987654	CoQ10	100mg	1	2025-12-12	Take 1 tablet daily.	
Hannah Doe	2084-01-01	Dr. White	123456	Glucurone	500mg	1	2025-01-01	Take 1 tablet daily.	
Ivan Doe	2086-02-02	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-02-02	Take 1 tablet daily.	
Jessica Doe	2088-03-03	Dr. Red	456789	Vitamin D3	1000IU	1	2025-03-03	Take 1 tablet weekly.	
Karen Doe	2090-04-04	Dr. Yellow	987654	Probiotic	100mg	1	2025-04-04	Take 1 tablet daily.	
Liam Doe	2092-05-05	Dr. Purple	123456	Iron Supplement	100mg	1	2025-05-05	Take 1 tablet daily.	
Mia Doe	2094-06-06	Dr. Orange	789012	Selenium	100mcg	1	2025-06-06	Take 1 tablet weekly.	
Natalie Doe	2096-07-07	Dr. Pink	456789	Chlorophyll	500mg	1	2025-07-07	Take 1 tablet daily.	
Oscar Doe	2098-08-08	Dr. Black	987654	CoQ10	100mg	1	2025-08-08	Take 1 tablet daily.	
Parker Doe	2100-09-09	Dr. White	123456	Glucurone	500mg	1	2025-09-09	Take 1 tablet daily.	
Quinn Doe	2102-10-10	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-10-10	Take 1 tablet daily.	
Riley Doe	2104-11-11	Dr. Red	456789	Vitamin D3	1000IU	1	2025-11-11	Take 1 tablet weekly.	
Sophie Doe	2106-12-12	Dr. Yellow	987654	Probiotic	100mg	1	2025-12-12	Take 1 tablet daily.	
Tucker Doe	2108-01-01	Dr. Purple	123456	Iron Supplement	100mg	1	2025-01-01	Take 1 tablet daily.	
Ulysses Doe	2110-02-02	Dr. Orange	789012	Selenium	100mcg	1	2025-02-02	Take 1 tablet weekly.	
Vivian Doe	2112-03-03	Dr. Pink	456789	Chlorophyll	500mg	1	2025-03-03	Take 1 tablet daily.	
Wesley Doe	2114-04-04	Dr. Black	987654	CoQ10	100mg	1	2025-04-04	Take 1 tablet daily.	
Xavier Doe	2116-05-05	Dr. White	123456	Glucurone	500mg	1	2025-05-05	Take 1 tablet daily.	
Yasmine Doe	2118-06-06	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-06-06	Take 1 tablet daily.	
Zachary Doe	2120-07-07	Dr. Red	456789	Vitamin D3	1000IU	1	2025-07-07	Take 1 tablet weekly.	
Abigail Doe	2122-08-08	Dr. Yellow	987654	Probiotic	100mg	1	2025-08-08	Take 1 tablet daily.	
Brynn Doe	2124-09-09	Dr. Purple	123456	Iron Supplement	100mg	1	2025-09-09	Take 1 tablet daily.	
Caitlin Doe	2126-10-10	Dr. Orange	789012	Selenium	100mcg	1	2025-10-10	Take 1 tablet weekly.	
Dylan Doe	2128-11-11	Dr. Pink	456789	Chlorophyll	500mg	1	2025-11-11	Take 1 tablet daily.	
Ella Doe	2130-12-12	Dr. Black	987654	CoQ10	100mg	1	2025-12-12	Take 1 tablet daily.	
Felicity Doe	2132-01-01	Dr. White	123456	Glucurone	500mg	1	2025-01-01	Take 1 tablet daily.	
Garrison Doe	2134-02-02	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-02-02	Take 1 tablet daily.	
Hannah Doe	2136-03-03	Dr. Red	456789	Vitamin D3	1000IU	1	2025-03-03	Take 1 tablet weekly.	
Ivan Doe	2138-04-04	Dr. Yellow	987654	Probiotic	100mg	1	2025-04-04	Take 1 tablet daily.	
Jessica Doe	2140-05-05	Dr. Purple	123456	Iron Supplement	100mg	1	2025-05-05	Take 1 tablet daily.	
Karen Doe	2142-06-06	Dr. Orange	789012	Selenium	100mcg	1	2025-06-06	Take 1 tablet weekly.	
Liam Doe	2144-07-07	Dr. Pink	456789	Chlorophyll	500mg	1	2025-07-07	Take 1 tablet daily.	
Mia Doe	2146-08-08	Dr. Black	987654	CoQ10	100mg	1	2025-08-08	Take 1 tablet daily.	
Natalie Doe	2148-09-09	Dr. White	123456	Glucurone	500mg	1	2025-09-09	Take 1 tablet daily.	
Oscar Doe	2150-10-10	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-10-10	Take 1 tablet daily.	
Parker Doe	2152-11-11	Dr. Red	456789	Vitamin D3	1000IU	1	2025-11-11	Take 1 tablet weekly.	
Quinn Doe	2154-12-12	Dr. Yellow	987654	Probiotic	100mg	1	2025-12-12	Take 1 tablet daily.	
Riley Doe	2156-01-01	Dr. Purple	123456	Iron Supplement	100mg	1	2025-01-01	Take 1 tablet daily.	
Sophie Doe	2158-02-02	Dr. Orange	789012	Selenium	100mcg	1	2025-02-02	Take 1 tablet weekly.	
Tucker Doe	2160-03-03	Dr. Pink	456789	Chlorophyll	500mg	1	2025-03-03	Take 1 tablet daily.	
Ulysses Doe	2162-04-04	Dr. Black	987654	CoQ10	100mg	1	2025-04-04	Take 1 tablet daily.	
Vivian Doe	2164-05-05	Dr. White	123456	Glucurone	500mg	1	2025-05-05	Take 1 tablet daily.	
Wesley Doe	2166-06-06	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-06-06	Take 1 tablet daily.	
Xavier Doe	2168-07-07	Dr. Red	456789	Vitamin D3	1000IU	1	2025-07-07	Take 1 tablet weekly.	
Yasmine Doe	2170-08-08	Dr. Yellow	987654	Probiotic	100mg	1	2025-08-08	Take 1 tablet daily.	
Zachary Doe	2172-09-09	Dr. Purple	123456	Iron Supplement	100mg	1	2025-09-09	Take 1 tablet daily.	
Abigail Doe	2174-10-10	Dr. Orange	789012	Selenium	100mcg	1	2025-10-10	Take 1 tablet weekly.	
Brynn Doe	2176-11-11	Dr. Pink	456789	Chlorophyll	500mg	1	2025-11-11	Take 1 tablet daily.	
Caitlin Doe	2178-12-12	Dr. Black	987654	CoQ10	100mg	1	2025-12-12	Take 1 tablet daily.	
Dylan Doe	2180-01-01	Dr. White	123456	Glucurone	500mg	1	2025-01-01	Take 1 tablet daily.	
Natalie Doe	2182-02-02	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-02-02	Take 1 tablet daily.	
Oscar Doe	2184-03-03	Dr. Red	456789	Vitamin D3	1000IU	1	2025-03-03	Take 1 tablet weekly.	
Parker Doe	2186-04-04	Dr. Yellow	987654	Probiotic	100mg	1	2025-04-04	Take 1 tablet daily.	
Quinn Doe	2188-05-05	Dr. Purple	123456	Iron Supplement	100mg	1	2025-05-05	Take 1 tablet daily.	
Riley Doe	2190-06-06	Dr. Orange	789012	Selenium	100mcg	1	2025-06-06	Take 1 tablet weekly.	
Sophie Doe	2192-07-07	Dr. Pink	456789	Chlorophyll	500mg	1	2025-07-07	Take 1 tablet daily.	
Tucker Doe	2194-08-08	Dr. Black	987654	CoQ10	100mg	1	2025-08-08	Take 1 tablet daily.	
Ulysses Doe	2196-09-09	Dr. White	123456	Glucurone	500mg	1	2025-09-09	Take 1 tablet daily.	
Vivian Doe	2198-10-10	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-10-10	Take 1 tablet daily.	
Wesley Doe	2200-11-11	Dr. Red	456789	Vitamin D3	1000IU	1	2025-11-11	Take 1 tablet weekly.	
Xavier Doe	2202-12-12	Dr. Yellow	987654	Probiotic	100mg	1	2025-12-12	Take 1 tablet daily.	
Yasmine Doe	2204-01-01	Dr. Purple	123456	Iron Supplement	100mg	1	2025-01-01	Take 1 tablet daily.	
Zachary Doe	2206-02-02	Dr. Orange	789012	Selenium	100mcg	1	2025-02-02	Take 1 tablet weekly.	
Abigail Doe	2208-03-03	Dr. Pink	456789	Chlorophyll	500mg	1	2025-03-03	Take 1 tablet daily.	
Brynn Doe	2210-04-04	Dr. Black	987654	CoQ10	100mg	1	2025-04-04	Take 1 tablet daily.	
Caitlin Doe	2212-05-05	Dr. White	123456	Glucurone	500mg	1	2025-05-05	Take 1 tablet daily.	
Dylan Doe	2214-06-06	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-06-06	Take 1 tablet daily.	
Natalie Doe	2216-07-07	Dr. Red	456789	Vitamin D3	1000IU	1	2025-07-07	Take 1 tablet weekly.	
Oscar Doe	2218-08-08	Dr. Yellow	987654	Probiotic	100mg	1	2025-08-08	Take 1 tablet daily.	
Parker Doe	2220-09-09	Dr. Purple	123456	Iron Supplement	100mg	1	2025-09-09	Take 1 tablet daily.	
Quinn Doe	2222-10-10	Dr. Orange	789012	Selenium	100mcg	1	2025-10-10	Take 1 tablet weekly.	
Riley Doe	2224-11-11	Dr. Pink	456789	Chlorophyll	500mg	1	2025-11-11	Take 1 tablet daily.	
Sophie Doe	2226-12-12	Dr. Black	987654	CoQ10	100mg	1	2025-12-12	Take 1 tablet daily.	
Tucker Doe	2228-01-01	Dr. White	123456	Glucurone	500mg	1	2025-01-01	Take 1 tablet daily.	
Ulysses Doe	2230-02-02	Dr. Blue	789012	Omega-3 Fish Oil	1000mg	1	2025-02-02	Take 1 tablet daily.	
Vivian Doe	2232-03-03	Dr. Red	456789	Vitamin D3	1000IU	1	2025-03-03	Take 1 tablet weekly.	
Wesley Doe	2234-04-04	Dr. Yellow	987654	Probiotic	100mg	1	2025-04-04	Take 1 tablet daily.	
Xavier Doe	2236-05-05								

As required  
PRN  
medicines  
Year: 2013

Attach ADA sticker

Cut off section



SMR130007

ALLERGIES & ADVERSE DRUG REACTIONS (ADR)  
 Not known     Unknown     Suspected but unconfirmed  
 Disbelieved     Reactions from home     Homeless

FAMILY NAME: \_\_\_\_\_ MRN: \_\_\_\_\_  
 PRINC Hospital: \_\_\_\_\_ 1234567  
 PRINC Address: \_\_\_\_\_  
 DOB: 11/11/1939 Age: 79 Sex: M  
 ASK QUESTIONS AND RECORD  
 INC. ANSWERS



EMERGENCY/DEPARTMENT: \_\_\_\_\_  
 PRINC Emergency Room: \_\_\_\_\_  
 PRINC Address: \_\_\_\_\_  
 PRINC DOB: 11/11/1939 Age: 79 Sex: M  
 PRINC MRN: 1234567  
 PRINC Phone: 123-4567  
 PRINC Email: 1234567@princ.com  
 PRINC Address: 123 Main Street, Anytown, USA  
 PRINC City: Anytown  
 PRINC State: USA  
 PRINC Zip: 12345

Aspirin	Precise Ultra	R

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 <b>NSW</b>   <b>Health</b>		<b>PATIENT NAME</b> <b>SMITH</b> <b>James Smith</b> <b>DOB:</b> 17/01/1939 <b>Age:</b> 74Y <b>Sex:</b> M <b>Address:</b> 123 Main Street, NSW 2000-0000 <b>Phone Number:</b> 02 1234 5678	<b>Emergency Department</b> <b>1234567</b> <b>PHONE NUMBER:</b> 1234 5678
<h2 style="text-align: center;"><b>MEDICATION MANAGEMENT PLAN</b></h2>			
<p><b>COMPLETENESS OF MEDICATION LIST</b></p> <p>Please check off each item as it applies to your patient.</p> <p><b>Medication List:</b></p> <p>Supply new medication list for pt on discharge</p> <p><b>Comments (e.g. medication administration, liaison required, supply notes):</b></p> <p>Handwritten notes:</p> <p>1. Paracetamol tablets changed to Panadeine white in hospital.      Change back to Paracetamol tablets before discharge.      2. Colloidal soap solution changed from pink to yellow white      An antihistamine. Changed back to Panadeine.      3. Amiodarone ceased due to hypertension.      4. Warfarin dose ↓ to 5mg twice as INR remained 3.</p>			
<p><b>MEDICATION CHANGES DURING ADMISSION</b></p> <p>1. Paracetamol tablets changed to Panadeine white in hospital.      Change back to Paracetamol tablets before discharge.      2. Colloidal soap solution changed from pink to yellow white      An antihistamine. Changed back to Panadeine.      3. Amiodarone ceased due to hypertension.      4. Warfarin dose ↓ to 5mg twice as INR remained 3.</p>			
<p><b>MEDICATION DISCHARGE CHECKLIST</b></p> <p><input checked="" type="checkbox"/> Reconciled on discharge      Sign: _____ Date: _____  <input type="checkbox"/> Own medicines returned      Sign: _____ Date: _____  <input type="checkbox"/> Permission for disposal of medicines      Sign: _____ Date: _____  <input type="checkbox"/> Medication supply      Sign: _____ Date: _____  <input type="checkbox"/> Dose administration aid      Sign: _____ Date: _____  <input type="checkbox"/> Script given to patient (if applicable)      Type: _____  <input type="checkbox"/> Discharge Medication Record given/sent to: <input checked="" type="checkbox"/> Patient <input type="checkbox"/> GP <input type="checkbox"/> Pharmacy <input type="checkbox"/> Other: _____      Sign: _____ Date: _____  <input type="checkbox"/> Consumer Medicine Information      Sign: _____ Date: _____  <input type="checkbox"/> Education provided      Sign: _____ Date: _____  <input type="checkbox"/> Recommend Home Medicines Review referral (see checklist below)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>			
<p><b>RECOMMENDING A HOME MEDICINES REVIEW REFERRAL CHECKLIST</b></p> <p>Consider recommending a Home Medicines Review referral because:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Difficulty managing medicines</li> <li><input type="checkbox"/> Taking more than 12 doses per day</li> <li><input type="checkbox"/> Suspected non compliance</li> <li><input type="checkbox"/> Significant changes to medication regimen during admission</li> <li><input type="checkbox"/> Medication requiring therapeutic monitoring</li> <li><input type="checkbox"/> Inability to manage drug related therapeutic devices</li> <li><input type="checkbox"/> Taking more than 5 medicines</li> <li><input type="checkbox"/> Other: _____</li> </ul>			

## CONTINUITY OF MEDICATION MANAGEMENT MEDICATION RECONCILIATION TOOLKIT CLINICAL EXCELLENCE COMMISSION

Result Type: Discharge Referral Note  
 Result Date: 11 November 2013 14:20  
 Result Status: Auth (Verified)  
 Result Title: Discharge Referral Baseline  
 Performed By: Claire CHAN (RMO) on 11 November 2013 15:18  
 Verified By: Claire CHAN (RMO) on 11 November 2013 15:54  
 Encounter Info: Inpatient, 07/11/2013 – 11/11/2013

#### **Discharge Referral Baseline**

Patient: SMITH Mr James MRN: 1234567  
 Age: 74 years Sex: Male DOB: 17/04/1939  
 Associated diagnoses: Chest pain; Postural hypotension  
 Author: Claire CHAN

#### **Visit Information**

Facility:	Prince Hospital	
Admission Date:	07/11/2013	To be discharged: 11/11/2013
Medical Service:	Renal Medical	Consulting Clinician:
Attending Medical Officer:	Dr Charles Nguyen	
AMO Provider No.:	54321H	Indigenous Status: Neither Aboriginal/Torres Strait Is
Local Medical Officer:	Dr Sam Pierce	
LMO Provider No.:	34567H	
LMO Address:	Dr Sam Pierce 78 Rose Street Amberville, 2967, NSW	
LMO Phone:	9453 6798	LMO Fax: 9453 6799
Interpreter Required:	No	Language spoken at home: English

Dear Dr Sam Pierce,

Thank you for reviewing James Smith, a 74 year old male to be discharged on 06/11/2013 from Prince Hospital. James presented to this facility with Pain, chest.

#### **Summary of Care**

James presented to ED with progressive left sided chest pain which was sharp and stabbing. It has been present for last 2/52 and is only present when standing and is relieved when lying down. No fevers, cough or SOB. The pain occurred often when he was walking up stairs or lifting bags and did sound exertional in nature.

He describes 3 episodes of lightheadedness in the past month, lasting approx.. 20 seconds.  
No loss of consciousness.

#### **PMH**

Renal transplant 2007 – cadaveric

Nephrotic syndrome

PE in 2005 and 2013

T2DM

Hypertension

OA

Depression

PVD

Result Type: Discharge Referral Note  
 Result Date: 11 November 2013 14:20  
 Result Status: Auth (Verified)  
 Result Title: Discharge Referral Baseline  
 Performed By: Claire CHAN (RMO) on 11 November 2013 14:53  
 Verified By: Claire CHAN (RMO) on 11 November 2013 15:54  
 Encounter Info: Inpatient, 07/11/2013 – 11/11/2013

Peripheral neuropathy  
 Prostatitis and TURP  
 Antiphospholipid syndrome

#### Chest pain

CXR showed left basal atelectasis but was otherwise normal.

INR was therapeutic so PE very unlikely and VQ scan not performed.

Pacemaker check showed device pacing and sensing appropriately. One episode recorded on 20/10 with only 4 beats. Otherwise no other arrhythmias.

As the chest pain sounded exertional in nature, we performed a sestamibi myocardial scan which showed mild impairment of coronary flow reserve in the distal LAD territory. No segmental wall abnormality is seen with LVEF 67%.

The pain resolved on the first day and he was pain free for the remainder of the admission.

#### Postural hypotension likely due to autonomic neuropathy

Mr Smith experienced postural drops of approximately 30mHg around admission and felt dizzy at the time. He reports it has been happening for approx. 3/52. No episodes of loss of consciousness. It may be secondary to autonomic neuropathy and he also has some reduced sensation in the lower limbs in a glove and stocking distribution. We ceased the amlodipine to see if there is any improvement. We advised him to increase his salt and fluid intake and wear long compression stockings.

Fludrocortisone can be considered in the future if there is no improvement.

#### Discharge Plan

D/C home to retirement village

F/U with GP next week for blood pressure check and consider restarting antihypertensive. Can trial different agent eg coversyl rather than amlodipine

GP to please organise nerve conduction studies as an outpatient

Pt can increase salt intake, drink adequate fluids and wear long compression stockings to help with postural drops.

#### Health Status

##### Principle and Other Diagnosis

Chest pain : SNMCT 49966017, Discharge, ED Medical,

Postural hypotension : SNMCT 47966010, Final, Medical

##### Allergies and Adverse Reactions

###### Allergic Reaction (Selected)

Severe

Aspirin – Ulcers.

SMITH, Mr James - 1234567

Result Type: Discharge Referral Note  
 Result Date: 11 November 2013 14:20  
 Result Status: Auth (Verified)  
 Result Title: Discharge Referral Baseline  
 Performed By: Claire CHAN (RMO) on 11 November 2013 14:53  
 Verified By: Claire CHAN (RMO) on 11 November 2013 15:54  
 Encounter Info: Inpatient, 07/11/2013 – 11/11/2013

**Medications**

**Discharge Medications:**

Medication Name	Dose	Freq	Route	Start Date
WARFARIN (COUMADIN)	5.5mg	Daily	Oral	
Other Comment: as per INR aim INR 2-3				
Status: Medication continued – dose reduced				
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
GLYADE MR	30mg	BD	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
PANADOL OSTEOT	2	TDS	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
CALCIA D	1000 units	Morning	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
SIMVASTATEN	80mg	Night	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
COLOXYL AND SENNA	2	Other: bd pm	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
MYCOPHENOLATE	750mg	BD	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			
Medication Name	Dose	Freq	Route	Start Date
CYCLOSPORIN	100mg	BD	Oral	
Status:	Medication continued – dose unchanged			
Last Updated:	11/11/2013 14:12			

**CEASED MEDICATIONS**

Medication Name	Disc	Freq	Route	Start Date
AMLODIPINE	5mg	Morning	Oral	
Status: Medication ceased				
Last Updated: 11/11/2013 14:12				

Medications Form/Section Last Updated On: 11-NOV-2013 14:36  
 Medications Form/Section Last Updated By: Claire Chan - Medical Officer

Page 3 of 4

SMITH, Mr James – 1234567

Result Type: Discharge Referral Note  
Result Date: 11 November 2013 14:20  
Result Status: Auth (Verified)  
Result Title: Discharge Referral Baseline  
Performed By: Claire CHAN (RMO) on 11 November 2013 14:53  
Verified By: Claire CHAN (RMO) on 11 November 2013 15:54  
Encounter Info: Inpatient, 07/11/2013 – 11/11/2013

Medical Compliance Aid – Recommended: No. Type: Medlist

**Discharge Information**

Performed by  
Dr Claire Chan; Medical Officer

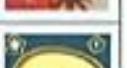
**Completed Action List:**

- \*Performed by Claire CHAN on 11 November 2013 14:53
- \*Modified by Claire CHAN on 11 November 2013 15:30
- \*Modified by Claire CHAN on 11 November 2013 15:46
- \*Signed by Claire CHAN on 11 November 2013 15:54
- \*Verified by Claire CHAN on 11 November 2013 15:54

**PHARMACY DEPARTMENT - PRINCE HOSPITAL**  
**PATIENT MEDICATION LIST**

**James SMITH   DOB: 17 April 1939   Date: 11/11/2013**

**Page 1 of 2**

<b>Name of medicine</b>	<b>Brand names</b>	<b>Used for</b>	<b>Directions</b>	<b>Daily time table</b>				<b>Comments</b>
				 Morning 7-9am	 Noon 11-1pm	 Evening 4-6pm	 Bedtime 9-11pm	
Warfarin 5mg tablet	Coumadin	Prevent blood clots and stroke	Take 1 tablet in the evening		1			Decreased dose
Warfarin 1mg tablet			Take $\frac{1}{2}$ a tablet in the evening		$\frac{1}{2}$ half			Your dose many change, see your GP within 3 days.
Simvastatin 80mg tablet	Lipex Zocor	Reduce cholesterol levels in the blood	Take 1 tablet at bedtime				1	Unchanged
Cyclosporin 100mg capsule	Neoral	Prevent kidney rejection	Take 1 capsule in the morning 1 capsule in the evening	1		1		Unchanged
Mycophenolate 250mg capsule	Celcipt	Prevent kidney rejection	Take 3 capsules in the morning 3 capsules in the evening	3		3		Unchanged
Cilazapril 30mg modified release tablet	Glyade MR	Control amount of sugar in the blood	Take 1 tablet in the morning 1 tablet in the evening	1		1		Unchanged
Paracetamol 665mg modified release tablet	Paracetamol Osteo	To reduce arthritis pain	Take 2 tablets in the morning 2 tablets at noon 2 tablets in the evening	2	2	2		Take with breakfast and dinner. Swallow the tablet whole.
Co lecalciferol 1000 IU capsule	Calcia D Ostelin	Vitamin D supplement	Take 1 capsule in the morning	1				Do not take more than 6 tablets in one day. Swallow the tablets whole.

**PHARMACY DEPARTMENT - PRINCE HOSPITAL**  
**PATIENT MEDICATION LIST**

James SMITH    DOB: 17 April 1939    Date: 11/11/2013

Page 2 of 2

Name of medicine	Brand names	Used for	Directions	Daily time table				Change	Comments
				Morning 7-9am	Noon 11-1pm	Evening 4-6pm	Bedtime 9-11pm		
Docusate 50mg and Senna 8mg tablet	Coloxyl with Senna	Relieve constipation	Take 2 tablets in the morning 2 tablets in the evening	Take 2 tablets in the morning and 2 tablets in the evening when needed for constipation.				Unchanged	

The following medicines were STOPPED while you were in hospital. Do not take these medicines without further advice

Name of medicine	Brand names	Date stopped	Explanation
Amlodipine 5mg tablet	Amllo Norvasc	7/11/2013	Making blood pressure too low when standing up, causing dizziness.

**Allergies and adverse drug reactions**

Date	Medicine/causal agent	Reaction
Many years ago	Aspirin	Stomach ulcer

Continuity of Medication Management Comprehensive Audit Tool



### Auditor's Worksheet

Patient Number: 18

Medications taken prior to admission	Plan for admission medicines	Medications on medication chart at admission	Medications on medication chart at discharge	Any documented plan for continued therapy (check last medical round notes, prescriptions)	Medications on discharge summary	'Intended regimen on discharge'
Cyclosporin 100mg BD Mycophenolate 750mg BD	✓	same	same	cont	same	Cyclosporin 100mg BD
Simvastatin 80mg	✓	same	same	cont	same	Mycophenolate 750mg BD
Amiodarone 50mg BD	✓ (W)	same (W)	same (W)	cease	cease	Simvastatin 80mg
Cilostazol 120mg BD	✓	same	same	cont	same	Cilostazol 120mg BD
Colchicine 0.5mg BD	✓	same	same	cont	same	Colchicine 0.5mg BD
Panobinostat 100mg BD	✓ (Dose reduction)	—	Panobinostat 100mg BD	cont	same	Panobinostat 100mg BD
Warfarin 5mg BD	✓	same	Warfarin 5mg BD	cont ↓ dose warfarin 5mg	—	Warfarin 5mg BD
Paracetamol 1g BD	—	—	—	—	—	—

# COMPREHENSIVE AUDIT TOOL

Audit Period: <u>15/10 - 15/11/13</u>	Hospital: <u>Prince Hospital</u>
Date of Audit: <u>22/11/13</u>	Auditor/s names: <u>Kim Jones</u> <u>Chris Collins</u>
Patient Number: <u>18</u>	Additional Notes:
Male/Female (circle) Age: <u>Male</u> <u>74</u>	
Department/Ward: <u>Medical</u>	

## Section 1: Best Possible Medication History (BPMH)

1.1 Admission date: <u>7 / 11 / 13</u>	Admission time: <u>12:53</u>
1.2 Discharge date: <u>11 / 11 / 13</u>	Discharge destination: <u>Retirement Village</u>
1.3 Was this patient on regular medications prior to admission? (if No, do not proceed with data collection)	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   If No, was 'patient on nil medications' documented?	
<input type="checkbox"/> Yes   If Yes, where was it documented? <input type="checkbox"/> No	
1.4 Has a medication history been documented? (if No, do not proceed with data collection)	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1.5 Who documented the most comprehensive medication history? (select only one)	
<input type="checkbox"/> ED medical officer <input type="checkbox"/> Admitting medical team <input checked="" type="checkbox"/> Pharmacist <input type="checkbox"/> Registered nurse <input type="checkbox"/> Nurse practitioner <input type="checkbox"/> Multidisciplinary team	
Other (provide details):	
N.B. Use the most comprehensive medication history to complete data collection	
1.6 Date and time (if available) medication history was documented	
Date: <u>8 / 11 / 13</u> Time:	
1.7 Where was the medication history documented?	
<input type="checkbox"/> History section of NIMC <input checked="" type="checkbox"/> MMP <input type="checkbox"/> Other dedicated form <input type="checkbox"/> Paper progress notes <input type="checkbox"/> Electronic progress notes <input type="checkbox"/> Medication table	
Other (provide details):	
1.8 a) Were the patient's allergies, adverse drug reactions, or lack of, documented as part of the history?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
1.8 b) Were details documented? (i.e. type of reaction or nil or not known)	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable	
1.9 a) Number of regular prescribed medications?	<u>8</u>
1.9 b) Number with name, dose and frequency?	<u>8</u>
1.10 a) Number of pm prescribed medications?	<u>1</u>
1.10 b) Number with name, dose and frequency?	<u>1</u>
1.11 a) Number of non-prescribed medications?	<u>0</u>
1.11 b) Number with name, dose and frequency?	<u>0</u>
1.12 a) Was/were the source/s of the information obtained for the medication history documented? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
b) Were 2 or more sources used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable	

# COMPREHENSIVE AUDIT TOOL

Audit Period:	Hospital:	
Date of Audit: <u>22/11/13</u>		
Patient Number: <u>18</u>	Auditor/s names:	Additional Notes:
Male/Female (circle) Age: <u>74</u>		
Department/Ward:		

Section 2: Medication Reconciliation on Admission	Response
This section compares the medications taken prior to admission to those prescribed on the medication chart	
2.1 Number of regular and prn prescribed medications taken prior to admission with a documented plan? (i.e. to continue, change, withhold or cease)	<u>9</u>
2.2 Number of non-prescribed medications taken prior to admission with a documented plan?	<u>0</u>
2.3 a) Number of regular prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>
2.4 a) Number of regular prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) without reason documented and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>
2.5 a) Number of prn prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>
2.6 a) Number of prn prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) without reason documented and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>
2.7 a) Number of non-prescribed medications taken prior to admission omitted from the medication chart without reason documented and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>
2.8 a) Number of non-prescribed medications taken prior to admission written on the medication chart with a discrepancy (name, dose, route, form, frequency) and not identified or rectified within 48 hours of admission?	a) <u>0</u>
b) Number of these possibly intentional due to obvious patient/disease factors?	b) <u>0</u>

Comments: \_\_\_\_\_

# COMPREHENSIVE AUDIT TOOL



Audit Period:	Hospital:	
Date of Audit: 22/11/13	Auditor/s names:	Additional Notes:
Patient Number: 18		
Male/Female (circle) Male	Age: 74	
Department/Ward:		

Section 3: Medication Reconciliation on Discharge	Response
This section compares the medications taken prior to admission and those prescribed on the medication chart with the medications listed on the discharge summary or patient medication list	
3.1 Was a discharge summary completed for this patient? (if No, do not proceed with data collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3.2 Number of medications to be continued on discharge, determined by reviewing medications taken prior to admission, the medication chart, discharge prescriptions (if available) and any documented plan for continued therapy?	8
3.3 Number of medications omitted from the discharge summary?	0
3.4 Number of medications included on the discharge summary with a discrepancy (name, dose, route, form, frequency)?	0
3.5 Number of unexplained extra medications on the discharge summary?	0
3.6 a) Number of medications the patient had been taking prior to admission ceased? (i.e. not to be continued on discharge)	a) 1 amiodipine
b) Number of these documented as ceased on the discharge summary?	b) 1
3.7 a) Number of medications to be continued on discharge either new, or differing in strength, dose or frequency?	a) 1 warfarin
b) Number of these documented on the discharge summary as either new, or differing in strength, dose or frequency?	b) 1
3.8 Number of new, changed or ceased medications that had reason/s for change documented on the discharge summary?	1 amiodipine
3.9 Was the patient provided with a medication list on discharge? (if No or Not Applicable do not proceed with data collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
3.10 Number of medications omitted from the patient medication list that had been identified as to continue on discharge?	0
3.11 Number of medications included in the patient medication list with a discrepancy (name, dose, route, form, frequency)?	0
3.12 Number of unexplained extra medications on the patient medication list?	0
3.13 Number of medications documented as ceased on the patient medication list?	1
3.14 Number of medications documented on the patient medication list as either new, or differing in strength, dose or frequency?	1
3.15 Number of new, changed or ceased medications that had reason/s for change documented on the patient medication list?	1
3.16 Does the list of medications in the patient medication list correspond identically with the list of medications in the discharge summary?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Comments: \_\_\_\_\_

## Appendix 2 – Auditor’s Work Sheet

Comprehensive Audit Tool

## Auditor's Work Sheet

Patient Number:



# BASELINE AUDIT SUMMARY TEMPLATE

<HOSPITAL NAME>

<DATE>

MEDICATION RECONCILIATION

# BASELINE AUDIT SUMMARY

## Objectives of the Audit

An audit at <Hospital Name> was conducted to establish a baseline and evaluate current activity relating to the continuity of medication management, prior to any formal education program or improvement strategies.

In particular to determine whether:

- A Best Possible Medication History (BPMH) is documented for every patient within 24 hours of admission
- All medicines taken prior to admission which were intended to continue were prescribed on the patient's medication chart, with documented reason/s for any change
- On discharge, the discharge summary contains an accurate medication list
- On discharge, the discharge summary contains the reason/s for any change in medicines
- On discharge the patient is provided with an accurate medication list.

## Summary of Results

- x% of patients had a clear medication history documented within 24 hours, x% of these could be recognised as a Best Possible Medication History (BPMH).
- x% of patients had all medicines taken prior to admission which were intended to continue prescribed on their medication chart, with documented reason/s for any change
- x% of discharge summaries contained an accurate medication list
- x% of discharge summaries contained the reason/s for any change in medicines
- x% of patients were provided with an accurate medication list.

## Method

A retrospective audit of the medical records of patients discharged between the <date> to <date> from <name of ward(s)> was conducted. Patients who had been admitted for less than 24 hours, transferred from other hospitals (other than direct ED to ED), died during the admission, were provided palliative care only or were admitted directly to ICU, were excluded from the audit. <Number> medical records were randomly selected and reviewed. After exclusions <number> medical records remained. Both paper and electronic records were reviewed.

## Definitions

The following terms and definitions are used during the audit and have been included in this report:

Best Possible Medication History	A medication history that has each medicine clearly identified and with clear directions i.e. dose and frequency; allergies and/or adverse drug reactions recorded; and evidence of at least two sources used
Regular prescribed medication	A medicine that would require a prescription or would normally form part of a prescribed treatment plan (e.g. aspirin in a patient with cardiovascular risk factors). This excludes medicines used only when necessary
prn prescribed medication	A medicine used only when necessary that would require a prescription
Non-prescribed medication	A medicine that does not require a prescription or form part of a prescribed treatment plan e.g. over-the-counter medicines, vitamins and complementary medicines
Discrepancy	An omission or change in a medication that has no documented reason and has not been identified or rectified within 48 hours
Unintentional discrepancy	A discrepancy that has not been identified by the auditors as probably intentional due to the patient's condition or circumstances.

## Results

It was found that <number> (x%) of the <number> patients were on medications prior to their hospital admission (see Table 1. for a breakdown of patient details).

Of the <number> patients:

- <Number> had no medication history documented, though they were identified as taking medications
- <Number> (x%) had a comprehensive medication history documented (<number> (x%) by a pharmacist, <number> (x%) by an Emergency Department medical officer and <number> (x%) by the admitting medical team)\*
- <Number> (x%) of the medication histories were documented in the electronic notes.

\*The clinician allocated was that identified by the auditor as taking the most comprehensive medication history as documented in the medical record.

*Table 1. Patient details per ward*

Ward	Number of patients	Median age	Age range	Percentage of males	Median number of regular prescribed medications	Median length of stay
A						
B						
<b>Total</b>						

## Best Possible Medication History

The <number> medication histories documented in the medical records were reviewed to identify whether they could be classified as a BPMH i.e. each medication was clearly identified and had clear directions, allergies were recorded and a minimum of two sources were used to obtain and verify it. Data was collected for all medicines (regular prescribed, prn prescribed and non-prescribed) in the medication history. Figure 1. displays the number of medication histories meeting one or more criteria, for 'all' medications and for 'regular prescribed' medications.

<insert graph>

*Figure 1. Percentage of medication histories completed within 24 hours, meeting BPMH criteria*

Only <number> medication histories met all criteria for a BPMH and were documented within 24 hours. As the audit was conducted retrospectively verification was determined only if there was evidence in the medical record. Of the <number> medication histories (considering regular prescribed medications only) <number> ( $x\%$ ) of them were clear (all medications with clear name, dose and frequency), documented within 24 hours and included allergies (including unknown or nil known). Though classified as clear, being retrospective, the audit could not determine whether these histories were correct.

There were a total of <number> regular prescribed, <number> prn prescribed and <number> non-prescribed medications recorded. Of the prescribed medications <number> ( $x\%$ ) had a documented plan in the medical record i.e. whether they were to continue, change or be ceased during the admission (plans which stated to 'continue all medicines' were included, whereas those that stated 'as charted' were excluded).

## Prescribed Medications on Admission

The medications prescribed on admission for each patient were reviewed to determine whether any pre-admission medications had been omitted or changed without a documented reason (i.e. had a discrepancy) and if so, not been identified or rectified within 48 hours.

A total of <number> ( $x\%$ ) patients had one or more of their pre-admission medications either omitted or changed without a documented reason on admission. Some of these changes were identified by the auditors as probably intentional due to the patient's condition or circumstances. Removing these resulted in <number> ( $x\%$ ) patients with 'unintentional' omissions or other discrepancies (Figure 2.) The number of unintentional omissions or other discrepancies per patient ranged from <number> to <number>, with an average of <number> errors per patient.

It is likely that the number of errors per patient is actually higher than that determined in this audit. Not all pre-admission medications documented in the medication history had clear directions (<number> medications belonging to <number> patients were not clear) making it impossible to determine whether they were prescribed with or without a discrepancy. It was also not possible to determine whether there may have been medications the patient was taking that were not documented. These medications would not be captured as an omission in the audit.

<insert graph>

*Figure 2. Percentage of patients with at least one omission or discrepancy on admission (excluding those identified or rectified within 48 hours)*

## Discharge Medicines Information

In order to determine the medications to continue on discharge for each patient the auditors were required to consider the patient's pre-admission medications, the medication chart, discharge prescriptions (if available) and any documented plan for continued therapy. Auditors found that <number> ( $x\%$ ) patients had some change made to their medications. Either new medications were commenced or pre-admission medications were ceased or changed during their admission.

Of the <number> patients on medications on discharge, <number> discharge summaries were completed. Of these <number> ( $x\%$ ) had either a medication omission or other discrepancy (Figure 3.)

More than <number> of the patients (<number> of <number>) who had a medication error (omission or other discrepancy) on admission also had medication errors on discharge.

The number of medications patients were taking at the time of discharge ranged from <number> to <number> medication, with a median of <number> medications. Of the <number> patients on medications at discharge <number> (x%) were taking five or more medications.

<insert graph>

*Figure 3. Percentage of patients with at least one omission or discrepancy on their discharge summary*

There was evidence that only <number> of the <number> patients that were taking medications on discharge was provided a patient medication list. <Number> (%) of patients with a patient medication list had a medication omission and <number> (%) had an other discrepancy in their medication list (Table 2.) <Number> (%x) of the patient medication lists provided included reasons for any change/s.

*Table 2. Number of patients with a medication omission or discrepancy in their medication list*

Patient medication list	Medication omissions	Medication discrepancies	Reasons for any change/s
Percentage of patients	x%	x%	x%

## Limitations

The audit had a number of limitations, these included:

- The audit was conducted retrospectively relying solely on the documentation that was available, there was no patient interview
- Medication histories documented could not be verified for their accuracy, this may have resulted in an underreporting of omissions
- Evidence of medication omissions and other discrepancies being *identified* on admission was considered an indication of a reconciliation process. Not all identified discrepancies may have followed through to be rectified
- Subjective decisions were made when no plan was available to determine whether discrepancies were intentional i.e. obvious patient/disease factors. There may have been less obvious reasons for an intentional omission or change
- Auditors may have been subjective in determining the intended regimen on discharge from the information available in the record.

## Summary

There is evidence that the processes of medication reconciliation are happening for some admitted patients. Clear medication histories within 24 hours are documented for x% of patients and x% of patients had all medicines taken prior to admission which were intended to continue prescribed on their medication chart. Discharge summaries were completed for the majority of patients with x% containing an accurate medication list. Medication reconciliation however, should be a standard systematic process occurring for all admitted patients throughout their hospital stay.

This audit summary highlights a number of areas requiring improvement. The following recommendations have been made to reduce the current gap between patients that have their medications reconciled and those that do not; reducing the number of patients at risk of experiencing an adverse medication event.

## Recommendations

<See suggestions below>

- Increasing the number of medication histories meeting the criteria for a BPMH by introducing a standard process of collecting and documenting a medication history.

(Strategies may include an educational program, defining roles and responsibilities, redesigning current processes, agreement on when and where it is documented, creating a referral pathway, using a dedicated form that prompts this information, developing a policy or procedure)
- Documenting the plan for the patient's pre-admission medications to improve the recognition of intended changes to medications and providing evidence of reconciling medication orders on admission. This will assist future audits as it will reduce subjectivity resulting from poor documentation.

(Strategies may include a dedicated form that prompts this information, defining roles and responsibilities, agreement on when and where it is documented)
- Documenting the plan for the patient's medications on discharge and identifying the changes made to pre-admission medications.

(Strategies may include easy access to the BPMH, defining roles and responsibilities, agreement on when and where it is documented)
- Increasing the number of patients provided with an accurate medication list and the reasons for any changes.

(Strategies may include defining roles and responsibilities, creating a referral pathway, investigating electronic tools/programs)

Improvements in these areas will improve patient care, reduce patient harm and assist to meet Medication Safety Standard 4 of the National Safety and Quality Health Service Standards.

# SNAPSHOT AUDIT TOOL

## Baseline / Progress (circle)



Audit period	/ / to / /																			Total number of patients with component completed
Number of patients	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Medication history																				
Confirmation																				
Accessibility at point of care																				
Reconciliation																				
Medication list and changes for next care provider on discharge																				
Medication list and changes for patient on discharge																				
Number of components present	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	/6	
<b>100% compliant in all areas (tick if 6/6)</b>																				

### Instructions

For each of the patient records reviewed tick whether the six components of continuity of medication management have been completed (see the Snapshot Audit Tool User Guide for component definitions). Continuity of medication management has occurred for the patient if all six components have been ticked i.e. 6 out of 6. The final column can be used to identify components which require improvement.

Note this audit tool has been adapted from the Safer Systems Saving Lives Campaign 2006 – Preventing Adverse Drug Events Audit



# SNAPSHOT AUDIT TOOL USER GUIDE

## MEDICATION RECONCILIATION TOOLKIT

# TABLE OF CONTENTS

INTRODUCTION .....
METHOD.....
AUDIT INSTRUCTIONS.....
COMPONENT DEFINITIONS.....

# INTRODUCTION

The Snapshot Audit Tool is an observational tool that collects information on whether components of continuity of medication management are evident for each patient. It provides a quick overview of the processes that are occurring and those which are not. It does not provide detail regarding the quality of the information in the patient record.

This audit tool captures six components of continuity of medication management:

1. Documentation of a medication history
2. Confirmation or verification of the medication history
3. Accessibility of the medication history at the point of care
4. Reconciliation of medications in the medication history with the medications actually prescribed
5. Medication list and changes had been provided for the next care provider on discharge
6. Medication list and changes had been provided for the patient on discharge.

# METHOD

Each Snapshot Audit Tool can be used to review 20 patient records. It is recommended that at least 20 randomly selected records, distributed evenly across the wards/units to be included in the quality improvement activity, be reviewed. These 20 patients do not need to be reviewed on the same day, the tool allows for collection over a period of time (e.g. five patients could be reviewed each week for a month). Frequent small samples have been shown to be more manageable and provide sufficient data to support ongoing quality improvement activities.

The following patients should be excluded from the audit:

- Admitted for less than 24 hours
- Transferred from other hospitals (other than direct from ED to ED)
- Died during the admission
- Were provided palliative care only
- Admitted directly to ICU (unless specifically targeting these patients).

Auditing may be conducted by intern and registered pharmacists, registered nurses and doctors who are familiar with the concepts of medication reconciliation and quality improvement methodology. They must familiarise themselves with the component definitions. As the six components of continuity of medication management captured in the tool span across admission to discharge, the data needs to be collected retrospectively after discharge.

The Snapshot Audit Tool provides an alternative to the Comprehensive Audit Tool and can be used by hospitals that:

- Wish to monitor their existing formal medication reconciliation processes
- Do not have the resources to conduct a detailed audit, to obtain an indication of whether formal processes of medication reconciliation are evident.

# AUDIT INSTRUCTIONS

1. Read this Snapshot Audit Tool User Guide. Familiarise yourself with the component definitions.
2. Read/review local guidelines and procedures regarding medication history taking, recording medication-related information and transfer of medication information on discharge or make enquiries in regards to current practices.
3. Decide on the wards/units and number of patient records to review.
4. Circle whether this is a collection to determine a baseline or progress.
5. Enter the audit period i.e. discharge date range of the records audited.
6. A tick or cross should be entered for each component on the Snapshot Audit Tool.
7. The total number of components ticked for each patient should be added.
8. A tick or cross should be entered in the last row to indicate whether all components have been completed.
9. The final column can be used to identify components that require improvement.

# COMPONENT DEFINITIONS

In the table below are the definitions for each of the six components of continuity of medication management.

Component	Definition
Medication history	Tick if there was a documented list of medications taken prior to admission that included the name, dose and frequency of each medication. This also includes documentation of any allergies, adverse drug reactions, as well as nil or not known.
Confirmation	Tick if there was documentation of at least two sources of information used to confirm the history.
Accessibility at point of care	Tick if the medication history was documented on a dedicated form (either paper or electronic) which according to protocol is kept with the active medication chart or is recorded in an electronic medication reconciliation program which links to electronic prescribing.
Reconciliation	Tick if there was evidence that a formal medication reconciliation process had occurred i.e. there was documentation to support that the medications in the confirmed history had been used to ensure that the medications 'actually' prescribed match those that 'should' be prescribed. Evidence may include documented changes to orders resulting from identified discrepancies or documentation that reconciliation had been completed on a form dedicated for this purpose.

Component	Definition
Medication list and changes for the next care provider on discharge	Tick if when the patient was discharged an accurate list of medicines and the reason/s for any change, was provided to the next care provider. This may be contained in a discharge summary or transfer documents.
Medication list and changes for the patient on discharge	Tick if when the patient was discharged an accurate list of medicines and the reason/s for any change, was provided to the patient. The list provided to the patient should be in a format that is easily understood by laypersons (if a discharge summary is provided to the patient the medicines information within it must be easily understood and not contain medical terminology or jargon).

# MEDICATION MANAGEMENT PLAN USER EVALUATION

Selected areas in this hospital have been trialling the Medication Management Plan (MMP). The aim of the form is to assist medication reconciliation and the handover of medication information, issues and action plans when a patient is admitted to hospital, throughout the patient's stay and at discharge.

Your assessment and feedback is required regarding:

1. Issues arising from the use of the form
2. Suggestions that may facilitate its use or acceptance
3. The usefulness of the form.

All feedback is anonymous and results will be collated.

Enter name of hospital

Enter date

Enter your occupation

Please read each statement below and mark the most appropriate response for each.

1. Did you attend an education session on the form?

Yes  No  Unsure

2. How did you use the form?

Documented the preadmission medication list  
 Identified a medication issue  
 Actioned an identified issue  
 Referred to or used the medication list  
 Other, please specify:

3. Did you require further verbal instruction or clarification on how to use the form?  
 Yes  No  Unsure
4. Did you find it useful to have the preadmission medication list available at the point of care, with the medication chart?  
 Yes  No  Not applicable  Unsure
5. Did you find the issue section useful?  
 Yes  No  Not applicable  Unsure
6. Did you find the sources of medicines list useful?  
 Yes  No  Not applicable  Unsure
7. Did you find the medication history checklist useful?  
 Yes  No  Not applicable  Unsure
8. Was the form useful as a resource on discharge?  
 Yes  No  Not applicable  Unsure
9. Overall, was the form useful?  
 Yes  No  Not applicable  Unsure

10. Please give your suggestions on how the use of the form could be improved:

11. Please list the most useful aspects of the form:


12. Provide any additional comments:


Thank you for your feedback  
Please return this completed form to:

Insert name and contact details of  
local program coordinator

## APPENDIX E

This appendix contains the following tools which may assist with sustaining and spreading:

- Posters
- Spreading Medication Reconciliation Improvements Presentation

# Medication RECONCILIATION

## 4 easy steps

**1 Collect**  
information to compile  
a Medication History

**2 Confirm**  
the accuracy of the information

**3 Compare**  
the history with prescribed  
medicines at every transfer of care

**4 Supply**  
accurate medicines information  
to the patient & next care provider



# Getting the best possible MEDICATION HISTORY

Medication Reconciliation: Steps 1 & 2



## Collect information

Talk to your patient, their carer and previous health care provider. Use:

- > an interview guide
- > language the patient understands
- > a checklist

## Confirm accuracy

- > use at least two sources
- > explore inconsistencies between sources



An accurate medication list is a key to excellent and safe care



# Compare medication lists at EVERY TRANSFER OF CARE

Medication Reconciliation: Step 3



Is the  
medication  
plan  
clear for all...

**continue?  
change?  
cease?**



...at  
admission,  
transfer and  
discharge



An accurate medication list is a  
key to excellent and safe care



# Supply accurate MEDICINE INFORMATION

## Medication Reconciliation: Step 4

Patient Medication Summary Pharmacy Department, My Hospital for Mr Terry EXAMPLE					
PRODUCT DESCRIPTION	BREAKFAST	LUNCH	TEA	BEDTIME	COMMENTS
CLOFENAPROTHIACILLIN 500MG CAPSULES	1		1		Unchanged. To prevent glucose finger reactions.
METFORMIN 1000MG (250MG) TABLETS	0		0		Unchanged. To prevent glucose finger reactions. Do not exceed tablets. Can be taken without meals.
GLITZAZIDE MR 10MG/ BUTYLAZIDE MR 10MG	1		1		Unchanged. To control blood sugar. Take with or immediately after food.
IRBUTIN IR 100MG (DIAZOXIDE) 5MG, 20MG, 50MG			See 'instructions' column		Current dose at 100mg/200ml in 5.0 ml. q.d. in the morning. IRB and dose to be reviewed by GP on the 1/1/2013.
PARACETAMOL 500MG	2	2	2		Unchanged. To reduce pain.
SALPISTATIN 500ML				1	Unchanged. To lower cholesterol.
The following medicine was CEASSED. Do not take this medicine without further notice. ACE-DIOSPRIME 100MG/100ML 5mg					CEASSED as floating posture. Reassess and discuss. GPs to be informed for antihypertensives at next visit.
All known allergies or adverse drug reactions					

Please bring this chart with you to each visit to your Doctor, Pharmacist, Dentist  
Prepared by: Sue Smith

Be sure the medicine list is complete and clear for:  
> your patient  
> their carer &  
> next health care provider

### Explain:

- > changes to medicines
- > reason for change
- > the ongoing plan

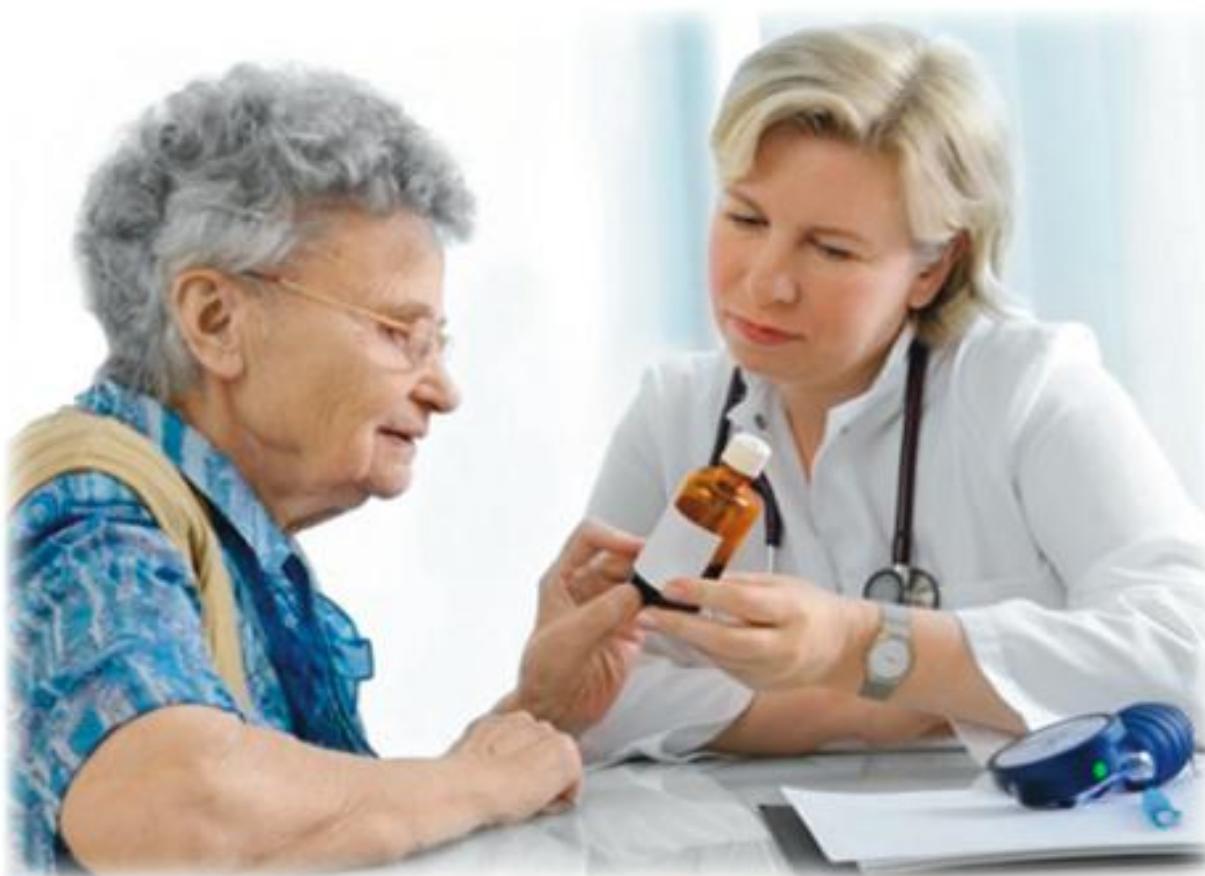


An accurate medication list is a key to excellent and safe care



# Your medication list is important to your care

Do you keep a list?  
Is it up to date?  
Is it with you?



An accurate medication list is a key  
to excellent care



# Continuity of Medication Management

## Spreading Medication Reconciliation Improvements

Hospital  
Presenter  
Month YYYY



# Continuity is an Issue in Health Care

- 10-67% of medication histories contain at least one error<sup>1</sup>
- Incomplete medication histories at the time of admission have been cited as the cause of at least 27% of prescribing errors in hospital<sup>2</sup>
- The most common error is the omission of a regularly used medicine<sup>3</sup>
- Around half of the medication errors that happen in hospital occur on admission or discharge<sup>4</sup>
- 30% of these errors have the potential to cause harm<sup>3,5</sup>



## Quality Improvement

- <Insert name of ward/unit>
- <Insert names of Quality Improvement team members>
- <Insert Aim Statement>

**S**pecific, **M**easurable, **A**spirational, **R**ealistic, **T**ime based



## Local Examples - Medication Errors

<Insert summarised case notes>

<Insert resulting effect on patient>

<Insert consequence e.g. contributed to death>

<Insert summarised case notes>

<Insert resulting effect on patient>

<Insert consequence e.g. caused moderate to severe harm>

<Insert summarised case notes>

<Insert resulting effect on patient>

<Insert consequence e.g. caused minor harm>

## Diagnosis of Problem

- <Insert process undertaken e.g.
  - Process flow chart
  - Brainstorming
  - Ishikawa (cause and effect) diagram
  - Prioritising causes
    - Weighted voting
    - Pareto chart>

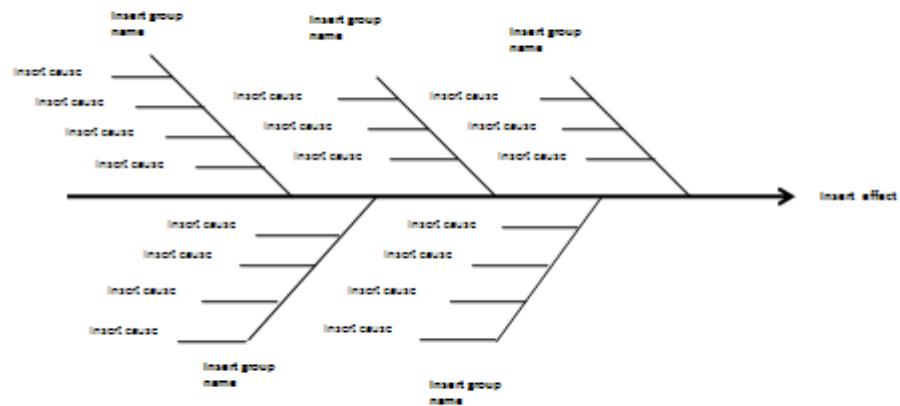


## Problem Work Flow

- <Insert copy of flow chart>



## Ishikawa (Cause and Effect) Diagram



## Prioritising Causes

- <Insert copy of Pareto chart>



## Highest Scoring Causes

- <Insert a description of each of the highest scoring causes on the Pareto chart>



## Agreed Strategies

- <Insert agreed strategies and work plan>



## Improvements

- <Insert improvement results e.g. run charts>



## Lessons Learned

- <Insert what worked well, and what didn't work well>



## Strategies for Sustaining Improvements

- <Insert strategies e.g.
  - Real time measuring and reporting
  - Continual training of new staff
  - Ingraining as standard process
  - Documentation of procedure, protocols and guidelines
  - Encourage feedback
  - Continually review and refine using feedback>



## Strategies for Spread

- <Insert strategies e.g.
  - Form unit/ward quality improvement team
  - Compare existing process to trial teams experience
    - Are there any differences requiring consideration?
  - Review previous teams results
    - Are causes similar?
    - Are strategies achievable?
  - Trial existing or adapted strategies
  - Measure improvements and refine if required
  - Communicate to next unit/ward>



## Further Information

- Clinical Excellence Commission (CEC)  
Enhancing Project Spread and Sustainability –  
A Companion to the ‘Easy Guide to Clinical  
Practice Improvement’
- [www.cec.health.nsw.gov.au/programs/clinical-practice](http://www.cec.health.nsw.gov.au/programs/clinical-practice)



## References

1. Tam V, Knowles SR, Cornish PL, Fine N, Marchesano R, Etchells EE. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. *CMAJ* 2005;173:510-5.
2. Dobrzanski S, Hammond I, Khan G, Holdsworth H. The nature of hospital prescribing errors. *Br J Clin Govern* 2002;7:187-93.
3. Cornish PL, Knowles SR, Marchesano R, Tam V, Shadowitz S, Juurlink DN, Etchells EE. Unintended medication discrepancies at the time of hospital admission. *Arch Intern Med* 2005;165:424-9.
4. Sullivan C, Gleason KM, Rooney D, Groszek JM, Barnard C. Medication reconciliation in the acute care setting: opportunity and challenge for nursing. *J Nurs Care Qual* 2005;20:95-8.
5. Vira T, Colquhoun M, Etchells EE. Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 2006;15:122-6.



**Correspondence**  
Locked Bag 8  
Haymarket NSW 1240  
Tel 61 2 9269 5500  
Fax 61 2 9269 5599  
[www.cec.health.nsw.gov.au](http://www.cec.health.nsw.gov.au)

