

Medicines in focus BACKGROUND MATERIAL

This background document supports the **SHPA FACT SHEET: Medication reconciliation. How do pharmacists add value?** The document addresses medication safety and management in relation to the Australian Commission on Safety and Quality in Health Care's *National Safety and Quality Health Service Standards*¹ and their *Australian Safety and Quality Goals for Health Care*², *EQUIP 5* from the Australian Council on Healthcare Standards³⁻⁵, and the Australian Pharmaceutical Advisory Council's *Guiding principles to achieve continuity in medication management*⁶.

Medication safety is a priority area (1.1) for the Australian Commission on Safety and Quality in Healthcare's (ACSQHC) *Australian Safety and Quality Goals for Healthcare*, namely "Reduce harm to people from medications through safe and effective medication management".² In their earlier consultation paper related to these goals, ACSQHC noted evidence for "the implementation of a systematic medication reconciliation process" and "the use of **clinical pharmacists** to review medications at admission" amongst ways to reduce the incidence of medication errors and improve continuity of medication across sectors and settings.⁷

The ACSQHC's *National Safety and Quality Health Service (NSQHS) Standards*¹ includes Standard 4 Medication Safety. Criteria to achieve this Standard include amongst others:

- taking accurate medication histories
- documenting previous adverse medicines reactions and updating these
- reviewing medication orders
- medication reconciliation.

ACSQHC has three initiatives on the process of medication reconciliation: The National Medication Management Plan⁸; MATCH UP medicines⁹; and involvement in the World Health Organization's Medication Reconciliation Project, which is part of the High 5s Project¹⁰ for assuring medication accuracy at transitions in care. Medication reconciliation is a patient safety issue. The Medication Safety Standard is assessed in health service accreditation.^{3-5,11}

Medication reconciliation¹²⁻¹⁴ is a formal process of obtaining and verifying a complete and accurate list of each patient's current medicines **matching** the medicines the patient **should** be prescribed to those they are **actually** prescribed. Any discrepancies are discussed with the prescriber and reasons for changes to therapy are documented. Medication reconciliation is a strategy that has been shown to improve medication safety and significantly decrease errors.^{12,7,15}

Medication reconciliation is a 4 step process:¹⁶

1. **Obtain and document the best possible medication history**
2. **Confirm the accuracy of the medication history**
3. **Reconcile the history with prescribed medicines and follow up discrepancies**
4. **Supply accurate medicines information when care is transferred.**¹⁶

Reconciliation of the patient's medicines is conducted to:

- ensure patients receive all intended medicines
- avoid errors of transcription, omission, duplication of therapy
- avoid drug-drug and drug-disease interactions.¹³

Ideally medication reconciliation completed and documented before the medication chart is written by the admitting doctor becomes a verified source of information and reduces errors occurring on the medication chart. The use of standardised forms for recording the medication history and reconciling discrepancies allows for effective medication reconciliation.^{12,17} An example of such a form is the National Medication Management Plan⁸.

Medicines are the most common treatment used in health care and are associated with a higher incidence of errors and adverse events than other healthcare interventions.¹

It is estimated that in Australia, 190 000 hospital admissions a year are medication related with the cost of these estimated at \$660 million^{1,18} and at least 400 000 visits to general practitioners are associated with adverse events from medicines.¹ Errors can occur at all interfaces of care.¹²

Estimates of preventability for medication-related hospital admissions and adverse drug reactions associated with hospitalisation suggest that between one third and three quarters are potentially preventable.¹⁸

There are increasing numbers of older people in the community with chronic complex health conditions. Many are on multiple medicines, sometimes from a variety of prescribers and sources. Medication management for these people is often complex and challenging. These patients are amongst those who would benefit from the process of medication reconciliation and review throughout their care.

The *Australian Pharmaceutical Advisory Council's (APAC) Guiding principles to Achieve Continuity in Medication Management* highlights the components of the medicines management pathway critical to achieving continuity in the medication management continuum.⁶ Meeting APAC guidelines is a requirement for maintaining access to the PBS in hospitals.

In 2008 a NSW Special Commission of Inquiry report recommended “guidelines which involve consultation by and the participation of clinical pharmacists in patient care at the earliest appropriate opportunity.... to enable a clinical pharmacist to take a patient’s medication history, participate in ward rounds, review the patient’s medical chart during their inpatient stay and review medications on discharge.”¹⁹

Medication reconciliation involves organisational, individual health service provider, and patient commitment, communication and teamwork.¹² It should be delivered to all patients, but in particular those identified at risk, for instance, in transition or as a result of changes in their medical condition.

The ACSQHC Safety and Quality Goals² Priority area 1.1 Medication Safety, lists examples of risk factors which predispose people to medication related adverse events/harm:

- currently taking five or more regular medications
- taking more than 12 doses of medication per day
- significant changes made to medication treatment regimen in the last three months
- medication with a narrow therapeutic index or medications requiring therapeutic monitoring
- symptoms suggestive of an adverse drug reaction
- suboptimal response to treatment with medicines
- suspected non-compliance or inability to manage medication related therapeutic devices
- patients having difficulty managing their own medicines because of literacy or language difficulties, dexterity problems or impaired sight, confusion/ dementia or other cognitive difficulties
- patients attending a number of different doctors, both general practitioners and specialists
- recent discharge from a facility / hospital (in the last four weeks).²

Medication review and reconciliation should be undertaken whenever the patient is transferred from one setting to another, whether within the facility or on discharge. The **activities that are essential for safe and effective medication management** are:

- **medication reconciliation** (including an accurate medication history or obtaining a best possible medication history which is then confirmed using a second source⁹) on admission/ transfer into hospital and transfer (clinical handover) between units
- management of medication issues throughout the admission
- **medication reconciliation** on discharge/ transfer from hospital and provision of that verified information for ongoing care.^{1,12,13}(Figure 1)

These activities align with the Australian Charter of Healthcare Rights, in particular the patient's right to receive safe and high quality care.⁴⁵



Figure 1 Medication review and reconciliation pathway

The NSQHS Standard 4 Safety and Quality Improvement Guide¹⁷ mentions the use of indicators such as 6.2 *Percentage of patients that are reviewed by a clinical pharmacist within one day of admission* (Indicators for Quality Use of Medicines in Australian Hospitals)²⁰ as outputs in the improvement process to “*implement a formal systematic process for obtaining and recording a best possible medication history*”.

At all points of care, medication reconciliation supports safe, timely and efficient transition of patients through the hospital and on discharge, maintaining the continuum of care.⁶

Pharmacists are medicines experts and skilled, effective^{21,22} and efficient at providing these services. They are also able to educate, train and support other health professionals in the healthcare team to conduct comprehensive, structured medication reconciliation.

Medication review and reconciliation continues when patients are returned to community care and reviewed by their GP/medical specialist/healthcare provider, on transfer to an aged care facility or to another hospital, or during Home Medicines Reviews (Figure 1). The medicines management cycle associated with each episode of care, independent of the setting, is shown in Figure 2.^{6,23}

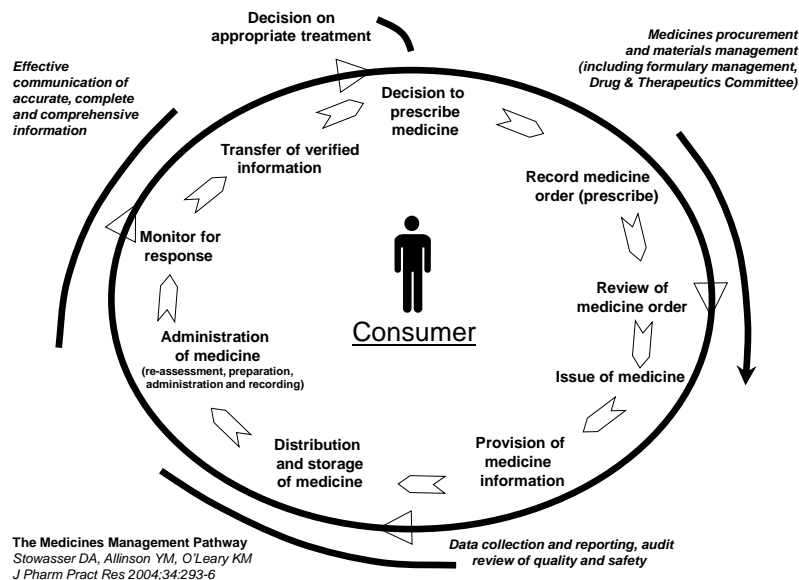


Figure 2 Overview of the medicines management pathway cycle (reproduced from J Pharm Pract Res 2004; 34: 294.)²³

When the care of the patient is transferred a current and accurate list of medicines, including reasons for change, is provided to the people taking over the patient's care and to the patient or carer.

Although accurate medication histories are vitally important to optimal patient care, obtaining them can be complex and time consuming. Evidence suggests this task is poorly done by staff that are not focused on medication management^{22,24-6} and that pharmacists obtain more accurate medication histories than do other health professionals.²² Pharmacists have demonstrated that they are skilled and accurate in undertaking this task^{21,22} and it is valued by doctors.²⁷

The average time taken for a clinical pharmacist to undertake a medication history interview and medication reconciliation has been reported as 9.6 minutes \pm 4.9²⁸, and 11.3 minutes for medication history interview in a recent Australian study²⁹. An earlier overseas study reported the average time taken for a pharmacist to take the medication history was 13.4 \pm 6.7 minutes as compared with nurses spending on average 24.3 \pm 19.8 minutes.^{30,13} A separate study describing the implementation of a comprehensive medication reconciliation program at a US Academic Medical Centre noted an average time of 21.9 minutes for pharmacists to complete a medication history and 9.8 minutes to reconcile admission medications.³¹ A Canadian study reported a median time required to conduct medication reconciliation at admission as 15 minute (interquartile range 10-21).³² Factors such as complexity of medication regimes and medical conditions would contribute to and account for variations in the times for these activities to be undertaken.

Most hospitals in Australia with a pharmacy service offer some level of clinical pharmacy service at the patient bedside.^{33,34} An Australian study conducted across eight major teaching hospitals found that clinical pharmacist initiated changes to patient drug therapy or management contributed to reduced length of stay, reduced potential for readmission and associated savings in cost of care.³⁵

International studies of hospital pharmacy services have shown that mortality^{36,37}, adverse drug events and medication errors can be reduced where clinical pharmacists work as part of health care teams.³⁶⁻³⁹ Research from the US has found that admission drug/ medication histories and adverse drug reaction monitoring are amongst select clinical pharmacy services associated with reduced hospital mortality rates and decreased medication errors.^{36,39}

KEY POINTS

Medication reconciliation:

1. is a requirement for meeting national Medication Safety Standards.¹
2. can significantly decrease medication errors and is recognised as a key strategy towards improving medication safety and reducing morbidity and mortality
3. should be delivered to all patients but in particular those identified at risk of medication misadventure: in transition, or as a result of changes in their medical condition
4. has been shown to promote safe and effective use of medicines.
5. requires organisational, individual health service provider, and patient commitment, communication and teamwork

Evidence shows pharmacists do medication reconciliation well.

Some examples of research related to medication reconciliation

Australian experience

In 2002, patients seen by an ED pharmacist at a metropolitan teaching hospital 'received a more appropriate initial medication regimen as reflected by a 75% reduction in the number of changes that the ward pharmacists had to make to the admission regimen'. Documentation of adverse drug reactions increased, pain management was provided earlier and concordance with antibiotic guidelines increased with involvement of an ED pharmacist. Satisfaction levels were high amongst ED staff and patients.²⁷

Pharmacist charting of medication histories was compared with eliciting histories in the ED after medications had been prescribed by doctors at a teaching hospital in Australia. The study found that accuracy increased when the pharmacist prepared the medication charts (for the doctor), reducing the frequency of an unintentional discrepancy. The study supports early involvement of pharmacists in compiling medication histories for medication chart preparation.⁴⁰

An evaluation of a medication liaison service (MLS) was conducted in two major hospitals in Australia. The interventions involved a comprehensive medication history determined at admission confirming this with the admitting doctor and community healthcare professionals. On discharge a comprehensive discharge communication was prepared with the hospital medical staff and forwarded to the patient's GP and community pharmacy. The MLS resulted in improved patient outcomes, more interventions and medication changes to optimise therapy. There was a significant decrease in community healthcare professional visits and a tendency (not-significant) for reduced readmissions.²¹

A review of the literature highlighted strategies for improving medication reconciliation which include: use of a standardised medication reconciliation form, improved communication, a multidisciplinary approach, the use of computerised physician or prescriber order entry with decision support and home medication lists.¹⁵

A study to determine time required providing clinical pharmacy services to individual medical and surgical patients at two general hospitals, and the effect of complexity and presentation on this, found that the average time to undertake a medication history interview and medication reconciliation was 9.6 minutes (standard deviation 4.9).²⁸

A continuous observational time-and-motion study to quantify time clinical pharmacists spend on various activities over their working day at a teaching hospital found pharmacist conducted medication history interviews took on average 11.3 minutes and medication order review 2 to 3 minutes.²⁹

A study at a metropolitan teaching hospital in Australia found the ED pharmacist providing timely medication histories was more likely to result in admitted patients receiving an accurate medication chart early in their hospital stay. Having a clinical pharmacist within the ED resulted in a greater than 70% relative reduction in errors.⁴¹

Overseas experience

A study to identify discrepancies between medication histories taken by ED providers: physicians, nurses and medical students and clinical pharmacists in a tertiary care teaching facility found that the medication histories taken by clinical pharmacists were more complete than those by the other health professionals.²²

A 2010 systematic review examining the effects of US pharmacist – provided direct patient care noted that mortality, hospitalisation/ readmission, inpatient length of stay, and ED visits benefit greatly from pharmacist services as do safety outcomes which include adverse drug events and medication errors.⁴²

In the US, research has found that pharmacy staffing, clinical pharmacy services which include pharmacist-provided admission drug histories, in-service education, adverse drug reaction management, drug use evaluation and drug protocol management were associated with reduced mortality rates.³⁶

A study into clinical pharmacy services, hospital pharmacy staffing and medication errors in US hospitals list pharmacist-provided drug admission histories and increased staffing levels of clinical pharmacists amongst factors associated with decreased medication errors.³⁹

A study of 49 National Health Service organisations in the UK found an association between the number of pharmacists employed (more pharmacists on staff and involved in clinical activities) and lower mortality rates.³⁷

A study in two medical wards in a Swedish hospital using integrated medicines management-based medication reconciliation found that approximately 50% of mainly older patients were affected by errors in the medication history at admission to hospital. The most common medication error was an omitted drug, followed by a wrong dose. The authors concluded that clinical pharmacists can be valuable in performing structured medication reconciliations to reduce risk of medication errors.⁴³

A systematic review into frequency, type and clinical importance of medication errors at hospital admission found prescription medication history errors on hospital admission are common. Improved physician training, accessible community pharmacy databases and closer teamwork between patients, physicians and pharmacists could reduce the frequency of these errors. The authors indicate a need for a systematic approach to ensure acquisition of accurate medication histories at admission.²⁵

Implementation of a comprehensive medication reconciliation program (from admission to discharge) at an academic medical centre in the US found that the pharmacy-driven multidisciplinary admission history and medication reconciliation process for all admitted inpatients reduced medication errors. All components of the medication history were documented using an integrated electronic medical record medication documentation tool.³¹

A pilot study conducted in an inpatient family medicine unit of an academic hospital centre in the US found that there was a decrease in the mean number of medication discrepancies that occurred during admission and discharge after a structured multidisciplinary medication reconciliation process was implemented.⁴¹ In this study nurses spent a mean of 8.2 minutes in the first phase of the study (admission medication history-using information from medication bottles, patients, family members) and 5 minutes in the second phase, obtaining and documenting each patient's medication history. During the study pharmacists had to enhance the quality of nursing medication lists with additional information on several occasions.⁴⁴

A small study into the potential impact of a medication reconciliation process in a Canadian community hospital found that medication reconciliation was a useful method for identifying and rectifying medication errors at times of transition. The researchers found unintended medication variances on admission and discharge are common and clinically important.³²

References:

1. Australian Commission on Safety and Quality in Health Care (ACSQHC). National safety and quality health service standards. Sydney: ACSQHC; 2012.
2. Australian Commission on Safety and Quality in Health Care (ACSQHC). Australian safety and quality goals for health care. Medication safety action guide. Sydney: ACSQHC, 2012.
3. Australian Council on Healthcare Standards (ACHS). The ACHS EQUiP 5 Guide: Book 1 – Accreditation, Standards and Guidelines- Clinical Function. Sydney: ACHS; 2010.
4. Australian Council on Healthcare Standards. Comparison of EQUiP 4 Standards and Criteria with EQUiP5 October 2010. Sydney: ACHS; 2010. Available from <www.achs.org.au/equip5/>
5. Australian Council on Healthcare Standards. The ACHS National Report on Health Services Accreditation Performance 2009-10. Sydney: ACHS; 2011. Available from: <<http://www.achs.org.au/NAR/>>.
6. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Canberra: Commonwealth of Australia; 2005.
7. Australian Commission on Safety and Quality in Health Care. Australian safety and quality goals for health care. Consultation paper. (November). Sydney: ACSQHC; 2011.
8. Australian Commission on Safety and Quality in Health Care. National Medication Management Plan. Sydney: ACSQHC, 2011. Available from <www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/nmmp/>
9. Australian Commission on Safety and Quality in Health Care. Match Up Medicines. Sydney: ACSQHC; 2011. Available from <www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/match-up-medicines/>

10. Australian Commission on Safety and Quality in Health Care. World Health Organization's High 5s Medication Reconciliation Project. Sydney: ACSQHC; 2011. Available from <www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/who-high-5s-medication-reconciliation-program/>
11. Australian Commission on Safety and Quality in Health Care (ACSQHC). Hospital Accreditation workbook. Sydney: ACSQHC, 2012.
12. Duguid M. The importance of medication reconciliation for patients and practitioners. *Aust Prescr* 2012; 35: 15-9.
13. The Society of Hospital Pharmacists of Australia. SHPA Standards of practice for the provision of medication reconciliation. *J Pharm Pract Res* 2007; 37: 231-3.
14. Australian Commission on Safety and Quality in Health Care. Medication Reconciliation. Sydney: ACSQHC; 2011. Available from <www.safetyandquality.gov.au/our-work/medication-safety/medication-reconciliation/>
15. McLeod SE, Lum E, Mitchell C. Value of medication reconciliation in reducing medication errors on admission to hospital. *J Pharm Pract Res* 2008; 38: 196-9.
16. Australian Commission on Safety and Quality in Health Care. Match Up Medicines. A Guide to Medication Reconciliation. Commonwealth of Australia; 2010. Available from <www.safetyandquality.gov.au/wp-content/uploads/2012/02/42794-MATCH-UP-brochure.pdf>
17. Australian Commission on Safety and Quality in Health Care (ACSQHC). Safety and Quality Improvement Guide Standard 4: Medication Safety (October 2012). Sydney. ACSQHC, 2012.
18. Roughead EE, Semple SJ. Review. Medication safety in acute care in Australia: where are we now? Part 1: a review of the extent and causes of medication problems 2002–2008. *Aust New Zealand Health Policy* 2009; 6: 18. Published online 2009 August 11. Doi: 10.1186/1743-8462-6-18. Available from <<http://www.anzhealthpolicy.com/content/6/1/18>>.
19. Garling P. Final report of the Special Commission of Inquiry: Acute Care in NSW Public Hospitals. Volume 1. Sydney: NSW Government; 2008. Available from: <www.rdansw.com.au/sites/default/files/E_Volume1.pdf>. Accessed November 2011.
20. NSW TAG and the Clinical Excellence Commission. Indicators for Quality use of Medicines in Australian Hospitals. NSW Therapeutic Advisory Group, Sydney 2007. Available from <www.cec.health.nsw.gov.au/programs/medication-safety>
21. Stowasser DA, Collins DM, Stowasser M. A randomised controlled trial of medication liaison services-patient outcomes. *J Pharm Pract Res* 2002; 32: 133-40.
22. Carter MK, Allin DM, Scott LA, Grauer D. Pharmacist-acquired medication histories in a university hospital emergency department. *Am J Health Syst Pharm* 2006; 63: 2500-3.
23. Stowasser DA, Allinson YM, O'Leary KM. Understanding the Medicines Management Pathway. *J Pharm Pract Res* 2004; 34: 293-6.
24. Reeder TA, Mutnick A. Pharmacist-versus physician-obtained medication histories. *Am J Health Syst Pharm* 1008; 65: 857-60.
25. Tan VC, 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.
26. De Winter S, Spreit I, Indevuyt C, Vanbrabant P, Desruelles D, Sabbe M et al. Pharmacist-versus physician acquired medication history: a prospective study at the emergency department. *Qual Saf Health Care* 2010; 10: 371-5.
27. Taylor SE, Thompson B, Garrett K, et al. Comprehensive evaluation of the role of a clinical pharmacist in the emergency department. Quality Improvement Funding Final Report. Melbourne: Department of Human Services; 2003.
28. Stuchberry P, Kong DCM, DeSantis GN, Lo SK. Determining clinical pharmacy workload by patient disease classification in medical and surgical patients. *J Pharm Pract Res* 2008; 38: 126-31.
29. deClifford J, Blewitt P, Lam SS, Leung BK. How do clinical pharmacists spend their working day? A time-and-motion study. *J Pharm Pract Res* 2012; 42: 134-9.
30. Nester TM, Hale LS. Effectiveness of a pharmacist-acquired medication history in promoting patient safety. *Am J Health Syst Pharm* 2002; 59: 2221-5.
31. Murphy EM, Oxencis CJ, Klauk JA, Meyer DA, Zimmerman JM. Medication reconciliation at an academic medical centre: implementation of a comprehensive program from admission to discharge. *Am J Health Syst Pharm* 2009; 66: 2126-31.
32. Vira T, Colquhoun M, Etchells E. Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care* 2006; 15: 122-6. Doi: 10.1136/qshc.2005.015347.
33. Wilson SG, Tsui M, Tong N, Wilson DI, Chapman CB. Hospital pharmacy service provision in Australia-1998. *Am J Health Syst Pharm* 2000; 57: 677-80.

34. O'Leary KM, Allinson YM. Snapshot of the Australian public hospital pharmacy workforce in 2007 J Pharm Pract Res 2009; 39: 28-33.
35. Dooley MJ, Allen KM, Doecke CJ, Galbraith KJ, Taylor GR, Bright J, et al. A prospective multicentre study of pharmacist initiated changes to drug therapy and patient management in acute care government funded hospitals. Br J Clin Pharmacol 2004; 57: 513-21. Doi: 10.1046/j.1365-2125.2003.02029.x
36. Bond CA, Raehl CL. Clinical pharmacy services, pharmacy staffing, and hospital mortality rates. Pharmacotherapy 2007; 27: 481-93.
37. Borja-Lopetegi A, Webb DG, Bates I, Sharott P. Association between clinical medicines management services, pharmacy workforce and patient outcomes. Pharm World Sci 2008; 30: 411-50.
38. Bond CA, Raehl CL. 2006 National clinical pharmacy services survey: clinical pharmacy services, collaborative drug management, medication errors, and pharmacy technology. Pharmacotherapy 2008; 28: 1-13.
39. Bond CA, Raehl CL, Franke T. Clinical pharmacy services, hospital pharmacy staffing, and medication errors in the United States hospitals. Pharmacotherapy 2002; 22: 134-47.
40. Vasileff HM, Whitten LE, Pink JA, Goldsworthy SJ, Angley MT. The effect on medication errors of pharmacists charting medication in the emergency department. Pharm World Sci 2008. Doi: 10.1007/s11096-008-9271-y.
41. deClifford J, Caplygin FM, Lam SS, Leung BK. Impact of an emergency department pharmacist on prescribing errors in an Australian hospital. J Pharm Pract Res 2007; 37: 284-6.
42. Chisholm-Burns MA, Lee JK, Spivey CA, Slack M, Herrier RN, Hall-Lipsy E, et al. US Pharmacists' effect as team members on patient care. Systematic review and meta-analysis. Med Care 2010; 48: 923-33.
43. Hellström LM, Bendesson Å, Höglund P, Eriksson T. Errors in medication history at hospital admission: prevalence and predicting factors. BMC Clin Pharmacol 2012;12(9). Available from <www.medscape.com> on 6/7/2012.
44. Varkey P, Cunningham J, O'Meara J, Bonacci R, Desai N, Sheeler R. Multidisciplinary approach to inpatient medication reconciliation in an academic setting. Am J Health Syst Pharm 2007; 64: 850-4.
45. Australian Commission on Safety and Quality in Health Care. Australian charter of healthcare rights. Sydney: ACSQHC, 2011. Available from <www.safetyandquality.gov.au/wp-content/uploads/2012/01/Charter-PDF.pdf>

Additional reading:

46. The Society of Hospital Pharmacists of Australia. Committee of Specialty Practice in Clinical Pharmacy. SHPA standards of practice in clinical pharmacy. J Pharm Pract Res 2005; 35: 122-46.
47. Gleason KM, Brake H, Agramonte V, Perfetti C. Medications at transitions and clinical handoffs (MATCH) toolkit for medication reconciliation. (Prepared by the Island Peer Review Organisation, Inc, under Contract No HHSA2902009000 13C.) AHRQ Publication No 11(12)-0059. Rockville, MD: Agency for Healthcare Research and Quality; 2011.
48. Thompson-Moore N, Liebl MG. Health Care System Vulnerabilities. Understanding the root causes of patient harm. Am J Health Syst Pharm 2012; 69(5): 431-36.
49. WHO collaborating centre for patient safety solutions. Assuring medication accuracy at transitions in care. Geneva: World Health Organisation. 2007 Available from <www.ccforspatientsafety.org/common/pdfs/fpdf/presskit/PS-Solution6.pdf>
50. Hughes C. Medication errors in hospitals: what can be done [editorial]? MJA 2008; 188: 267-8.

An electronic version of this background document and the associated FACT SHEET are available at:
<http://www.shpa.org.au/scripts/cgiip.exe/WService=SHPA/ccms.r?PageId=18>

FURTHER INFORMATION

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The Society of Hospital Pharmacists of Australia (SHPA) is the professional body which represents over 3,000 pharmacists, pharmacy technicians and associates practising in all parts of the Australian health system.

the shpa vision: Excellence in medicines management through leading edge pharmacy practice and research

the shpa mission includes: advocating for the safe and effective use of medicines across the continuum of care, partnering with key medicines stakeholders