SHPA Standards of Practice for Clinical Pharmacy Services

SHPA Committee of Specialty Practice in Clinical Pharmacy

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Overview: Standards of Practice for Clinical Pharmacy Services

INTRODUCTION

These standards supersede the previously published *SHPA Standards of Practice for Clinical Pharmacy* and *SHPA Standards of Practice for the Provision of Medication Reconciliation*.[1,2]

The practice of clinical pharmacy continues to evolve with the changing needs and demands of contemporary health care. These standards are applicable to the delivery of clinical pharmacy services across all care settings: inpatients, outpatients and patients in the community. They describe the activities delivered by pharmacists for patients to minimise the risks associated with the use of medicines and to optimise the use of medicines.

Comprehensive and accountable clinical pharmacy services are an essential component of contemporary health care. Ideally, every health service organisation will have resources to provide all clinical pharmacy activities to every patient based on their needs.

Australian and overseas practice-based evidence confirm that the pharmacist activities described in these standards support an individual patient's medication management plan (MMP) and reduce morbidity, mortality and the cost of care.[3-5]

Clinical pharmacy services for individual patients support the objectives of:

- *Guiding Principles to Achieve Continuity in Medication Management*[6]
- *National Safety and Quality Health Service Standards*[7]
- *Australian Safety and Quality Goals for Health Care*[8]
- *Hospital Accreditation Workbook*[9]
- *National Strategy for Quality Use of Medicines*[10]
- *Medication Safety Self-Assessment for Australian Hospitals*[11]
- *Antimicrobial Stewardship in Australian Hospitals*.[12]

In addition, clinical pharmacy services for individual patients enable the objectives of national strategies to improve patient safety and quality of care to be met, such as:

- *Patient-Centred Care: Improving Quality and Safety through Partnerships with Patients and Consumers*[13]
- *Match Up Medicines: A Guide to Medication Reconciliation*[14]
- National Inpatient Medication Chart (NIMC), National Aged Care Residential Medication Chart, Paediatric Medication Chart, Private Hospital NIMC and Private Hospital Day Surgery NIMC[15]
- *National Medication Management Plan*[16]
- *Australian Charter of Healthcare Rights*[17]
- *OSSIE Guide to Clinical Handover Improvement*.[18]

Other SHPA standards of practice and guidelines in specialty areas should be read in conjunction with these standards including:

- *Standards of Practice for Medication Safety*[19]
- *Standards of Practice for Drug Use Evaluation in Australian Hospitals*[20]
- *Standards of Practice for the Provision of Clinical Oncology Pharmacy Services*[21]
- *Standards of Practice for Mental Health Pharmacy*[22]
- *Standards of Practice for the Community Liaison Pharmacist*[23]
- *Guidelines for Self-Administration of Medication in Hospitals and Residential Care Facilities*[24]
- *Standards of Practice for the Provision of Oral Chemotherapy for the Treatment of Cancer*[25]
- *Standards of Practice in Emergency Medicine Pharmacy Practice*[26]
- *Standards of Practice for the Provision of Consumer Medicines Information by Pharmacists in Hospitals*[27]
- *Standards of Practice for Critical Care Pharmacy Practice*[28]
- *Standards of Practice for the Provision of Palliative Care Pharmacy Services*[29]
- *Standards of Practice for Pharmacy Investigational Drugs Services*[30]
- *Standards of Practice for Medicines Information Services*.[31]

The professional conduct of pharmacists providing clinical services in all aspects of practice should be guided by the:

- Pharmacy Board of Australia codes and guidelines[32-40]
- *SHPA Code of Ethics*[41]
- *National Competency Standards Framework for Pharmacists in Australia*.[42]

Familiarity with the medicines management pathway and how other non-clinical hospital pharmacy services support each step of the pathway is useful to understand the context of clinical pharmacy services (Figures 1, 2).

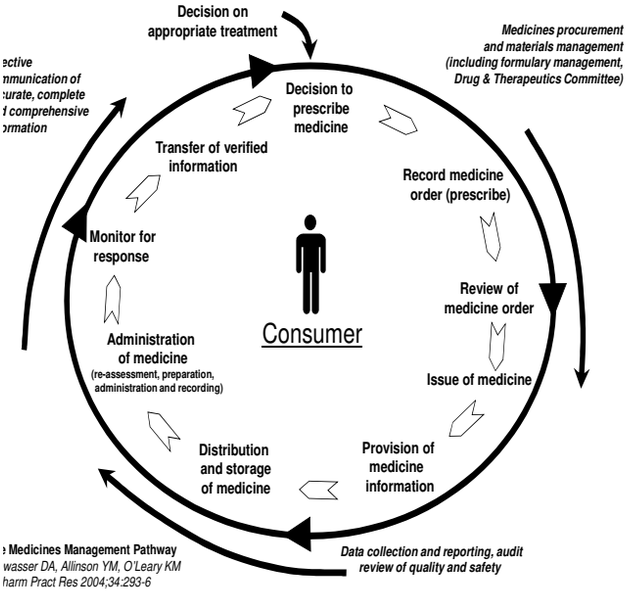

Figure 1. Overview of the medicines management pathway cycle.

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OBJECTIVE AND DEFINITION

Objective

The objectives of a clinical pharmacy service and clinical pharmacy activities are to minimise the inherent risks associated with the use of medicines, increase patient safety at all steps in the medicines management pathway and optimise health outcomes.

Definition

Pharmacists undertake clinical pharmacy activities for individual patients to minimise the inherent risk associated with the use of medicines. Clinical pharmacy activities support a collaborative approach (with patients, carers, prescribers and other health professionals) to medicines management.

Clinical pharmacy activities described in these standards include:

- medication reconciliation
- assessment of current medication management
- clinical review, therapeutic drug monitoring and adverse drug reaction management
- contributing to the MMP
- providing medicines information
- facilitating continuity of medication management on discharge or transfer
- participating in interdisciplinary ward rounds and meetings
- training and education
- participating in research
- quality improvement activities and peer review.

A clinical pharmacy service describes a team of pharmacists (with support from pharmacy technicians and assistants) who are involved in the delivery of a combination of these activities to individual patients or groups of patients.

EXTENT AND OPERATION

These standards are comprised of 15 chapters that detail the clinical pharmacy activities listed above. They provide guidance on maximising clinical pharmacy services and activities, managing workloads, using pharmacy support staff and improving the quality of clinical pharmacy services. These chapters are:

- Chapter 1: Medication reconciliation
- Chapter 2: Assessment of current medication management
- Chapter 3: Clinical review, therapeutic drug monitoring and adverse drug reaction management
- Chapter 4: Medication management plan
- Chapter 5: Providing medicines information
- Chapter 6: Facilitating continuity of medication management on transition between care settings
- Chapter 7: Participating in interdisciplinary care planning
- Chapter 8: Prioritising clinical pharmacy services
- Chapter 9: Staffing levels and structure for the provision of clinical pharmacy services
- Chapter 10: Training and education
- Chapter 11: Participating in research
- Chapter 12: Pharmacy assistants and technicians supporting clinical pharmacy services
- Chapter 13: Documenting clinical activities
- Chapter 14: Improving the quality of clinical pharmacy services
- Chapter 15: Clinical competency assessment tool.

Each chapter is also linked to relevant competencies and accreditation frameworks.

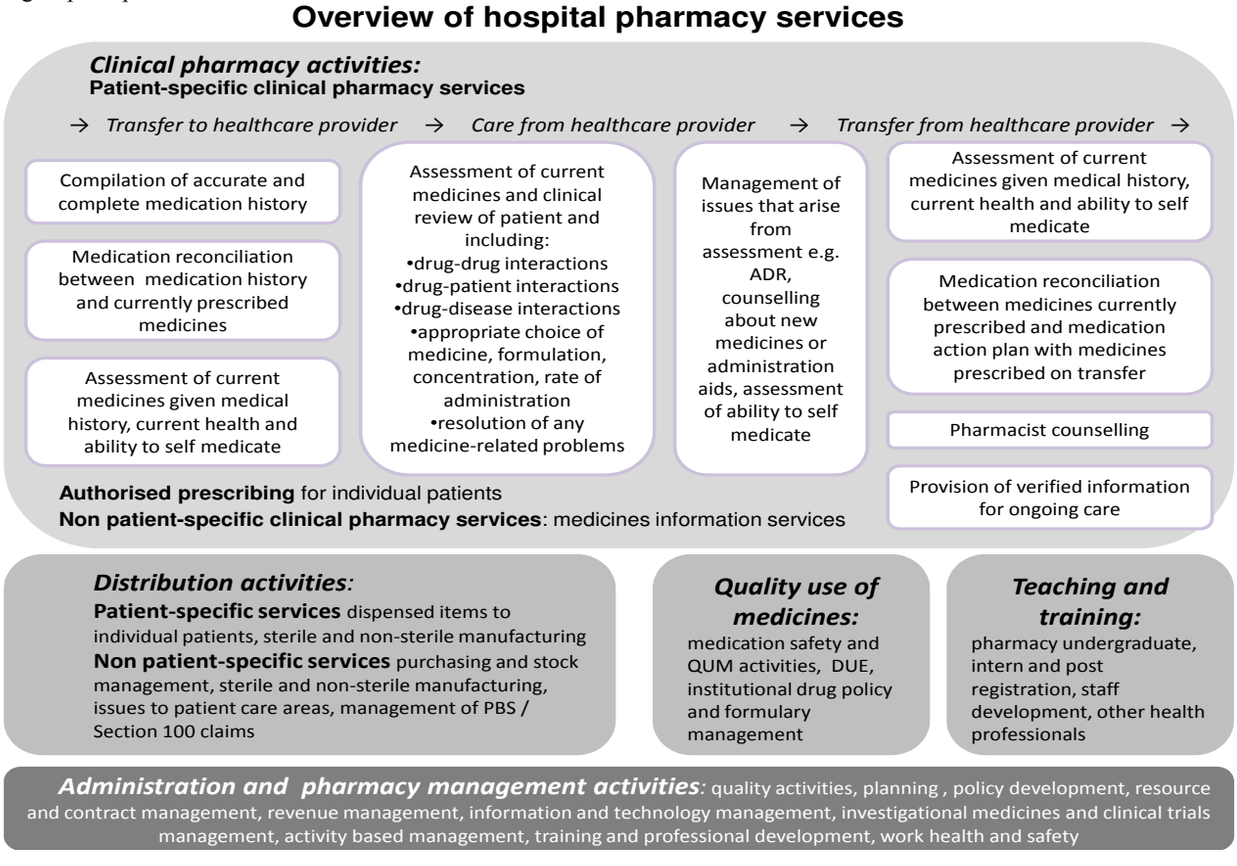

Figure 2. Hospital pharmacy services that support the medicines management pathway.

Clinical pharmacy activities are not restricted to hospital practice; pharmacists in many settings deliver the activities described in these standards. However, the notion of a designated clinical pharmacy service is generally associated with hospital practice.

There should always be a separation of the functions of prescribing, dispensing and administering medicines in all practice settings, wherever possible. In some settings, e.g. theatres, rural and remote areas, or in emergencies this may not always be possible, but the principle is supported as it provides the checks and balances necessary for safer prescribing and delivery of medicines.[43]

Separating these functions ensures that another health professional takes an independent review of the next step in the medicines management pathway. Pharmacists proactively collaborate with prescribers, retrospectively review medicines ordered, and intervene when errors or omissions have occurred or improvements can be made. The clinical pharmacy activities described in these standards focus on the optimum use of medicines for an individual patient, and are required irrespective of the number of prescribers or the profession of the prescriber. Medicines ordered by pharmacists authorised to prescribe should be reviewed by the dispensing pharmacist or the clinical pharmacist responsible for the patient's care.

Decision support and therapeutic information offered through electronic prescribing systems can support prescribing within designated parameters but they do not replace review of prescribed medicines by a pharmacist.

Communication and cooperation between acute, subacute, non-acute and primary care sectors is important for patients to receive uninterrupted care. For this reason, facilitating continuity of medication management on discharge or transfer is a core clinical pharmacy activity.

Where appropriate, pharmacists should contribute to a patient's electronic health record to facilitate the continuity of medication management.

Pharmacy services should be available when patients require them, 7 days per week and for extended hours. Limiting services to business hours and 5 days per week reduces the timeliness of service delivery and may impact on patient care.

Ideally, every health service organisation will have resources to provide a clinical pharmacy service to every patient based on their needs. However, limited funding and insufficient staffing levels to meet patient numbers and inpatient throughput mean that pharmacy services may not be provided to all patients. Pharmacy managers, in conjunction with the organisation's managers, need to plan for these circumstances by determining the groups of patients that will benefit the most from a clinical pharmacy service and which clinical pharmacy activities are prioritised in their organisation.

These decisions should be in line with the organisation's policies and need to be described in service agreements that detail the patients/service areas that will have access to clinical pharmacy services and which clinical pharmacy activities are priorities for each group of patients/service area. These decisions should also align with the national safety and quality health service standards and their goals.[7,8]

Pharmacists also need to prioritise the patients who will receive which clinical pharmacy activities on a day-to-day basis.

Patients most at risk of medicines-related problems are likely to obtain the maximum benefit from clinical pharmacy activities. Patients most at risk of medicines-related problems include those who:[1,15,16,44,45]

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

In addition to meeting their continuing professional development requirements, pharmacists have a responsibility to contribute to the training and education of other pharmacists, pharmacy students and health professionals. This may involve experiential training of undergraduate and postgraduate students, or orientation and training of inexperienced pharmacists or those recently returning to the workplace. The shpaclinCAT competency framework for pharmacists provides a tool to support pharmacist development as part of an ongoing program of review and enhancement.[46]

Pharmacists should be involved in presentations and education programs for colleagues and patient groups, e.g. cardiac rehabilitation, participate in medication management-related nursing education and in public health education programs, e.g. smoking cessation.

Pharmacists should support, initiate and participate in research projects, whenever possible. Pharmacists involved in research activities must adhere to the principles and procedures outlined by key authoritative bodies and the organisation's research and ethics committees.[29,47,48]

Participation in quality use of medicines activities within hospitals and research into optimal use of medicines and the practice of clinical pharmacy are essential components of a clinical pharmacy service. Quality use of medicines activities are inclusive of medication safety, drug use evaluation and antimicrobial stewardship.[12,19,20,49] Pharmacists can be involved in drug use evaluation activities by: identifying clinical areas requiring evaluation, data collection and the design and provision of education programs.

Each pharmacy service should have a clearly defined quality improvement governance system which outlines the goals for the quality of service delivery. This governance system should be in accordance with the larger framework of the organisation.[7,8] A quality improvement governance system for a clinical pharmacy service should consider the range and day-to-day prioritisation of clinical pharmacy activities delivered and any service agreements.

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Chapter 1: Medication Reconciliation

INTRODUCTION

Medication reconciliation is a formal process intended to prevent medication errors and medicines-related problems at transition points in patient care. It is an essential element of medication management. Medication reconciliation should occur at all points of transition between episodes of care. Medication reconciliation is consistent with the concept of continuity of medication management across the continuum of care as required by the *Guiding Principles to Achieve Continuity in Medication Management* and includes Guiding principle 4: accurate medication history.[1]

Failure to reconcile medications at transitions of care accounts for many preventable adverse events.[2] Poor communication of medical information at points of transition was responsible for up to 50% of medication errors and up to 20% of adverse medicine events.[3]

OBJECTIVE AND DEFINITION

Objective

The purpose of medication reconciliation is to ensure patients receive all intended medicines and to avoid errors of transcription, omission, duplication of therapy, and drug–drug and drug–disease interactions. The procedure for each organisation should be standardised. Ideally, the medication reconciliation process should commence as soon as possible on presentation or admission and a documented, confirmed medicines list be available before medicines are prescribed.

Definition

Medication reconciliation is the standardised process of obtaining a patient's best possible medication history and comparing it to presentation, transfer or discharge medication orders in the context of the patient's medication management plan (MMP).[4-6] See *Chapter 4: Medication management plan.*

Medication reconciliation also involves documenting discrepancies identified between the medication history and current medication orders and how these discrepancies were resolved.

EXTENT AND OPERATION

Medication reconciliation should be undertaken on:[4]

- presentation or admission to a health service organisation
- transfer between wards and care settings within an organisation
- discharge or transfer from the health service organisation to the community or other organisations
- transfer between community-based providers.

All patients should have their medication reconciled as soon as possible after admission or presentation. See Figure 1. If medication reconciliation cannot be completed for all patients, prioritise patients most likely to obtain maximum benefit. Patients most at risk of medicines-related problems include those who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

For patients who attend a health service organisation as a day patient or for ambulatory care (e.g. chemotherapy, renal dialysis, radiotherapy), medication reconciliation should be completed at the first episode of care and then every 6 to 12 months, following a recent admission or when there is a change in their treatment plan. See Figure 1.

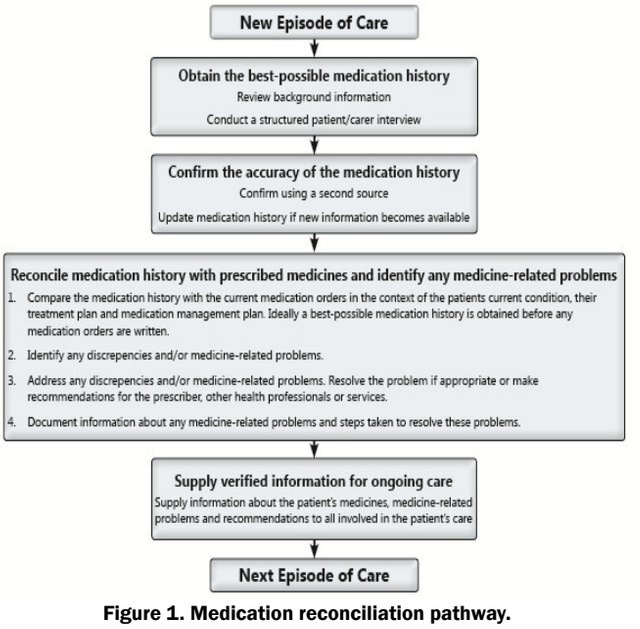

Figure 1. Medication reconciliation pathway.

Medication reconciliation is a four-step process and involves:

1. obtaining and documenting the best possible medication history
2. confirming the accuracy of the medication history
3. comparing the medication history with the prescribed medicines and follow-up discrepancies
4. supplying verified information for ongoing care.

Medication reconciliation requires an interdisciplinary approach that includes doctors, nurses, pharmacists and patients/carers across the continuum of care.[2] Although accurate medication histories are important for optimal patient care, obtaining them can be complex and time consuming. Evidence suggests this task is poorly done by those not focused on medication management and that pharmacists obtain more accurate medication histories than other health professionals.[7-10] Pharmacists have demonstrated that they are skilled and accurate in undertaking this task, and is valued by doctors.[7,11,12] Pharmacist-obtained medication histories have also been shown to be more accurate than patient-completed medication histories.[13]

Health service organisations need a reliable and robust medication reconciliation process that clearly articulates the steps involved and who is responsible for each step.

POLICY AND PROCEDURE

Obtain the Best Possible Medication History

A medication history is a record of all the medicines actually taken by the patient in the period before admission or presentation for the episode of care and includes information about previous adverse drug reactions (ADRs), adverse medicines events and allergies and recently ceased or changed medicines.[1] Obtaining a best possible medication history involves:

- reviewing background information
- conducting a patient/carer medication history interview.

Review Background Information

Before conducting an interview, review known patient-specific information. Use appropriate sources for background information, e.g. ward handover sheet, health records, transfer summaries, laboratory results, other health professionals. Some information may not be available from these sources and will need to be obtained during the face-to-face interview.

A combination of information sources can be used to compile or confirm the medication history. Alternative sources of information must be used if the patient does not manage their own medicines or if a reliable medication history cannot be obtained from the patient/carer.

Reviewing background information before the face-to-face interview allows patients to be prioritised and identifies issues to focus on during the interview. See Table 1.1.

Conduct Patient/Carer Medication History Interview

The critical component of obtaining a best possible medication history is a structured face-to-face interview with the patient/carer, preferably before admission, within 24 hours of presentation or admission, or at least before the end of the next working day after admission.[1] Pharmacists in the emergency department, medical assessment unit or preadmission clinic are ideally placed to obtain a medication history on admission.[14]

Interviewing the patient/carer to obtain a medication history is a key clinical activity performed by pharmacists. Medication history interviews provide opportunities for pharmacists to:

- establish rapport with the patient/carer and to explain their role in the patient's care
- commence preliminary education regarding the patient's medicines and any changes to their medicines
- use the information obtained to develop a MMP
- initiate plans for discharge and follow-up.

The medication history checklist on the *National Medication Management Plan* is a useful tool to use during the medication history interview.[15] See Table 1.2.

Table 1.1. Background patient information

The following information about the patient is useful:
•age, consider the ability to metabolise or excrete medicines, and the implications for appropriate selection of medicine and dosage
•gender, consider impact of gender on medicine selection
•height and weight
•pregnancy or lactation status
•immunisation status
•ethnic background or religion, consider implications for medicine selection including pharmacogenetic factors
•social background, consider the impact on patient's ability to manage their medicines
•details of regular GP, community pharmacy or other health professional as appropriate
•details of medication use, e.g. self-administering, nurse administers from dose administration aid, medicines crushed
•ability to communicate, e.g. cognitive function, language barriers, alertness, mental acuity, psychological state, and requirements for communication aids, e.g. glasses, hearing aids, need for interpreter service
•ability to take medicines as prescribed, e.g. cognition, dexterity, swallowing ability
•presenting condition, consider the possibility of adverse drug reactions, poor adherence, inadequate dosing, inappropriate therapy as a contributor to hospital presentation/morbidity
•working diagnosis, consider appropriate evidence-based therapy
•previous medical history, identify potential medicine and/or disease contraindications and ensure that management of the presenting complaint does not compromise a prior condition. Consider therapies for prior conditions that may have been omitted
•relevant laboratory or other findings (if available), focus on findings that will affect decisions regarding medicines, such as: -renal function -electrolytes -liver function -full blood count -cardiac markers -general observations -relevant previous therapeutic drug monitoring results.
Use appropriate sources to obtain information, such as:
•patient/carer
•patient's own medicines and/or medication list
•previous prescriptions (community pharmacy, discharge/ outpatient)
•preadmission clinic records
•GP referral letter/other correspondence, e.g. ambulance service notes
•GP medication list
•adherence aids
•transfer information from another health service organisation, e.g. nursing home, hospital, hostel
•electronic records, e.g. pharmacy dispensing system, discharge medication records
•current medication chart/administration records.

Table 1.2 Detailed instructions for conducting a patient/carer medication history interview

The nature of the interview will depend on the patient. Determine the specific goals of the interview and tailor the questions and discussion to obtain the necessary information. Questions must be relevant, as exhaustive interviews may be counter productive.

Conduct the interview in a location that allows privacy and minimises the risk of interruption and distraction. After determining the ability of the patient to communicate, choose an appropriate location and adopt a suitable position to enable the interview to take place comfortably and effectively.

1. Interview technique

•Greet patient and establish their identity.

•Ideally, use the AIDET framework:[16] **A**cknowledge the patient by name; **I**ntroduce yourself by name and profession and tell the patient how you can help them; tell them how long you will be talking to them (**D**uration); **E**xplain what you are doing and **T**hank the patient at the conclusion of the interview.

•Confirm that the time is convenient.

•Respect patient's right to decline an interview.

•Identify and attempt to overcome any communication barriers.

•Establish rapport with patient to support ongoing communication.

•Explain purpose of the interview (other health professionals may have already performed a medication history, so it may be necessary to explain the reason for a pharmacist-obtained medication history).

•Determine who is responsible for administering and managing the patient's medicines at home.

•Use an appropriate interview manner, avoid appearing rushed, be polite, attentive, maintain eye contact, avoid interrupting the patient, be non-judgemental, and communicate clearly and effectively. Use appropriate techniques, begin the medication history interview with open-ended questions to encourage the patient to explain and elaborate and move to close-ended questions to systematically minimise omissions. Use a structured and systematic approach to obtain a comprehensive medication history:
-ask patient/carer about their medicines using a logical and systematic method to ensure all relevant information is obtained and to avoid omitting relevant details
-consider using a written/mental checklist to ensure all patients/carers are asked pertinent questions regarding the patient's medicines.
-consider using the medication management plan to structure the interview and use as a guide to the information that is required.

2. Allergy and ADR history

•Confirm and document an accurate and comprehensive allergy and ADR history:
-confirm with patient/carer details of allergies or previous ADRs to any medicines (including CAM).
-if an allergy/ADR is known, document the medicine, reaction and date of reaction (if known) on the medication chart and any associated document
-if patient reports no history of ADR/allergy, tick the 'nil known' box on the medication chart
-if the ADR history cannot be established, tick the 'unknown' box on the medication chart
-sign and date the entry and print your name
-follow institutional policy regarding documentation of allergy and ADR history in the patient's health record.

3. Prescription and non-prescription medicines

•Ask patient/carer about their use of prescription and non-prescription medicines:
-ask which medicines were taken immediately prior to admission, specifically name (active ingredient and brand), dose, frequency and duration of current therapy
-locate and review patient's own medicines, if available, and consider appropriateness in view of current clinical details
-ask who is the usual prescriber for each medicine
-determine what they perceive the indications for each medicine are
-determine details of any adverse effects or allergies associated with current medicines
-determine the need for further supply of medicines on discharge
-ask about recently ceased/changed medicines and the reasons for the changes
-ask if they use adherence aids
-ask how they store their medicines at home
-ask if they use recreational substances, including alcohol, nicotine and illicit drugs, and the frequency of use.

•Ask patient/carer about their use of complementary and alternative medicines (CAMs):
-ask which CAM they are taking including herbal, vitamin and naturopathic medicines (specifically name, dose, frequency and duration of current therapy).
-ask their reason for taking the CAM.

4. Adherence assessment

This will be an ongoing process during the episode of care and assists in developing a medication management plan, facilitating discharge or transfer and ongoing care. See *Chapter 4: Medication management plan* and *Chapter 6: Facilitating continuity of medication management on transition between care settings*.

•Undertake a structured adherence assessment including patient's understanding and experience of taking their medicines:
-assess patient's understanding of their illness and determine if they need further education about their illness and refer to medical staff if required.

•Assess patient's understanding and attitude to current and previous medication therapy including:
-indication
-perceived effectiveness
-perceived problems attributed to medicines
-current monitoring
-reasons for changes to medicines.

•Assess patient's ability to use medicines as prescribed, e.g. do they have swallowing difficulties?

Table 1.2 Detailed instructions for conducting a patient/carer medication history interview (contd)
•Assess whether there are factors preventing adherence, such as: -insufficient knowledge of medicines -confusion -cost issues -personal or cultural beliefs or attitudes -physical limitations, e.g. poor vision, lack of strength or coordination.
•Assess patient's adherence by asking questions such as: 'People often have difficulty taking their medicines for one reason or another. Have you had any difficulty taking your medicines?' 'About how often would you say you miss taking your medicines?'
•Use a non-judgmental, empathetic approach and open-ended questions.
•Where possible, supplement self-reported adherence with objective measures, e.g. dispensing records.
•Inform medical staff if significant areas of poor adherence are identified.
•Identify strategies to address poor adherence.
•Assess how medicines were managed before presentation: -determine level of supervision/assistance needed for safe medicine administration at home, e.g. Was another person responsible for obtaining and/or assisting with medicine administration? Was an adherence aid being used? If so, who packed it?
•Assess patient's ability with respect to literacy, visual impairment, physical dexterity, cognition/memory and other disabilities.
•Assess need for additional adherence aids, e.g. large print, written information provided in a language other than English.

Obtain Patient's Consent

Where appropriate, obtain the patient's consent before requesting patient-specific information from other health professionals. Also:

- explain the need to contact other health professionals
- request permission to obtain patient-specific information from other health professionals
- obtain the patient's consent before discussing medication details with their carer or the person managing their medicines.

Summarise Interview

Allow the patient/carer to ask questions about their medicines during and at the conclusion of the interview. At the conclusion of the interview:

- advise the patient/carer when a pharmacist will next visit and what to do if they have further questions
- summarise the important information and describe the expected plan for their medication management, e.g. medicines-related issues that need to be resolved, different brands of medicine used.

Document Medication History

The information obtained in patient interviews should be accurately documented and readily available to other healthcare providers involved in the care of the patient. See Table 1.3

Table 1.3 Documenting medication reconciliation
A medication history should include:[1]
•patient details •date •name, designation and contact details of person documenting the medication history •information sources •list of medicines (prescription, non-prescription, CAMs, recreational, recently ceased, taken intermittently). For each medicine include: generic and brand name, strength, dose form, dose, route, administration schedule, duration of therapy/when medicine started, perceived indication (according to the patient) •adverse drug reactions and allergies.

Information may be gathered over several interviews as the patient/carer recall their medicines. It is important that the medication history documentation is easy to access and update when new information becomes available. Address issues identified when taking the medication history as soon as possible.[1]

Details of the medication history may be entered on the National Inpatient Medication Chart (NIMC).[17] However, the NIMC may be moved from the bedside when a new chart is commenced and there is insufficient space to record all the details required for a comprehensive history. A comprehensive medication history can be documented in a MMP, in paper or electronic format according to local policy. If the review is done in outpatients or a clinic then the MMP or local equivalent rather than the NIMC should be used. The medication history must then form part of the patient's permanent health record.

Planned Admissions

Ideally, all preadmission clinics will have a pharmacist present and all patients admitted for elective admissions will have their medication history taken and documented by a pharmacist.

Patient-completed questionnaires used for preadmission assessment are often inaccurate.[18] Encourage patients/carers to bring to the preadmission clinic:

- all their medicines (prescription, non-prescription, herbal and dietary supplements)
- medicines lists and repeat prescriptions
- any other information that could help accurately record what they have been taking, e.g. ADR card.

Advise patient/carer on:

- continuing current medicines regimen until their admission
- medicines that must be withheld and for how long before the admission
- medicines that are contraindicated or may interact with their planned treatment
- pre-medications required before admission.

Pharmacists should clearly document the plan for ceasing medicines before procedures and the plan for restarting them after the procedure.

On admission:

- check if there have been changes to their medicines since the preadmission clinic appointment
- document and flag medicines-related problems to be addressed before discharge, e.g. adherence.[1]

As not all elective admissions have preadmission processes, e.g. medical admissions, complete and document the medication history within 24 hours of presentation or admission, or at least before the end of the next working day after admission.

Confirm Accuracy of the Medication History

Determine if the medication history obtained from the patient/carer requires confirmation with alternative sources. Confirmation from a further source is required if:

- the patient is not responsible for administration of their own medicines
- a reliable medication history cannot be obtained from the patient/carer
- elements of the medication history are unknown
- the medication history is complex
- the medication history includes high-risk medicines.

Review the documented medication history and update if new information becomes available during the episode of care. Appropriate sources to confirm accuracy of the medication history include:

- patient's relative/carer responsible for supervising medicine administration
- dispensing history from previous hospital admissions and/or community pharmacies
- administration records from residential care or other health service organisations
- other health professionals, e.g. GP, community nurse
- patient's electronic health record
- patient's medicines or medicines list
- patient's prescriptions (community pharmacy, discharge/outpatient).

If unable to confirm what medicines the patient was taking before presentation or admission, then document that the medication history details obtained have not been confirmed.

Reconcile History with Prescribed Medicines

Medication reconciliation should:

- occur each time a patient is transferred from one episode of care to another and when new medication orders are written. Transfer may be within the organisation, on discharge or between providers of care
- include review of the previous medication orders alongside new orders and the care plan
- include review and resolution of discrepancies as they arise as well as available information to determine if discrepancies are intentional or non-intentional
- include communication with the prescriber to resolve medicines-related problems.

On Admission or Presentation

Compare the best possible medication history with the current medication orders in the context of the admission plan and the MMP and identify any discrepancies. Ensure that the patient has not been prescribed a medicine to which they have experienced an ADR/allergy. Medicine-related problems with the patient's current medicines regimen may be identified at this stage, see *Chapter 2: Assessment of current medication management* and *Chapter 3: Clinical review, therapeutic drug monitoring and ADR management*.

All medication reconciliation information should be documented in the patient's MMP as part of their active health record so that it is available to all healthcare providers involved in the patient's care. See *Chapter 13: Documenting clinical activities*.

The MMP should remain with the patient's active medication chart for the duration of the admission. It is then filed in the health record along with the medication chart on discharge. If the MMP is documented electronically it should be readily available in the patient's health record. Information technology can facilitate medication reconciliation if it is devised to support a well-designed process.[2] Minimum requirements for documenting medication reconciliation on a purpose-designed form are listed in Table 1.4.

Table 1.4 Minimum requirements for medication reconciliation recording form

Sources of information and contact details (where applicable):[15]
•carers/family •nursing home •community pharmacist •GP •community nurse •patient's own medicines •previous hospital records •medication list.
General information:
•who manages the patient's medicines •location of the patient's own medicines •immunisation status •contact information for GP, community pharmacist and residential aged care facility (if applicable).
Documented evidence:
•indicate that each medicine in the patient's medication history has been reconciled on admission and discharge •indicate variances in medication orders •explain action taken to reconcile discrepancies in medication orders.
Other useful details:[15,17]
•prescriber's plan for continuing/discontinuing medication for this episode of care •medicines that the patient has existing supplies of •medicines to supply on discharge •administration and/or adherence aids used prior to presentation •relevant information from adherence assessment •consent given by patient to contact other health professionals •relevant information regarding patient understanding of their medicines •presenting complaint •past medical history •admission weight and height •relevant biochemical data •risk assessment: level of independence and patient assessment •home visit or HMR referral recommended •follow-up medical review via ambulatory or outreach clinic recommended •discharge tasks documented and signed for including: medication counselling, CMI provided, discharge medication record provided, discharge medication supplied, administration aid supplied, community liaison pharmacist referral, discharge summary provided and where it has been sent.

Wherever medication reconciliation is performed, the MMP or equivalent should be filed in the patient's permanent health record for future access.

During Inpatient Stay

Check that the best possible medication history and current medicines are accurately transcribed for every transition the patient makes from one episode of care to another or when a new medication chart is written.

On Discharge/Transfer

Check that the discharge/transfer medication orders match current medication orders, the medicines supplied at discharge and the discharge plan. Check that there is a plan for recommencing medications withheld on admission and any changes noted.

The medication history should be listed in the discharge summary including the reasons for any changes between admission and discharge. Ensure that the details are included in the patient's electronic health record.

Reconcile the patient's own medicines with discharge/transfer medication orders and discuss changes to medicines during the episode of care and expected changes for discharge/transfer. Discuss with the patient what medicines will be required on discharge to ensure continued supply. Obtain permission from the patient to supply required medicines and remove ceased medicines for destruction. See *Chapter 6: Facilitating continuity of medication management on transition between care settings.*

Supply Verified Information for Ongoing Care

Ensure that verified information about the patient's medicines is received by all involved in the patient's care (including the patient) on discharge. Ensure information is included in the patient's electronic health record. Obtain patient consent before sharing any information with other healthcare providers in line with privacy and confidentiality legislation.

If the patient is being transferred to another episode of care, supply comprehensive information to the health professionals responsible for continuing the patient's medication management. Also provide relevant information to the patient in accordance with their MMP. *See Chapter 5: Providing medicines information* and *Chapter 6: Facilitating continuity of medication management on transition between care settings.*

Provide the following verified information:

- any medicines issued at discharge/transfer and the source for further supply
- discharge or transfer medicines list (complete and accurate list of all current medicines)
- explanation of the changes to therapy during the episode of care.

The method of information delivery should be timely and mutually agreed among healthcare providers. If required create a current list of medicines.

Encourage patients/carers to have a current list of medicines and to bring the list with them to each health service organisation or health professional that they attend.[17]

Table 1.5 lists the competencies and accreditation frameworks that are relevant to this chapter.

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Table 1.5 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[19]
Competency unit 1.1 Medication history
1.1.1 Relevant patient background 1.1.2 Introduction to consultation 1.1.3 Questioning technique 1.1.4 Patient consent 1.1.5 Allergy and adverse drug reaction review 1.1.6 Accurate medication details 1.1.7 Patient's understanding of illness 1.1.8 Patient's experience of medicines use 1.1.9 Documentation of medication history 1.1.10 Confirmation of medication history 1.1.11 Adherence assessment
Competency unit 1.2 Assessment of current medication management and clinical review
1.2.1 Medication reconciliation
Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems
1.3.2 Identification of medicines-related problems 1.3.3 Prioritisation of medicines-related problems 1.3.4 Resolution of medicines-related problems 1.3.5 Documentation of medicines-related problems
Competency unit 1.5 Discharge/transfer facilitation
1.5.1 Reconciliation of medicines on transition between care settings
Competency unit 2.1 Problem solving
2.1.2 Access information 2.1.3 Abstract information 2.1.4 Evaluation and application of information
Competency unit 2.4 Communication
2.4.1 Patient and carer 2.4.2 Pharmacy staff 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness
2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence

Competency unit 2.6 Team work
2.6.2 Interdisciplinary team
Competency unit 2.7 Professional qualities
2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[20]
Standard 1.1 Practise legally
3 Respect and protect the consumer's right to privacy and confidentiality 4 Support and assist consumer consent
Standard 2.1 Communicate effectively
1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 2.2 Work to resolve problems
1 Analyse the problem/potential problem 2 Act to resolve the problem/potential problem
Standard 4.2 Consider the appropriateness of prescribed medicines
1 Gather relevant information
Standard 6.1 Assess primary health care needs
1 Elicit relevant clinical information
Standard 7.1 Contribute to therapeutic decision-making
1 Obtain accurate medication history
National safety and quality health service standards[21]
Standard 4 Medication safety: documentation of patient information
4.6 Accurate medication history 4.7 Documentation of adverse drug reactions 4.8 Review and reconciliation on admission and transfer
Standard 4 Medication safety: continuity of medication management
4.12 Current comprehensive list of medicines and the reason for change
Standard 4 Medication safety: communicating with patients and carers
4.15 Current medicines information

Chapter 2: Assessment of Current Medication Management

INTRODUCTION

Assessment of a patient's current medication management is vital to ensure the quality use of medicines.[1] The assessment aims to optimise the quality use of medicines and therefore patient outcomes, and to minimise medicines-related problems.

To assess the patient's current medication management, the pharmacist confirms the safety and appropriateness of individual medication orders and the combination of medicines prescribed. This assessment is then documented in the patient's record or the pharmacy section of the National Inpatient Medication Chart (NIMC) or equivalent.

Assessment of a patient's current medication management should not be done in isolation. It requires a systematic, in-depth assessment of current medicines in consultation with the patient taking into account:

- the patient's medication history
- the patient's medication management plan (MMP) and data from the medication administration record
- a clinical review including therapeutic drug monitoring (TDM).

OBJECTIVE AND DEFINITION

Objective

Assessment of a patient's current medication management aims to optimise therapy and outcomes by ensuring the safety and appropriateness of prescribed medicines, taking into account patient-specific factors including their medical condition and previous experience with medicines. The goals are for the patient to receive the most appropriate dose and dosage form of their medicine, timing of dosage and duration of therapy and that the risks of medicines-related problems are minimised.

Pharmacist input into the appropriate choice of medicines and assessment of the patient's current medication management helps to:

- optimise the quality of patient care and clinical outcomes
- ensure that the selection of medicines follows local guidelines, formulary and availability limitations, where applicable
- promote the quality use of medicines
- promote the cost-effective use of medicines.

Definition

Assessment of a patient's current medication management by a pharmacist involves several elements including:

1. Reviewing all medicine orders and administration records (e.g. NIMC, electronic equivalent, intravenous fluid and electrolyte orders, outpatient and discharge prescriptions) to optimise medicine therapy, to ensure medicines are administered safely and appropriately and patient outcomes are optimised. This includes reviews when new medication charts are written or the patient is transferred to another setting.
2. Comparing the patient's current medicines to their MMP and data from the medication administration record, pharmacist clinical review, laboratory results and TDM.[2]
3. Providing advice on the selection of medicines to support therapeutic appropriateness, cost effectiveness and accessibility.

EXTENT AND OPERATION

Assessment of a patient's current medication management occurs on presentation or admission to a health service organisation (as part of medication reconciliation) throughout the episode of care and on discharge or transfer. Presentation may be on admission, in emergency departments, in outpatient clinics or other services.

Ideally, all acute patients should have their current medication management assessed and reviewed daily. If this is not achievable, prioritise those where maximum benefit is likely to be obtained.

Subacute patients may not require their current medication management to be reviewed daily. They should have their medication management assessed at regular intervals (including on admission, transfer or discharge) and when their medicines are changed or their health status changes. Non-acute patients should have an assessment when their medicines are changed or their health status changes. See *Chapter 8: Prioritising clinical pharmacy services*.

POLICY AND PROCEDURE

Medication Order Review

Medication order review involves assessing all current and recent orders and administration records including: NIMC, variable dose medicines, intravenous fluid and electrolyte orders, single dose medicines, anaesthetic and operative records, epidural medicines, analgesics, enteral and parenteral nutrition orders, outpatient and/or discharge prescriptions and other relevant medication orders. Areas to consider for assessment are included in Table 2.1.

In addition to reviewing the patient's medication order:

- assess their ability to adhere to their medication management before and during the episode of care. Determine if the patient requires help in managing their medicines at home or on discharge.[2] An initial assessment of adherence is part of the best possible medication history. See *Chapter 1: Medication reconciliation*
- assess if polypharmacy is an issue impacting on adherence
- ensure all medicines are ordered according to the patient's therapeutic goals and the MMP, if available
- identify and prioritise any medicines-related problems.

Take into account recent consultations, pathology results and investigations, treatment plans and daily progress when determining the appropriateness of current medication orders and planning patient care. See *Chapter 3: Clinical review, therapeutic drug monitoring and adverse drug reaction management*.

Liaise with the prescriber to resolve any issues, correct the medication orders and record in the health record.

Finally, sign the 'pharmaceutical review' section of the NIMC. See *Chapter 13: Documenting clinical activities*.

Table 2.2 lists the competencies and accreditation frameworks that are relevant to this chapter.

Table 2.1 Medication order review
For each medicine order assess:
Clarity
•Ensure prescriber's intention is clear to enable the safe supply and administration of medicines.
•Ensure all medicines are prescribed by their active ingredient or as recommended by local policy.
•Ensure prescribing abbreviations meet local and national policy.
•Annotate the order to clarify the administration of modified-release products, IV administration method, indication and maximum dose in 24 hours for PRN medications, administration in relation to food and relevant restrictions, e.g. schedule 8.
•Ensure cancelled medicine orders comply with national and local prescribing policies.
•Ensure date and time the medication is to commence and cease is written.
•Ensure duration of the medicine is appropriate, consideration should be given to medicines commonly used in short courses.
•Ensure time the dose should be given is endorsed in the relevant section of the chart.
Validity
•Check patient identifiers are present.
•Ensure order is signed and the prescriber can be identified.
•Ensure order conforms with legal and funding requirements and any additional requirements are fulfilled, e.g. authority granted.
Appropriateness
•Consider local guidelines for patient management when making recommendations on the choice of medicines. Also consider the latest evidence regarding the medicine's: -efficacy in the management of a particular disease or symptom -comparative efficacy and safety of therapeutic alternatives -likelihood of adverse effects, compared with therapeutic alternatives and ways to minimise adverse effects -pharmacokinetic and pharmacodynamic properties -route and method of administration -dosage form, comparative efficacy and adverse effects of different dose forms, intended site of action, dose required for intended effect, kinetics of different dose forms -method of monitoring for therapeutic and adverse effects.
•Check medication orders for interactions including drug–drug, drug–patient, drug–disease and drug–nutrient interactions and: -identify mechanism of the interaction -consider clinical significance -decide on an appropriate course of action.
•Consider interactions with laboratory tests and environmental factors, e.g. smoking, alcohol consumption, motor vehicle driving.
•Consider cost of the medicine therapy to the patient, hospital and community.
•Consider cost/benefit of prescribed medicines and costs of therapeutic alternatives.
•Check availability, i.e. government restrictions, marketing approval, hospital formulary limitations, methods of obtaining further supply outside of the facility.
•Check all medication orders for duplication.
•Check dose with respect to patient's previous experience with medicine, disease state, pregnancy, age, renal function, liver function, interactions, dose form and method of administration.
•Check dose conversions required with changes to route or formulation.
•Check the most appropriate route of administration is selected.
•Check timing of administration is appropriate with respect to food/feeds, administration rounds, convenience, scheduled procedures/investigations, TDM requirements.

Table 2.1 Medication order review (contd)
•Check orders for medicines to which the patient may be allergic or have experienced an ADR. Discuss with prescriber the need for such medicine and recommend an alternative, if appropriate. If the prescriber wishes to continue treatment with the suspected medicine, details of the discussion with the prescriber should be documented in the patient's health record.
•Ensure infusion solution, concentration and rate of administration are appropriate and clinical targets (e.g. blood sugar levels, blood pressure) are appropriate.
•Check administration record to see that all doses have been given as prescribed.
•Check availability of the medicine and annotate the supply method of individual medicines.
•Ensure necessary medicines are available and where necessary ordered, e.g. current medicines, premedication.

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Table 2.2 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[3]
Competency unit 1.1 Medication history 1.1.7 Patient's understanding of illness 1.1.8 Patient's experience of medicines use 1.1.11 Adherence assessment
Competency unit 1.2 Assessment of current medication management and clinical review 1.2.2 Drug–drug interactions 1.2.3 Drug–patient interactions 1.2.4 Drug–disease interactions 1.2.5 Drug–nutrient interactions 1.2.6 Appropriate choice of medicine 1.2.7 Medicine order/prescription clarity 1.2.8 Medicine order/prescription legality 1.2.9 Dose review 1.2.10 Route and timing of dose 1.2.11 Selection of formulation, concentration or rate
Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems 1.3.2 Identification of medicines-related problems 1.3.3 Prioritisation of medicines-related problems 1.3.4 Resolution of medicines-related problems 1.3.5 Documentation of medicines-related problems 1.3.7 Documentation of clinical pharmacy activities
Competency unit 1.4 Provision of medicine 1.4.1 Availability of medicines 1.4.3 Review of administration of prescribed medicines
Competency unit 2.1 Problem solving 2.1.2 Access information 2.1.3 Abstract information 2.1.4 Evaluation and application of information 2.1.5 Appraisal of therapeutic options 2.1.6 Formulation of a clear decision

Competency unit 2.2 Therapeutic understanding 2.2.1 Justification of therapeutic choice
Competency unit 2.4 Communication 2.4.1 Patient and carer 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness 2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence
Competency unit 2.6 Team work 2.6.2 Interdisciplinary team 2.6.4 Promotion of rational medicines use
Competency unit 2.7 Professional qualities 2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[4]
Standard 1.1 Practise legally 1 Comply with statute law, guidelines, codes and standards 2 Respond to common law requirements 3 Respect and protect consumer's right to privacy and confidentiality 4 Support and assist consumer consent
Standard 1.3 Deliver 'patient-centred' care 1 Maintain primary focus on the consumer 2 Address consumer needs
Standard 1.4 Manage quality and safety 1 Protect and enhance consumer safety 2 Respond to identified risk
Standard 2.1 Communicate effectively 1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 2.2 Work to resolve problems 1 Analyse the problem/potential problem 2 Act to resolve the problem/potential problem
Standard 4.2 Consider the appropriateness of prescribed medicines 1 Gather relevant information 2 Review the prescribed medicines 3 Promote optimal medicines use
Standard 7.1 Contribute to therapeutic decision-making 2 Assess current medication management 3 Recommend change in medication management 4 Support and assist patient self-management
Standard 7.2 Provide ongoing medication management 1 Seek consumer support 2 Review clinical progress 3 Initiate monitoring and intervention 4 Manage medication management records
National safety and quality health service standards[5]
Standard 4 Medication safety: communicating with patients and carers 4.13 Informing patients about treatment options 4.14 Medication management plan

Chapter 3: Clinical Review, Therapeutic Drug Monitoring and Adverse Drug Reaction Management

INTRODUCTION

Clinical review, therapeutic drug monitoring (TDM) and adverse drug reaction (ADR) management contribute to the quality use of medicines by ensuring safe and appropriate dosage and administration of medicines, improving response to therapy and minimising medicines-related problems.

Clinical review, TDM and ADR management commence when a patient presents or is admitted to a health service organisation and continue as routine activities throughout the episode of care in conjunction with assessment of current medication management and other clinical pharmacy activities.

OBJECTIVE AND DEFINITION

Objective

Clinical review, TDM and ADR management aim to ensure safe and appropriate treatment with medicines. Review of patient-specific clinical information assists in the understanding of a patient's clinical progress and treatment options. Ongoing clinical review and TDM is essential to re-evaluate and modify therapeutic goals as the patient's condition and response to therapy change.

Definition

Clinical review is the review of patient-specific clinical information including patient parameters to evaluate their response to medication therapies and to detect and manage potential or actual medicines-related problems. It may include interpreting biochemical and other tests, evaluating the patient's signs and symptoms identified from interviews with the patient and review of the health record.

TDM is the interpreting and monitoring of measured drug concentrations in body fluids to optimise medicine efficacy and minimise toxicity. TDM applies the disciplines of pharmacology, pharmacokinetics, pathology and clinical medicine.

ADR management is the prevention, detection, assessment, management, documentation and reporting of ADRs. An ADR is a response to a medicine that is noxious and unintended, and which occurs at doses normally used or tested in humans for the prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function.[1] An unexpected therapeutic response may be a side effect but not an adverse reaction.

EXTENT AND OPERATION

All patients should have a clinical review, TDM and ADR management as appropriate throughout the episode of care in parallel with assessment of current medication management. See *Chapter 2: Assessment of current medication management*.

Clinical review of patient's medication therapy should be undertaken in conjunction with the assessment of current medication management as a routine activity. Collating this information enables the pharmacist to identify and prioritise patient-specific medicines-related problems, formulate a management plan and develop and monitor treatment goals.

Extensive TDM monitoring for every patient is impractical due to cost and time. Medicines to be monitored should be prioritised according to risk assessment. Local criteria need to be established that identify the patient groups with a high risk of measurable adverse effects or medicine interactions that require extensive monitoring. See *Chapter 8: Prioritising clinical pharmacy services*.

POLICY AND PROCEDURE

Clinical Review

Information about a patient's signs, symptoms and progress may be obtained from:

- their medication history or medication reconciliation documentation
- reviewing their health record
- a discussion with other healthcare team members
- a discussion with and review of the patient
- their clinical data
- their laboratory investigations.

Examples of patient-specific clinical information may include:

- routine observations, e.g. temperature, blood pressure
- weight
- fluid balance
- urine output
- biochemistry results, e.g. electrolytes, creatinine
- haematology results
- microbiology results
- radiological investigations
- bowel charts
- peak flow/spirometry
- nutrition
- pain scores.

Document information that is not readily available on the medication administration record, medication management plan (MMP) or in the patient's health record according to local policy.

Interpret and evaluate the clinical information obtained by referring to the:

- clinical features and pathophysiology of conditions treated
- indication for an investigation, and its sensitivity and specificity
- timeframe of drug-related effects (may include expected adverse effects)
- patient's medication history
- planned outcome(s) of treatment
- patient's pharmacogenomics and genetic markers, especially as they relate to drug handling and monitoring of suitability of certain drugs.

Identify actual and potential medicines-related problems. Prioritise these according to their risk and urgency. Liaise with the prescriber to resolve any issues and document these in the health record, MMP or equivalent, according to local policy. See *Chapter 13: Documenting clinical activities*.

Therapeutic Drug Monitoring

TDM may be used to optimise therapy for medicines where there is a known relationship between measured concentration in body fluids and pharmacological effect. There are a number of specific indications for monitoring the concentrations of medicines in body fluids including:

- suspected toxicity due to a medicine and/or metabolite
- suboptimal response to medicines
- potential drug interactions
- patient is not medically stable
- following initiation or change to the medicines regimen
- previous ADRs or toxicity
- post overdose or poisoning and determination of antidote dose needed
- patient adherence issues.

TDM is indicated for patients being treated with medicines with the following characteristics:

- narrow therapeutic index
- high risk
- significant adverse effects profile
- large degree of patient variability in pharmacodynamics
- associated with clinically significant interactions.

TDM may also be indicated for patients who have an altered clinical status and changes in pharmacodynamics. Particular patient groups include those:

- with renal or hepatic impairment
- undergoing dialysis and haemofiltration
- with uncompensated cardiac dysfunction
- who are pregnant
- at extremes of age, i.e. elderly or paediatric (especially neonates)
- who are obese, undernourished or have diminished muscle mass
- who have burns, cystic fibrosis and polymorphisms.

Some factors to consider before initiating TDM include:

- patient's clinical status and recent progress (particularly relating to clinical signs of medicine effect or toxicity)
- patient adherence with prescribed medicines regimen
- benefit of TDM and the impact on patient, e.g. multiple blood collections and ability to obtain TDM samples and to analyse them in a timely fashion.

The therapeutic range describes the range of medicine concentrations most commonly associated with optimal effect and minimal toxicity. It serves as a guide to therapy and must always be used in conjunction with an assessment of clinical response. The target concentration and empiric dosing of a medicine may depend on the desired clinical response, e.g. cyclosporin levels relative to the time since transplantation, digoxin levels to manage atrial fibrillation.

To interpret drug concentrations other details need to be known to relate the measured concentration to therapeutic effect. Data to record when taking samples include time of sampling, time of last dose and duration of current medicines regimen. When interpreting results, consider the following:

- drug, dose, formulation and dosing schedule
- method of administration
- indication for treatment
- reason for TDM
- duration of current medicines regimen
- time of last dose
- time of sampling
- prior drug monitoring and other relevant laboratory results
- patient-specific factors, e.g. renal and hepatic function, cardiac status, age, weight
- relevant pharmacokinetic and pharmacodynamic properties of the drug
- potential for drug interactions
- other environmental factors, e.g. smoking
- potential for sampling or measurement error
- local laboratory parameters
- pharmacogenomics and genetic markers especially as they relate to drug handling and monitoring of suitability of certain drugs for particular patients.

Pharmacokinetic calculations and simulated computer profiles can be used as a guide in assessing patient dose. However, consider the assumptions and limitations of such programs when interpreting TDM data.

Inform the prescriber of the results of TDM in a timely manner, including recommended action and future monitoring requirements. Document any recommendations in the patient health record, MMP or equivalent, or electronic health record, where appropriate.

Adverse Drug Reaction Management

ADR management involves the detection, assessment and correlation, management, documentation and prevention of ADRs. The emphasis of ADR management is on preventing ADRs and preventing re-exposure of patients who have already experienced an ADR.

Detecting Adverse Drug Reactions

Identify and monitor patients susceptible to ADRs. Particular patient groups include:

- those who have previously experienced ADRs
- those with multiple disease processes
- those on a large number of medicines
- those with renal or hepatic impairment
- geriatric or paediatric patients
- those treated with medicines known to have a high incidence of adverse effects
- those treated with medicines known to be associated with serious adverse effects
- those treated with drugs with a low therapeutic index
- those taking medicines with the potential for multiple interactions
- those with abnormal investigation results.

Orders for single doses of medicines, such as antihistamines, adrenaline and corticosteroids may indicate that an adverse reaction has occurred.

Encourage nursing and medical staff and patients/carers to report any suspected ADRs.

Suspected Adverse Drug Reactions

When an ADR is suspected, assess the details of the ADR in the context of patient-specific and medication-related factors.

Patient-specific factors include:

- age, gender, race, organ function, height, weight
- diagnosis and other relevant comorbidities prior to reaction
- previous exposure to suspected or related drug(s).

Medication-related factors include:

- non-prescription drugs, complementary and alternative therapies
- recently ceased medicines
- suspected causative drug (name, dose, route of administration, manufacturer, batch, date and time commenced, date and time discontinued [if applicable], indication).

Comprehensive adverse reaction details include:

- description of the reaction
- time of onset and duration of reaction
- complications and sequelae
- treatment and outcome of treatment
- relevant investigation results or autopsy report.

When assessing the likelihood that a suspected ADR was caused by a particular drug, review the relevant literature and where appropriate consult with other health professionals. Causality of a suspected medicine with an adverse reaction may be:[2]

- **Certain** – a clear association is established between administration of the drug and the reaction, the results of investigations confirm that there is a relationship between administration of the drug and the reaction, the reaction recurs on re-exposure to the drug, or the reaction is known to occur with the suspected drug.
- **Probable** – the reaction is known to occur with the suspected drug, and there is a possible association between the reaction and administration of the drug, the reaction resolves or improves on withdrawal of the suspected drug and other medicine therapy remains unchanged, or an uncommon clinical event occurs in the absence of other potentially causative factors.
- **Possible** – an alternative explanation for the reaction exists, more than one drug is suspected, recovery follows withdrawal of more than one medicine or the association between the reaction and administration of the medicine is unclear.
- **Doubtful** – another cause is more likely to have accounted for the clinical event, e.g. underlying disease.

Managing and Reporting Adverse Drug Reactions

The likelihood of the suspected medicine(s) having caused the reaction and the clinical significance of the reaction are considered when assessing whether to continue treatment with the suspected medicine(s). In many cases a reasonable alternative treatment will be available. Recommend treatment options for the ADR and, if appropriate, recommend alternative treatments. Important issues to consider when managing ADRs include the:

- patient's condition
- requirement for therapy (whether treatment can be ceased)
- risks and benefits associated with continuing therapy with a medicine suspected to have caused an adverse reaction, including factors such as causality and the seriousness of the reaction
- relative efficacy and safety of other therapeutic alternatives
- prophylactic use of other medicines to prevent future adverse reactions
- consideration of rechallenge and desensitisation for the medicine.

Ensure all suspected ADRs are communicated appropriately by:

- documenting in the health record, including electronic prescribing or dispensing system and if appropriate attach relevant alert notices/stickers to medicine administration records and health record. See *Chapter 13: Documenting clinical activities*
- documenting in the MMP or equivalent and the electronic health record
- notifying medical and nursing staff (including the original prescriber)
- supplying a record of the ADR to patients/carers when potential for re-occurrence is deemed significant
- reporting to the Therapeutic Goods Administration ADR reporting system and to the manufacturer in the case of a trial, non-marketed or newly-marketed medicine[3]
- documenting ADRs according to local policy.

Likelihood of future ADRs can be minimised by:

- documenting ADRs to avoid patient re-exposure on all medicine orders, including noting when there are no known ADRs
- documenting ADRs in the MMP and the electronic health record
- monitoring patients at risk of ADRs
- judicious use of medicines that have a high incidence of or are known to cause serious adverse effects
- ensuring patient is given a hospital alert wrist band
- providing education and information, including alert cards, to patients who have experienced serious ADRs.

Table 3.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2012.
2. World Health Organization. Safety monitoring of medicinal products: guidelines for setting up and running a pharmacovigilance centre. Uppsala: The Organization; 2000. Available from <www.who-umc.org/graphics/24747.pdf>.
3. Therapeutic Goods Administration. 'Blue card' adverse reaction reporting form. Canberra: Therapeutic Goods Administration; 2012. Available from <www.tga.gov.au/pdf/forms/problem-medicines-forms-bluecard-121029.pdf>.
4. Society of Hospital Pharmacists of Australia. Clinical competency assessment tool (shpaclinCAT version 2). In: SHPA standards of practice for clinical pharmacy services. J Pharm Pract Res 2013; 43 (suppl): S50-S67.
5. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.

Table 3.3 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[4]
Competency unit 1.2 Assessment of current medication management and clinical review 1.2.12 Review and interpretation of patient-specific data 1.2.13 Therapeutic drug concentration monitoring
Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems 1.3.2 Identification of medicines-related problems 1.3.3 Prioritisation of medicines-related problems 1.3.4 Resolution of medicines-related problems 1.3.5 Documentation of medicines-related problems
Competency unit 2.1 Problem solving 2.1.2 Access information 2.1.3 Abstract information 2.1.4 Evaluation and application of information 2.1.5 Appraisal of therapeutic options 2.1.6 Formulation of a clear decision
Competency unit 2.4 Communication 2.4.1 Patient and carer 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness 2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence

Competency unit 2.6 Team work
2.6.2 Interdisciplinary team 2.6.4 Promotion of rational medicines use
Competency unit 2.7 Professional qualities
2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[5]
Standard 1.1 Practise legally
3 Respect and protect consumer's right to privacy and confidentiality 4 Support and assist consumer consent
Standard 1.3 Deliver 'patient-centred' care
1 Maintain primary focus on the consumer 2 Address consumer needs
Standard 1.4 Manage quality and safety
1 Protect and enhance consumer safety 2 Respond to identified risk
Standard 2.1 Communicate effectively
1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 2.2 Work to resolve problems
1 Analyse the problem/potential problem 2 Act to resolve the problem/potential problem
Standard 4.2 Consider the appropriateness of prescribed medicines
1 Gather relevant information 2 Review the prescribed medicines 3 Promote optimal medicines use
Standard 7.1 Contribute to therapeutic decision-making
2 Assess current medication management 3 Recommend change in medication management 4 Support and assist consumer self-management
Standard 7.2 Provide ongoing medication management
1 Seek consumer support 2 Review clinical progress 3 Initiate monitoring and intervention 4 Manage medication management records
National safety and quality health service standards[1]
Standard 4 Medication safety: documentation of patient information
4.7 Documentation of adverse drug reactions
Standard 4 Medication safety: communicating with patients and carers
4.13 Informing patients about treatment options 4.14 Medication management plan

Chapter 4: Medication Management Plan

INTRODUCTION

A medication management plan (MMP), medication action plan or pharmaceutical care plan is a key principle in the continuity of medication management across the continuum of care as required by the *Guiding Principles to Achieve Continuity in Medication Management*.[1]

An MMP is a continuing plan developed and used by health professionals in collaboration with patients to develop strategies to manage the use of medicines for the patient. The MMP or equivalent may be used in inpatient, outpatient or non-admitted areas, emergency departments, subacute or for primary care.

The MMP lists issues identified during the assessment of the patient's current medication management and the medication management goals developed.[1] It should combine information, such as medication reconciliation, assessment of current medication management, clinical review, therapeutic drug monitoring (TDM) and adverse drug reaction (ADR) management.

The MMP, and the National Inpatient Medication Chart (NIMC) (or local equivalents including electronic information systems) form the main record of a patient's medicines use throughout their episode of care.

OBJECTIVE AND DEFINITION

Objective

An MMP supports health professionals, in collaboration with the patient, to develop strategies to manage the patient's medicines. Documenting the MMP requires an interdisciplinary approach that includes doctors, nurses, pharmacists and patients/carers across the continuum of care. In acute and subacute care it is also used to assist in discharge and transfer of care planning.[1,2]

Definition

An MMP is a continuing plan for the use and management of medicines developed in collaboration with the patient.[1] The MMP records medicines taken before admission and aids medication reconciliation throughout the patient's episode of care. It is a record of patient-specific medication issues, actions taken to resolve issues and medication management goals developed during the episode of care.

All health professionals are responsible for documenting on the MMP regardless of the setting.

EXTENT AND OPERATION

The ideal opportunity to initiate or review an MMP is during the medication history interview or as early as possible in the episode of care or presentation, see *Chapter 1: Medication reconciliation*. It is a working document that should be reviewed and updated throughout the episode of care.

Ideally, an MMP is completed for all patients. If an MMP cannot be completed for all patients, prioritise those where maximum benefit is likely to be obtained. Patients most at risk of medicines-related problems include those who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

The MMP must be accessible and should be kept with the current medication chart or with the patient's active health record throughout the episode of care. After transfer or discharge it must be filed with the patient's permanent health record. In outpatients or emergency department the MMP must be filed with the patient's permanent health record.

The *National Medication Management Plan* is a standardised document that aims to improve the completeness of the information documented to ensure the continuity of medicines management in acute and subacute care.[2]

POLICY AND PROCEDURE

Minimum components of an MMP for an individual patient are listed in the *Guiding Principles to Achieve Continuity in Medication Management*, Guiding principle 6: medication action plan and include:[1]

- patient identification and general information
- a current list of medicines (and recent changes)
- risk assessment, e.g. allergies, visual impairment
- action plan, e.g. goals of therapy
- documentation of concordance and relevant discussions with other health professionals
- communication details, e.g. who and where the MMP was sent to.

Ideally, an MMP for an individual patient would also document:[2]

- medication history checklist
- medication reconciliation on admission
- medicines taken prior to presentation to hospital
- recently ceased or recent changes to medicines
- sources of medicines list
- allergies and ADRs
- medication risk identification
- medication issues and management plan
- medication changes during admission
- medication discharge checklist
- who usually administers the patients medicines

- preferred administration methods, e.g. gastrostomy tube
- location of patient's own medicines
- immunisation status
- details of GP, community pharmacy and residential care facility
- recommendation for a Home Medicines Review or other follow-up in primary care.

The patient-specific background information recorded in the MMP is used to support the following clinical pharmacist activities.[3]

Interpreting Patient-Specific Information

Patient-specific information assists in establishing the goals of therapy and management plan and helps pharmacists to identify medicines-related problems and assess the appropriateness of therapy.

Collect and review relevant information, such as age, comorbidities, allergies and ADRs, laboratory results and renal and hepatic function. For a comprehensive list see Table 1.1. Organise and document patient-specific information on the NIMC, MMP or local equivalent. See *Chapter 13: Documenting clinical activities*.

Identifying Medicine-Related Problems

Identify actual or potential medicines-related problems when reviewing patient-specific information. Examples of medicines-related problems might include:

- medicines which have no clear indication
- untreated conditions
- inappropriate medicines
- inappropriate doses considering patient factors, e.g. renal function
- therapeutic duplication
- clinically significant interactions.[3]

See comprehensive list in Table 2.1. See *Chapter 13: Documenting clinical activities*.

Assess the patient's current medication management and conduct clinical review regularly to identify medicines-related problems as they arise.

Prioritise problems according to significance, severity and relevance in order to optimise patient care and outcome. Establish a proactive problem-orientated approach to patient care rather than a reactive response to isolated changes in medicines management.

Individualising Therapy

Together with the patient and other health professionals, identify achievable goals for the patient's management, e.g. cure, symptom control, prevention.

Choice of a particular therapy is based on the planned therapeutic goal, the evidence available and patient preference. Also consider the efficacy, safety, availability and costs. See *Chapter 2: Assessment of current medication management*.

Where multiple therapeutic options exist, the suitability of each treatment must be weighed against individual patient factors and cost to ensure the best possible outcome. Throughout this process, the pharmacist's role is to support the team along with the patient to make informed decisions about the treatment plan.

Monitoring Patient Outcomes

Use a structured and responsive approach and consider potential planned and unplanned outcomes when monitoring patient outcomes. Monitoring should be patient focused and directed to the key endpoints relating to therapy and the clinical problems identified. The frequency of monitoring will vary between patients according to complexity of therapies, timeframe for expected changes and the potential risks associated with the treatment. See *Chapter 3: Clinical review, therapeutic drug monitoring and adverse drug reaction management* and *Chapter 13: Documenting clinical activities*.

Documenting Outcomes

Use the MMP or equivalent to record details of outcomes when goals are achieved, modify goals when outcomes are not achieved and when there are other changes to medication management. See *Chapter 13: Documenting clinical activities*.

On discharge or transfer ensure a copy of the MMP remains with the patient's permanent health record and details of ongoing management are communicated to the patient/carer and other health professionals. See *Chapter 6: Facilitating continuity of medication management on transition between care settings*.

Table 4.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Canberra: The Council; 2005.
2. Australian Commission on Safety and Quality in Health Care. National medication management plan user guide. Sydney: The Commission; 2010.
3. Pharmaceutical Reforms SA Health. Continuity in medication management – a handbook for South Australian hospitals. Adelaide: Department of Health, Government of South Australia; 2010.
4. Society of Hospital Pharmacists of Australia. Clinical competency assessment tool (shpaclinCAT version 2). In: SHPA standards of practice for clinical pharmacy services. J Pharm Pract Res 2013; 43 (suppl): S50-S67.
5. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.
6. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2012.

Table 4.1 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[4]
Competency unit 1.1 Medication history
1.1.1 Relevant patient background 1.1.2 Introduction to consultation 1.1.3 Questioning technique 1.1.4 Patient consent 1.1.5 Allergy and adverse drug reaction review 1.1.6 Accurate medication details 1.1.7 Patient's understanding of illness 1.1.8 Patient's experience of medicines use 1.1.9 Documentation of medication history 1.1.11 Adherence assessment
Competency unit 1.2 Assessment of current medication management and clinical review
1.2.2 Drug–drug interactions 1.2.3 Drug–patient interactions 1.2.4 Drug–disease interactions 1.2.5 Drug–nutrient interactions 1.2.6 Appropriate choice of medicine 1.2.7 Medicine order/prescription clarity 1.2.8 Medicine order/prescription legality 1.2.9 Dose review 1.2.10 Route and timing of dose 1.2.11 Selection of formulation, concentration or rate 1.2.12 Review and interpretation of patient-specific data 1.2.13 Therapeutic drug concentration monitoring

Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems
1.3.2 Identification of medicines-related problems 1.3.3 Prioritisation of medicines-related problems 1.3.4 Resolution of medicines-related problems 1.3.5 Documentation of medicines-related problems 1.3.7 Documentation of clinical pharmacy activities
Competency unit 2.1 Problem solving
2.1.2 Access information 2.1.3 Abstract information 2.1.4 Evaluation and application of information 2.1.5 Appraisal of therapeutic options 2.1.6 Formulation of a clear decision
Competency unit 2.2 Therapeutic understanding
2.2.1 Justification of therapeutic choice
Competency unit 2.4 Communication
2.4.1 Patient and carer 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness
2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence
Competency unit 2.6 Team work
2.6.2 Interdisciplinary team 2.6.4 Promotion of rational medicines use
Competency unit 2.7 Professional qualities
2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[5]
Standard 1.1 Practise legally
1 Comply with statute law, guidelines, codes and standards 2 Respond to common law requirements 3 Respect and protect consumer's right to privacy and confidentiality 4 Support and assist consumer consent
Standard 1.3 Deliver 'patient-centred' care
1 Maintain primary focus on the consumer 2 Address consumer needs
Standard 1.4 Manage quality and safety
1 Protect and enhance consumer safety 2 Respond to identified risk
Standard 2.1 Communicate effectively
1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 2.2 Work to resolve problems
1 Analyse the problem/potential problem 2 Act to resolve the problem/potential problem
Standard 2.3 Collaborate with members of the health care team
Standard 4.2 Consider the appropriateness of prescribed medicines
1 Gather relevant information 2 Review the prescribed medicines 3 Promote optimal medicines use
Standard 7.1 Contribute to therapeutic decision-making
1 Obtain accurate medication history 2 Assess current medication management 3 Recommend change in medication management 4 Support and assist consumer self-management
Standard 7.2 Provide ongoing medication management
1 Seek consumer support 2 Review clinical progress 3 Initiate monitoring and intervention 4 Manage medication management records
National safety and quality health service standards[6]
Standard 4 Medication safety: documentation of patient information
4.6 Accurate medication history 4.7 Documentation of adverse drug reactions 4.8 Medication reconciliation
Standard 4 Medication safety: continuity of medication management
4.12 Documented medicines list and changes
Standard 4 Medication safety: communicating with patients and carers
4.13 Informing patients about treatment options 4.14 Medication management plan

Chapter 5: Providing Medicines Information

INTRODUCTION

Pharmacists provide medicines information to health professionals to influence the prescribing, administration, monitoring and use of medicines for individual patients. The information or advice may be initiated by the pharmacist or may be in response to a verbal or written request from a health professional.

This activity also includes providing consumer medicines information (CMI) to patients during an episode of care. Pharmacists have a responsibility to provide comprehensive information and advice to enable patients/carers achieve safe and effective use of their medicines. Also see *SHPA Standards of Practice for the Provision of Consumer Medicines Information by Pharmacists in Hospitals*.[1]

To provide accurate and relevant medicines information, pharmacists require critical literature evaluation skills, an awareness and understanding of the available medicines information resources and their limitations, as well as competence in interpersonal communication techniques. See *Chapter 10: Training and education*.

Providing medicines information to patients encourages the quality use of medicines and is a key principle in the continuity of medication management across the continuum of care as required by the *Guiding Principles to Achieve Continuity in Medication Management*.[2]

OBJECTIVE AND DEFINITION

Objective

It is a fundamental responsibility of pharmacists to provide information on medicines-related matters. Providing medicines information to health professionals helps to provide patient-centred care and optimises quality use of medicines. Providing medicines information to patients is a core element of patient-centred care. It improves patient capacity for involvement, engages them in their health care and encourages the safe and appropriate use of medicines, enhancing therapeutic outcomes.

Definition

Medicines information for health professionals and patients may include:

- written medicines information, either CMI or specific written information produced by the organisation. See *SHPA Standards of Practice for the Provision of Consumer Medicines Information by Pharmacists in Hospitals*[1]
- a medicines list
- information and advice provided verbally or in written form appropriate for the particular situation and person involved
- verbal instructions, education and demonstrations
- product information
- specific medicines protocols
- local formularies.

For this chapter, medicines information does not include information provided directly by a specialist medicines information service, although may include occasions where interpretation of information provided is required by the pharmacist. See the *SHPA Standards of Practice for Medicines Information Services*.[3]

EXTENT AND OPERATION

Where appropriate, pharmacists should provide medicines information to health professionals proactively. This may include supplying information about the use, administration, adverse affects and monitoring of medicines. In particular, health professionals may find information helpful for medicines:

- that are relatively new, not marketed or have limited information available
- that are associated with specific requirements which, if not followed, may adversely affect patient care
- about which they have limited experience.

Pharmacists should utilise the expertise and resources of a specialist medicines information service when appropriate.

Information and education should be provided to the patient for all newly commenced medicines; greater detail should be provided for high-risk medicines and for medicines likely to be continued following discharge.

Ideally, all patients should be provided with medicines information and education. If this is not possible, prioritise those where maximum benefit is likely to be obtained. Patients most at risk of medicines-related problems include those who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

POLICY AND PROCEDURE

Providing Medicines Information to Health Professionals

Obtain all relevant patient information, including comprehensive details of why the information is needed to enable a patient-centred response. Relevant information may include:

- diagnosis (including current and past medical and surgical problems)
- goals of treatment
- test results or other relevant parameters, e.g. age
- routes of administration which are appropriate for the patient.

Enquiries related to immediate patient care requirements should be given highest priority.

Determine why an enquiry was made and how the information provided is to be used. Sometimes the questions may not be the most relevant or may refer to peripheral issues, rather than the primary problem.

The enquiry may be dealt with immediately if accurate and sufficient information is available. If the enquiry requires research, systematically retrieve information using the available resources and expertise. If further consultation is required, discuss patient-specific details with a medicines information pharmacist or other specialists.

Formulate a reply that meets the specific needs of the enquirer. Communicate the response in a written or verbal form as required. Document the enquiry and response in the patient's health record according to local policy. See *Chapter 13: Documenting clinical activities*. Follow-up with the enquirer to determine if the response supplied was satisfactory and contributed to patient care, or if further information is required. Advise the enquirer if further relevant information becomes available.

Providing Medicines Information to Patients

Ensure that information about medicines and counselling is provided to both the patient and the person responsible for administering and managing their medicines. Obtain patient consent before sharing any information with others in line with privacy and confidentiality legislation.

Identify patients that require medicines-related information, in particular patients at risk of medicines-related problems or who specifically request information.

Discuss information that was previously provided, the patient's perception of the indication and efficacy of their medicines and previously experienced adverse events to identify specific education requirements.

Patient's understanding of their medicines and retention of information will be optimised if education occurs on an ongoing basis during their episode of care and at the time of discharge or transfer. It may be necessary to schedule education interviews at different times, such as during an ambulatory clinic visit, on admission, during the medication history interview, throughout an inpatient stay, and/or immediately before discharge or at discharge/transfer.

Ensure privacy, minimise the risk of interruptions and ensure that education interviews occur at convenient times. How education is given will depend on the patient's needs, who is receiving education and the timing of education interviews, e.g. during hospital stay, time of discharge or review. Use various techniques including one-to-one discussions, group teaching and information resources such as CMIs, audiovisual and educational displays. There are five steps in an education interview.

1. Planning

Identify patient's medicines list. Key education points must be relevant and tailored to the patient's needs as providing exhaustive information may be counter-productive.

During the interview assess the patient's ability to understand the information and ask them to describe how they are going to take the medicine. Consider modifying the strategies used to counsel patients with cognitive or perceptual problems, or for those on medicines that may impair their ability to recall information. Consider the need for an interpreter for patients with language difficulties. Where appropriate use counselling aids, e.g. pictorial aids.

2. Introduction

After determining the ability of the patient to communicate, choose an appropriate location and adopt a suitable position to enable the session to take place comfortably and effectively and:

- greet the patient/carer
- establish the identity of the patient/carer
- introduce yourself
- confirm that the time is convenient
- respect the patient's right to decline education
- identify and attempt to overcome any communication barriers (use an interpreter if necessary)
- establish rapport with the patient/carer to support ongoing communication
- explain the purpose of the session
- organise medicines in a logical sequence
- provide a medicine list as an adherence aid.

3. Counsel Patient/Carer on Relevant Aspects of their Medicine Regimen

Provide information on:

- generic and brand names of the medicine, physical description and strength
- intended purpose and expected action/duration of treatment
- administration advice
- special directions or precautions
- common adverse effects, ways to minimise them and action required if they occur
- storage advice
- relevant interactions
- techniques for self-monitoring therapy
- intended duration of therapy
- ongoing supply and follow-up arrangements, see *Chapter 6: Facilitating continuity of medication management on transition between care settings*
- action to be taken in the event of a missed dose
- use of adherence aids
- ceased medicines and relationship to new medicines
- new medicines or medicines with changed dose or dose forms
- written medicines list as required.

Provide and discuss CMIs:

- for all new and changed medicines
- where a brand/formulation change has been made
- where requested by the patient/carer or another health professional.

Also see *SHPA Standards of Practice for the Provision of Consumer Medicines Information by Pharmacists in Hospitals*.[1]

4. Conclude Interview

At the end of the session:

- summarise the vital information
- assess the patient's understanding
- ensure the patient has all the relevant information
- supply adherence aids as necessary
- ask the patient if they have any questions or if there is any information they did not understand.

In addition to medicine-specific information, where appropriate include the following elements of patient education:

- contingency plan (monitoring required and who is responsible)
- administration technique, e.g. crushing tablets
- lifestyle advice.

Encourage the patient to contact the pharmacist if required and provide the pharmacy and pharmacist contact details.

5. Future Planning

Based on the assessment of the patient's understanding, determine whether follow-up is required for:

- further education sessions including home visits or Home Medicines Review, MedsCheck, Diabetes MedsCheck or medication review in outpatient or non-admitted settings
- referral to other healthcare providers
- communication of relevant strategies or perceived problems to necessary health professionals.

Document the information provided, who it has been transferred to and any recommendations for reviews on the medication management plan or directly into the patient's health record or equivalent, according to local policy. See *Chapter 13: Documenting clinical activities*.

Obtain patient consent before sharing any information with other health professionals in line with privacy and confidentiality legislation.

Table 5.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Society of Hospital Pharmacists of Australia. Standards of practice for the provision of consumer medicines information by pharmacists in hospitals. J Pharm Pract Res 2007; 37: 56-8.

2. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Canberra: The Council; 2005.

3. Society of Hospital Pharmacists of Australia. Committee of Specialty Practice in Medicines Information. Standards of practice for medicines information services. J Pharm Pract Res 2013; 43: 53-6.

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5. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.

6. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2012.

Table 5.1 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[4]
Competency unit 1.2 Assessment of current medication management and clinical review 1.2.12 Review and interpretation of patient-specific data
Competency unit 1.5 Discharge/transfer facilitation 1.5.2 Provision of information for ongoing care
Competency unit 1.6 Patient education and liaison 1.6.1 Need for information 1.6.2 Cultural and social background 1.6.3 Provision of information to patient and/or carer 1.6.4 Provision of information regarding non-pharmacological therapies
Competency unit 2.1 Problem solving 2.1.2 Access information 2.1.3 Abstract information 2.1.4 Evaluation and application of information
Competency unit 2.3 Provision of therapeutic advice and information to health professionals 2.3.1 Provision of accurate information 2.3.2 Provision of relevant and usable information 2.3.3 Provision of timely information
Competency unit 2.4 Communication 2.4.1 Patient and carer 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness 2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence
Competency unit 2.7 Professional qualities 2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[5]
Standard 1.1 Practise legally 1 Comply with statute law, guidelines, codes and standards 2 Respond to common law requirements 3 Respect and protect consumer's right to privacy and confidentiality 4 Support and assist consumer consent
Standard 1.3 Deliver 'patient-centred' care 1 Maintain primary focus on the consumer 2 Address consumer needs
Standard 1.4 Manage quality and safety 1 Protect and enhance consumer safety 2 Respond to identified risk
Standard 2.1 Communicate effectively 1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 4.2 Consider the appropriateness of prescribed medicines 3 Promote optimal use of medicines
Standard 4.3 Dispense prescribed medicines 3 Assist consumer understanding and adherence
Standard 7.1 Contribute to therapeutic decision-making 4 Support and assist consumer self-management
National safety and quality health service standards[6]
Standard 4 Medication safety: continuity of medication management 4.12 Medicines list
Standard 4 Medication safety: communicating with patients and carers 4.15 Provide current medicines information

Chapter 6: Facilitating Continuity of Medication Management on Transition Between Care Settings

INTRODUCTION

Transfer of patients between health professionals, health service organisations and within health service organisations provides opportunity for medications errors if communication of the patient's medicines information is incomplete or inaccurate.[1] More than 50% of medication errors occur at transitions of care and up to one-third of these errors has the potential to cause harm.[1-3]

The *Guiding Principles to Achieve Continuity in Medication Management* have three guiding principles that relate to the continuity of medication management on transition between care settings: supply of medicines information to consumers, ongoing access to medicines and communicating medicines information.[4]

Pharmacists' participation in the transition of patients between care settings supports these guiding principles. Pharmacist participation in facilitating discharge and transfer of care has been shown to reduce adverse outcomes and importantly to reduce hospital readmissions.[5]

When patients move between different settings there is a risk that their care will be fragmented. Poor communication of medical information at points of transition has been shown to be responsible for up to 50% of medication errors and up to 20% of adverse drug events.[6] Omitting one or more medicines from the discharge summary exposes patients to 2.31 times the risk of re-admission to hospital.[7]

Communication and liaison with the patient/carer and other health professionals (e.g. GP, community pharmacists, other primary health professionals) facilitates the continuity of a patient's medication management. Patients may have multiple prescribers including non-medical prescribers. This communication may be via the patient's discharge summary, medication management plan (MMP), electronic health record or equivalent.

A key aspect of facilitating the continuity of medication management is to ensure the patient has affordable and continued access to the medicines they require to support their MMP.

Ideally, an outreach or community liaison pharmacist would be available to facilitate patient transfer from hospital. See *SHPA Standards of Practice for the Community Liaison Pharmacy Practice*.[8]

OBJECTIVE AND DEFINITION

Objective

The pharmacist's role in facilitating transition between care settings is to achieve continuity of medication management for the patient. The care settings may include hospital, residential aged care and community services. The patients may be admitted, ambulatory or residential.

Definition

Facilitating the continuity of medication management at transition involves pharmacist activities performed on discharge or transfer that ensure:

- patients receive the correct medicines and have ongoing access to medicines
- verified, patient-specific, medicines-related information is provided to all relevant persons involved in the patient's ongoing care
- patients at risk of medication misadventure are followed up, monitored and receive adherence aids, if required.

EXTENT AND OPERATION

Planning for transition between care settings should commence on admission and be ongoing during the episode of care. All patients should have access to information about their medicines. Medicines information should be supplied to the patient/carer and other relevant health professionals as required during the episode of care.

If all steps of facilitating medication management on transition cannot be completed for every patient, prioritise those who are most likely to benefit from the service. Patients most at risk of medicines-related problems include those who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

POLICY AND PROCEDURE

Patient's confidentiality and personal wishes must be respected. Obtain patient consent before sharing their information with other health professionals. Encourage patients to contact their hospital pharmacist at any time, even after discharge or transfer, as they may require further information despite comprehensive counselling. The name and contact number of the hospital pharmacist or the organisation's pharmacy service should be made available to the patient/carer.

Manage Patient's Medicines and Communicate with Patient and/or Carer on Transition

Patients/carers should receive sufficient supplies of appropriately labelled medicines for ongoing treatment. Where it is not hospital policy to supply medicines on discharge, prescriptions should be provided. The pharmacist needs to ensure that the patient can access supplies in a timely manner for uninterrupted dosing.

Communication with the patient/carer on transition is important to ensure any remaining issues are resolved or communicated to the new team and to reinforce information provided during the admission or episode of care.

- Reconcile medicines on transition, see *Chapter 1: Medication reconciliation*.
- Reconcile discharge/transfer medication orders with:
  -current medication orders (on all medicine charts)
  -medication history taken on admission
  -patient's own medicines
- Discuss with the patient/carer the medicines that need to be supplied or sourced on discharge or transfer. Annotate on the MMP which medicines need to be supplied on discharge.
- Return patient's own medicines where appropriate. Remove ceased medicines for destruction with the patient's permission. Document the details of medicines returned, re-labelled or removed.
- Check that the medicine orders meet legal and local prescribing requirements.
- Provide patient with the medicines that they require together with an accurate and complete list of their medicines or discharge medication record.
- Provide patient/carer with instructions on how to get further supplies of their medicines after discharge or transfer.
- Provide verbal and written medicines information including information on changes to their medicines, CMIs, details regarding the further supply of medicines and other information required for ongoing care. See *Chapter 5: Providing medicines information*.
- Provide information about adherence aids.
- Discuss the need for follow-up either at home, residential care, outpatients or non-admitted settings.

If the patient refuses to consent to the removal of ceased medicines then separate the ceased medicines from the current medicines and clearly label them as ceased and no longer part of the current therapy.

Liaise with Other Health Professionals on Transition

Obtain patient consent and then communicate all medicines-related information in a timely manner to the patient's GP, community pharmacist, residential care provider or other health professional. The method and extent of communication will vary depending on the needs of individual patients, and the available time and resources.

There should be communication with the community pharmacy to facilitate continued supplies of the medicines.

Provide the following information to all involved in the patient's care in accordance with the *Guiding Principles to Achieve Continuity in Medication Management,* Guiding principles 8 and 9:[1]

- details of medicines prescribed on discharge or transfer, a contact name within the hospital and a telephone number
- verified list of all the patient's medicines beginning at the episode of care, changes made during the episode of care and a detailed rationale of these changes
- monitoring requirements for ongoing management of the patient's medicines
- information regarding the patient's need for periodic medicines review. Include recommendations on the need for a Home Medicines Review, Residential Medication Management Review, MedsCheck, Diabetes MedsCheck or other review process to support the patient's MMP including:
  -post acute care follow-up
  -outpatient or non-admitted medication review
  -hospital-in-the-home
  -post-discharge outreach or liaison services for those at high risk of medication misadventure
- sufficient information about obtaining supplies of ongoing medicines after transition, including special packaging requirements
- reported adverse drug events and adverse drug reactions during the episode of care
- information regarding assistance required
- an interim medication chart (if available) for patients discharged to residential care facilities.

Document the information provided and who it has been transferred to on the MMP or directly in the patient's health record. See *Chapter 13: Documenting clinical activities*.

Post-Discharge Follow-Up of Patients at High Risk of Medication Misadventure

The potential benefits of post-discharge follow-up include:

- reduced readmission rates due to adverse drug reactions and medicines-related problems
- improved patient knowledge about medicines through ongoing counselling to improve medication adherence
- improved patient satisfaction with discharge care
- enhanced continuity of care and improved communication and interaction with GPs and other health professionals
- reduced medicine stockpiling.

Identify high-risk patients in consultation with the interdisciplinary team and arrange appropriate follow-up for the immediate post-transfer period, e.g. MedsCheck, Diabetes MedsChek, outpatient or non-admitted review. Prioritise patients most at risk of medicines-related problems who have risk factors as above in Extent and Operation.

Identify patients who will have difficulty in obtaining medicines, e.g. combination of the Pharmaceutical Benefits Scheme and the Special Access Scheme.

Table 6.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

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2. Cornish PL, Knowles SR, Marechessano R, Tam V, Shadowitz S, Juurlink DN, et al. Unintended medications discrepancies at the time of admission to hospital. Arch Intern Med 2005; 165: 424-9.
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10. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.
11. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2011.

Table 6.1 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[9]
Competency unit 1.5 Discharge/transfer facilitation 1.5.1 Reconciliation of medicines on transfer between care settings 1.5.2 Provision of information for ongoing care 1.5.3 Continuity of supply 1.5.4 Liaison with community primary care healthcare providers
Competency unit 1.6 Patient education and liaison 1.6.1 Need for information 1.6.2 Cultural and social background 1.6.3 Provision of information to patient and/or carer 1.6.4 Provision of information regarding non-pharmacological therapies
Competency unit 2.3 Provision of therapeutic advice and information to health professionals 2.3.1 Provision of accurate information 2.3.2 Provision of relevant and usable information 2.3.3 Provision of timely information
Competency unit 2.4 Communication 2.4.1 Patient and carer 2.4.2 Pharmacy staff 2.4.3 Prescribing staff 2.4.4 Nursing staff 2.4.5 Other health professionals
Competency unit 2.5 Personal effectiveness 2.5.1 Prioritisation 2.5.3 Efficiency 2.5.4 Logic 2.5.5 Assertiveness 2.5.6 Negotiation 2.5.7 Confidence
Competency unit 2.6 Team work 2.6.2 Interdisciplinary team
Competency unit 2.7 Professional qualities 2.7.2 Confidentiality 2.7.4 Responsibility for patient care
National competency standards framework for pharmacists[10]
Standard 1.1 Practise legally 3 Respect and protect consumers right to privacy and confidentiality 4 Support and assist consumer consent
Standard 1.3 Deliver 'patient-centred' care 1 Maintain primary focus on the consumer 2 Address consumer needs
Standard 2.1 Communicate effectively 1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
Standard 4.3 Dispense prescribed medicines 3 Assist consumer understanding and adherence
Standard 7.1 Contribute to therapeutic decision-making 4 Support and assist consumer self-management
National safety and quality health service standards[11]
Standard 4 Medication safety: continuity of medication management 4.12 Current comprehensive list of medicines and the reason for change
Standard 4 Medication safety: communicating with patients and carers 4.15 Provide current medicines information

Chapter 7: Participating in Interdisciplinary Care Planning

INTRODUCTION

There is a supporting research that the frequency and duration of medication errors are reduced when pharmacists participate in medical rounds.[1,2] A pharmacist's presence on interdisciplinary ward rounds and in clinics influences prescribing at the time of prescribing.

OBJECTIVE AND DEFINITION

Objective

The aim of having pharmacists participate in interdisciplinary care planning is to optimise patients' medicines management through reducing medication misadventure and improving the quality use of medicines.

Ward rounds are also an efficient method for pharmacists to collect information on the patient's treatment or care plan and the medication management plan (MMP).

Definition

Interdisciplinary care planning includes ward rounds, clinics and meetings attended by other health professionals where the overall care of the patient is discussed and planned.

Participating in interdisciplinary care planning requires the physical presence of the pharmacist and for the pharmacist to actively engage in the ward round or meeting. This requires the use of well-developed clinical, communication and interpersonal skills.

EXTENT AND OPERATION

As an active participant of the healthcare team, it is important that pharmacists attend interdisciplinary care planning whenever possible and that this is supported by the pharmacy and health service organisation.

Attendance at relevant ward rounds, clinical meetings and clinics should be routine. If this is not possible, priority should be given to events in which the pharmacist can have the most impact and gather the most relevant information.

Appropriate communication skills must be used when discussing medicines-related problems with other health professionals, and when discussing medicines-related problems in the presence of the patient and their family.

POLICY AND PROCEDURES

Pharmacists must be well prepared before participating in interdisciplinary care planning. Where possible, patients' medications should be reconciled and assessed before the ward round or meeting. Participation in the interdisciplinary care planning provides an opportunity to:

- contribute information about the patient's medicines and medicines management
- make suggestions for selecting and monitoring medicines
- develop a rapport with the treating team
- identify potential medication errors
- prevent medication errors occurring at the time of prescribing
- immediately review all medicine orders and correct deficiencies
- reduce the frequency and duration of medication errors
- communicate additional information about the patient that may be relevant to their medicine therapy, e.g. comorbidities, adherence aids
- detect adverse drug reactions and drug interactions
- be fully informed about current patient-specific issues
- prioritise patients requiring further review or education by the pharmacist
- have greater access to clinical decision makers
- participate in discharge planning or planning for ongoing care.

Follow-up outstanding issues at the end of the interdisciplinary care planning, such as:

- respond to enquiries
- discuss changes to therapy with the patient and provide counselling where appropriate
- communicate changes in medicine therapy to other relevant staff
- consider the impact of changes to the MMP and make changes, e.g. monitoring requirements
- complete the necessary documentation, e.g. MMP, patient's health record. See *Chapter 13: Documenting clinical activities*.

Table 7.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Leape LL, Cullen DJ, Clapp MD, Burdick E, Demonaco HJ, Erickson JI, et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. JAMA 1999; 282: 267-70.

2. Scarsi KK, Fotis MA, Noskin GA. Pharmacist participation in medical rounds reduces medication errors. Am J Health Syst Pharm 2002; 59: 2089-92.

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5. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2011.

Table 7.1 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[3]
Competency unit 2.6 Team work 2.6.2 Interdisciplinary team 2.6.3 Share learning experiences 2.6.4 Promotion of rational use of medicines
National competency standards framework for pharmacists[4]
Standard 2.1 Communicate effectively 1 Adopt sound principles for communication 2 Adapt communication for cultural and linguistic diversity 3 Manage the communication process 4 Apply communication skills in negotiation
National safety and quality health service standards[5]
N/A

Chapter 8: Prioritising Clinical Pharmacy Services

INTRODUCTION

Ideally, every health service organisation would have resources to provide all clinical pharmacy activities to every patient based on their needs. However, funding and staffing issues coupled with high patient numbers and inpatient throughput may mean that a comprehensive clinical pharmacy service cannot be provided to all patients. See *Chapter 9: Clinical pharmacist staffing levels and structure for provision of clinical pharmacy services* for details and recommendations of staffing levels required to provide a comprehensive clinical pharmacy service.

Pharmacy managers may need to determine which groups of patients benefit the most from a clinical pharmacy service and the clinical pharmacy activities prioritised in their organisation. Pharmacy and hospital managers are responsible for ensuring that delivery goals and objectives are set for all clinical areas and that services are appropriately resourced to deliver these goals and objectives.

On a day-to-day basis, pharmacists need to prioritise the patients who will receive which clinical pharmacy activities in order to maximise the value of their input.

Australian and overseas evidence confirm that the pharmacist activities described in these standards support an individual patient's medication management plan (MMP), reduce morbidity and mortality and the cost of care.[1-5]

Activities which have been shown to have major benefits include:

- medication reconciliation on admission and during changes in level of care
- interventions to address medicines-related problems
- assessment of current medication orders
- clinical review, therapeutic drug monitoring (TDM) and adverse drug reaction management
- provision of medicines information to patients.

Pharmacy managers and pharmacists should prioritise their services according to evidence of benefit to patients and local service delivery goals and policies.

OBJECTIVE AND DEFINITION

Objective

The objective of prioritising clinical pharmacy services is to maximise patient health outcomes where limited pharmacy resources are available.

Definition

Prioritisation of a clinical pharmacy service involves evaluating and choosing the:

- groups of patients that will have access to clinical pharmacy services in the health service organisation
- range of clinical pharmacy services to be delivered to each of these groups.

Prioritisation of day-to-day workload by individual pharmacists requires:

- identifying patients most at risk of medicines-related problems (who will receive the greatest benefit from clinical pharmacy services)
- ensuring local service delivery goals and objectives are met.

EXTENT AND OPERATION

The groups of patients to receive a clinical pharmacy service and which clinical pharmacy activities are prioritised should be continually reviewed, with the aim always to be providing clinical pharmacy services to all patients across the health service organisation.

The staffing structure and skills mix of staff available to deliver clinical pharmacy services at any particular time will have a major impact on delivery of clinical pharmacy services.

Individual pharmacists should allocate their time and activities based on patient needs and organisation-wide priorities and policies.

POLICY AND PROCEDURE

There may be occasions when pharmacy managers will need to prioritise particular units, wards, services or patients when staffing levels are below those recommended in these standards. See *Chapter 9: Staffing levels and structure for the provision of clinical pharmacy services*.

Prioritising Day-to-Day Activities

Pharmacists need to prioritise their day-to-day activities according to daily workload and patient needs. Activities must be delivered in a timely manner with respect to the elements of each patient's needs, e.g. are they being discharged, is the activity needed before a procedure?

Suggested day-to-day routine for delivery of pharmacy activities to inpatients include:

- gathering information to support decision making on prioritisation, e.g. patient/bed handover lists, MMPs, daily/weekly team planning meetings
- completing medication reconciliation for patients pending discharge or transfer
- facilitating patients being discharged with the medicines they require along with an accurate and complete list of their medicines with information for ongoing care. Liaise with community healthcare providers as appropriate
- completing medication reconciliation for new admissions
- completing an assessment of current medication management and clinical review
- participating in interdisciplinary care planning and following up outstanding issues
- completing medication reconciliation of discharge/transfer medication orders for patients being discharged the next day
- providing other clinical pharmacy services, e.g. provision of medicines information to the healthcare team, teaching and training, provision of education services as required and as time permits.

Department Policy

The pharmacy may prioritise service delivery to particular patients according to organisational priorities, e.g. medication reconciliation for patients on admission, acute medical patients before general surgical patients.

Patient Needs

Patient groups most at risk of medicines-related problems should be prioritised to receive clinical pharmacy services. Maximum benefit is likely to be obtained for patients most at risk of medicines-related problems and include those who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or require an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

Managing Problems with Medicines

At any time, problems can arise that will require immediate attention, overriding the regular scheduling of clinical activities. This is likely to occur when they relate to scheduled investigations, procedures or doses of medication. For example, incidents with premedication for an imminent procedure, TDM results indicating the need for a change in dose with the next dose.

A plan for addressing problems that are identified, prioritising them according to severity and association with activities such as investigations or procedures and medicine dosing schedules should be determined.

Table 8.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

Table 8.1 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[6]
Competency unit 2.5 Personal effectiveness 2.5.1 Prioritisation 2.5.2 Initiative 2.5.3 Efficiency
National competency standards framework for pharmacists[7]
Standard 2.6 Plan and manage professional contribution 1 Assure the adequacy of resources 2 Plan and prioritise 3 Manage work activities
Standard 3.1 Provide leadership and organisational planning 2 Establish a strategic direction 3 Plan pharmacy services 4 Define organisational structure
National safety and quality health service standards[8]
N/A

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1. 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 2003; 57: 513-21.

2. Bond CA, Raehl CL, Franke T. Clinical pharmacy services and hospital mortality rates. Pharmacotherapy 1999; 19: 556-64.

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5. University HealthSystem Consortium. Pharmacy practice models for academic medical centers. Oak Brook: University HealthSystem Consortium; 2010.

6. Society of Hospital Pharmacists of Australia. Clinical competency assessment tool (shpaclinCAT version 2). In: SHPA standards of practice for clinical pharmacy services. J Pharm Pract Res 2013; 43 (suppl): S50-S67.

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8. Australian Commission of Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2011.

Chapter 9: Staffing Levels and Structure for the Provision of Clinical Pharmacy Services

INTRODUCTION

The primary consideration when establishing and maintaining a staffing structure for clinical pharmacy services is to provide patient-centred quality care that ensures the safe and effective use of medicines.

The structure and skills mix of staff required to deliver clinical pharmacy services will be determined by what is included in the pharmacy service agreement (documented or implied) for the organisation and for specific units or wards, the size and type of organisation and the casemix.

These standards detail the activities a pharmacist undertakes to support an individual patient's medication management plan (MMP), i.e. optimisation of medicines for that individual. Therefore, staffing levels for clinical pharmacy services have been calculated on providing activities that ensure the safe and effective use of medicines for individual patients. Pharmacy services should be available 7 days per week and for extended hours during the day.

This level of clinical pharmacy service delivery is required to support:

- the *Guiding Principles to Achieve Continuity in Medication Management,* which highlight the need for: medication history (medication reconciliation), assessment of current medication management, medication action plan (now known as MMP), providing information to patients and the transfer of verified information about medicines use on discharge or transfer[1]
- the *National Safety and Quality Health Service Standards,* standard 4 medication safety, which highlight the need for MMPs for individual patients with medication reconciliation on admission and discharge or transfer, clinical review of medications during the admission and the provision of information to patients[2]
- the *Australian Safety and Quality Goals for Health Care: Medication Safety Action Guide,* goal one, which aims to reduce harm to people from medications through safe and effective medication management.[3] Effective evidence-based strategies to improve medication safety include the use of clinical pharmacists to perform medication reconciliation on admission and discharge (to improve continuity of medication across sectors and settings) and review medications during hospital admission.

Information on the workload that is manageable by one pharmacist allows managers to allocate resources to achieve agreed levels of service delivery. Time–motion data from an Australian study was used to calculate the number of patients/inpatient beds that a single pharmacist (one full-time equivalent) could provide clinical pharmacy services for based on the time taken to provide each clinical pharmacy activity.[4,5] These data were used to develop the staffing levels for clinical pharmacists published in 2010.[6] These have been recalculated using recently published length-of-stay data.[7]

STRUCTURE FOR PROVIDING SERVICES

Clinical pharmacists may provide services based on designated beds or a designated clinical unit. Aligning services based on clinical units has been shown to be of benefit.[8] Advantages of a clinical unit-based service include:

- typically lower patient-to-pharmacist ratio
- proactive pharmacist involvement with the interdisciplinary team
- clinical pharmacy activities are care plan based and for the individual patient
- improved communication with medical staff
- development of specialist knowledge and skills
- facilitating pharmacist's patient advocacy role across the continuum of care
- easier to educate and train intern pharmacists and students
- educational role of the pharmacists more easily integrated across disciplines
- facilitates involvement in collaborative research.

Disadvantages of a unit-based service include:

- complex scheduling/coverage needed for after hours services or weekends
- higher staffing requirements because of a lower patient-to-pharmacist ratio
- difficult to implement in all types of health service organisations
- significant overlap of clinical pharmacy services within the wards or settings creating inefficiencies
- more person-specific than department-specific
- may leave distribution activities to other pharmacists
- increased travel time and reduced time available for service delivery when a unit's patients are on different wards throughout the organisation or wards are considerable distances from each other.

Wherever possible, clinical pharmacy services should be allocated in parallel with medical units rather than ward-based in parallel with nursing services. Patients, no matter on which ward they are located, are better serviced clinically when their care is provided by the appropriate medical unit and by extension the clinical pharmacy services. However, ward-based services are easier to staff and maintain and provide a close working relationship with nursing staff.[8]

Suitably trained and qualified pharmacy assistants and technicians and other support staff must be available to perform non-clinical functions, such as medicine acquisition and distribution, manufacturing and data entry.[9] Pharmacy technicians can also directly support clinical pharmacists, see *Chapter 12: Pharmacy assistants and technicians supporting clinical pharmacy services*.

The notion of a 'pharmacy team' where the pharmacist concentrates on providing clinical services and the pharmacy technician ensures the medicines are available in the patient care area and on discharge as well as supporting the pharmacist has been shown to be efficient and effective and is now considered an optimal service delivery model. See *Chapter 12: Pharmacy assistants and technicians supporting clinical pharmacy services*

Additional resources should be dedicated for other related activities such as clinical pharmacy management, drug protocol management, antimicrobial stewardship, relevant to the scope and size of the clinical pharmacy service. See *Chapter 14: Improving the quality of clinical pharmacy services*.

Additional resources are also required to allow dedicated time for training and education, research and involvement in other clinical pharmacy services to support the *National Medicines Policy*.[10] See *Chapter 10: Training and education* and *Chapter 11: Participating in research*.

PHARMACIST STAFFING LEVELS

Three major factors drive changes to the staffing levels for clinical pharmacy services. These include:

1. range of clinical pharmacy services required and expected by patients, funders and boards of management
2. complexity of care required (linked to patient age, range and number of diagnoses, and number, range and type of medicines used)

Table 9.1. Pharmacist staffing levels for provision of clinical pharmacy services based on 'overnight beds'

Category	Service related group/ bed type	Beds to 1 FTE pharmacist for clinical pharmacy services 5 days/ week*
1 Specialist units, high dependence on medicines	Haematology, Immunology and Infections, Medical Oncology, Renal Medicine, Transplantation, Qualified Neonates	15
2 Medical bed type	General medical units, Cardiology, Interventional cardiology, Dermatology, Endocrinology, Gastroenterology, Chemotherapy, Neurology, Psychiatric, Respiratory medicine, Rheumatology, Pain management, Definitive Paediatric medicine	20
3 Surgical bed type	General surgical units, Breast surgery, Cardiothoracic surgery, Colorectal surgery, Upper GIT surgery, Head and Neck surgery, Neurosurgery, Orthopaedics, Plastic and Reconstructive surgery, Urology, Vascular surgery	25
4 Palliative care	Palliative care	25
5 Minimal change to medicines anticipated	Ear Nose and Throat, Gynaecology, Obstetrics, Unqualified Neonates, Perinatology	30
6 Longer stay admissions	Drug and Alcohol, Non Acute Geriatric, Geriatric Evaluation and Management, Palliative care, Rehabilitation	30

FTE = full-time equivalent.
*Service on a weekend (assuming few admissions and discharges and medication chart review only) would require an additional 2 to 2.5 hours per day.

Table 9.2. Pharmacist staffing levels for provision of clinical pharmacy services based on the number of patients per day

Category	Patient/service type	No. of patients to 1 FTE pharmacist for clinical pharmacy services per day*
7 Critical care units, high dependence on medicines	All critical care units, extensive burns, tracheostomy, extra corporeal membrane oxygenation	10
8 Review and advice on medicine usage – with urgency	Emergency,† Medical Assessment and Planning Units, Short stay acute medical assessment units <48 h	10
9 Review and advice on medicine usage – ambulatory	Pharmacists providing review and advice on medicine usage services in Allied Health and/or Clinical Nurse Specialist Interventions clinics - Tier 2 Non-admitted Service 40.04[11]	5
10 Review and advice on medicine usage – outreach services	Pharmacists providing review and advice on medicine usage services in Allied Health and/or Clinical Nurse Specialist Interventions clinics - Tier 2 Non-admitted Service 40.04 as outreach service or in the patient's home[11]	3
11 Same day admission	Day surgery beds, Diagnostic GI, Endoscopy, Ophthalmology, Dentistry, Oncology, Renal Dialysis, Hospital in the Home	22
12 Outpatient clinics	Pharmacists participating in Medical Consultation clinics (including all Tier 2 Non-admitted Service 20.1–20.51)[11] Pharmacists providing services in Allied Health and/or Clinical Nurse Specialist Interventions clinics (including Tier 2 Non-admitted Service: 40.01, 40.02, 40.07, 40.13, 40.19, 40.20, 40.21, 40.26)[11]	22

FTE = full-time equivalent.
*Includes services on weekdays and weekends.
†Figure presented on the basis of admitted patients only but allowance for workload for some patients discharged from ED (based on admission rate of 27%).[7]

3. hospital throughput, which is a combination of the number of beds, length of stay and occupancy and the usage of same-day and ambulatory services.

General guidance regarding clinical pharmacist staffing levels for particular service areas is described in Tables 9.1 and 9.2. These ratios are based on:

- providing a clinical pharmacy service to support an individual patient's MMP
- a bed occupancy rate of 95%
- an average length of stay of 5.9 days for general medical and surgical patients (the length of stay for overnight admissions in Australia's public hospitals in 2011–12)[7]
- an average length of stay of 11.9 days for palliative care patients, 18 days for rehabilitation patients and 20 days for geriatric evaluation and management[7,11,12]
- minimal dispensing or medicine distribution activities performed by the pharmacist
- a small component of clinical supervision, e.g. undergraduate and postgraduate pharmacy students
- a 5-day service with an 8-hour working day (allowance has been made for attending interdisciplinary care planning, pharmacy staff meetings/liaison with other pharmacy staff regarding prescriptions).

The total number of inpatients has been determined by the number of beds, length of stay and occupancy rate over a given time period. The number of beds rather than the number of patients has been used as a workload measure for these patient categories as the unit 'one bed' is easily understood and identifiable.

If additional activities, e.g. dispensing, ensuring compliance with PBS requirements, liaison with community care providers, provision of adherence aids, are included in a pharmacist's job description, then the number of patients/beds able to be covered by the pharmacist would need to be reduced. Resource allocation for leave cover should also be considered.

If the length of stay within a unit is less than 6 days, or patients are transferred from one unit to another during their inpatient stay, the number of patients/beds able to be covered by the pharmacist would need to be reduced.

If extended services, e.g. 7-day service, services on public holidays, are offered then additional pharmacist time is required. Assuming the majority of admissions and discharges occur during the weekdays and a focus on safety of medicines use, the additional time per day for services in Table 9.1 is 2 to 2.5 hours. This amount of time would only allow the pharmacist to undertake medication reconciliation for newly admitted patients and those discharged and undertake a brief review of admitted patients.

Service types listed in Table 9.2 require the same pharmacist resources irrespective of the day of the week.

Table 9.3 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Canberra: The Council; 2005.

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3. Australian Commission on Safety and Quality in Health Care. Australian safety and quality goals for health care: medication safety action guide. Sydney: The Commission; 2012.

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13. Society of Hospital Pharmacists of Australia. Clinical competency assessment tool (shpaclinCAT version 2). In: SHPA standards of practice for clinical pharmacy services. J Pharm Pract Res 2013; 43 (suppl): S50-S67.

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Table 9.3 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[13]
N/A
National competency standards framework for pharmacists[14]
Standard 3.1 Provide leadership and organisational planning 2 Establish a strategic direction 3 Plan pharmacy services 4 Define organisational structure
Standard 3.4 Manage quality service delivery 1 Facilitate service delivery 2 Maintain and enhance service quality 3 Ensure continuity of service
National safety and quality health service standards[2]
Standard 1 Governance for safety and quality in health service organisations: governance and quality improvement systems 1.1 Implement a system that determines and regularly reviews the roles, responsibilities and accountabilities and scope of practice for the clinical workforce

Chapter 10. Training and Education

INTRODUCTION

This chapter focuses on workplace-based education and training of pharmacists (including pharmacy students and intern pharmacists) and can assist in self-directed learning.

Competence is the skills, attitudes and other attributes attained by an individual based on knowledge and experience, which together are considered sufficient to enable the individual to practice as a pharmacist.[1]

A commitment to continuing professional development (CPD) is necessary to ensure that a pharmacist's competence is maintained throughout their career during which new and challenging professional responsibilities will be encountered.[2] Formal and workplace-based training and education should form part of an individual's CPD plan and activities.

OBJECTIVE AND DEFINITION

Objective

Clinical education pharmacists offer education and training for pharmacists that is structured, personalised and documented, which aims to develop the practice of clinical pharmacy relevant to the learner, in order to provide safe, efficient and effective clinical pharmacy services.

Pharmacists involved in the educating and training of pharmacy support staff, other health professionals and the community aim to improve the quality use of medicines within the hospital and in the community.

Definition

As part of their role, clinical pharmacists may be involved in educating and training pharmacy students, intern pharmacists, other pharmacists, other health professionals and pharmacy technicians.

EXTENT AND OPERATION

Quality education and training is delivered by experienced pharmacists and clinical education pharmacists or other educators and is tailored to the experience and practice of the learner.[1-4] Clinical education pharmacists must be available to meet the needs of students, interns and pharmacists new to the workplace, as well as support experienced pharmacists with their clinical, educational and mentoring responsibilities.

Designated clinical education pharmacist positions are required to support transition to practice programs, orientation programs, preceptor activities as well as professional development programs; pharmacists may deliver some of these activities as part of their job description. Recommended ratios to use as a guide are one clinical education pharmacist for every 10 intern pharmacists or every 50 pharmacists.

Education and training for the provision of clinical pharmacy services should be designed to follow adult learning principles where the learning is within the learner's control and the clinical education pharmacist is available for support and guidance. Training should be structured, with learning goals and outcomes documented and students allowed to reflect on their learning.[5]

Principles for teaching adult learners include:[5]

- establishing an effective learning climate, where learners feel safe and comfortable expressing themselves
- involving learners to plan relevant methods and curricular content of education
- involving learners to diagnose their learning needs
- encouraging learners to formulate their objectives
- encouraging learners to identify resources and devise strategies for using the resources to achieve their objectives
- supporting learners carry out their learning plans
- involving learners to evaluate their learning—this can develop their skills of critical reflection.

Pharmacists are also involved in teaching the public about medicines to improve the use of medicines in the community. See *Chapter 5: Providing medicines information*.

Education and training for pharmacists should encompass all aspects of daily practice and include: orientation to the workplace, management of daily workload, review of skills (using an assessment tool based on competency standards) or performance review and an ongoing program of CPD relevant to scope of practice.

Education and training should be self-directed and follow adult learning principles—the learner should decide what they need to learn and how they are going to learn it and identify changes to their practice. The clinical education pharmacist should be available for support and guidance.

The model for clinical pharmacy education and training developed by a workplace will depend on its size and the extent of operation of the clinical pharmacy service.

All clinical pharmacy services should have dedicated clinical education resources and a mentoring team of pharmacists who have experience in particular clinical areas. Departments should have pharmacist(s) for the management, orientation, review and education of staff. Some departments may use academics, doctors, nurses and other health professionals for pharmacist education. Departments should have a documented education, assessment and review plan for all their pharmacists and this should be supported by pharmacy and hospital managers.

Wherever possible, pharmacists involved in an educator role should have formal training in clinical supervision.

POLICY AND PROCEDURE

Training and Educating Clinical Pharmacists

Workplace Orientation

Employees commencing practice in an unfamiliar organisation, department, unit or ward should receive a thorough orientation to that workplace. An orientation manual of policies and procedures should be available that:

- clearly defines the expectations, service priorities, extent and quality of the clinical pharmacy service
- includes these standards

- describes the duties and responsibilities of the employee in the role
- is regularly updated to reflect changes in clinical practice within and outside the workplace
- provides a framework for the clinical pharmacy procedures of the workplace.

Orientation also includes an introduction to all pharmacy and relevant medical, nursing, clerical and allied health staff; orientation to patient care areas, medication charts, histories, the laboratory system and other aspects of patient care activities.

Clinical Skills Development

Before planning a skills development program for a pharmacist, a baseline measure of clinical skills based on competency standards should be determined either by self-assessment or through workplace review.

The shpaclinCAT is a competency assessment tool for self-assessment and workplace assessment specific for the Australian setting, and is recommended for use.[3]

The *National Competency Standards Framework for Pharmacists in Australia* provide a competency tool for the self-assessment and workplace assessment of pharmacists in a general role.[1]

The *Advanced Pharmacy Practice Framework for Australia* provides a generic framework that can be customised to show specific expert knowledge and skills required.[6]

Selection of appropriate sections from these documents will guide the development of pharmacists' competencies in identified areas of need.

Support by a clinical education pharmacist or an experienced pharmacist throughout training is recommended. The level and duration of supervision will be dependent on the baseline skills and experience of the pharmacist undergoing training.

A structured training and assessment plan for each pharmacist should:[5]

- define learning goals based on the individual's learning needs
- provide basic knowledge and skills needed including: information relevant to the specific area of clinical practice (e.g. an up-to-date ward manual), daily clinical pharmacy service activities, information regarding the types of patients and common procedures undertaken on the particular ward or service area, treatment protocols, related clinical information and relevant references
- include an observation of the pharmacist during encounters with patients, medical, nursing and other staff during clinical pharmacy service activities with debriefing and feedback
- give the learner opportunity to reflect on their learning
- allow for planning for the next clinical experience.

The shpaclinCAT assessment tool provides a useful template for developing a training and assessment plan.

Mentoring Pharmacists Providing Clinical Services

A mentoring system where an experienced pharmacist supervises and provides encouragement, support and feedback is a useful program to improve a pharmacist's skills. An effective mentoring program requires the mentor and pharmacist to meet regularly. This may involve regular supervised clinical practice, discussions involving medicine issues, clinical problems encountered with individual patients and education sessions at staff meetings.

The experienced pharmacist may also support a pharmacist in their journey towards advanced practice.[6-8]

Evaluating Clinical Skills and Assessing Performance

Most aspects of professional practice such as communication, teamwork and some technical skills can only be assessed by qualitative methods involving observation of the pharmacist in the workplace.

Reviewing and assessing performance is an essential component of both personal CPD and the improvement of clinical pharmacy services. Assessors can provide feedback and support based on directly observing the pharmacist completing agreed competencies. This provides a platform for identifying professional development requirements and planning career progression.

A pharmacist's ability to perform core clinical pharmacy activities can be assessed using a competency assessment framework, such as shpaclinCAT, which can be used for self-assessment as well as workplace review.

Performance assessment also includes the extent of pharmacist involvement in education, departmental activities and research, and incorporates feedback from key stakeholders. It may require direct observation and discussion with the pharmacist and other staff, including nurse unit mangers, medical and pharmacy staff.

Regular review and feedback with individual pharmacists will identify areas that need improvement for the pharmacist and the pharmacy service and provides an opportunity to give positive feedback to individuals.

Clinical Education and Training

Pharmacists

Pharmacists providing clinical services should play a role in educating and training pharmacy students, pharmacy interns, pharmacists, postgraduate pharmacists, pharmacy support staff, other health professionals and the public.

A key element of an individual pharmacist's CPD also includes presenting at continuing education sessions, presenting clinical cases, presenting at professional conferences or publishing in peer-reviewed journals and coordinating other educational activities.

Pharmacy Students

A pharmacist's involvement in training pharmacy students should be in conjunction with the student's academic institution. The training should reflect the required objectives of clinical placements, as well as the student's previous experiences.

Education and training of pharmacy students involves modelling clinical skills and incorporates all aspects of these standards. It may also include teaching about the use of medicines in the clinical context. Assessing the student's performance and providing feedback to the student, as well as providing formal feedback to the university regarding the student's performance in this area of pharmacy practice is also required.

Intern Pharmacists

Experiential clinical learning is an essential component of the intern training program. Modelling clinical pharmacy skills assists the intern pharmacist to assimilate knowledge gained as an undergraduate with the practical realities of caring for patients. The focus and intensity of training can be modified as the intern's knowledge and skills improve.

Practising Pharmacists

Pharmacists participating in the ongoing education of pharmacists within their workplace can include training in knowledge and skills in a specialty area. It also enables continuity of service provision when the 'usual' pharmacist is absent.

Pharmacists Undertaking Postgraduate Studies

Many postgraduate clinical pharmacy programs incorporate a component of clinical experiential training as well as didactic teaching. Pharmacists undertaking postgraduate studies should have access to pharmacists or other health professionals with the necessary clinical expertise, skill and experience to supervise and mentor. Postgraduate students should be taught at a significantly higher standard than undergraduates and be required to demonstrate the skills required to provide clinical services at a level more advanced than that expected of a general level pharmacist.

Pharmacy Assistants and Technicians

Pharmacy assistants and technicians involved in the supply of medicines should either have obtained or be undergoing training in HLT13412 - Certificate III in Hospital - Health Services Pharmacy Support.

Pharmacy assistants and technicians supporting clinical pharmacy services should either have obtained or be undergoing training in HLT40512 – Certificate IV in Hospital–Health Services Pharmacy Support.

Pharmacists, in preceptor or supervisor roles, will be involved in education and training of pharmacy assistants and technicians in the practical aspects of their support roles and didactic continuing education activities.

Other Health Professionals

Pharmacists are often called on to provide formal education to other health professionals and students. This is an important aspect of the pharmacist's role and can be instrumental in improving the quality use of medicines as well as the profile of pharmacists.

Pharmacists also provide informal education to other health professionals through their active participation in clinical decision making on ward rounds and in interdisciplinary team meetings.

Patients

Pharmacists will often be requested to provide medicines education to the public. This may involve educating individual patients on their medicines, or addressing groups of patients with particular diagnoses or in specific clinical situations. Pharmacists should be involved in the design and planning of patient education sessions about the use of medicines, such as smoking cessation, cardiac rehabilitation, disease management and other public health education programs.

Table 10.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.
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9. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2011.

Table 10.1 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[3]
Competency unit 2.1 Problem solving
2.1.1 Recognition of limits of personal knowledge
Competency unit 2.8 Continuing professional development
2.8.1 Continuing professional development
National competency standards framework for pharmacists[1]
Standard 2.7 Supervise personnel
1 Accept the supervisory role 2 Delegate tasks 4 Support improved performance of supervised personnel
Standard 3.1 Provide leadership and organisational planning
1 Provide leadership
Standard 3.2 Manage and develop personnel
2 Manage performance 3 Develop professional capabilities
Standard 8.3 Formally educate and train students and healthcare colleagues
1 Understand educational theory and principles 2 Facilitate learning 3 Assess learning outcomes
National safety and quality health service standards[9]
Standard 1 Governance for safety and quality in health service organisations: performance and skills management
1.10 Implement a system to determine and review the scope of practice of the clinical workforce 1.11 Clinical workforce performance development 1.12 Ongoing safety and quality education and training

Chapter 11: Participating in Research

INTRODUCTION

Pharmacists are in a unique position to identify opportunities for research in the optimal use of medicines and the provision of clinical pharmacy services. Research in clinical practice is essential for initiating changes in professional service delivery and promoting advancement of the pharmacy profession with the aim to improve health outcomes of patients.[1]

Research activities include involvement in the conception and design of the research, analysis and interpretation of data and presentation and publication of findings. It is essential that pharmacists identify a strategic focus for their involvement in research and develop the necessary skills to have a meaningful role.

Pharmacist involvement in clinical drug trials, drug use evaluation and quality assurance audits is not considered in this chapter. See *SHPA Standards of Practice for Pharmacy Investigational Drugs Services, SHPA Standards of Practice for Drug Use Evaluation in Australian Hospitals* and *SHPA Standards of Practice for Medication Safety*.[2-4]

OBJECTIVE AND DEFINITION

Objective

Research identifies the evidence that supports safe and effective medicines use for improved patient outcomes. It also has a role in advancing pharmacy practice.[1]

Definition

Participating in research includes seeking opportunities for meaningful involvement in the design, conduct and analysis of research into medicines, medicines use, health and professional practice. It also encompasses mentoring and supervising other researchers (including students undertaking research).

EXTENT AND OPERATION

Involvement in research should be a core activity of pharmacy practice. Participation in research may not be possible in all situations or practices; however pharmacists should attempt to contribute to the knowledge of evidence-based practice. It is important that involvement in research does not automatically infer that the pharmacist is required to perform all the activities, such as data collection and analysis.

Research activities should be approved by the organisational ethics committee as required.

Pharmacists' involvement in research should focus on their area of expertise, such as therapeutics, pharmacy practice, health service and quality improvement. The nature and extent of involvement will depend on the practice setting and the specific skills and experience of the pharmacist. Even small departments can undertake research.

In some advanced practice settings, pharmacy services may develop a formal research group with a strategic focus. Formal research links should be explored with academic institutions and other health professionals or other areas within the organisation.

Pharmacists can contribute to research in a range of ways. The extent and nature can vary, examples include primary investigator on prospective clinical trials, assistance in literature reviews and practical local support for research programs such as patient recruitment and data collection. Pharmacists can also be directly involved by analysing and interpreting data and determining the practical implications, and the significance of the findings and options for incorporation into practice.

POLICY AND PROCEDURE

Successful research requires:

- support and acknowledgement of research as a core pharmacy activity
- appropriate resources
- focus on an area where pharmacists have expertise
- collaboration with other health professionals and academics
- relevance to current practice
- alignment with local practice experience and expertise
- credible researchers
- adherence to principles and procedures outlined by key authoritative bodies[2,3,5,6]
- sharing of results.

In planning and undertaking research activities ensure that the objectives are achievable, relevant and original. Ensure the activity is worthy of the required resources, data used are accurate, reliable and verifiable and that the method is appropriate and meets relevant ethics committee criteria.

Collaborate with other pharmacists, pharmacy staff and other health professionals in the identification, conception and design of research activities and utilise the expertise and resources of other health professionals whenever possible. Collaborative research with schools of pharmacy at undergraduate and postgraduate level provides opportunities to share expertise and resources. Universities can offer the pharmacist undertaking research access to technical expertise and facilities and assistance from students or academics with different specialties than those which may be encountered in their work.

All patient information must be treated in strict confidence. Identifiable patient data must not be revealed to anyone not directly involved in the research project or the clinical care of that patient.[7] An exception to this is when patients have provided written consent for their records to be subject to source document verification.

Research findings should be presented and published in interdisciplinary forums, pharmacy conferences and peer-reviewed journals.

RESOURCES

The level of research contribution and resources available will depend on the organisation and pharmacy services. Pharmacists should be supported so they can dedicate a proportion of their time to research. A proportion of pharmacy departmental resources should also be made available to assist in the research.

Funding to support research can be obtained from direct operational sources or through submission to professional, government or philanthropic organisations. Individual pharmacists will need the support of their department and colleagues in applying for external funding.

Consider using support staff in some aspects of the research activity, e.g. data collection. Potential contributors include pharmacy assistants and technicians, pharmacy students, vocational research students and pharmacy interns. Collaboration with other colleagues can result in the sharing of the workload. Nursing, health information and medical staff, especially those completing postgraduate studies, are often keen to contribute.

Table 11.1 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

1. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.
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9. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2012.

Table 11.1 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[8]
N/A
National competency standards framework for pharmacists[1]
Standard 8.2 Engage in health, medicines or pharmacy practice research 1 Understand research principles and concepts 2 Conduct research 3 Disseminate and apply findings
National safety and quality health service standards[9]
Standard 4 Medication safety: governance and systems for medication safety 4.5 Undertake quality improvement activities to enhance the safety of medicines use

Chapter 12: Pharmacy Assistants and Technicians Supporting Clinical Pharmacy Services

INTRODUCTION

Pharmacy assistants and technicians have moved from traditional dispensing and supply roles to assisting pharmacists who provide clinical pharmacy services to individual patients. The role of pharmacy assistants and technicians in supporting pharmacists continues to evolve.

OBJECTIVE AND DEFINITION

Objective

When pharmacists and pharmacy assistants or technicians work as a team, the time the pharmacist has to deliver clinical services to individual patients is increased.

Definition

The Pharmacy Board of Australia has stated that the role of pharmacy assistants and technicians must be limited to activities that do not require professional judgement or discretion.[1] Activities that require clinical judgement such as listening to patients, assessing treatment or counselling patients are not to be undertaken by pharmacy assistants and technicians.

EXTENT AND OPERATION

The pharmacist remains legally and ethically accountable for clinical pharmacy services delivered to individual patients. The extent to which pharmacy assistants and technicians can support pharmacists is dependent on the ability of the pharmacist to supervise the work of the pharmacy assistant and technician. The role of the pharmacy assistant and technician should be clearly defined. The supervising pharmacist, pharmacy assistant and technician and management should know the extent and limitations of the role.

Supporting pharmacists to deliver clinical pharmacy services is not considered an entry-level activity but is an advanced practice role for pharmacy assistants and technicians. Pharmacy assistants and technicians undertaking clinical pharmacy support roles should hold an appropriate qualification (equivalent to the HLT40512 – Certificate IV in Hospital–Health Services Pharmacy Support) and have suitable experience.

To determine if a pharmacy assistant or technician is competent to perform a particular activity that supports a pharmacist who delivers clinical pharmacy services refer to Table 12.1 and consider:

- the pharmacy assistant or technician's qualifications and the workplace training and education they have received
- how the activity can be assigned to ensure direct supervision by a pharmacist
- the benefits and risk of devolving the activity.

Adequate pharmacy assistants or technicians and support staff must be available to perform functions that would be considered technical, such as medicine distribution, supply of medicines for individual patients (during their admission and on discharge and transfer) and data collection and entry.

POLICY AND PROCEDURE

Recommendations regarding the activities suitable for pharmacy assistants and technicians are summarised in Table 12.1. Roles not specified on this list are not included in any Australian qualification and should be interpreted as not suitable for pharmacy assistants and technicians at this time.

References

1. Pharmacy Board of Australia. Guidelines for dispensing of medicines. Melbourne: Australian Health Practitioner Regulation Agency; 2010.

2. Society of Hospital Pharmacists of Australia. Committee of Specialty Practice in Clinical Pharmacy. SHPA standards of practice for clinical pharmacy. J Pharm Pract Res 2005; 35: 122-46.

Table 12.1 Activities for pharmacy assistants and technicians working in support roles under the supervision of a pharmacist[2]

Clinical activity	Activities suitable for pharmacy technicians	Activities not suitable for pharmacy technicians
Medication reconciliation	•detect new admissions/patients that require a clinical pharmacy service	•interview patient/carer to obtain medication history
	•where there are well-defined protocols, screen patients for their ability to self-medicate	•perform medication history review
	•communicate medicines supply information with health professionals, e.g. medical and nursing staff	•interview patient/carer to determine allergies
	•assist in managing the storage and retrieval of patient's own medicines	•compare medication history with medication chart
	•ensure all medicines required for the patient are available in the patient care area	•investigate medicines-related problems
	•communicate with external health professionals (GP, community pharmacist, nursing home/hostel staff) to obtain information for a medicine list for review by a pharmacist	
Medication management plan	•where there are well-defined protocols, use the checklist in the *National Medication Management Plan* or similar to identify patients at high risk of medication misadventure	•as per medication reconciliation

Table 12.1 Activities for pharmacy assistants and technicians working in support roles under the supervision of a pharmacist[2] (contd)

Clinical activity	Activities suitable for pharmacy technicians	Activities not suitable for pharmacy technicians
	•where there are well-defined protocols, use the checklist in the *National Medication Management Plan* or similar to identify patients that would benefit from an HMR referral or other follow-up	•interpret medicines changes in context of the medication management plan
		•clinical assessment of medication management
		•as per assessment of current medication management, clinical review, ADR management and TDM
Assessment of current medication management	•check the medicine order for compliance with legal and local requirements. Identify non-compliant orders and refer to the pharmacist when appropriate	•educate medical staff regarding prescription writing and medicine selection
	•annotate medication chart with information on the supply of the medicine, e.g. imprest item	•annotate medication chart with clinical information, e.g. swallow whole, infuse over 30 minutes
		•ensure the medicine order is appropriate with respect to patient's previous medicine, patient-specific considerations, drug, dosage, form and method of administration
		•ensure all necessary medicines are prescribed
Clinical review	•access and record patient-specific laboratory data	•interpret patient-specific laboratory data
	•screen laboratory data for abnormal or unexpected results for the pharmacist by comparing the result with a defined reference range or other parameter to assist the pharmacist's clinical review of the patient	•interpret patient-specific clinical data
	•screen patient-specific clinical information for the pharmacist by comparing the result with a defined reference range or other parameter to assist the pharmacist's clinical review of the patient	
Adverse drug reaction management	•assist pharmacists with documenting and processing of confirmed ADR reports	•identify patients who have had a previous ADR as this is encompassed in medication history interview, is of limited value and requires medicine knowledge and clinical interpretation
		•ensure previous ADRs are documented
		•check ADR history as part of the dispensing process as this must be performed by a pharmacist
Therapeutic drug monitoring	•access and record drug levels	•interpret drug levels
	•screen drug levels for abnormal results for pharmacists by comparing with defined reference range	
Provision of medicines information to health professionals	•no specific support roles to assist clinical pharmacists in this activity	•receive medicines information queries
		•search for medicines information without direct supervision of a pharmacist
		•interpret medicines information
		•discuss medicines information with patients, nurses or medical staff
Provision of medicines information to patients	•gather consumer medicines information (CMI) leaflets	•distribute CMI leaflets to patients with counselling
	•distribute CMI leaflets to patients prior to counselling by pharmacist	•conduct counselling on any medicines
		•conduct counselling on disease state management
		•identify patients requiring medication counselling
		•identify patients requiring adherence aids
Information for ongoing care	•identify patients requiring communication with community health professionals	•communicate by telephone with GPs
	•identify patients requiring further supply of medicines on discharge and if they consent to accessing these medicines through the PBS	•provide information regarding medicines other than supply.
	•assist in preparing information for transfer to community healthcare providers	
	•assist in preparing a medicine list for the patient	
	•communicate medicine supply information by telephone with community pharmacist and other health professionals	
	•communicate by facsimile/e-mail/letter with community pharmacist, GP and nurse after a final check by a pharmacist	
Participation in interdisciplinary care planning	•no specific support roles to assist clinical pharmacists in this activity as attendance requires gathering data and also the contribution of clinical expertise	

Chapter 13. Documenting Clinical Activities

INTRODUCTION

Documenting clinical activities is required for one or more of the following:

- clinical care of individual patients
  - -sharing information with other health professionals to contribute to the quality use of medicines using patient-specific forms and health records, e.g. medication reconciliation
  - -documenting patient-specific activities for professional accountability, e.g. signing off the National Inpatient Medication Chart (NIMC) and the medication management plan (MMP)
- management of clinical pharmacy activities or incidents
  - -recording clinical pharmacist interventions and incidents for risk management and accountability purposes
  - -workload statistics and key performance indicators (KPIs) to determine efficiency and quality of service as well as to assist in strategic planning.

Documenting clinical activities provides a permanent record of identified actual and potential medicines-related problems, clinical decisions made and suggested changes to medicine therapy for individual patients.

Documenting clinical interventions and incidents can also identify areas for quality improvement by revealing trends in medicines-related problems.

OBJECTIVE AND DEFINITION

Objective

The primary reason for documenting clinical activities is to improve the quality of each patient's care. Documenting clinical activities in the patient's permanent health record is a way of communicating with other health professionals to support the continuity of care of the patient.

Documentation demonstrates the accountability of the pharmacist and the evidence of impact of the pharmacist's services. The continuous and periodic documenting of workload statistics and KPIs aims to assess efficiency and quality of pharmacy service provision and may assist in strategic planning.

Definition

Documenting activities is an essential element of providing clinical pharmacy services, it involves a standardised process of recording patient-specific information, clinical interventions or incidents, professional actions as well as workload statistics, quality improvement activities and KPIs. This information may be collected and recorded manually or via an electronic medication management system.

EXTENT AND OPERATION

Clinical activities documented include:

- information in the patient's permanent health record, i.e. NIMC, MMP, health record or organisation-specific form that is filed in the patient's health record
- patient-specific information as part of a departmental record, e.g. patient meets funding criteria for medicine.

Attempts should be made to document clinical pharmacy activities using terms consistent with organisational and national systems for classification of services for coding purposes.

Documenting clinical interventions and incidents, workload statistics and KPIs should be carried out in accordance with local policy and service agreements. See *Chapter 14: Improving the quality of clinical pharmacy service*s.

Other clinical activities should be recorded when the information is useful in determining the efficiency and quality of the clinical service and to assist in strategic planning. Documenting non-patient-specific activities should not detract from providing patient-centred care. It may be collected on a continuous basis or periodically depending on service agreements.

POLICY AND PROCEDURE

How information is documented will be dependent on local policy and will be influenced by the nature of the information and who the information is intended for. This is applicable to all forms of documentation, manual and electronic. Patient-specific information may be documented:

- on the NIMC and associated medication charts
- on the MMP or equivalent
- directly in the patient's health record.

Documented patient-specific information must comply with the user guides of the NIMC and MMP and the provisions of privacy legislation including the relevant state privacy laws and the National Privacy Principles in the *Privacy Act*.[1-3] Ideally, recorded patient-specific information is linked to pharmacy workload data, e.g. recording clinical interventions and changes to medicines in the patient's health record as well as in workload documentation.

Inpatient Medication Administration Order

The NIMC is intended to ensure best practice and assist in improving the steps in the medication management cycle through safer prescribing, dispensing and administration of medicines and minimising the risk of adverse medication events.[1] Pharmacists should be familiar with the *NIMC User Guide*. The NIMC is appropriate for most hospital settings, however there will be occasions when organisation-specific medication orders or charts are used. These standards are applicable regardless of the form used (paper-based or electronic).

Any annotations by the pharmacist should be easily identified as being distinct from the prescriber. Organisation policy may allow for the use of coloured ink, which should be easily visible when charts are photocopied, faxed or scanned. If an annotation is made the pharmacist's signature, designation and contact details should be clearly identifiable on that page.

Ensure the NIMC or order has been correctly completed. If appropriate, the pharmacist should document omitted information.

Use only accepted abbreviations as defined in the *Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines*.[4]

Check that adverse drug reactions (ADRs) have been annotated appropriately on the chart. Ensure the ADR sticker is also on the chart if ADRs are listed. If the patient is not aware of previous ADRs, then the 'nil known' box should be ticked and the person documenting must sign, print their name and date the entry.

The pharmacy section for each individual order is for use by the pharmacist to clarify the order, indicate source of supply or provide administration instructions. There are suggested annotations for supply.[1] The pharmacist should sign the pharmaceutical review section at the bottom of the NIMC to indicate the appropriateness of all medicines ordered for that patient, e.g. doses, drug interactions.

The medication history documentation section may be completed by the admitting medical officer, nurse, pharmacist or other clinician trained in medication history documentation. The NIMC provides space for minimum information to be documented on admission. Health service organisations may choose to implement a more comprehensive approach to documentation such as using a MMP or local equivalent. If the medication history is recorded on both forms then the information should be the same. See *Chapter 1: Medication reconciliation*. Ideally, the medication history is only recorded in one place and the NIMC should be annotated to indicate where the medication history is recorded.

It is also helpful to document the indication for each medicine in the medication history section of the NIMC, use a checklist such as the one on the *National Medication Management Plan* to ensure a comprehensive history is obtained. See *Chapter 1: Medication reconciliation*.

Document the quantity of medicine supplied to the patient on discharge/transfer on the form used by the health service organisation.

Medication Management Plan

It is essential that information relating to the management of a patient's medicines is documented in a routine manner that enable all healthcare team members (medical, nursing, pharmacists) to have timely and full access to assist in decision making. This information should be documented using a standardised format that forms part of the patient's health record. This information may be documented in either a paper-based or electronic format.

All healthcare team members should use this primary document to record the patient's MMP and assist with their clinical decision making. This document will be constantly updated during the episode of care and forms the basis of information provided at discharge or transfer. Duplicating this information in clinician-specific tools is not encouraged.

Decisions regarding the use and format of MMPs will depend on the organisation, the clinical service being offered and the ability to obtain information in a timely manner from other sources. Local policy may dictate the use of an organisation-specific medication history and reconciliation or MMP forms. These forms may be either paper-based or electronic and after discharge are filed in the patient's health record.

The *National Medication Management Plan* is a national standardised document that can be used to improve the accuracy and completeness of documented medicines information and the continuity of medicines management. It may be used to record:

- medicines taken before admission
- changes to medicines
- patient-specific risks regarding medicines
- medication reconciliation on admission, intra-hospital transfer and discharge.

Pharmacists using the *National Medication Management Plan* should be familiar with the *National Medication Management Plan User Guide*.[3]

The MMP or equivalent should be kept with the active medication chart(s) throughout the patient's admission. It should be available to and used by other health professionals and the patient/carer when possible. After discharge it should be filed with the patient's permanent health record.

Specific information documented on a MMP or other report could include:

- history of presenting complaint and reason for current admission
- assessment of the patient's clinical problems
- plan for the management of the patient's clinical problems and therapeutic goals
- past and current medical and surgical problems
- list of medicines at time of admission and past medication history
- details of allergies and ADRs, including dates and descriptions of reactions and re-exposure to the drug
- relevant laboratory parameters
- medication risk identification including actual or potential medicines-related problems and management
- plans for patient care, e.g. outcome monitoring, discharge planning
- patient medicine education planned and dates when performed, e.g. warfarin, inhaler technique
- changes to the patient's medicines regimen. An assessment of adherence and plans for the provision of adherence aids and review dates and deadlines
- Home Medicines Review referral checklist.

Any documented comments should be objective, respectful and non-critical of the patient and other health professionals. Choose words such as 'suggest' or 'consider' rather than 'do' or 'needs'.

Patient Health Record

Information documented in the health record is intended to form a permanent record and to supplement, not replace, verbal communication. When making an entry in the health record:

- identify discipline (i.e. pharmacist), date and time
- follow a logical sequence, e.g. SOAP method:[5]
  -subjective relevant patient details
  -objective clinical findings
  -assessment of the situation or clinical problem
  -proposed management plan
- limit comments to 'recommendations' to allow scope for discussion
- document relevant discussion of the issue with prescriber or nursing staff
- use only well-recognised abbreviations (refer to an appropriate medical abbreviations document)
- document the strategy for clinical review and monitoring
- sign the entry, print name and designation alongside the signature and provide contact details.

Consider documenting the following details or activities relating to medicines-related problems and potential actions in the patient's MMP or health record:

- information obtained from an accurate medication history including an assessment of patient adherence with the prescribed medicines regimen
- medication reconciliation record to form part of the patient health record where not recorded in a organisation-specific form
- identification of serious clinical problems with discussion of the pharmacist's assessment
- details of patient education and administration and adherence aids provided
- response to patient-specific questions from other staff e.g. recommended doses
- provision of patient-specific medicines information and specific therapeutic information, e.g. potential drug interactions
- recommendations for therapeutic drug monitoring and evaluation of therapeutic drug monitoring data
- ADR assessment and management recommendations
- serious concerns about medicine therapy that cannot be verbally communicated to a medical officer (or which has not been addressed by medical staff, or which would potentially imply negligence by the pharmacist if not documented).

Organisation-Specific Forms

Organisations may choose to develop their own standardised forms for recording patient-specific information. It is important that patient-specific information is accessible to all members of the healthcare team during the patient admission and filed in the health record at discharge.

Clinical Interventions or Addressed Medicine-Related Problems

Previous versions of these standards have defined a pharmacist intervention as any action that directly results in a change in patient management or therapy.

The *Standard and Guidelines for Pharmacists Performing Clinical Interventions* defines a drug-related problem (DRP) as 'an event or circumstance involving drug treatment that actually or potentially interferes with the patient experiencing an optimum outcome of medical care'.[6] It goes on to define pharmacist clinical interventions as: 'the process of a pharmacist identifying, and making a recommendation in an attempt to prevent or resolve, a DRP. It can be defined as 'any professional activity by the pharmacist directed towards improving the quality use of medicines and resulting in a recommendation for a change in the patient's medication therapy, means of administration or medication-taking behaviour.'[6]

Departments should have a formalised policy on documenting pharmacist interventions. Ideally, information on the setting and service being provided, e.g. medication reconciliation on admission, medication review in residential aged-care facility, should be recorded along with:

- medicine(s) involved
- date and patient demographic data
- treating unit/provider
- pharmacist identifier
- category of the DRP
- category of the pharmacist recommendation
- category of the action taken in response to the DRP.

The following categories can be used to record the DRPs (adopted from the DOCUMENT system, detailed definitions in *Standard and Guidelines for Pharmacists Performing Clinical Interventions*):[6]

- drug selection – duplication
- drug selection – drug interaction
- drug selection – wrong drug
- drug selection – incorrect strength
- drug selection – inappropriate dose form
- drug selection – contraindications apparent
- drug selection – no indication apparent
- drug selection – other drug selection problem
- drug selection – drug should have been ceased
- over or underdose – prescribed dose too high
- over or underdose – prescribed dose too low
- over or underdose – incorrect or unclear dosing instructions
- over or underdose – other dose problem
- compliance – under-use by consumer
- compliance – over-use by consumer
- compliance – erratic use of medication
- compliance – intentional drug misuse
- compliance – difficulty using dosage form
- compliance – other compliance problem
- undertreated – condition undertreated
- undertreated – condition untreated
- undertreated – preventive therapy required
- undertreated – other untreated indication problem
- monitoring – laboratory monitoring
- monitoring – non-laboratory monitoring
- monitoring – other monitoring problem
- education or information – consumer requests drug information
- education or information – consumer requests disease management advice
- education or information – other education or information problem
- non-classifiable
- toxicity, allergic reaction or adverse effect present.

The following categories can be used to record the pharmacist recommendations (adopted from and detailed definitions in *Standard and Guidelines for Pharmacists Performing Clinical Interventions*):[6]

- change of therapy – dose increase
- change of therapy – dose decrease
- change of therapy – drug change
- change of therapy – drug formulation change
- change of therapy – drug brand change
- change of therapy – dose frequency/schedule change
- change of therapy – prescription not dispensed
- change of therapy – other changes to therapy
- referral required – refer to prescriber
- referral required – refer to hospital
- referral required – refer for medication review
- referral required – other referral required
- provision of information – education or counselling session
- provision of information – written summary of medications
- provision of information – recommended adherence aid
- provision of information – information documented for patient's permanent record
- provision of information – other written information
- monitoring – monitoring laboratory
- monitoring – monitoring non-laboratory test
- no recommendation necessary.

Table 13.1 Risk classification of pharmacy interventions using a consequence/probability matrix[9]					
Consequence or impact					
Level	**Descriptor**	Description: assume intervention not made, probable scenario (not worse case)			
1	Insignificant	No harm or injuries, low financial loss			
2	Minor	Minor injuries, minor treatment required, no increased length of stay or re-admission, minor financial loss			
3	Moderate	Major temporary injury, increased length of stay or re-admission, cancellation or delay in planned treatment/procedure. Potential for financial loss			
4	Major	Major permanent injury, increased length of stay or re-admission, morbidity at discharge, potential for significant financial loss			
5	Catastrophic	Death, large financial loss and/or threat to goodwill/good name			
Likelihood of occurrence					
Level	**Descriptor**	Description: likelihood of impact occurring without intervention and scenario occurring in the future			
A	Almost certain	Is expected to occur in most circumstances			
B	Likely	Will probably occur in most circumstances			
C	Possible	Might occur at some time			
D	Unlikely	Could occur at some time			
E	Rare	May occur only in exceptional circumstances			
Risk (consequence x likelihood)					
Likelihood	**Insignificant**	**Minor**	**Moderate**	**Major**	**Catastrophic**
A (almost certain)	H	H	E	E	E
B (likely)	M	H	H	E	E
C (possible)	L	M	H	E	E
D (unlikely)	L	L	M	H	E
E (rare)	L	L	M	H	H
E = extreme risk; H = high risk; M = moderate risk; L = low risk.					

The following categories can be used to record the action taken in response to the DRP:

- prescriber has accepted pharmacist recommendation
- prescriber has not accepted pharmacist recommendation
- pharmacist has provided service as recommended
- patient has accepted pharmacist recommendation
- patient has not accepted pharmacist recommendation
- unknown at time of recording DRP.

In many instances, clinical interventions by pharmacists are examples of 'near-miss' incidents. It is recommended that reporting of clinical interventions be linked to incident monitoring to identify areas for performance improvement throughout the organisation. This will provide guidance for the best method of documenting clinical interventions.

Where possible, assign a risk assessment by using guidelines, such as the *Australian Standards for Risk Management* that includes a description of the consequence (impact) and likelihood of occurrence happening again.[7] It should involve formal reporting to selected organisation quality forums and incident monitoring systems, especially those interventions classified as high and extreme risk. See Table 13.1.

Using trends in clinical intervention data, the activities of pharmacists can be optimised to focus on the activities that have the greatest impact and identify the medicines that should be targeted to result in positive changes.[8] Additional reasons for recording interventions include:

- education and training of pharmacy staff regarding their performance and identification of actual and potential problems
- providing information to hospital management regarding the performance of the pharmacy services
- local and national benchmarking activities.

Pharmacy Patient Profiles

The health record is the definitive document of a patient's care and must always be the key reference point. There is no specific requirement for the need to maintain separate or additional pharmacy patient profiles beyond the episode of care.

If separate or additional records are maintained, the pharmacy service must ensure the privacy and security of the records are maintained.

Workload Data

Non-patient-specific activities, including clinical workload data, may be documented using a variety of formats. Use strategies to ensure that workload documenting does not take up a large component of clinical pharmacists' time and distract from providing clinical services, e.g. support staff, pharmacy software, risk management software.

Table 13.2 lists the competencies and accreditation frameworks that are relevant to this chapter.

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Table 13.2 Competencies and accreditation frameworks
Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[10]
Competency unit 1.1 Medication history 1.1.5 Allergy and adverse drug reaction review 1.1.9 Documentation of medication history
Competency unit 1.2 Assessment of current medication management and clinical review 1.2.1 Medication reconciliation 1.2.11 Selection of formulation, concentration or rate 1.2.13 Therapeutic drug concentration monitoring
Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems 1.3.5 Documentation of medicines-related problems 1.3.7 Documentation of clinical pharmacy activities
Competency unit 2.7 Professional qualities 2.7.2 Confidentiality
National competency standards framework for pharmacists[11]
Standard 2.2 Work to resolve problems 2 Act to resolve the problem/potential problem
Standard 7.1 Contribute to therapeutic decision-making 1 Obtain accurate medication history 3 Recommend change in medication management
Standard 7.2 Provide ongoing medication management 2 Review clinical progress 3 Initiate monitoring and intervention 4 Manage medication management records
National safety and quality health service standards[12]
Standard 4 Medication safety: documentation of patient information 4.6 Accurate medication history 4.7 Documentation of adverse drug reactions 4.8 Review and reconciliation on admission and transfer

Chapter 14: Improving the Quality of Clinical Pharmacy Services

INTRODUCTION

This chapter describes establishing a management system for generic approaches to assess the quality of the clinical pharmacy services described in previous chapters. The *Australian Safety and Quality Framework for Health Care* specifies three core principles of safe and high-quality care: the care is patient centred, driven by information and organised for safety.[1]

A number of quality assurance frameworks and standards are available and SHPA recommends their use in conjunction with this document. These include:

- shpaclinCAT[2]
- *National Competency Standards Framework for Pharmacists in Australia*[3]
- *National Safety and Quality Health Service Standards: Standard 4 Medication Safety*[4]
- *Hospital Accreditation Workbook*[5]
- *Indicators for Quality Use of Medicines in Australian Hospitals*.[6]

These frameworks may not be the most appropriate measures by which to evaluate the quality of clinical pharmacy services in all practice settings and practice-specific indicators will need to be identified.

The quality of a clinical pharmacy service can be difficult to assess using specific outcomes in many circumstances. In these instances, a set of processes of care indicators can be identified that have evidence of benefit to patients when these processes are completed.[1] Because indicators assume that processes lead to better health outcomes there are limitations and many aspects of clinical pharmacy services cannot be isolated or specifically measured.

Wherever possible, the quality of a clinical pharmacy service should be assessed by providing evidence to support improved patient outcomes. This is possible in selected circumstances where the clinical pharmacist has direct responsibility for an aspect of patient care, e.g. anticoagulation, pain management. In these cases the pharmacist's responsibility and desired patient outcomes must be clearly defined and documented.

OBJECTIVE AND DEFINITION

Objective

The main goals of a quality management system for clinical pharmacy services are to:

- ensure the provision of an appropriate service to patients (and those involved in patient care)
- ensure patients' medicine needs are addressed
- monitor and evaluate the services including the standard of services provided
- identify and minimise risks associated with service delivery
- identify areas for improvement, including staff development programs
- motivate pharmacists by involving them in assessing and evaluating these services
- provide a mechanism through which action is taken to implement and sustain these improvements.

Definition

The purpose of a quality management system for clinical pharmacy services is to monitor, evaluate or improve the quality of health care delivered by the service. Quality improvement should be an integral part of all healthcare delivery.

EXTENT AND OPERATION

Pharmacy services should have a clearly defined quality management system that outlines the goals for the service and individual pharmacists along with the expected range and quality of service delivery. This program should be in accordance with the larger framework of the health service organisation.[1,2]

A quality management system for a clinical pharmacy service should include consideration of the range of clinical pharmacy activities delivered, any service agreements and overall day-to-day prioritising of these activities.

Quality management systems enable pharmacists to meet ethical obligations to their patients, maintain professional competence and endeavour at all times to provide a pharmacy service to the highest possible standards.[7] The ethical principles of integrity, respect, beneficence and justice apply to all quality improvement activities.

Methods for assuring and improving the quality of practice of individual pharmacists, such as structured performance reviews, peer review and continuing professional development opportunities, should also be incorporated into a pharmacy's quality management system. See *Chapter 10: Training and education*.

POLICY AND PROCEDURE

Quality Management Systems

A quality management system for clinical pharmacy services should include:

- developing and documenting clear objectives for each of the services provided by pharmacists. These should be in a format easy to reference for everyday use
- developing clear and effective strategies and supporting plans to achieve objectives. Strategies should be explained, detailed and understood. If strategies have not been developed, it will be useful to involve all the staff in quality program planning
- encouraging effective employee participation in developing and implementing quality plans. This is likely to lead to the plan being better received and adopted by the participants
- staffing mix and structure prioritised for clinical pharmacy services in line with the organisation's objectives. This should include the level of pharmacist competency and resources required to deliver services and commentary on services to be prioritised when there are staff shortages, outside usual business hours and patient care areas that do not receive routine clinical pharmacy services.[7] See *Chapter 8: Prioritising clinical pharmacy services*
- ensuring a process of review of pharmacy staff competency, preferably using a structured assessment tool, e.g. peer review, shpaclinCAT

- identifying quality indicators that are patient-centred with evidence of positive health outcomes[5]
- using published standards and indicators, e.g. *National Safety and Quality Health Service Standards, EQuIP5*.[4,8]

Key Performance Indicators and Workload Statistics

Indicators are measures of processes and outcomes or health care that can be used to guide and monitor the quality and appropriateness of healthcare delivery with the aim of continuous improvement.[5] The *National Safety and Quality Health Service Standards*, *EQuIP5* and *Indicators for Quality Use of Medicines in Australian Hospitals* provide a clear guide to many indicators and the processes to measure.[4,6,8] The National Inpatient Medication Chart (NIMC) Audit provides a useful tool to evaluate the use of the NIMC and compliance with its safety features. The audit tool can be used to measure specific clinical pharmacy activities, such as pharmacy annotations and review.[9] Table 14.1 contains some further suggestions for indicators that may be used to indicate the performance of clinical pharmacy services.

Documenting workload data, in particular clinical interventions, can provide evidence of the impact of clinical pharmacy services on patient care. Workload data is also valuable in performance appraisal and as a means of reporting clinical pharmacy activities to a Drug and Therapeutics Committee, Medicines Advisory Committee and other health service organisation forums. Workload data can also be used to justify staffing levels, make staffing projections, underpin service agreements and evaluate efficiency of services provided.[10]

Local factors will determine the need for documenting clinical workload and in some circumstances periodic recording may be more appropriate than continuous recording. In some organisations, clinical interventions documented in the patient's health record may not be recorded as part of the organisation-based coding process on discharge therefore a more reliable method of recording workload statistics may be required.

Ideally, activities should be recorded in a standardised way that links to patient details or to the pharmacy dispensing software. Uniform terminology should be used. Barcoding may be used to record activities.

See *SHPA Standards of Practice for Medication Safety*.[11]

Table 14.1 Some suggested performance indicators for clinical pharmacy services

Clinical activity	Performance indicator
Accurate medication history	Percentage of patients with completed medication history by a pharmacist within 24 hours of admission or presentation
Medication reconciliation	Percentage of patients with completed medication reconciliation by a pharmacist within 24 hours of admission or presentation
	Percentage of patients with a correctly completed record of prior adverse drug reactions and allergies documented within 24 hours of admission
	Percentage of patients with current medications reconciled (on presentation, transfer or discharge)
Assessment of current medication management	Number of assessments of current medication managements by a pharmacist per total patient bed days
	Percentage of patients that receive an assessment of current medication management by a pharmacist
	Quality of clinical pharmacy interventions: percentage of interventions rated > moderate (collected periodically over 2 days)
Therapeutic drug monitoring	Percentage of patients with an INR > 4 that have had their dosage adjusted or reviewed prior to the next warfarin dose
	Percentage of patients with toxic or subtherapeutic aminoglycoside concentrations that have had their dosage adjusted or reviewed prior to the next aminoglycoside dose
Medication management plan	Percentage of patients with a documented initial medication management plan within 24 hours of admission or presentation
	Percentage of patients prescribed salbutamol on discharge that are given a written action plan for acute exacerbations of respiratory disease with a copy communicated to the primary care physician
Provision of medicines information to patients	Percentage of patients that received appropriate verbal counselling and/or written information about their medicines prior to discharge
	Percentage of patients receiving discharge medicines who also receive medicines information
Information for ongoing care on discharge or transfer	Percentage of discharge summaries that document an accurate medicines list and the reasons for all medication therapy changes from medications taken prior to admission
	Satisfaction of key stakeholders

Quality Improvement of a Pharmacist's Practice

Review and assessment of an individual's performance is an essential component of personal continuing professional development and improvement of clinical pharmacy services. Ideally, a pharmacist's ability to perform clinical pharmacy activities is assessed using a structured assessment tool in the workplace or simulated environment.

Most of the important aspects of professional practice, such as communication, teamwork and some technical skills, can only be assessed by qualitative methods involving observation and judgement. Assessors can provide feedback and support based on direct observation of agreed targeted competencies.

Performance assessment also includes the extent of a pharmacist's involvement in education, departmental activities, research and projects and incorporates feedback from key stakeholders. It may require direct observation and discussion with the pharmacist and other staff, including nurse unit mangers, medical and pharmacy staff.

shpaclinCAT can be used for workplace review as well as self assessment. This provides a platform for identifying professional development requirements, planning career progression and supporting documentation for re-registration.

Regular review of individual pharmacists will identify areas that need improvement for both the pharmacist and the service.

Table 14.2 lists the competencies and accreditation frameworks that are relevant to this chapter.

References

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2. Society of Hospital Pharmacists of Australia. Clinical competency assessment tool (shpaclinCAT version 2). In: SHPA standards of practice for clinical pharmacy services. J Pharm Pract Res 2013; 43 (suppl): S50-S67.
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Table 14.2 Competencies and accreditation frameworks

Relevant national competencies and accreditation standards and shpaclinCAT competencies
shpaclinCAT[2]
Competency unit 1.3 Identification, prioritisation and resolution of medicines-related problems
1.3.6 Assessment of outcomes of contributions
National competency standards framework for pharmacists[3]
Standard 3.4 Manage quality service delivery
1 Facilitate service delivery 2 Maintain and enhance service quality 3 Ensure continuity of service
National safety and quality health service standards[4]
Standard 1 Governance for safety and quality in health service organisations: performance and skills management
1.10 Regular reviews for the clinical workforce 1.11 Performance development and improvement 1.12 Ongoing safety and quality education and training
Standard 1 Governance for safety and quality in health service organisations: incident and complaints management
1.14 Incident management and investigation system 1.15 Complaints management and investigation system
Standard 1 Governance for safety and quality in health service organisations: patient rights and engagement
1.20 Patient experience feedback mechanisms

Chapter 15. Clinical Competency Assessment Tool (shpaclinCAT version 2)

INTRODUCTION

Traditionally, pharmacists improved their knowledge and skills post-registration by undergoing formal postgraduate training or by participating in site-based training. shpaclinCAT was the first structured, formal and recognised process for reviewing and improving clinical skills and knowledge for general level pharmacists in Australia.

Competency frameworks like shpaclinCAT benefit pharmacists, pharmacy departments, consumers and the profession by:

- raising the standards and consistency of pharmacy practice
- providing a quality assurance for pharmacy practice
- identifying inadequacies in systems and processes
- identifying professional development needs of pharmacists.

shpaclinCAT aims to support pharmacists' professional development in all settings through structured evaluation. For the individual pharmacist, shpaclinCAT provides a platform for identifying professional development requirements, planning career progression and supporting documentation for re-registration.

Review of professional practice by a peer (including the use of competency assessment tools) is a valuable and important part of the maintenance and enhancement of a health practitioner's clinical and professional skills. Ideally, workplace evaluators should possess the following attributes:

- significant and recent clinical experience
- proven teaching/mentoring skills
- desire to support professional development and to foster a positive culture toward the process of review
- an appropriate personality to support and encourage others to develop professionally
- trained in the process of feedback and evaluation

For this reason evaluator training has been developed for shpaclinCAT <cpd.shpa.org.au>.

The clinical pharmacy assessment tool detailed in this chapter has been developed in the context of Australian pharmacy standards and guidelines including:

- *National Competency Standards Framework for Pharmacists in Australia*[1]
- *SHPA Standards of Practice for Clinical Pharmacy Services*
- *Guiding Principles to Achieve Continuity in Medication Management*[2]
- *National Safety and Quality Health Service Standards*[3]
- *Australian Charter of Healthcare Rights*[4]
- *SHPA Code of Ethics*.[5]

This chapter details the assessment tool, which consists of:

- Part one: Delivery of Patient Care
- Part two: Personal and Professional Qualities.

There is a companion document for use as a workplace and self-evaluation tool <cpd.shpa.org.au>.

ACKNOWLEDGMENT

shpaclinCAT version 1 was the first clinical competency assessment tool described for Australian pharmacists.[6] Version 1 was made possible through a Memorandum of Understanding between SHPA, Monash University and the UK Competency Development and Evaluation Group <www.codeg.org.uk/> whose publication, the *General Level Framework for Pharmacist Development in General Pharmacy Practice* formed the basis of shpaclinCAT version 1.[7]

shpaclinCAT has been developed through a process of national consultation utilising the skills of a reference group consisting of representatives from a national reference group, each SHPA Branch and/or with links to key SHPA stakeholder groups. The hard work and dedication of all contributors for the first and this version of shpaclinCAT is gratefully acknowledged.

References

1. Australian Pharmacy Profession Consultative Forum. National competency standards framework for pharmacists in Australia. Deakin: Pharmaceutical Society of Australia; 2010.
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3. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. Sydney: The Commission; 2011.
4. Australian Commission on Safety and Quality in Health Care. Australian charter of healthcare rights. Sydney: The Commission.
5. Society of Hospital Pharmacists of Australia. SHPA code of ethics. Collingwood: The Society; 2012.
6. Society of Hospital Pharmacists of Australia. shpaclinCAT: clinical competency assessment tool for Australian pharmacists. Collingwood: The Society; 2010.
7. Competency Development and Evaluation Group. General level framework: a framework for pharmacist development in general pharmacy practice. 2nd ed. London: The Group; 2007.

Part One: Delivery of Patient Care

Competency Unit 1.1: Medication History

This competency unit incorporates the structure and processes needed to obtain and document information relating to the patient's presentation, which will provide a baseline for ongoing medication management. The personal skills required to perform these tasks are described in the personal and professional cluster (Part two).

Element	Performance criteria	Evidence guide
1.1.1 Relevant patient background	**Retrieve relevant information**	Obtain and contextualise the following patient information as applicable: -age, consider patient's ability to metabolise or excrete medicines, and the implications for appropriate selection of medicine and dosage -gender, consider impact of gender on medicine selection -height and weight -pregnancy or lactation status -immunisation status -ethnic background or religion, consider implications for medicine selection including pharmacogenetic factors -social background, consider the impact on patient's ability to manage their medicines -details of regular GP, community pharmacy or other health professional as appropriate -details of medication use, e.g. self-administering, medicines crushed -ability to communicate, e.g. cognitive function, language barriers, alertness, mental acuity, psychological state, and requirements for communication aids, e.g. glasses, hearing aids -ability to take medicines as prescribed, e.g. cognition, dexterity, swallowing ability -presenting condition, consider the possibility of adverse drug reactions (ADRs), poor adherence, inadequate dosing, inappropriate therapy as a contributor to hospital presentation/morbidity -working diagnosis, consider appropriate evidence-based therapy -previous medical history, identify potential medicine and/or disease contraindications and ensure that management of the presenting complaint does not compromise a prior condition. Consider therapies for prior conditions that may have been omitted -relevant laboratory or other findings (if available), focus on findings that will affect decisions regarding medicines, such as: -renal function -electrolytes -liver function -full blood count -cardiac markers -general observations -relevant previous therapeutic drug monitoring (TDM) results -use appropriate sources to obtain information, such as. -patient/carer -patient's own medicines and/or medication list -previous prescriptions (community pharmacy, discharge/outpatient) -preadmission clinic records -GP referral letter/other correspondence, e.g. ambulance service notes -GP medication list -adherence aids -transfer information from another health service organisation, e.g. nursing home, hostel -electronic records, e.g. pharmacy dispensing system, discharge medication records -current medication chart/administration records
1.1.2 Introduction to consultation	**Provide clear introduction to the consultation**	Greet patient
		Establish patient identity
		Introduce self and other colleagues, as applicable
		Confirm that the time is convenient
		Establish rapport with patient and/or carer to support ongoing communication
		Respect patient's right to decline an interview/consultation or to choose a more appropriate time
	Agree on an agenda with the patient	Explain purpose of discussion, e.g. taking a medication history, medicine-specific counselling, medication chart review

Element	Performance criteria	Evidence guide
1.1.3 Questioning technique	**Use appropriate questioning to obtain relevant information from the patient**	Determine who the most appropriate person is to discuss the patient's medicines with
		Use appropriate non-verbal language, e.g. adopt a suitable position, maintain eye contact
		Use appropriate language, i.e. non-judgemental, non-alarmist, reassuring and using terminology and phrasing the patient/carer will understand (avoid medical jargon)
		Ask relevant and succinct questions using an appropriate technique, i.e. mixture of open and closed questions
		Avoid interrupting patient/carer
		Avoid leading or negative questions
1.1.4 Patient consent	**Obtain patient consent where appropriate before requesting patient-specific information from other healthcare providers**	Explain need to contact other healthcare providers
		Request permission to obtain patient-specific information from other healthcare providers, such as GPs, community pharmacists and community nurses
		Obtain patient consent before discussing medication details with carer or person managing the patient's medicine
		Document when consent is denied or withdrawn
1.1.5 Allergy and ADR review	**Confirm and document an accurate and comprehensive allergy and ADR history**	Identify and monitor patients susceptible to ADR including: -those who have previously experienced ADRs -those with multiple disease processes -those on a large number of medicines -those with renal or hepatic impairment -geriatric or paediatric patients -those treated with medicines known to have a high incidence of adverse effects -those treated with medicines known to be associated with serious adverse effects -those treated with medicines with a low therapeutic index -those taking medicines with the potential for multiple interactions -those with abnormal investigation results.
		Confirm with patient/carer details of allergies or previous ADRs to any medicines (including complementary and alternative medicines [CAMs])
		If an allergy/ADR is known; document the medicine, reaction and date of reaction (if known) on the medication chart and any associated documentation, e.g. Advisory Committee on the Safety of Medicines report
		If patient reports no history of ADR/allergy, tick the 'nil known' box on the medication chart
		If the ADR history cannot be established, tick the 'unknown' box on the medication chart
		Sign and date the entry and print your name
		Follow institutional policy regarding documentation of allergy and ADR history in the patient's health record
1.1.6 Accurate medication details	**Use appropriate sources of information**	Use the following sources as applicable: -patient and/or carer -patient's own medicines and/or list -previous prescriptions (community pharmacy, discharge/outpatient) -preadmission clinic records -GP referral letter/other correspondence, e.g. ambulance service notes -transfer information from an institution, e.g. nursing home, hospital, hostel -electronic records, e.g. pharmacist dispensing system, discharge medication records -current medication chart/administration records
	Specifically question the patient/carer regarding use of prescription and non-prescription medicines	Determine which medicines the patient was taking immediately prior to presentation/admission, specifically name (active ingredient and brand), dose, frequency and duration of current therapy
		Locate and review patient's own medicines, if available. Consider appropriateness in view of current clinical details
		Determine details of any adverse effects or allergies associated with current medicines
		Ask about recently ceased/changed medicines and the reasons for the change/s
		Discuss storage of current medicines in the home environment
		Ask if patients uses adherence aids
		Determine if patient uses recreational substances, including alcohol and nicotine, and the frequency of use
	Specifically question patient/carer regarding use of CAMs	Determine which, if any, CAM the patient is taking including herbal, vitamin and naturopathic medicines, specifically name, dose and frequency of current therapy
		Determine the patient's perceived indication for therapy
		Determine duration of therapy
		Question regarding recently ceased/changed therapies

Element	Performance criteria	Evidence guide
	Use a structured and systematic approach to obtain a comprehensive medication history	Ask patient/carer regarding the patient's medicines using a logical and systematic method to ensure all relevant information is obtained and to avoid omitting relevant details
		Consider using a written or mental checklist to ensure all patients/carers are asked pertinent questions regarding the patient's medicines
	Summarise interview	Allow patient/carer to ask questions regarding current medicines during and at the conclusion of the interview
		Advise patient/carer when a pharmacist will next visit and what to do if they have further questions
		Summarise the important information for the patient/carer and describe expected plan for their medication management, e.g. medicines-related issues that need to be resolved, different brand of medicine used in the organisation
1.1.7 Patient's understanding of illness	**Elicit patient's understanding of their illness**	Assess patient's understanding of their illness in the context of prescribed medicines
		Assess need for further information
1.1.8 Patient's experience of medicines use	**Explore patient's experience of medicines use**	Assess patient's understanding and attitude to current and previous medication therapy and seek specific information regarding the following: -indication -perceived effectiveness of medicines, e.g. control of symptoms/disease -perceived problems attributed to medicines, e.g. perceived adverse effects -current monitoring of disease/medicine -reason previously used medicines were started/changed/ceased
1.1.9 Documentation of medication history	**Document accurate and complete medication history according to hospital policy**	Document all relevant aspects of the medication history according to local policy, e.g. on medication chart/patient profile/medication management plan/health record
		Document medicines taken immediately prior to presentation, including: -active ingredient and brand, if relevant -dose, dose form, route, frequency, indication and duration of therapy -perceived indication (according to the patient) -ADRs and allergies -relevant recent changes to the medicines regimen and reasons for discontinuation/ alteration -patient's GP and regular community pharmacy -adherence aids used prior to presentation
1.1.10 Confirmation of medication history	**Confirm medication history to ensure accuracy and completeness, as applicable**	Determine if medication history obtained from the patient/carer requires confirmation. Confirmation may be required if: -patient is not responsible for administration of their own medicines -a reliable medication history cannot be obtained from the patient/carer -elements of the medication history are unknown, e.g. tablet strength -medication history is complex -medication history includes high-risk medicines
		Confirm medicines taken immediately prior to presentation with alternative sources as required. Appropriate sources may include: -patient's relative or carer responsible for supervising medicine administration -dispensing history from previous hospital admissions and/or community pharmacies -administration records from residential care or other health service organisation -other health professionals, e.g. GP, community nurse -patient's own medicines or medicines list -patient's e-health record -patient's prescriptions (community pharmacy, discharge/outpatient)
		If unable to confirm medicines taken immediately prior to presentation, document uncertainty along with medication history details as obtained
1.1.11 Adherence assessment	**Undertake a structured adherence assessment**	Assess patient's understanding of their illness and determine if they need further education about their illness and refer to other health professionals, if required
		Assess patient's understanding and attitude to current and previous medication therapy including: -indication -perceived effectiveness -perceived problems attributed to medicines -current monitoring -reasons for changes to medicines
		Assess patient's ability to use medicines as prescribed, e.g. do they have swallowing difficulties?
		Assess whether there are factors preventing adherence, such as: -insufficient knowledge of medicines -confusion -cost issues -personal or cultural beliefs or attitudes -physical limitations, e.g. poor vision, lack of strength, coordination

Element	Performance criteria	Evidence guide
		Assess patient's adherence by asking questions such as: 'People often have difficulty taking their pills for one reason or another. Have you had any difficulty taking your pills?' 'About how often would you say you miss taking your medicines?'
		Use a non-judgemental, empathetic approach and open-ended questions
		Where possible, supplement self-reported adherence with objective measures, e.g. dispensing records, results of TDM
		Inform medical staff if significant areas of poor adherence are identified
		Identify strategies to address poor adherence
	Assess how medicines were managed prior to presentation	Determine level of supervision/assistance needed for safe medicine administration at home, e.g. Was another person responsible for obtaining and/or assisting with medicine administration? Was an adherence aid being used? If so, who packed it?
		Assess patient's ability with respect to literacy, visual impairment, physical dexterity, cognition/memory and/or other disabilities
		Assess need for additional adherence aids, e.g. large print, written information provided in a language other than English

Competency Unit 1.2: Assessment of Current Medication Management and Clinical Review

This competency unit relates to the review of all medicine orders to ensure safe and appropriate dosage administration, and to optimise medicine therapy and patient outcomes.

Element	Performance criteria	Evidence guide
1.2.1 Medication reconciliation	**Reconcile currently prescribed medicines with those taken prior to presentation**	Check the confirmed medication history with the medicines prescribed on presentation
		Review available information to ascertain if discrepancies are intentional/non intentional
		Ensure patient is not currently charted for a medicine to which they have experienced an allergy/ADR
		Confer with the prescriber to resolve discrepancies
		Document any resulting changes
	Reconcile currently prescribed medicines with medical problems, both current and previous	Consider the following in relation to currently prescribed medicines: -is there a current indication for each medicine? -is there a medical condition which may require therapy that is not yet prescribed? -past medical history -relevant patient background
		Review available information to ascertain if discrepancies are intentional/non intentional
1.2.2 Drug–drug interactions	**Identify drug–drug interactions**	Identify common, well-documented drug–drug interactions (including those involving CAMs) which relate to the patient's prescribed therapy
		Identify the mechanism by which the interaction occurs
		Recognise medicines with increased interaction potential and investigate as appropriate
		Identify medicines that may interact with alcohol/nicotine and investigate as appropriate
	Assess clinical significance of drug–drug interaction	Identify potential consequence of drug–drug interaction
		Consider impact on current therapy of abrupt cessation of alcohol or nicotine
		Identify probability of adverse outcome occurring
		Appropriately prioritise risk of interaction
		Decide on appropriate course of action (if any) to minimise potential for harm to patient
1.2.3 Drug–patient interactions	**Identify drug–patient interactions**	Identify patient groups at risk of drug–patient interactions
		Identify patient-related issues which preclude/require the use of a particular medicines, e.g. warfarin or sedatives in an elderly patient at risk of falls
	Assess clinical significance of drug–patient interaction	Identify potential consequence of drug–patient interaction
		Identify probability of adverse outcome occurring
		Appropriately prioritise risk of drug–patient interaction
		Decide on appropriate course of action (if any) to minimise potential for harm to patient
1.2.4 Drug–disease interactions	**Identify drug–disease interactions**	Identify medicines whose use is contraindicated/cautioned in certain pathophysiological conditions, e.g. NSAIDs in a patient with heart failure
	Assess clinical significance of drug–disease interaction	Identify potential consequence of drug–disease interaction
		Identify probability of adverse outcome occurring
		Appropriately prioritise risk of drug–disease interaction
		Decide on appropriate course of action (if any) to minimise potential for harm to patient

Element	Performance criteria	Evidence guide
1.2.5 Drug–nutrient interactions	**Identify drug–nutrient interactions**	Identify medicines which interact with food
		Identify medicines which interact with enteral or parenteral feeds
		Identify the mechanism by which the interaction occurs.
	Assess clinical significance of drug–nutrient interaction	Identify potential consequence of drug–nutrient interaction
		Identify probability of adverse outcome occurring
		Appropriately prioritise risk of interaction
		Decide on appropriate course of action (if any) to minimise potential for harm to patient.
1.2.6 Appropriate choice of medicine	**Ensure medicine is therapeutically appropriate**:	Confirm there is a clear indication for continuing therapy with each medicine and if the medicine has been achieving goals of therapy
		Confirm the medicine is prescribed for an approved or recognised indication. Identify any contraindications/cautions
		Apply principles of evidence-based medicine
		Consider any local guidelines for patient management when making recommendations on the choice of medicines. Also consider the latest evidence regarding the medicine's: -efficacy in the management of a particular disease or symptom -comparative efficacy and safety of therapeutic alternatives -likelihood of adverse effects, compared with therapeutic alternatives and ways to minimise adverse effects -pharmacokinetic and pharmacodynamic properties -route and method of administration -dosage form, comparative efficacy and adverse effects of different dose forms, intended site of action, dose required for intended effect, kinetics of different dose forms -methods of monitoring for therapeutic and adverse effects
		Check all orders for duplication
	Ensure medicine is cost-effective	Consider cost of medicine for desired treatment course
		Consider ongoing cost of medicine to patient
		Identify suitable alternatives where appropriate
		Check availability, i.e. government restrictions, marketing approval, hospital formulary limitations, methods of obtaining further supply outside of the facility
	Ensure medicine is accessible	Consider accessibility of medicine to patient for planned treatment course
		Identify circumstances or supply arrangements impacting on the medicine's availability
		Consider alternatives if prescribed medicine is unavailable according to local formulary or will be difficult for the patient to obtain once discharged/transferred
1.2.7 Medicine order/ prescription clarity	**Ensure clarity, accuracy and completeness of medicine order/ prescription**	Ensure prescriber's intention is clear to enable safe supply and administration of the medicine/s
		Ensure all medicines are prescribed by active ingredient, except as recommended by local policy, e.g. prescription of insulin by brand name
		Ensure prescribing abbreviations meet with local or national policies
		Annotate the order to clarify the administration of modified-release products, IV administration method, indication and maximum dose in 24 hours for PRN medications, administration in relation to food and relevant restrictions, e.g. schedule 8 or formulary restrictions. Ensure all required medicines are prescribed, including pre-procedural medicines and prophylactic therapies
		Ensure new medication charts are consistent with previous versions and no transcription errors have occurred
		Ensure cancelled medicine orders comply with national and local prescribing policies, e.g. administration section of the medication chart is cancelled as well as the medicine order section
		Ensure date and time therapy is to commence or cease is written
		Ensure that the duration of the medicine is appropriate, specific consideration should be given to medicines commonly used in short courses, e.g. antibiotics
		Liaise with prescriber where appropriate to resolve identified issues and annotate medication chart where appropriate to improve clarity
1.2.8 Medicine order/ prescription legality	**Ensure authenticity and legality of medicine order/ prescription**	Check that patient identifiers are present
		Ensure that the order is signed and the prescriber can be identified
		Ensure that the order conforms with legal and funding requirements and any additional requirements are fulfilled, e.g. schedule 8, authority granted

Element	Performance criteria	Evidence guide
1.2.9 Dose review	**Ensure dose is appropriate**	Check dose with respect to patient's previous experience with medicine, disease state, pregnancy, age, renal function, liver function, potential interactions, dose form and method of administration
		Check dose conversions required with changes to route or formulation
		Check most appropriate route of administration is selected
		Check timing of administration is appropriate with respect to food or feeds, administration rounds, convenience, scheduled procedures or investigations, TDM requirements
		Check orders for medicines to which the patient may be allergic or have experienced an ADR. Discuss with the prescriber the need for such medicine, and recommend an alternative, if appropriate. If the prescriber wishes to continue treatment with the suspected medicine, details of the discussions with the prescriber should be fully documented in the patient's health record
		Ensure infusion solution, concentration and rate of administration are appropriate and clinical targets, e.g. blood sugar levels, blood pressure, are appropriate
		Check the administration record to see that all doses have been given as prescribed
1.2.10 Route and timing of dose	**Ensure appropriate route and timing of dose**	Ensure most appropriate route selected
		Ensure prescribed route is available, e.g. is patient nil-by-mouth?
		Ensure intended time of dose recorded on the medication chart
		Annotate specific days for weekly or non daily dosing
		Ensure timing appropriate with respect to: -food/feeds -medicine administration rounds -patient convenience -scheduled surgery or investigative procedure -local phlebotomy schedule -therapeutic monitoring requirements
1.2.11 Selection of formulation, concentration or rate	**Ensure appropriate regimen**	Check availability of medicine in prescribed form
		Check formulation is appropriate for the patient. Consider presence of physical disability, e.g. visual impairment, impaired physical dexterity, swallowing difficulties
		Consider factors likely to compromise product efficacy and stability when repackaging medicines out of their original containers/packaging, e.g. dose administration aid
		Provide administration advice where needed, such as -crushing of oral medicine/s -dilution of parenteral medicine/s -compatible fluids -rate of parenteral administration -suitability of formulation -method of administration
		Document administration advice according to local policy
1.2.12 Review and interpretation of patient-specific data	**Monitor patient-specific clinical data, medication outcomes and response**	Appropriately access patient-specific clinical data, such as -laboratory investigations -clinical observations, e.g. temperature, pulse, blood pressure, bowel function, pain scores, -progress notes/health record
		Correctly interpret patient-specific clinical data with respect to: -clinical diagnosis -patient's current clinical state and past medical history -pathophysiology of disease/s -specifics of medicine, e.g. time to effect -desired outcome
		Monitor patient for effectiveness of treatment and potential adverse effects
		Identify missing data and resolve, e.g. INR not performed
1.2.13 Therapeutic drug concentration monitoring	**Monitor drug concentrations as appropriate**	Identify medicines requiring concentration monitoring, e.g. narrow therapeutic range, high risk, significant adverse effect profile, large degree of patient variability in pharmacodynamics, associated with clinically significant interactions, and the reason for doing so, e.g. suspected toxicity, suboptimal response, patient adherence issues
		Recommend TDM where indicated
		Identify patients at risk of adverse effects who may require more intensive monitoring, e.g. renal or hepatic impairment, undergoing dialysis and haemofiltration, uncompensated cardiac dysfunction, pregnant, obese, malnourished, extremes of age (elderly or paediatric patients especially neonates), cystic fibrosis, severe burns, specific polymorphisms
		Identify the appropriate target therapeutic range according to indication, e.g. prophylaxis/ treatment, route of administration

Element	Performance criteria	Evidence guide
		Review concentrations considering: -medicine, dose, formulation and dosing schedule -method of administration -indication for treatment -reason for TDM -duration of current medicines regimen -time of last dose -time of sampling -prior drug monitoring and other relevant laboratory results -patient-specific factors, such as renal and hepatic function, cardiac status, age, weight -relevant pharmacokinetic and pharmacodynamic properties of the medicine -potential for drug interactions -other environmental factors, such as smoking -potential for sampling or measurement error -local laboratory parameters -pharmacogenomics and genetic markers especially as they relate to medicine handling and monitoring of suitability of certain medicines for particular patient
		Correctly interpret concentrations in context of: -patient's current clinical state -desired target concentration -desired outcome of therapy -perceived adherence with medicines -duration of therapy -potential drug interactions -previous relevant TDM results -potential for sampling/laboratory error.
		Correctly calculate dose adjustment if required
		Communicate results of concentration monitoring in a timely manner
		Recommend ongoing monitoring requirements
		Document dose and monitoring recommendations

Competency Unit 1.3: Identification, Prioritisation and Resolution of Medicine-Related Problems

This competency unit describes the skills needed to effectively identify and resolve medicines-related issues regarding patient care.

Element	Performance criteria	Evidence guide
1.3.1 Identification of patients most at risk of medication misadventure	**Identify if patient is at risk of medication misadventure**	Patients most at risk of medicines-related problems include those who: -have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation -are aged 65 years or older -take 5 or more medicines -take more than 12 doses of medicines per day -take a medicine that requires therapeutic monitoring or is a high-risk medicine -have clinically significant changes to their medicines or treatment plan within the last 3 months -have suboptimal response to treatment with medicines -have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties -have impaired renal or hepatic function -have problems using medication delivery devices or require an adherence aid -are suspected or known to be non-adherent with their medicines -have multiple prescribers for their medicines -have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation
1.3.2 Identification of medicines-related problems	**Identify actual and potential medicines-related problems**	Identify common contraindications to therapy, potential adverse effects and interactions
		Identify high-risk medicines, high-risk disease groups and high-risk patients
		Identify ongoing monitoring requirements related to therapy
		Consider presenting complaint – is a current symptom related to prescribed or potentially omitted medicine/s?
		Identify factors likely to adversely affect adherence to intended medication therapy
	Identify new ADRs	Identify potential causative agent/s and the severity of the reaction
		Consider the benefits/potential harm of continuing/ceasing therapy with the suspected medicine
		Ensure medical officer and nursing staff are informed of newly identified ADRs and that appropriate action is taken
		Identify ongoing monitoring requirements/treatment

Element	Performance criteria	Evidence guide
1.3.3 Prioritisation of medicines-related problems	**Prioritise medicines-related problems appropriately**	Identify the risk associated with the medicines-related problem, i.e. potential harm to patient.
		Identify the urgency of resolution, e.g. potential harm to patient, dosing schedule
		Appropriately prioritise actions
1.3.4 Resolution of medicines-related problems	**Resolve medicines-related problems appropriately**	Ensure that an appropriate course of action is identified and implemented
		Accurately communicate to the relevant personnel the action required and the urgency of that action
		Act to minimise harm to the patient
1.3.5 Documentation of medicines-related problems	**Document medicines-related problems accurately**	Document medicines-related problems and outcomes as per local policy, e.g. -medication management plan -patient's health record -medication chart -clinical pathways.
		Where appropriate prepare a report that clearly and concisely documents medication management advice and recommendations and the basis upon which they are made
1.3.6 Assessment of outcomes of contributions	**Assess outcomes of contributions appropriately**	Follow-up on the clinical outcome of previous contributions/interventions, e.g. symptom control, medicine efficacy, ongoing information requirements
		Re-evaluate and modify therapeutic goals
		Request feedback from patient, carer, or health professional on specific issue/service
		Reflect on service delivery or patient encounter and identify potential service improvement or learning needs
1.3.7 Documentation of clinical pharmacy activities	**Document medication management plan**	Information documented on a medication management plan or other report could include: -history of presenting complaint and reason for current admission -assessment of the patient's clinical problems -plan for the management of the patient's clinical problems and therapeutic goals -past and current medical and surgical problems -list of medicines at time of presentation/admission and past medication history -details of allergies and ADRs, including dates and descriptions of reactions and re-exposure to the medicine -relevant laboratory parameters -medication risk identification including actual or potential medicines-related problems and management -plans for patient care, e.g. outcome monitoring, discharge planning -patient medicine education planned and dates when performed, e.g. warfarin -changes to the patient's medicines regimen. An assessment of adherence and plans for the provision of adherence aids and review dates and deadlines.
		Recommendation for medicines review or the need for periodic medication review if required
		Clearly identify discipline (i.e. pharmacist), date and time
		Follow a logical sequence, e.g. SOAP method[5] -subjective relevant patient details -objective clinical findings -assessment of the situation or clinical problem, and -proposed management plan
		Limit comments to 'recommendations' to allow scope for discussion
		Document relevant discussion of the issue with prescriber or other health professional
		Only use well-recognised abbreviations (refer to a medical abbreviations document)
		Document the strategy for clinical review and monitoring
		Sign the entry, print name and designation alongside the signature and provide contact details
		Where medicines-related problems are identified consider documenting: -information obtained from an accurate medication history including an assessment of patient adherence with the prescribed medicines regimen -medication reconciliation record to form part of the patient's health record where not recorded in a organisation-specific form -identification of serious clinical problems with discussion of the pharmacist's assessment -details of patient education and adherence aids provided -response to patient-specific questions from other staff, e.g. recommended doses -provision of patient-specific medicines information and specific therapeutic information -recommendations for TDM and evaluation of TDM data -ADR assessment and management recommendations -serious concerns about medicine therapy that cannot be verbally communicated to the prescriber (or which has not been addressed by medical staff or which would potentially imply negligence by the pharmacist if not documented)
	Sign for clinical review	Sign pharmaceutical review section on medication chart/patient's health record when clinical review is complete

Element	Performance criteria	Evidence guide
	Document pharmacist interventions	Accurately and succinctly document the nature of the intervention in the patient's health record and/or medication management plan according to local policy
		Evaluate effectiveness of interventions
	Document new ADRs	Document details of newly identified ADRs according to local policy on the: -medication chart -health record -appropriate software and/or patient's e-health record -patient wrist band
		Complete and send ADR report if appropriate to the Advisory Committee on the Safety of Medicines
	Document medication incidents	Initiate reporting of medicines-related events or circumstances which could have, or did lead to unintended harm to a person, loss or damage, and/or a complaint, according to local policy
		Discuss identified medication incidents with appropriate personnel
		Document identified medication incidents according to local policy

Competency Unit 1.4: Provision of Medicine

This competency unit relates to the safe and appropriate supply of medicines to the patient.

Element	Performance criteria	Evidence guide
1.4.1 Availability of medicines	**Ensure prescribed medicine can be made available**	Consider local formulary requirements (including those pertaining to CAMs)
		Consider S100/SAS/PBS/other applicable restrictions
		Consider ongoing access to medicine on transfer/discharge
		Ensure necessary paperwork is completed
1.4.2 Supply of medicines	**Supply prescribed medicine accurately and legally**	Select correct preparation (medicine, form, strength)
		Supply adequate quantity
	Label individually dispensed medicines accurately and appropriately	Label individually dispensed medicines accurately and appropriately with: -active ingredient, form, strength, quantity, patient name, date, and pharmacy details -clear dosage instructions for outpatient and discharge medicines -instructions as required for inpatient medicines according to local policy
		Attach ancillary labels if appropriate
		Ensure medicines are labelled appropriately for the patient, e.g. visually impaired, non-English speaking patients
	Provide prescribed medicine for the patient in a timely manner	Ensure all medicines are made available for due doses
		Prioritise supply of newly prescribed medicines depending on medical condition of the patient and availability of nursing or medical staff to administer the medicine.
	Document supply of the medicine on the medication chart/ prescription	Annotate supply on the medication chart/prescription in accordance with local policy and legal requirements
1.4.3 Review of administration of prescribed medicines	**Ensure prescribed medicines are administered correctly**	Check the administration area of the medication chart and ensure that administration has occurred and has been documented
		Identify occasions where medicines have been omitted and investigate and resolve, e.g. if due to unavailability of medicine, ensure initiation of supply.
		Visually check parenterally administered medicines to ensure administration follows correct procedure

Competency Unit 1.5: Discharge/Transfer Facilitation

This competency relates to the transition of patients within and between healthcare providers. It incorporates the provision of appropriate and timely information to the patient/carer and other healthcare providers responsible for ongoing care of the patient, in order to prevent medicines-related problems during the transition.

Element	Performance criteria	Evidence guide
1.5.1 Reconciliation of medicines on transition between care settings	**Reconcile discharge/ transfer prescription and/or medicines against current medication chart**	Check for discrepancies between discharge/transfer prescription, current medication chart and medication history
		Investigate justification for discrepancies (e.g. clinical changes at the time of discharge/ transfer, completion of courses) and resolve
		Ensure discharge/transfer prescription is consistent with discharge/transfer plan where available
	Reconcile discharge/ transfer prescription and/or medicines against admission medication history	Check for discrepancies between discharge/transfer prescription and medicines taken immediately prior to presentation
		Investigate justification for discrepancies (e.g. clinical changes, completion of courses) and resolve
	Reconcile patient's own medicines against discharge/transfer prescription and return to patient if appropriate	Discuss changes to medicines during care and intended changes post discharge/transfer with patient/carer. This should be reflected in medicines provided at the point of discharge/transfer and in written information provided
		Return the patient's own medicines where appropriate
		Remove ceased medicines for destruction with the patient's permission
		Document the details of the medicines returned, relabelled or removed
1.5.2 Provision of information for ongoing care	**Provide patient with an accurate and complete list of medicines with additional information for ongoing care**	Patients requiring additional information for ongoing care include those who: -have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation -are aged 65 years or older -take 5 or more medicines -take more than 12 doses of medicines per day -take a medicine that requires therapeutic monitoring or is a high-risk medicine -have clinically significant changes to their medicines or treatment plan within the last 3 months -have suboptimal response to treatment with medicines -have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties -have impaired renal or hepatic function -have problems using medication delivery devices or require an adherence aid -are suspected or known to be non-adherent with their medicines -have multiple prescribers for their medicines -have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation
		Provide appropriate information in accordance with local policy and include details on: -medicine (active ingredient and brand names) -dose and dose form -frequency -indication for therapy -changes to medicine/s during the episode of care -ADRs and any medicines-related problems -monitoring requirements for ongoing management of patient's medicines -pharmacy contact details -changes to take place post discharge/transfer -recommendation for Home Medicines Review, Residential Medication Management Review or the need for further medication review if required -explain function and use of medicines information provided and confirm patient/carer's comprehension
1.5.3 Continuity of supply	**Provide patient/ carer with information regarding further supply of medicine/s**	Provide patient/carer with instructions regarding ongoing supply of medicines after discharge/transfer, e.g. hospital or PBS prescription, need for authority/other requirements
		Review and return patient's own medicines if appropriate. Discard ceased/inappropriate medicines with the patient's permission.
		Consider the need for administration and/or adherence aids. Discuss with patient/carer and organise if required.

Element	Performance criteria	Evidence guide
1.5.4 Liaison with community/ primary care healthcare providers	**Supply verified patient-specific medicines-related information to all relevant persons involved in patient's ongoing care**	Provide comprehensive, accurate and timely information to patient's GP, community pharmacist, residential care provider or other healthcare provider as appropriate
		Include details of medicines ceased, commenced or modified and intended further changes or monitoring to take place post discharge or transfer
		Monitor strategies employed to improve adherence and liaise with other health professionals as required
		Organise an interim medication chart (if available) for patients discharged to residential care facilities
		Liaise regarding ongoing supply, including special packaging requirements
	Provide recommendation for follow-up/ periodic medicines review for patients at risk of medication misadventure	Provide recommendation for Home Medicines Review, Residential Medication Management Review or the need for further medication review if required including details of identified medicines-related problem

Competency Unit 1.6: Patient Education and Liaison

This competency unit relates to the provision of information to the patient/carer in order to facilitate informed and appropriate use of medicines after discharge or transfer.

Element	Performance criteria	Evidence guide
1.6.1 Need for information	**Accurately identify patient/carer's need for medicines-related information**	Identify patient/carer's need for information during the episode of care, e.g. those with: -new medicine/s -changes to existing medicine/s, including CAMs (local policy may need to be discussed with the patient) -multiple medicines -high-risk medicines -most at risk of medicines-related problems -a specific request for information
		Identify who is responsible for medication administration and follow-up post discharge/ transfer, e.g. patient/carer/relative
		Identify counselling requirements, e.g. discuss: -information previously provided (including that provided by another health professional) -patient's perception of indication and efficacy -adverse effects experienced
1.6.2 Cultural and social background	**Act in a sensitive and responsive manner to specific cultural and social needs and beliefs of the patient**	Recognise, and remain sensitive to cultural, religious and social beliefs of the patient/carer, e.g. addressing an appropriate family member, non-verbal cues.
		Recognise and remain sensitive to generational differences
		Recognise it may be relevant to delay discussion until the most appropriate person/ interpreter service is available
		Maintain flexibility in practice to accommodate specific cultural or social requirements of patients and/or carers
1.6.3 Provision of information to patient and/ or carer	**Utilise opportunities to educate patient during interaction/ episode**	Commence preliminary education regarding medicines and changes to medicines during the course of the interaction/episode
		Provide information regarding appropriate sources of medicines-related information (including pharmacist contact details)
	Retrieve information using an appropriate source	Assess the most appropriate source of information for the patient/carer. Consumer medicines information (CMI) developed by the manufacturer should be provided. Locally developed and approved information may be a useful addition
	Provide written and/ or oral information	Provide and discuss CMIs: -for all new or changed medicines -where a brand/formulation change has been made -where requested by the patient/carer or another health professional

Element	Performance criteria	Evidence guide
		Provide information which may include details of: -new and/or ceased medications -details of changes to medicines (dose, dose form) and reason for change (including changes to CAMs if modified at presentation) -intended purpose, benefits, potential side effects and expected outcome of treatment -relevant interactions -precautions -administration advice -active ingredient, brand name, physical description and strength -action to be taken in the event of a missed dose -storage advice -ongoing supply and follow-up arrangements -techniques for self-monitoring in the home environment, e.g. blood glucose level, weight -intended or likely duration of therapy -use of adherence aids -written medicines list as required
		Discuss with, and reassure patient where differences exist between information provided and individual circumstance, e.g. medicines used for non-approved indications, investigational medicines
		Acknowledge and preserve patient confidentiality and privacy
		Summarise information at the end of the discussion
		Avoid providing information another health professional should discuss with patient, e.g. disease or procedural specific information other than that pertaining to medicines
	Prepare a contingency plan	Consider the usefulness of a medication contingency plan for the patient and prepare as appropriate. Identify whether follow-up is required for further information sessions including Home Medicines Review, Residential Medication Management Review, medication review or referral to another health professional
		Details may include: -who is responsible for ongoing monitoring of therapy, e.g. GP, pathology service -what monitoring is required (e.g. blood glucose level) and how to monitor -what to do in the event of adverse effect.
	Review and discuss administration technique	Demonstrate administration technique where appropriate, e.g. inhaler, patches
		Review technique for administration of existing therapies
	Provide appropriate lifestyle advice	Discuss relevant lifestyle issues, e.g. dietary modifications, smoking cessation
	Assess patient and/or carer's comprehension of information provided	Encourage the patient/carer to discuss their prescribed medicines and assess their understanding and abilities during the conversation
		Reiterate important details
1.6.4 Provision of information regarding non-	**Consider non-pharmacological alternatives applicable to the patient and provide appropriate information**	Consider applicability and use of non-medication alternatives e.g. graduated compression stockings for venous thromboembolism prevention, heat packs for pain, relaxation techniques for anxiety and pain management
		Discuss with other health professionals and/or patient in context of disease management and medicine use

Part Two: Personal and Professional Qualities

Competency Unit 2.1: Problem Solving

This competency unit relates to the ability to gather and apply information, utilise appropriate resources and contextualise in order to resolve medicines-related issues.

Element	Performance criteria	Evidence guide
2.1.1 Recognition of limits of personal knowledge	**Identify the need to obtain further information or advice**	Recognise limits of personal knowledge and/or ability to interpret information
		Identify a need to seek further information or advice
		Actively find required information in order to resolve medicines-related issues
2.1.2 Access information	**Access information from an appropriate source**	Access information from an appropriate source, e.g. -local prescribing policies/formularies -sources of clinical information: clinical texts, journal articles, web-based information -patient-specific information: laboratory results, medical/nursing staff, patient/carer -other health professionals: pharmacists, nursing, medical and/or allied health staff
		Recognise potential strengths and limitations of individual reference sources (understand the importance of different levels of clinical evidence)
2.1.3 Abstract information	**Abstract key relevant points from information gathered**	Identify relevant aspects of the information gathered in the context of the patient
		Review available information efficiently to address patient-specific issues
2.1.4 Evaluation and application of information	**Evaluate information gathered and apply to the clinical setting**	Accurately interpret information in the context of the patient
		Appropriately apply clinical guidelines and/or references to practice
		Use information appropriately to formulate a plan to resolve medicines-related issues
		Assess the reliability of the information source, e.g. potential bias, evidence level
2.1.5 Appraisal of therapeutic options	**Consider available treatment options in the context of the patient**	Assess advantages and disadvantages of possible treatment options in light of comorbidities and individual patient factors (including patient/carer preferences)
		Consider available evidence to support therapeutic choice
		Recognise that in some cases no medicine may provide the best treatment option
2.1.6 Formulation of a clear decision	**Demonstrate clear decision making**	Formulate a rational course of action to resolve medicines-related issues in the light of information gathered
		Identify appropriate personnel to resolve, e.g. discuss with medical/nursing/pharmacy staff
		Communicate recommendations to the patient/carer, prescriber and other health professionals as appropriate

Competency Unit 2.2:Therapeutic Understanding

This competency unit relates to the ability to utilise knowledge in the clinical context presented in order to maximise medicine efficacy.

Element	Performance criteria	Evidence guide
2.2.1 Justification of therapeutic choice	**Justify therapeutic choice in the clinical context of the patient**	Identify and understand the therapeutic plan for the patient
		Understand the choice of therapy in the context of the patient including goals of therapy and patient preference
		Justify choice of therapy where multiple therapeutic options exist; taking into consideration specific patient details, potential benefits/risks, cost effectiveness and available evidence
		Understand the pharmacological action of chosen therapy
		Develop report that formalises medication management recommendations and the evidence base from which they were developed

Competency Unit 2.3: Provision of Therapeutic Advice and Information to Health Professionals

This competency unit relates to the provision of appropriate information to other health professionals in order to ensure medicines-related issues are resolved and patient-specific issues are shared appropriately with other members of the healthcare team.

Element	Performance criteria	Evidence guide
2.3.1 Provision of accurate information	**Provide accurate information to other members of the healthcare team**	Provide information to other members of the healthcare team accurately in the context of the specific patient/s (use evidence-based resources/consensus guidelines where appropriate). Provide global information to support and educate other members of the healthcare team regarding medicines-related issues
2.3.2 Provision of relevant and usable information	**Provide relevant information to other members of the healthcare team**	Determine why an inquiry was made, urgency of the request and how the information sought is to be used
		Provide information relevant to either a specific patient/group of patients or the healthcare team in general
		Provide information to other members of the healthcare team in a concise and usable form
		Avoid discussing information not specifically relevant or necessary
2.3.3 Provision of timely information	**Provide information to other members of the healthcare team in a timely manner**	Ensure information relating to specific medicines-related issues is provided in a timely manner to affect required changes/support the interdisciplinary team in a timely manner.

Competency Unit 2.4: Communication

This competency unit relates to the ability to communicate effectively with the patient/carer and other members of the healthcare team.

Element	Performance criteria	Evidence guide
2.4.1 Patient and carer	**Use clear, precise, relevant and appropriate communication**	Use language the patient/carer is able to understand
		Use reassuring, empathetic, non-alarmist tone to discuss medicines-related information
		Provide clear and relevant information with a patient safety focus
		Recognise the need for specialised communication, e.g. presence of emotional distress, physical disability, cultural/linguistic requirements (including the need for an interpreter)
		Recognise barriers to effective communication including culture, values, beliefs, sensory impairment, disability, personality conflict, socioeconomic or educational status, communication through a third party
		Remain respectful
	Involve patient/ carer in the medication management process	Actively listen to concerns/questions raised by the patient/carer in relation to therapy choices and refer as appropriate.
2.4.2 Pharmacy staff	**Use clear, precise, relevant and appropriate communication**	Provide information to other members of the pharmacy team to support patient care
		Ensure patient details are discussed confidentially and only where relevant to pharmaceutical care.
		Communicate relevant patient-specific details with members of the pharmacy team involved in the provision of patient care, e.g. pharmacists, support staff (pharmacy assistants and technicians, store/procurement staff)
		Consider constraints placed on other members of the team, e.g. time constraints, system confines
		Remain respectful
2.4.3 Prescribing staff	**Use clear, precise, relevant and appropriate communication**	Use language relevant to the prescriber's area of specialty and level of experience
		Use assertive language where necessary and maintain a patient safety focus
		Clearly state evidence/justification to support any action/s requested
		Actively listen and adjust patient plan according to additional information
		Demonstrate proactive approach to responding to medicines-related issues and problems
		Provide written information when appropriate, in a clear, concise, usable format.
		Remain respectful

Element	Performance criteria	Evidence guide
2.4.4 Nursing staff	**Use clear, precise, relevant and appropriate communication**	Use language relevant to the nursing staff's area of specialty and level of experience
		Use assertive language where necessary and maintain a patient safety focus
		Clearly state evidence/justification to support any action/s requested
		Actively listen and adjust patient plan according to additional information
		Demonstrate proactive approach to responding to medicines-related issues and problems
		Provide written information when appropriate, in a clear, concise, usable format
		Remain respectful
2.4.5 Other health professionals	**Use clear, precise, relevant and appropriate communication**	Use language relevant to the professional's area of specialty and level of experience
		Use assertive language where necessary and maintain a patient safety focus
		Clearly state evidence/justification to support any action/s requested
		Actively listen and adjust patient plan according to additional information
		Demonstrate proactive approach to responding to medicines-related issues and problems
		Provide written information when appropriate, in a clear, concise, usable format
		Remain respectful

Competency Unit 2.5: Personal Effectiveness

This competency unit describes the personal skills required to effectively perform clinical duties.

Element	Performance criteria	Evidence guide
2.5.1 Prioritisation	**Prioritise work to allow effective task completion**	Gather information to support decision making in relation to task prioritisation, e.g. patient bed or handover list, medication action plans, team planning meetings
		Consider relevant factors when prioritising work, e.g. patient acuity, workflow issues, discharge requirements, needs of other members of the department.
		Consider the goals of the interdisciplinary and pharmacy teams when prioritising tasks
		Adjust priorities in response to changing circumstances
		Refer early to an appropriate supervisor if assistance is required
2.5.2 Initiative	**Demonstrate appropriate initiative**.	Demonstrate the ability to work independently of others
		Accept responsibility for addressing problems
		Take on new opportunities/tasks without prompting from others
		Consider tasks that will add to patient safety and initiate the following consultation with the supervisor, e.g. -refining processes for admission/discharge -attendance at ward rounds and unit meetings -provision of medicine specific information -attendance at committee meetings
		Identify areas of practice requiring improvement, e.g. process/system issues, and seek to improve: -development of pharmacy, ward or unit specific policies or guidelines -consider areas for research and investigate/discuss with an appropriate colleague
2.5.3 Efficiency	**Work efficiently resulting in task completion with minimum waste of time**	Use time productively with minimum waste
		Consider task prioritisation and team goals to ensure completion of required tasks as efficiently as possible
		Understand basic systems and process within the work area, e.g. liaison with dispensary and ward staff
		Communicate with supervisor when assistance required, e.g. when workload becomes difficult to meet/situation becomes stressful
		Delegate tasks to other members of the pharmacy team where appropriate, e.g. non clinical duties to support staff
		Manage conflicting and/or multiple demands on time
		Maintain flexibility with respect to managing unplanned events to facilitate completion of tasks on time
		Apply information and guidance provided by others to progress tasks effectively
2.5.4 Logic	**Demonstrate a logical thought process to problem solving**	Identify key action points related to patient care
		Clarify required information and identify possible sources of information
		Apply a structured process to the identification and resolution of patient-related problems

Element	Performance criteria	Evidence guide
2.5.5 Assertiveness	**Use appropriate level of assertiveness to resolve identified issues**	Express point of view in a non-passive and non-aggressive manner, using appropriate language and tone
		Alert other health professionals to potential medicine safety issues and medicines-related problems
		Use appropriate assertiveness techniques to escalate discussions when patient safety is compromised
		Consider the need to discuss issue with a more senior staff member if unable to resolve at a junior level
		Ensure patient safety at all times
		Ensure own professional rights and values are not compromised
2.5.6 Negotiation	**Collaborate with colleagues to resolve issues in a mutually beneficial manner**	Use a collaborative approach to address problem.
		Understand the desired outcome of both parties
		Understand the requirements of both parties
		Consider options to facilitate a mutually agreeable outcome
		Work towards mutual goals
		Recognise and respect the professional rights of others
		Maintain composure and respectfulness even during difficult negotiations
2.5.7 Confidence	**Demonstrate professional confidence**	Use confident, effective language and appropriately assertive communication skills
		Complete requested tasks
		Demonstrate an appropriate level of knowledge regarding patient care
		Demonstrate confidence in own abilities

Competency Unit 2.6: Team Work

This competency unit relates to the ability to work effectively as part of both the pharmacy and interdisciplinary teams.

Element	Performance criteria	Evidence guide
2.6.1 Pharmacy team	**Recognise value of other team members**	Understand the contribution other members of the team make to patient care
		Recognise the limitations within which other members of the team work
	Work effectively as part of the team	Liaise appropriately with other members of the team to effectively manage patient care
		Utilise efficiently the skills of other members of the team to support patient care
	Pass on information to other pharmacists	Hand over patient and/or team specific information to other pharmacists, e.g. support leave cover
		Share information with members of another section of the pharmacy, e.g. dispensary staff
2.6.2 Interdisciplinary team	**Recognise value of other team members including non-clinical staff**	Understand the contribution that other members of the team make to patient care
		Recognise the limitations within which other members of the team work
	Work effectively as part of the team	Liaise appropriately with other members of the team to effectively manage patient care
		Utilise efficiently the skills of other members of the team to support patient care
2.6.3 Share learning experiences	**Share information to benefit other team members**	Provide clinical information to support and enhance learning of other members of the pharmacy or interdisciplinary team, e.g. discuss cases or medicine-specific information at continuing education sessions, team/unit meetings or other relevant forum
	Share experiences with less experienced team members	Support the development of members of the pharmacy and interdisciplinary teams by sharing experiences either formally or informally in a mentoring/educational capacity
2.6.4 Promotion of rational use of medicines	**Promote and participate in activities related to the quality use of medicines**	Identify situations in which a formal review process, such as drug use evaluation (DUE), may contribute to the rational use of medicines
		Participate in the design of DUE strategies including retrieval and review of appropriate literature resources
		Collect data accurately and contribute to the analysis of data obtained as part of the DUE process
		Contribute to the education of members of the pharmacy and interdisciplinary teams regarding DUE activities and results
		Promote local prescribing policies that support rational use of medicines

Competency Unit 2.7: Professional Qualities

This competency unit encompasses the professional qualities expected of pharmacists across all experience levels and working in all sectors.

Element	Performance criteria	Evidence guide
2.7.1 Professional code of ethics	**Practice within the relevant Code of Ethics**	Understand how the *SHPA Code of Ethics* relates to practice and act accordingly.
2.7.2 Confidentiality	**Maintain patient confidentiality**	Recognise and protect the rights of patients to privacy and confidentiality regarding information relating to their health.
		Recognise that patient-specific information discussed with other health professionals should remain confidential
2.7.3 Responsibility for own action	**Take responsibility for own actions**	Accept responsibility for actions taken including those taken by other staff for whom you are responsible, e.g. students
		Account for actions, omissions and outcomes associated with professional contribution
2.7.4 Responsibility for patient care	**Take responsibility for patient care**	Maintain patient care as focus of practice
		Ensure patient-specific problems are resolved
2.7.5 Recognition of limits of professional practice	**Appropriately refer medicines-related problems**	Understand personal practice profile (i.e. personal scope and level of practice)
		Clarify identified patient-related issue/s
		Consider most appropriate referral point
		Refer in a logical and concise manner
		Maintain and promote respect for other members of the healthcare team

Competency Unit 2.8: Continuing Professional Development

This competency unit relates to reflection on current practice and ongoing professional development.

Element	Performance criteria	Evidence guide
2.8.1 Continuing professional development	**Reflect on personal practice and identify learning needs**	Understand the concept of lifelong learning
		Reflect on current practice
		Evaluate learning and identify learning needs according to accepted standards of practice
		Formulate a plan to address learning needs and act appropriately
		Undertake self-directed learning as part of a structured learning plan
		Record actions taken to fill identified gaps in knowledge/skills/practice
		Record professional development tasks completed in line with Pharmacy Board of Australia criteria

Glossary

Adherence aid. An aid that assists the patient to adhere to their medicines as prescribed, e.g. Dosette boxes, Webster pack, medicines list, alarms, pagers.

Adverse drug reaction (ADR). A drug response that is noxious and unintended, and occurs at doses normally used or tested in humans for the prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function.[1]

Adverse medicines event (AME). An adverse event due to a medicine. This includes the harm that results from the medicine itself (an ADR) and the potential or actual patient harm that comes from errors or system failures associated with the preparation, prescribing, dispensing, distribution or administration of medicines (a medication incident).[1]

Assessment of current medication management. Review of a patient's current medication management including:

- reviewing all medicine orders and administration records to optimise medicine therapy, to ensure medicines are administered safely and appropriately and patient outcomes are optimised
- comparing patient's current medicines to the patient's MMP and data from the medication administration record, pharmacist clinical review, laboratory results and therapeutic drug monitoring
- providing advice on the selection of medicines to support therapeutic appropriateness, cost effectiveness and accessibility.

Clinical review. Review of patient-specific clinical information and patient parameters to evaluate their response to medication therapies and to detect and manage potential or actual medicines-related problems.

Continuous improvement. Systematic, ongoing effort to raise an organisation's performance against a set of standards or indicators.[1]

Drug use evaluation (DUE). Authorised, structured, ongoing system for improving the quality of medicine use within a health service organisation. Medicine use is evaluated using pre-determined standards, and efforts are initiated to correct patterns of use which are not consistent with these standards. It includes a mechanism for measuring the effectiveness of these corrective actions.[2]

Health professional. Healthcare provider or clinician trained as a health professional. Includes registered and non-registered practitioner, or a team of health professionals providing health care who spend the majority of their time providing direct clinical care.[1]

Health record. Patient's health record consists of, but is not limited to, a record of the patients medical history, treatment or progress notes, observations, correspondence, medication chart, prescription records, investigations, test results and photographs.[1] The health record may be a hard copy or electronic format. The immediate health record is the health record relating to that episode of care. The permanent health record contains all the patient's record for that health service organisation.

Health service organisation. A separately constituted health service that is responsible for the clinical governance, administration and financial management of service units providing health care. A service unit involves a grouping of clinicians and others working in a systematic way to deliver health care to patients and can be in any location or setting, including pharmacies, clinics, outpatient facilities, hospitals, patients' homes, community settings, practices and clinicians' rooms.

High-risk medicines. A medicine that is deemed high-risk, such as

- insulins and/or oral hypoglycaemic agents
- opioid analgesia
- immune suppressant therapy
- anticonvulsants
- aminoglycosides or vancomycin
- anticoagulants and antithrombotics
- intravenous potassium
- chemotherapy.

Interdisciplinary. Includes doctors, nurses and pharmacists and other health professionals.

Medication error. A preventable event that may cause or lead to inappropriate medication use or patient harm while medication is in control of the health professional, patient or consumer.[1] Such events may be related to professional practice, healthcare products, procedures, and systems, including prescribing; order communication; product labelling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.[3]

Medication history. Accurate recording of a patient's own medicines. It comprises a list of all current medicines including all prescription and non-prescription medicines, complementary healthcare products and medicines used intermittently; recent changes to medicines; past history of adverse drug reactions including allergies; and recreational drug use.[1]

Medication incident. *See Adverse medicines event*.

Medicines list. Comprehensive list of all current medicines being used by the patient including complementary and alternative medicines and over-the-counter medicines.

Medication management plan (MMP). Documented continuing plan used by health professionals in collaboration with patients to develop strategies to manage the use of medicines for the patient. It includes a best possible medication history and lists issues identified during the assessment of the patient's current medication management and the medication management goals developed.[4] Previously known as medication action plan.

Medication reconciliation. 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 next care provider.[1]

Near miss. Incident that did not cause harm but had the potential to do so.[1] This can be described as either an event that did occur but harm did not eventuate or an event that would otherwise have led to harm if it were not intercepted.

Patient vs consumer. The term patient has been chosen in this document to indicate all consumers of health care and their carers and recognises patients as active participants in their own health care.

Patients most at risk. Prioritise patients most at risk of medicines-related problems who:

- have medication misadventure as the known or suspected reason for their presentation or admission to the health service organisation
- are aged 65 years or older
- take 5 or more medicines
- take more than 12 doses of medicines per day
- take a medicine that requires therapeutic monitoring or is a high-risk medicine
- have clinically significant changes to their medicines or treatment plan within the last 3 months
- have suboptimal response to treatment with medicines
- have difficulty managing their medicines because of literacy or language difficulties, dexterity problems, impaired sight, confusion/dementia or other cognitive difficulties
- have impaired renal or hepatic function
- have problems using medication delivery devices or requires an adherence aid
- are suspected or known to be non-adherent with their medicines
- have multiple prescribers for their medicines
- have been discharged within the last 4 weeks from or have had multiple admissions to a health service organisation.

Service agreement. The level and scope of clinical pharmacy service between the pharmacy and the health service organisation or individual ward or unit or otherwise as determined. The agreement may be written or implied and may include desired outcomes and evidence of provision, e.g. key performance indicators.

Therapeutic drug monitoring (TDM). Interpreting and monitoring of measured drug concentrations in body fluids to optimise medicine efficacy and minimise toxicity. TDM applies the disciplines of pharmacology, pharmacokinetics, pathology and clinical medicine.

References

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3. Runciman WB. Shared meanings: preferred terms and definitions for safety and quality concepts. Med J Aust 2006; 184 (10 suppl): S41-S43.
4. Australian Pharmaceutical Advisory Council. Guiding principles to achieve continuity in medication management. Canberra: The Council; 2005.

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