Pharmaceutical Society of Australia

6th Community Pharmacy Agreement

Guidelines for pharmacists performing clinical interventions

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Executive summary

Although pharmacists routinely undertake clinical interventions as part of their professional duty of care, they may not consistently document these interventions, or document them at all. In addition, some pharmacists may not always recognise that their decisions and actions constitute clinical interventions.

These guidelines provide information and guidance to assist pharmacists to meet their professional responsibilities, exercise professional judgement and manage risks associated with performing clinical interventions. They provide information and advice to pharmacists on professional issues related to performing clinical interventions.

This will help pharmacists to:

- identify, classify and document medication-related problems (MRPs) and clinical interventions in a professional manner
- ensure that all important information is recorded effectively and systematically
- use documented clinical interventions to communicate with other healthcare providers and/or patients, where required.

The guidelines do not replace the need for pharmacists to exercise professional discretion and judgement when performing these tasks in their own practice environment. The guidelines do not include clinical information or detailed legislative requirements. Pharmacists must at all times comply with relevant Commonwealth, state and territory legislation, as well as relevant standards, codes and rules.

Introduction

A *clinical intervention* may 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".[1]

Pharmacists routinely provide clinical interventions to improve the health outcomes of patients. Clinical interventions are provided to prevent or address MRPs related to both prescription and non-prescription medicines.

An MRP is defined in the literature as "an event or circumstance involving drug treatment that actually or potentially interferes with the patient experiencing an optimum outcome of medical care". Terms used to describe an MRP or subtype include drug-related problem, medication error, adverse drug event, adherence issue and adverse drug reaction.[2–5]

MRPs are a major burden on the Australian healthcare system[5,6]:

- Of all hospital admissions, an estimated 2–3% are medication related. Up to three-quarters of these are considered potentially preventable, equating to 230,000 hospital admissions with an annual cost of $1.2 billion. Medication-related hospital admissions are greater in the population aged 65 years and over, at 20–30% of all admissions.
- Within residential aged care, the prevalence of potentially inappropriate medicine use in residents has been estimated as 40–50%. Other studies have found that more than 90% of residents had at least one MRP, with an average of three or four per person.
- In the community, studies have found that around 10% of patients seeing a general practitioner (GP) had had an adverse medication event in the previous 6 months. Of these, 11–12% were severe, and approximately 5% required hospitalisation.

These studies have highlighted the need for improved detection and prevention of MRPs within the community and aged care facilities, before a GP visit, or hospital attendance or admission, is necessary.

A clinical intervention is the process of a pharmacist identifying a potential MRP and making a recommendation in an attempt to prevent or resolve the MRP. It is intended that clinical interventions will complement other professional services such as in-pharmacy MedsCheck services, Staged Supply, Home Medicines Reviews, Residential Medication Management Reviews, pharmacist vaccination services and the provision of Dose Administration Aids.

Performing, documenting and classifying MRPs and clinical interventions are important for several reasons, including:

- facilitating better health outcomes for patients
- improving communication between pharmacists and other healthcare providers involved in the patient's care, and the patient themselves
- supporting a learning and quality improvement culture with evidence to support a professional practice portfolio
- developing tools that encourage pharmacists to provide and record more clinical interventions
- providing a basis for quality audits and peer review
- permitting analysis of the data for pharmacovigilance, economic review or other purposes
- adequately recording details for potentially litigious situations.

Researchers involved in the series of Pharmacy Recording of Medication Incidents and Services electronically (PROMISe) projects[7] (see Appendix 1), conducted with funding provided under the Fourth Community Pharmacy Agreement, developed and refined a classification system, termed the DOCUMENT classification system, for MRPs. This system is used in pharmacies across Australia.

It is important to review these guidelines in conjunction with relevant *Professional Practice Standards,*[8] particularly:

- Standard 1—Fundamental Pharmacy Practice
- Standard 3—Dispensing and Other Supply Arrangements
- Standard 8—Counselling.

Pharmacists should also be familiar with Australian Standard AS85000:2017 (Quality Care Community Pharmacy Standard),[9] specifically:

- 5.1—Compliance with Legal and Professional Obligations
- 5.2—Supply of Medicines, Medical Devices, and Poisons
- 5.3—The Supply of Complex Compounded Products (if offered)
- 5.4—Delivery of Health Programs and Services.

(These are equivalent to Elements 1, 2 and 3 of the Quality Care Pharmacy Program (QCPP) requirements.[10])

These guidelines provide pharmacies with a procedure to appropriately adhere to requirement 5.2.8 of the Australian Standard ("maintaining and following a system for the identification, managing, recording, analysis and reporting of (i) clinical interventions and (ii) adverse drug reactions"), which is equivalent to mandatory requirement 2.9 for accreditation under the QCPP.[10]

Scope

These guidelines focus on the best-practice process for performing a clinical intervention and are not intended to provide clinical information or advice.

Based on the research and findings from the PROMISe projects,[7] the guidelines include a recommended procedure for identifying, classifying and documenting MRPs and clinical interventions on a day-to-day basis, to ensure that all important information is recorded in a standard, consistent and systematic manner.

Details of legislative requirements are not comprehensively addressed in these guidelines. It is expected that pharmacists will comply with relevant Commonwealth and state or territory legislation governing therapeutic goods, drugs and poisons, pharmacists (health practitioners), pharmacies (premises), privacy and confidentiality, and record keeping.

Pharmacists are expected to apply professional judgement in performing clinical interventions and in managing any associated risks. They will need to make risk–benefit assessments and other professional judgements from time to time, based on the best available information and current evidence. Records should be kept of assessments, ensuring that all significant decisions are documented. Records may also be used as a form of communication with other healthcare providers and/or the patient, in appropriate circumstances.

Pharmacists are reminded that they have a professional and legal responsibility to ensure that any medicine they provide is appropriate and safe for patients to use, and that the health and wellbeing of patients are their first priority.[11]

Terminology

For some terms used in these guidelines, other terms with equivalent or similar meanings may be equally appropriate in certain contexts (see Table 1).

Table 1. Guideline terms and definitions, and equivalent or related terms

GUIDELINE TERM	DEFINITION	EQUIVALENT OR RELATED TERM
Adherence	A qualitative measure of the extent to which a patient's behaviour corresponds with the recommendations agreed with a healthcare professional, ideally through a concordant approach[8]	Compliance, concordance
Carer	A person who is responsible for, or taking part in, the provision of care for another person. This may be through an informal or a formal arrangement[12]	Agent, authorised representative, case worker, guardian, representative
Competence	"Possession by an individual of the required knowledge, skills and attributes sufficient to successfully and consistently provide a specific task or function to the desired standard"[12]	
Counselling	A two-way communication between the pharmacist and patient or carer. The pharmacist identifies the patient's needs, and provides them with the required information so that medicines and therapeutic devices can be used safely and effectively	Communication with patients or carers
Healthcare provider	A practitioner who provides services to individuals or communities to promote, maintain, monitor or restore health (such as a general practitioner, dentist, physiotherapist or case worker)[8]	Health professional, healthcare practitioner, healthcare professional
Medication-related problem[2-5]	An event or circumstance involving drug treatment that actually or potentially interferes with the patient's experiencing an optimum outcome of medical care	Adherence issue, adverse drug event, adverse drug reaction, drug-related problem, medication error, MRP
Medicine	A substance that is given with the intention of preventing, diagnosing, curing or alleviating a disease, or improving the physical or mental health of people. Includes prescription and non-prescription medicines (e.g. complementary and alternative medicines)	Drug, medication, product
Patient	A person who uses, or is a potential user of, health services (including their family and carers)[8]	Client, consumer, individual, person
Prescriber	A healthcare provider who is responsible for patient care, specifically medicines	Dentist, general practitioner (GP), nurse practitioner, other approved prescriber, specialist
Standards	Objective statements of the minimum requirements necessary to ensure that a service or professional activity is delivered at an acceptable level. Standards relate to the systems in place for delivering a service or professional activity and provide a benchmark against which performance can be assessed	

Clinical interventions overview

Figure 1 provides an overview of the clinical interventions pathway.

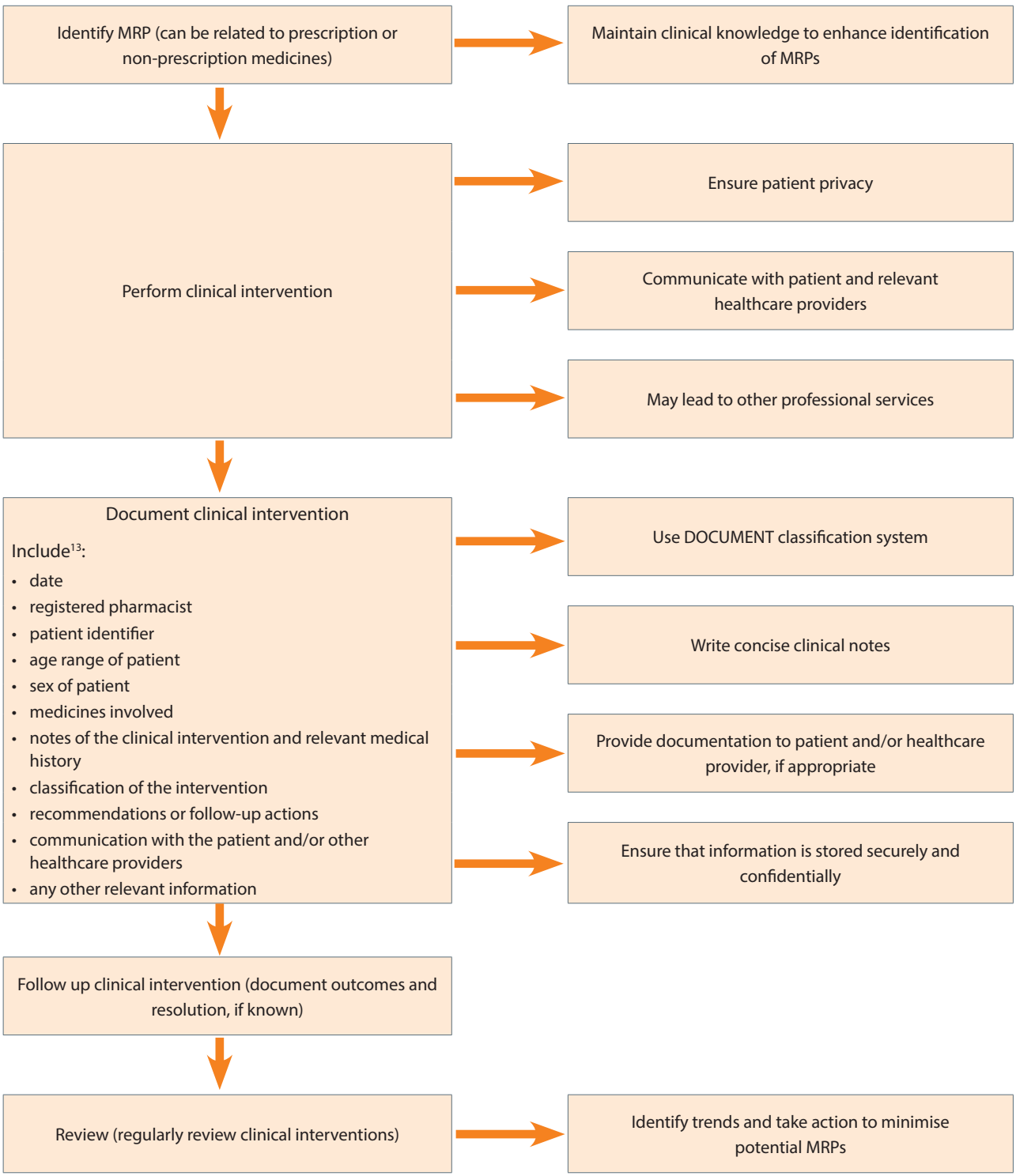


Figure 1. Clinical interventions overview

Clinical interventions as part of medicines management

Pharmacists have a fundamental role in, and responsibility for, optimising health outcomes and minimising medication misadventure.

All patients are potentially eligible for clinical interventions. Potential benefits of clinical interventions for patients include:

- improved symptom control and therapeutic response
- decreased incidence of adverse events related to medicines
- decreased emergency visits and hospitalisations due to MRPs
- improved adherence to the prescribed medicine regimen
- better knowledge of medicines and disease states
- potential cost savings by rationalising medication therapy and avoiding MRPs.

Identifying MRPs and performing clinical interventions are part of medicines management (including key components such as dispensing, medication review and counselling), which places the patient at the centre of care.[14] Documenting clinical interventions is essential. These guidelines provide comprehensive recommendations on how to classify MRPs and record interventions in a systematic way.

Clinical interventions may also provide a pathway into other professional services provided by pharmacists, such as Dose Administration Aids,[15] pharmacist administration of vaccinations,[16] provision of Consumer Medicine Information (CMI), Staged Supply,[17] Home Medicines Reviews,[18] Residential Medication Management Reviews,[19] MedsChecks and Diabetes MedsChecks,[20] and providing medicine lists (see Figure 2).

Collectively, these services and activities uphold the quality use of medicines principles[21]:

- Select management options wisely.
- Choose suitable medicines if a medicine is considered necessary.
- Use medicines safely and effectively.

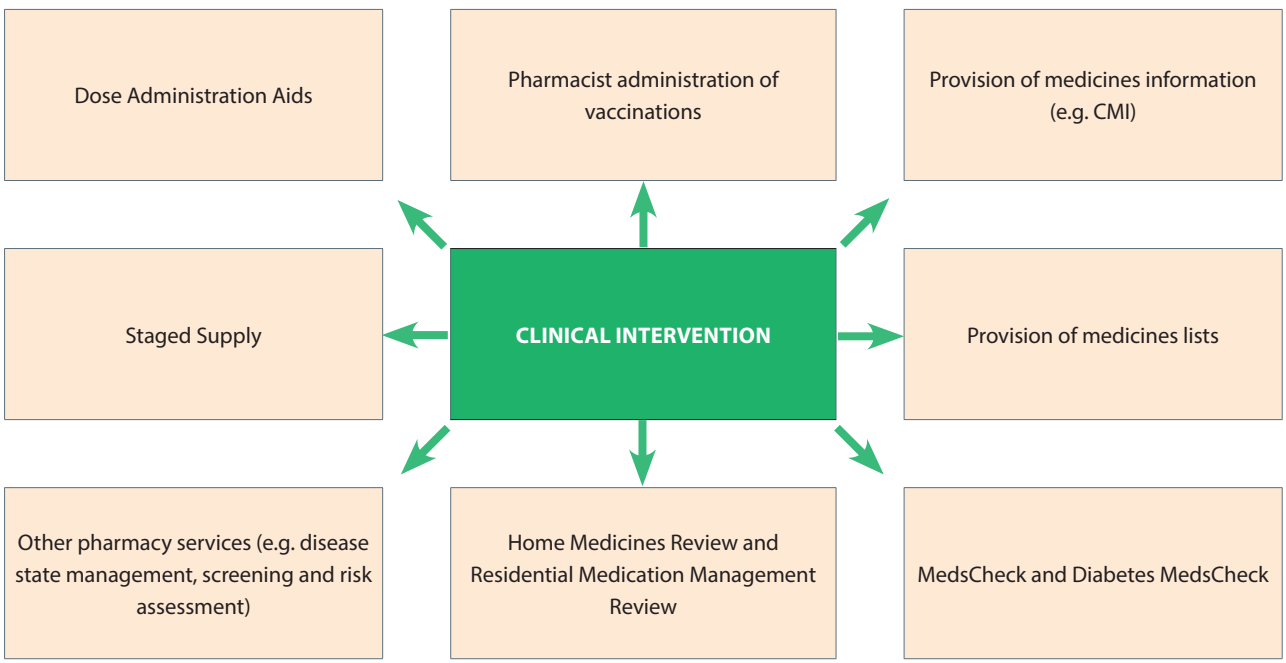


Figure 2. Other professional pharmacy services that may be recommended and used based on a clinical intervention

Relevance to funded programs

These guidelines have been developed to assist pharmacists performing clinical interventions under any service arrangement. When clinical interventions are provided under an externally funded program (e.g. Sixth Community Pharmacy Agreement), pharmacists are responsible for meeting any specific operational requirements of the relevant program. For further information about clinical interventions under the Sixth Community Pharmacy Agreement, go to www.ppaonline.com.au

Pharmacists intending to provide clinical interventions under funding provided by third parties, such as private health insurers, must ensure that the program requirements implemented by the third party do not contravene any of the requirements of the *Professional Practice Standards* (e.g. disclosure of patients' details to third parties without their informed consent).

When the Australian Government introduced incentive payments for clinical interventions as part of the Fifth Community Pharmacy Agreement, the aims were to[22]:

- encourage pharmacists to work in partnership with patients and other healthcare providers to identify, resolve and document MRPs
- encourage communication between pharmacists, patients, prescribers and other healthcare providers
- increase the number of beneficial clinical interventions provided by pharmacists
- integrate with other services and programs provided by community pharmacies
- develop a quality system for documenting clinical interventions provided by pharmacists.

Performing clinical interventions

Performing clinical interventions places a focus on the patient's overall care. It is about gathering information, assessing the information, planning what action to take, carrying out the action and recording it appropriately.

Patient privacy

Pharmacists must respect and safeguard the patient's privacy and confidentiality at all times (see Standard 1: Fundamental Pharmacy Practice of the *Professional Practice Standards*, version 5).[8]

Any consultation with the patient must take place in an environment that safeguards their privacy and confidentiality. Pharmacists should endeavour to provide consultations without distractions or interruptions. Consultation areas must comply with state or territory regulations for pharmacy premises.[8]

When performing clinical interventions, pharmacists may need to gather information from other pharmacies or healthcare providers. Only the information necessary to meet quality standards and legislative requirements for performing clinical interventions should be collected. The information should only be used for this purpose, unless another use is authorised by the patient.

Pharmacists should take reasonable steps to ensure that the patient understands:

- what information is being collected
- why the information is being collected
- who within the pharmacy will have access to the information
- how the information will be used
- the consequences of not collecting the information.

Pharmacists who are contacted by another pharmacist to share health information to assist in performing a clinical intervention must obtain consent from the patient before disclosing any information. It would be appropriate for the pharmacist who is requesting the information to facilitate the process of obtaining the patient's consent.[8]

All patient information should be stored in a manner that ensures privacy and confidentiality. Access to, and disclosure of, patient information must comply with relevant privacy legislation. Further information about privacy obligations for pharmacists is provided in the Australian Privacy Principles[23] and the *Professional Practice Standards* (Standard 1: Fundamental Pharmacy Practice).[8]

Consent

Pharmacists must obtain informed patient consent before providing services. This includes consent for how information will be used and stored.

Informed consent is needed before patient information is disclosed to another healthcare provider. Patients should be informed of the reason for contacting the other healthcare provider.

Consent should be documented, and patients have the right to withdraw consent at any time.

Refer to the *Professional Practice Standards* and *Code of Ethics for Pharmacists* for further information.[8,11]

Training

To deliver optimal health outcomes when performing clinical interventions, pharmacists are required to adopt professional practice standards (or quality standards) and maintain the relevant level of competence. Competence means that the individual has "the required knowledge, skills and attributes sufficient to successfully and consistently provide a specific task or function to a desired standard".[12] Pharmacists should refer to the *National Competency Standards Framework for Pharmacists in Australia 2016*[12] to identify competencies they will need to adequately perform clinical interventions.

Training programs may be available to develop pharmacists' skills to detect and manage MRPs, and to document clinical interventions.

Areas in which pharmacists may identify a need for increased skills may include:

- identification of MRPs and performance of clinical interventions (including up-to-date clinical knowledge and factors influencing medicine-taking behaviour)
- communication
- consultation and collaboration with patients and other healthcare providers to resolve MRPs
- the DOCUMENT classification system for MRPs
- documentation of MRPs and clinical interventions
- methods to improve their rate of MRP detection.

A number of medicines resources are available for pharmacists for managing clinical interventions, including the reference texts for pharmacists mandated by the Pharmacy Board of Australia. Further information on medicines information resources is also available at www.nps.org.au/australian-prescriber/articles/where-to-find-information-about-drugs

Policies and procedures

A systematic procedure for identifying, managing, recording, analysing and reporting clinical interventions should be developed, maintained and followed.

Policies and procedures should ensure that:

- all pharmacists have access to training and support for quality provision of clinical interventions
- information about clinical interventions is provided to relevant staff
- the impact of clinical interventions on staff resources, workload and workflow is estimated and monitored
- adequate time and resources are allocated to enable the delivery of clinical interventions in addition to the existing functions and services of the pharmacy
- appropriate record-keeping systems are used
- a designated consultation area, with appropriate privacy considerations, is available
- patients are informed that this is a professional activity provided by the pharmacist.

Documentation

Record-keeping systems may be electronic or paper based. The system used by the pharmacist should ensure that[8]:

- relevant Commonwealth and state or territory legislation is complied with
- adequate information can be systematically documented
- information is documented in a way that is appropriate for the intended audience (e.g. other healthcare providers, the patient)
- records are safely and securely stored
- records are accessible to relevant staff and easily retrievable to optimise patient care, and facilitate ongoing communication and clinical review
- accurate information can be transferred to the patient and members of the healthcare team in a secure and timely manner.

Further information about documentation can be found in the *Professional Practice Standards*, version 5.[8]

Staff responsibilities

All relevant pharmacy staff members must:

- be informed about the general nature of the activity
- understand their roles and responsibilities
- be familiar with relevant policies and procedures
- understand the responsibility of the pharmacist in undertaking the activity.

A dispensary assistant or technician may assist pharmacists in identifying and addressing actual or potential MRPs, and documenting clinical interventions. Pharmacists are responsible for ensuring that dispensary assistants or technicians are suitably trained and have adequate experience to perform any duties assigned; these duties must be performed under the direct and personal supervision of a pharmacist.[24]

Adequate time and resources must be allocated for performing and documenting clinical interventions.

Identifying and addressing medication-related problems

Pharmacists routinely perform clinical interventions to improve the health outcomes of patients.

When an MRP is identified:

- a patient's medicines and disease states should be reviewed in relation to the MRP
- appropriate, evidence-based resources should be used and critically evaluated in managing the MRP
- other professional services that may benefit the patient should be considered (e.g. Dose Administration Aids service).

Some clinical interventions are 'reactive'—they occur in response to the patient presenting with an MRP. One way reactive clinical interventions may be identified is if the dispensing process cannot proceed until the MRP is resolved. For example, a patient may present with a prescription without a strength specified, and dispensing cannot continue until the dose and strength are established.

In contrast, a 'proactive' intervention may take place when the pharmacist identifies factors likely to affect the choice of drug therapy prescribed, and notifies the patient and/or prescriber. For example, the pharmacist may be counselling a patient on a beta-blocker and reviews the patient's medication history for asthma therapies, or asks whether the patient suffers from asthma. By gathering information from the patient's medical history, the patient themselves or the prescriber, the pharmacist

can identify actual or potential MRPs and provide a proactive clinical intervention.

All clinical interventions must be documented to provide a written record of the MRP and actions taken. The written record can also be used as a communication tool with other healthcare providers or the patient.

It is important to note that MRPs are not necessarily complex. For example, MRPs can arise from poor communication, confusion or simple misunderstandings.[25]

See Box 1 for a suggested strategy for pharmacists to use when identifying an MRP associated with a prescribed medicine.

Box 1. Potential strategy for pharmacists managing an MRP associated with a prescribed medicine

1. Inform the patient of the issue.
2. Do not dispense the medicine immediately.
3. Obtain consent from the patient to share the findings of the clinical intervention with the patient's healthcare provider.
4. Contact the provider (e.g. GP) to discuss your findings, and have a suggested solution to recommend.
5. If you are not satisfied or confident about the course of action suggested by the prescriber, exercise professional autonomy and act accordingly. This might be to not dispense the medicine, or supply a minimum amount while gathering further information.
6. Provide information to the patient that is relevant to their clinical needs, such as the reasons for your concerns and any relevant documentation (e.g. CMI leaflets).

References: Pharmaceutical Society of Australia[11]; Pharmaceutical Defence Limited[26]

Communicating and collaborating with other healthcare providers

To perform clinical interventions in an effective and efficient manner, pharmacists require effective collaboration with, and communication between, relevant members of the healthcare team, including GPs, medical specialists, other pharmacists, patients, carers, nurses and other healthcare providers. Collaboration to resolve MRPs requires mutual respect and clear communication between all healthcare providers, with an understanding of each other's roles, responsibilities, capacities and constraints within the care of a patient.[11]

Pharmacists must ensure that sufficient information about the patient and MRP is communicated effectively, professionally and in a timely manner to support effective decision making. A common format for documenting and communicating clinical notes to support a recommended intervention is SOAP (Subjective, Objective, Assessment, Plan) (see Appendix 2).

The severity of the MRP, and the clinical judgement of the pharmacist, will determine the urgency and nature of communication with appropriate healthcare providers. For example, MRPs related to high-risk medicines (see Box 2) are likely to require urgent communication with the prescriber, and fast resolution to ensure the health and safety of the patient.

Box 2. Examples of high-risk medicines

- Anti-infectives
- Antipsychotics
- Potassium and other electrolytes
- Insulin
- Narcotics (opioids) and other sedatives
- Chemotherapeutic agents
- Heparin and anticoagulants

Reference: Clinical Excellence Commission[27]

Communication with healthcare providers about clinical interventions may involve:

- immediate verbal communication (e.g. with a prescriber) to resolve the MRP
- provision of information about the intervention following direct resolution of the MRP with the patient
- recommendation to the patient to visit a healthcare provider to discuss or resolve actual or potential MRPs (see the referral letter template in Appendix 3)
- written communication with another healthcare provider.

When communicating with prescribers and other healthcare providers, pharmacists should gather as much information about the patient and presenting situation as required to ensure that communication is productive. Where appropriate and available, pharmacists should use resources such as My Health Record and real-time prescription monitoring to gather required information, and assist in making clinical recommendations and decisions. When discussing a clinical intervention with other healthcare providers, pharmacists should be clear and concise about the reason for their concerns, and have potential solutions to discuss.[28]

Pharmacists should consider other communication strategies (e.g. written communication) that can be used to support verbal communication with other healthcare providers, particularly in situations that involve a high risk to the patient. Written communication may include references used to support the pharmacist's advice and recommendations, and documentation of the clinical intervention (including reasons for the intervention, recommendations and final actions). Pharmacists should use their professional judgement when deciding whether it is appropriate to provide another healthcare provider with a copy of the documentation of the clinical intervention. This will depend on the type of intervention, the severity and potential consequences of the situation, and the communication that has already occurred between the pharmacist and the other healthcare provider.

Pharmacists can add allergies to a patient's My Health Record; in future, they may be able to add other information related to clinical interventions undertaken.[29] See *My Health Record Guidelines for Pharmacists*[29] for further information.

Pharmacists must make the health and wellbeing of the patient their first priority, and demonstrate responsibility and accountability for all decisions made and actions taken.[30]

Collaboration does not alter the pharmacist's personal accountability for the care provided to patients,[11] and pharmacists have the right to refuse to supply medicines if they believe it is unsafe or inappropriate.

If another healthcare provider insists that a medicine is supplied and the pharmacist believes supply is inappropriate or unsafe, the following options may be appropriate initially[26,28]:

- Delay supply while gathering further information (e.g. through a literature search, consulting current and credible references).
- Seek further advice from reputable sources (e.g. drug information centres, other healthcare providers the patient may have consulted for the same condition previously, professional indemnity insurer).

A pharmacist must not supply a medicine where they believe it poses an unacceptable safety risk for the patient. If the pharmacist does not supply the medicine, they need to support the patient in receiving appropriate management and treatment. This may involve explaining to the patient the reasons for not dispensing the medicine and providing written information for the patient. Actions taken to ensure that the patient receives appropriate management will depend on the situation. See 'Communicating with patients' for further information.

Pharmacists should also use their professional judgement to determine whether it is essential that the medicine is supplied immediately, or whether it is appropriate to delay supply until further information can be gathered. If it is essential that the medicine is supplied immediately, pharmacists may consider supplying a minimum amount to allow the patient to receive the treatment without long-term consequences.[26,28] Adequate communication with patients is also essential (see 'Communicating with patients').[28]

Pharmacists should document all communications made with other healthcare providers in the patient's history—for example, in the form of clinical notes (see 'Patient history (clinical) notes').

Communicating with patients

Communication with patients is necessary while an MRP is being resolved. Pharmacists should ensure that patient-centred care is practised, and patients should be involved in their own care.

When communicating with patients it is important that pharmacists do so in a sensitive and effective manner, in order to provide the appropriate information without causing unnecessary alarm, avoiding inappropriate criticism of other health professionals and maintaining the patient's confidence in other healthcare providers, e.g. their prescriber, though the pharmacist's responsibility in ensuring the medicine is safe and appropriate for the patient has primacy.

It is acknowledged that pharmacists' recommendations to patients or prescribers may not necessarily be implemented. Effective communication is important to ensure the patient is adequately informed about the appropriate benefits and risks of medication use. If an MRP has been identified and the recommended action has been provided, acknowledgement of the autonomy of the patient and other treating healthcare providers should be taken into account.[11,30] As mentioned previously, pharmacists have the right to refuse to supply a medicine if it is believed to be unsafe or inappropriate for the patient (see 'Communicating and collaborating with other healthcare providers').

When communicating with the patient, pharmacists should provide details about their concerns, actions they have taken (e.g. contacting the prescriber) and their recommendations for what should be done next. Pharmacists should also document their actions in the patient's records.[26,28]

Communication with the patient may also involve providing written information to help them make an informed decision. The information may include CMI leaflets, extracts from references and/or a copy of the documentation relating to the clinical intervention.[26,28] If provided, the documentation relating to the clinical intervention must be written in a way that is suitable for the patient, can be easily understood by the patient, and provides adequate information to inform the patient of the risks associated with the MRP and the pharmacist's recommendations.

Follow-up

Pharmacists have a professional responsibility to follow up any issues arising from the clinical intervention.

Documentation

Documenting clinical interventions helps to ensure that patients receive safe and appropriate treatment. Documentation may be used to:

- provide a written record of an MRP identified and the actions the pharmacist has taken to resolve the issue
- communicate with other healthcare providers, detailing the MRP identified, reasons for the pharmacist's concern, and recommendations and actions taken by the pharmacist (see Appendixes 3 and 4)
- communicate with the patient the details of the MRP, its risks, and the pharmacist's recommendations to ensure safe and appropriate treatment
- fulfil reporting requirements when participating in professional programs.

Documentation of clinical interventions should never be the sole means of communication with other healthcare providers or patients, and should be used in conjunction with other communication methods (e.g. verbal counselling, provision of other written information). See 'Communicating and collaborating with other healthcare providers' and 'Communicating with patients' for further information.

Pharmacists should systematically document the details of each MRP identified and clinical intervention provided, as in the following examples:

- The pharmacist identifies potential over-use or duplication of medicines, or overtreatment of conditions.

- The pharmacist identifies a medical condition (e.g. poorly controlled hypertension) that may require enhanced therapy or improved medication adherence.
- The pharmacist identifies the need for preventive therapy, such as the requirement for adequate intake of calcium and vitamin D by a patient with osteoporosis.
- Upon request from a patient for non-prescription pain relief subsequent to the use of an HMG-CoA reductase inhibitor (statin), the pharmacist uncovers a possible myopathy-associated MRP.
- The pharmacist dispenses a repeat prescription from another pharmacy, and identifies that it had been previously dispensed incorrectly.
- A patient requests further information about a medicine or disease management.

Although pharmacists' recommendations to patients or prescribers may not necessarily be implemented, the provision of recommendations should still be considered a clinical intervention and should be documented. However, documenting a clinical intervention does not negate the pharmacist's professional responsibility—any actions the pharmacist takes must ensure that the patient's health and wellbeing are their first priority.[11]

Many activities undertaken by pharmacists are not clinical interventions and need not be documented. These include:

- routine patient counselling and provision of CMI, such as when a patient has been dispensed a new medicine
- substitution of a medicine brand (unless the recommended brand has a unique characteristic to assist in resolving an MRP, such as a calendar pack, braille markings, gluten-free nature)
- provision of emergency supply medicine under state or territory law
- activities directed towards improving medication management under other professional services
- routine assessment or management of minor ailments, such as provision of symptom relief for cold and flu, or assessment and treatment of allergic rhinitis
- administrative activities (e.g. medicine ordering, prescription processing, determining Pharmaceutical Benefits Scheme eligibility).

Methods of documentation

A recording system should be used to document clinical interventions. This may be an electronic system linked to dispensing systems or, if that is unavailable, a paper-based system (see Appendix 4).

Irrespective of the recording system used, the information that pharmacists record should include:

- date of the intervention
- medicines involved, including those central to the MRP, and any recommendations for the resolution of the MRP (strengths and doses of medicines should also be recorded, where possible)
- patient details, including age range and sex
- any communication with the patient's prescriber or other healthcare providers
- DOCUMENT and recommendation codes to classify the MRP and clinical intervention
- patient history (clinical) notes, including any further action or follow-up required, and details of outcomes or resolution.

Software for documenting clinical interventions is integrated into dispensing systems, and may be adaptable to use for non-prescription medicines.

The software should allow pharmacists to select a patient and complete details of the intervention via their dispensing system. The software may automatically generate some prescription and patient information.

Pharmacists who do not use clinical intervention software may record clinical interventions via a paper-based recording system (see Appendix 4 for a template). If paper-based records are used, pharmacists should have a system to ensure that the records are easily retrievable and can be easily linked with the relevant patient. The clinical intervention template may also be useful for pharmacists to make brief notes.

Patient history (clinical) notes

Brief clinical notes associated with the clinical intervention will help other pharmacists to interpret what happened during the intervention. Pharmacists should record the clinical notes in a systematic manner, using a method such as SOAP (see Appendix 2).

Clinical notes detailing follow-up requirements or pharmacist action in response to the intervention should be recorded. Notes relating to the outcome of the intervention should be added where the MRP has been resolved. This will ensure that pharmacist resources are appropriately directed. Appendix 4 provides a template for recording clinical interventions.

Recording medication-related problems

The DOCUMENT system consists of eight categories to classify MRPs; each category has between one and eight subcategories (see Table 2). A classification flowchart (see Figure 3) can be used to assist in the accurate classification of MRPs.

Comprehensive recording of the clinical intervention, not classification of the MRP, is important. If pharmacists find it difficult to classify MRPs, they should choose the most appropriate category and include brief notes to assist with interpreting the clinical intervention. Classification of an MRP may be unclear, and different categories could overlap. However, all MRPs that result in the patient actually experiencing adverse effects or symptoms should be recorded under the 'Toxicity or adverse reaction' category, even if they could be classified under another category.

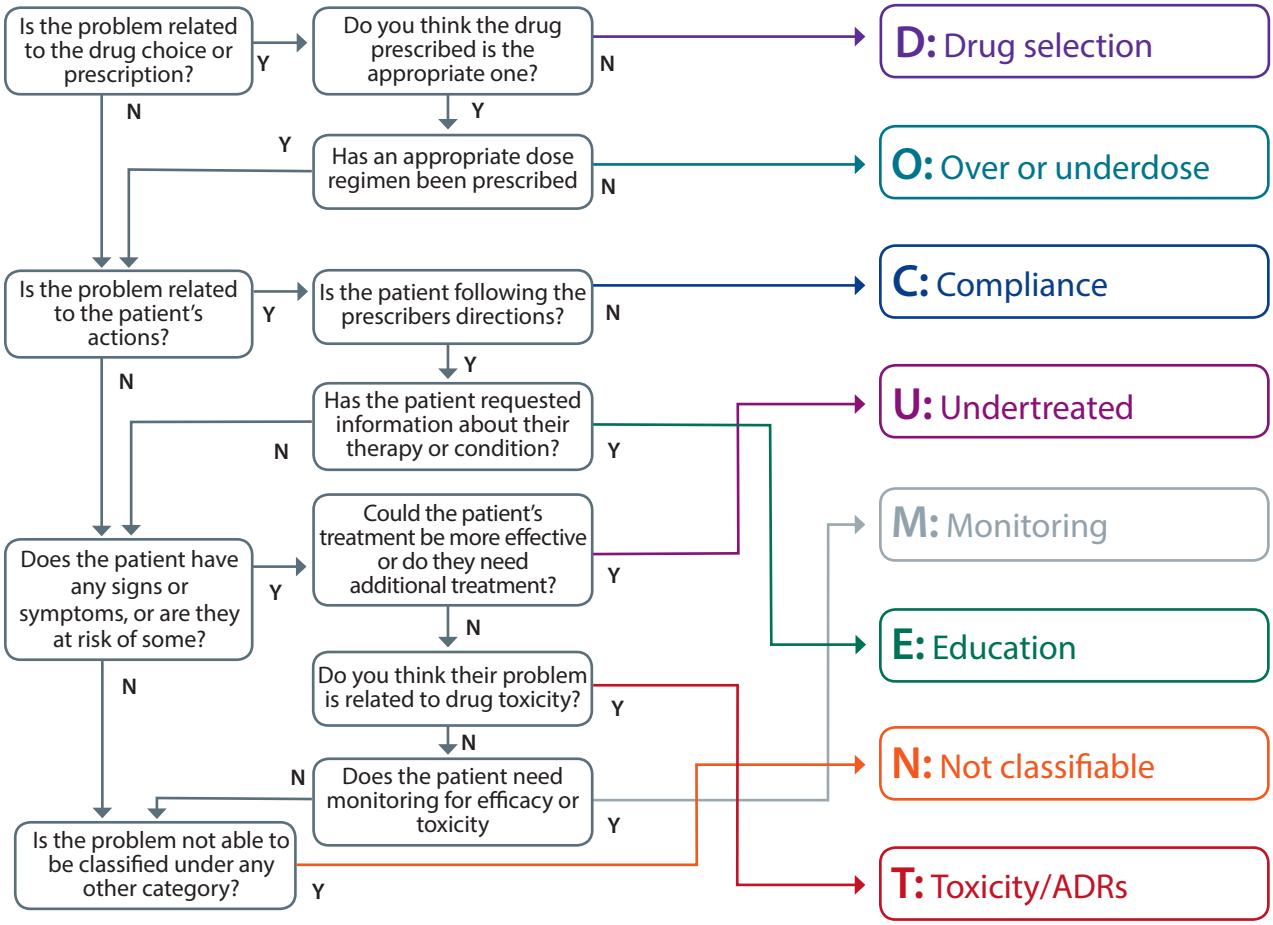
Table 2. DOCUMENT system for classifying MRPs		
When to use	**Example**	**When not to use**
D: DRUG SELECTION Problems relating to the choice of medicine prescribed or taken		
Duplication (D1)		
• No obvious adverse clinical effects of two medicines being used together, but it is either inappropriate or very unusual to see them prescribed or used together because they are from the same therapeutic class • Patient is inappropriately taking two brands of the same generic medicine	Patient taking two different brands of amiodarone at the same time	Medicines involved are not of the same therapeutic class; use *Drug interaction* (D2)
Drug interaction (D2)		
• No obvious adverse clinical effects of the drug interaction between two medicines that the patient is taking or intending to take, but the interaction is serious enough to check whether the doctor is aware of it • Patient presents with a non- prescription medicine request that could result in a major interaction if taken with their concurrent therapy	Patient asks to purchase an over-the-counter anti-inflammatory when taking warfarin	• Interacting medicine is of the same therapeutic class as part of the patient's existing therapy; use *Duplication* (D1) • Medicine is contraindicated because of an existing medical condition or previous adverse reaction to the medicine; use *Contraindication apparent* (D6)
Wrong drug (D3)		
Patient is taking a medicine that has been incorrectly prescribed (prescribing error) or incorrectly dispensed (dispensing error)	Doctor prescribes carbimazole 20 mg twice a day but intended carbamazepine 200 mg twice a day	Medicine is discontinued or out of stock on a long-term basis, and the doctor is contacted for a change in therapy; use *Other drug selection problem* (D0)
Incorrect strength (D4)		
• Patient presents with a new prescription that has no details about a medicine's strength or incorrect details that may require clarification from the prescriber • A drug chart or hospital discharge shows a strength that appears to be incorrect	Locum doctor prescribes irbesartan 150 mg daily, but previous therapy was 300 mg daily	Patient presents a prescription for an old medicine that has been replaced by a newer one that they should be taking; use *Other compliance problem* (C0)
Inappropriate dosage form (D5)		
Formulation of the product is inappropriate or incorrect in terms of the intended use of the product, including incorrect routes of administration	Rectal topical product is prescribed or supplied for an eye problem	Patient has a physical problem with the administration of the dosage form as it is intended to be used (e.g. swallowing a particular form of the medicine whole, or arthritis limiting the use of an inhaler) or their difficulty is related to a lack of understanding about how to use the dosage form; use *Difficulty using dosage form* (C5)
Contraindication apparent (D6)		
• Contraindication or precaution to the medicine being used by a particular patient due to their medical conditions, not their medicine therapy • A drug or drug group is prescribed for a patient who has previously had a major adverse reaction	Doctor prescribes enalapril for a woman who is 7 months pregnant	• Medicine is contraindicated as a result of existing drug therapy; use *Drug interaction* (D2) • Medicine is contraindicated as a result of therapeutic duplication; use *Duplication* (D1)

No indication apparent (D7)		
No clear reason apparent for the medicine to be used	Patient is using steroid eye drops over the long term without a current indication	Medicine is unnecessary due to therapeutic duplication; use *Duplication* (D1)
Other drug selection problem (D0)		
• Medicine being used is out of date or has deteriorated in some other way • Medicine is discontinued or out of stock on a long-term basis, and the doctor is contacted for a change in therapy • Pharmacist believes a more effective medicine is available and suggests it instead of the proposed therapy	Patient presents a prescription for trimethoprim for a urinary tract infection. The medicine is out of stock for another 3 weeks, so the doctor is contacted with a suggestion for an alternative antibiotic	Another brand must be substituted because the ordered brand cannot be used as a result of a physical problem relating to the patient taking the medicine; use *Difficulty using dosage form* (C5)
O: OVER or UNDERDOSE PRESCRIBED Problems relating to the prescribed dose or schedule of a medicine		
Prescribed dose too high (O1)		
• Total daily dose of a medicine prescribed is too high for the patient, based on either previous therapy or reference dose ranges, including when the dose prescribed is too high through error • Dose is too high because of a particular patient parameter, such as renal function, weight or age	Patient is prescribed dexamethasone 50 mg daily (prescriber was thinking of prednisolone dose)	Patient is taking too high a dose as a result of compliance issues; use *Over-use by patient* (C2)
Prescribed dose too low (O2)		
• Dose prescribed is too low based on either previous therapy or reference dose ranges • Dose prescribed is too low through error	A 30 kg child is prescribed cefalexin 125 mg four times a day (recommended dose 6.25–12.5 mg/kg four times a day)	• Actual dose per day is correct, but the duration is too short; use *Incorrect or unclear dosing instructions* (O3) • Patient is taking a low dose of a medicine as a result of poor compliance; use *Under-use by patient* (C1)
Incorrect or unclear dosing instructions (O3)		
• Specified dosing time is not optimal • Duration of use of the medicine is too short or too long, including incorrect dose titrations • Total dose of a medicine is suitable, but the frequency or dosage schedule is inappropriate	Patient presents a new prescription for lamotrigine 100 mg twice a day with no instructions to increase slowly (dose should start at 25 mg/day for 2 weeks, then 50 mg daily for 2 weeks, then increase by 50–100 mg daily every 1–2 weeks; the starting dose is different if the patient is already taking some other anticonvulsants)	Patient is not taking the appropriate dose of a medicine as a result of a lack of understanding of the dosage regimen; a compliance-related category would be more appropriate
Other dose problem (O0)		
Any other dosing problems for which the pharmacist is unable to identify a subcategory		

C: COMPLIANCE Problems relating to the way the patient takes the medicine		
Under-use by patient (C1)		
• Patient uses too little of a medicine as a result of forgetfulness or lack of understanding of the dosage regimen prescribed • Patient chooses to take a medicine when necessary instead of on a regular basis (when the latter was intended) • Patient chooses to discontinue a medicine	Patient only takes lercanidipine when they believe their blood pressure is very high	• Under-use is appropriate because of the resolution of symptoms or a condition; use *No indication apparent* (D7) and specify that the medicine may no longer be required • Patient has a physical problem with the administration of the dosage form, resulting in too little being used (e.g. swallowing a particular form of the medicine whole, or arthritis limiting the use of an inhaler); use *Difficulty using dosage form* (C5)
Over-use by patient (C2)		
Patient uses too much of a medicine as a result of forgetfulness or lack of understanding of the dosage regimen prescribed	Patient presents requesting a repeat prescription of simvastatin after 2 weeks because they were forgetting that they had taken it and often took two doses per day	• Over-use is due to an appropriate increase in use because of increased symptoms; use *Condition undertreated* (U1) • Over-use consists of inappropriately taking two different brands or forms of the same ingredient or drug class unknowingly; use *Duplication* (D1)
Erratic use of medication (C3)		
Patient is taking the medicine on an erratic basis	Patient presents for their venlafaxine prescription, which was dispensed 3 days ago, but was dispensed 2 months ago before that	Amount of medicine being taken can be easily quantified; use *Under-use by patient* (C1) or *Over-use by patient* (C2)
Intentional drug misuse, including non-prescription medicines (C4)		
Suspected intentional over-use of a potentially abused product, including non-prescription items; includes situations where the prescription appears to be a forgery	Patient returns for a second prescription from a different prescriber for nitrazepam after 1 week, claiming they dropped the previous supply down the toilet	Over-use is due to an appropriate increase in use because of increased symptoms; use *Condition undertreated* (U1)
Difficulty using dosage form (C5)		
• Patient lacks understanding of how to use the dosage form • Patient has a physical problem with the administration of the dosage form or device as it is intended to be used (e.g. swallowing a particular form of the medicine whole, appropriately inserting suppositories, or arthritis limiting the use of an inhaler) • Brand needs to be substituted to improve the patient's ability to use the medicine	Patient cannot swallow sustained- release diltiazem capsules	Formulation of the product is inappropriate or incorrect in terms of its intended use, such as an incorrect route of administration; use *Inappropriate dosage form* (D5)
Other compliance problem (C0)		
• Patient wishes to collect a prescription for a medicine that has been ceased or replaced by a new medicine • Patient is stockpiling medicines	Patient presents a prescription for ranitidine that has been ceased by the prescriber previously and replaced with omeprazole	Compliance issue results in two medicines of the same therapeutic class being taken inadvertently; use *Duplication* (D1)
U: UNDERTREATED Problems relating to actual or potential conditions that require management or prevention		

Condition undertreated (U1)		
Patient has a symptom or disease that is not being treated adequately	Patient frequently requests glyceryl trinitrate spray but is not being treated with regular anti-angina medicine	• Patient has a condition that is not currently being treated with any medicine; use *Condition untreated* (U2) • Patient requires additional therapy as a preventive strategy (e.g. potassium when on a loop diuretic); use *Preventive therapy required* (U3) • Patient takes too little and suffers worsening of their condition as a result; use *Under-use by patient* (C1)
Condition untreated (U2)		
Patient has a symptom or medical condition that is not currently being treated	Patient has a fall resulting in a hip fracture but is not on any osteoporosis medicine	• Patient has a condition that is currently being treated, but not adequately; use *Condition undertreated* (U1) • Patient requires additional therapy as a preventive strategy (e.g. potassium when on a loop diuretic); use *Preventive therapy required* (U3) • Patient takes too little and suffers worsening of their condition as a result; use *Under-use by patient* (C1)
Preventive therapy required (U3)		
Patient requires additional therapy to prevent a likely adverse event as a result of their therapy, coexisting diseases or risk factors (not to be used if the patient already has the condition)	Patient commences on slow-release morphine without laxative therapy	• Patient already has treatment for a particular problem, but it is not effective; use *Condition undertreated* (U1) • Patient already has a condition that is not currently being treated with any medicine; use *Condition untreated* (U2)
Other undertreated indication problem (U0)		
Any other problem relating to actual or potential conditions that appear to require management, but the pharmacist cannot identify a subcategory		
M: MONITORING Problems relating to monitoring the efficacy or adverse effects of a medicine		
Laboratory monitoring (M1)		
• In the absence of any adverse effects, it appears that a laboratory test is required (e.g. potassium, creatinine, white cell count, international normalised ratio [INR]) • Includes any laboratory test that is *not* done in the patient's home, doctor's surgery or pharmacy • In the absence of any adverse effects, it appears that drug level monitoring is required	Patient taking warfarin was discharged from hospital 2 weeks ago and has not yet had a post-discharge INR	• Need for laboratory monitoring occurs as a result of a drug interaction; use *Drug interaction* (D2). The monitoring then becomes a recommendation, not the primary problem • Test will occur in the patient's home, a pharmacy or a doctor's surgery; use *Non-laboratory monitoring* (M2)
Non-laboratory monitoring (M2)		
• In the absence of any adverse effects, it appears that non-laboratory monitoring is required (e.g. blood pressure, blood sugar levels, temperature, weight) • Test may be undertaken as a screening process	Patient with diabetes who has recently been prescribed insulin is advised to regularly monitor their blood sugar levels	If monitoring of a parameter (e.g. weight, blood sugar level, heart rate) is recommended as a result of another medicine problem, that recommendation should be recorded in the recommendation code section (see Table 3)
Other monitoring problem (M0)		
• Patient has another problem relating to monitoring of their medicines or medical conditions for either efficacy or adverse effects • Patient should have monitoring, but has problems attending the laboratory, or paying for the test or equipment needed	Patient is recommended to monitor their breathlessness and weight to provide an indication of how effectively their heart failure medicine is working	

E: EDUCATION or INFORMATION Where a patient requests further information about a medicine or disease state		
Patient requests drug information (E1)		
Patient has a reasonable understanding of their condition, but requests further information about their medicine	After commencing hormone replacement therapy (HRT), patient requests further printed information about breast cancer and HRT	• Patient is starting a new prescription item, and provision of CMI is provided as part of routine counselling • Patient requests information primarily about the disease state, rather than a medicine; use *Patient requests disease management advice* (E2)
Patient requests disease management advice (E2)		
Primary purpose of the interaction with the patient is to inform them of critical aspects of the management or prevention of a disease or condition	Information about fluid restriction is provided to a patient with heart failure	• Patient requests information primarily regarding a medicine; use *Patient requests drug information* (E1) • Counselling is part of routine duties, such as counselling a patient about their new medicine
Other education or information problem		
• Another healthcare provider (e.g. a doctor or another pharmacist) requests information • Any other problem relating to education or information		
N: NOT CLASSIFIABLE Problems that cannot be classified under another category		
Clinical interventions that cannot be classified under another category (N0)		
All prescriptions should usually be classified under another category; however, the N category is to be used when a pharmacist feels that a clinical intervention does not belong elsewhere (Note: the intervention must still be clinical, not administrative)		Problem is administrative; it is not a clinical intervention and does not need to be recorded. For example: • prescription is illegal under Commonwealth, state or territory law • prescription does not meet Pharmaceutical Benefits Scheme requirements (i.e. incorrect number of tablets or repeats) • authority prescription is not approved or is incorrect • medicine is unavailable from the manufacturer or is out of stock temporarily
T: TOXICITY or ADVERSE REACTION Problems relating to the presence of signs or symptoms that may be attributed to a medicine		
Toxicity, allergic reaction or adverse effect present (T1)		
• Patient has signs or symptoms that suggest toxicity, an allergic reaction or an adverse effect; also includes situations in which compliance issues have led to symptoms of toxicity • All significant adverse drug events should be reported to the Therapeutic Goods Administration via the **Australian Adverse Drug Reaction Reporting System**	Patient develops a dry cough after commencing treatment with an ACE inhibitor	



ADR = adverse drug reaction

Adapted from Peterson et al.[7]

Figure 3. DOCUMENT classification flowchart

Recording recommendations

A clinical intervention involves a pharmacist making a recommendation to the patient, prescriber or other healthcare provider. Details of the recommendation should be included in the documentation process.

A record of recommendations helps other pharmacists to interpret the situation. If the documentation of the clinical intervention is given to other healthcare providers or the patient, it also provides guidance on the pharmacist's recommendations to resolve the identified MRP. The recommendation codes enable pharmacists to easily record the type of recommendations made to resolve or prevent an actual or potential MRP (see Table 3).

Pharmacists can select multiple recommendations per intervention, and recommendations can be grouped. Table 3 outlines a system to assist accurate classification of recommendations. These categories are summarised in Appendix 5.

TABLE 3. CLASSIFYING RECOMMENDATIONS		
When to use	**Example**	**When not to use**
CHANGE IN THERAPY		
Dose increase (R1)		
Pharmacist recommends to the prescriber that the total daily dose of the medicine be increased	Pharmacist recommends to the prescriber an increase in dose of antibiotics for a 4-year-old child after calculating the appropriate dose based on weight	Total daily dose of the medicine does not change, but it is recommended that the schedule change; use *Dose frequency/schedule change* (R6)
Dose decrease (R2)		
Pharmacist recommends to the prescriber that the total daily dose of the medicine be decreased	Pharmacist recommends to the prescriber a decrease in the dose of gliclazide	Total daily dose of the medicine does not change, but it is recommended that the schedule change; use *Dose frequency/schedule change* (R6)
Drug change (R3)		
Pharmacist recommends a change in current medicines, including the addition or cessation of a medicine (Note: In many cases, *Refer to prescriber* (R9) should also be selected)	Patient describes ongoing drowsiness in the mornings with nitrazepam, and the pharmacist suggests a change to temazepam	• Change in medicine is a brand change to increase the patient's ability to use their medicine; use *Drug brand change* (R5) • Change in medicine is a change in the formulation (e.g. from cream to ointment, or plain tablets to controlled release); use *Drug formulation change* (R4)
Drug formulation change (R4)		
Active ingredient of the medicine and its total daily dose are not changed, but pharmacist recommends a change in the formulation	Pharmacist suggests to the prescriber a change from metformin 500 mg, one tablet three times a day, to metformin XR 500 mg, three tablets at night	Formulation change also results in a change in the total daily dose of the medicine; use *Dose increase* (R1) or *Dose decrease* (R2)
Drug brand change (R5)		
Pharmacist recommends a change in brand of the medicine (same medicine, same dose), usually due to patient difficulty using a particular brand (Note: Does not include routine brand substitution)	Pharmacist suggests a change from a brand that comes in blister packs to a brand that comes in a bottle, because the patient finds blister packs difficult to open	• Change in brand is to a different formulation of the same active ingredient; use *Drug formulation change* (R4) • Change in brand is due to routine brand substitution for cost reasons; it is not a clinical intervention and therefore does not need to be recorded
Dose frequency/schedule change (R6)		
Total daily dose of the medicine remains the same, but pharmacist suggests a change in the number of times a day or the timing of doses each day	Pharmacist suggests changing roxithromycin from 150 mg twice a day to 300 mg once daily to improve adherence	Suggestion results in a change in the total daily dose of the medicine; use *Dose increase* (R1) or *Dose decrease* (R2)
Prescription not dispensed (R7)		
Current prescription is not dispensed at this time	Patient presents with prescriptions for atorvastatin and erythromycin. To reduce the risk of myopathy, pharmacist advises that atorvastatin should not be taken until the course of antibiotics has been completed and consequently does not dispense the atorvastatin	
Other changes to therapy (R8)		
Pharmacist recommends another change to the patient's current therapy		

A REFERRAL REQUIRED		
Refer to prescriber (R9)		
Problem is of sufficient seriousness for the patient to see the prescriber again to resolve the problem (includes referral to a prescriber to initiate any new therapies that the pharmacist has suggested)	Patient presents with a rash from recently commenced antibiotics. Patient is told to cease the capsules and is referred to the prescriber for different antibiotics. *Drug change* (R3) should also be selected	Pharmacist has already contacted the doctor to resolve the issue; therefore, the patient does not require referral to the prescriber or only needs to collect a new prescription
Refer to hospital (R10)		
Problem is of sufficient seriousness for the patient to go to hospital to resolve the problem	Patient presents with melaena (black tarry stools) after commencing a non-steroidal anti-inflammatory drug	
Refer for medication review (R11)		
Pharmacist initiates the process for a Home Medicines Review (HMR) or MedsCheck for the patient	• Pharmacist recommends a MedsCheck for a patient who is having trouble understanding their medicines • Pharmacist refers a patient who suffers from chronic pain and is having difficulty managing their medicines for an HMR	An ad hoc review of the medicines is undertaken, and general assistance is provided to aid the patient's understanding; use *Education/counselling session* (R13)
Other referral required (R12)		
Pharmacist refers the patient to another healthcare provider	Patient requires referral to another healthcare provider (e.g. dentist, podiatrist)	Patient is referred to their prescriber; use *Refer to prescriber* (R9)
PROVISION OF INFORMATION		
Education or counselling session (R13)		
Pharmacist conducts a detailed counselling or education session with the patient or carer; the session is specifically targeted at resolving the problem that has been identified	Patient has not been taking metformin correctly, and pharmacist gives details of how to take it in relation to food, how long it lasts, and complications and management of diabetes	Discussion with the patient is to determine the nature of the problem, rather than propose a recommendation or further education
Written summary of medicines (R14)		
Pharmacist provides the patient with a detailed list/profile of their medicines. Consider whether this recommendation is appropriate for all interventions categorised under compliance	Patient commences on three new medicines, so a medication profile for the patient is produced to minimise potential confusion	• Information provided is simply a list of medicines with no additional information • If the information provided is in the form of PSA Self Care Fact Cards or other written information, use *Other written information* (R16)
Recommend dose administration aid (R15)		
Pharmacist suggests the use of a dose administration aid or a spacer device. Consider whether this recommendation is appropriate for all interventions categorised under compliance	Pharmacist recommends a dose administration aid for a patient who has significant problems in understanding the schedule and timing of their medicines	Pharmacist provides a written summary of the patient's medicines and their schedule (e.g. medication profile), in addition to the dose administration aid; also select *Education/counselling session* (R13)
Other written information (R16)		
Patient requires additional written information (e.g. PSA Self Care Fact Cards)	Pharmacist provides written details of a reducing prednisolone regimen	
MONITORING		
Monitoring: Laboratory (R17)		
Pharmacist suggests to the prescriber that they undertake laboratory monitoring for efficacy or adverse effects of the medicine	Pharmacist contacts the prescriber to suggest that they check the INR of a patient taking warfarin who has commenced ciprofloxacin	Monitoring relates to a test that can be done at home (e.g. blood sugar levels); use *Monitoring: Non-laboratory* (R18)

Monitoring: Non-laboratory (R18)		
Pharmacist suggests that the patient undertake non-laboratory monitoring for efficacy or adverse effects of the medicine, including blood pressure monitoring, blood sugar levels, temperature and weight	Pharmacist suggests that the patient weigh themselves daily while they are taking an increased dose of furosemide (frusemide) for heart failure	Monitoring involves a laboratory-based test; use *Monitoring: Laboratory* (R17)
NO RECOMMENDATION NECESSARY		
No recommendation necessary (R19)		
Problem has been investigated, and does not need to be addressed with any changes or monitoring		

Monitoring and evaluation

Pharmacists should monitor and evaluate the clinical interventions provided to ensure continuous quality improvement.

Pharmacists should regularly:

- review and audit the types of clinical interventions they make, for quality assurance purposes
- identify common issues involved in clinical interventions and consider measures that could be implemented to prevent these issues from recurring
- determine whether documentation associated with clinical interventions is being used to optimise patient care and safety (e.g. to communicate with prescribers or patients, where appropriate)
- evaluate how they provide clinical interventions against patient feedback, industry standards and peer review measures.

Reports of clinical interventions should be generated to assist with review and audit.

Appendix 1 - PROMISe projects

The Pharmacy Recording of Medication Incidents and Services electronically (PROMISe) projects involved developing and refining an electronic system for classifying and documenting MRPs and clinical interventions by community pharmacists.[2] In 2009, this research culminated in the PROMISe III project,[7] in which documentation software was installed in 185 pharmacies in three states, allowing researchers to determine the frequency and types of pharmacist-led clinical interventions, and the factors that influence their provision and documentation. PROMISe III also demonstrated the economic value of clinical interventions. The project showed that the average clinical intervention avoids approximately $360 in healthcare utilisation. It also highlighted the potential healthcare savings that might be realised by the Australian Government if the number of clinical interventions provided by pharmacists was increased.

Reported clinical intervention rates, both in Australia and overseas, vary from 0.9 to more than 24 interventions per 1,000 prescriptions (differences in definitions account for some of that variation).[31–36] The most recent PROMISe project reported an average intervention rate of 3 interventions per 1,000 prescriptions dispensed.[7] The results, however, also indicated that pharmacists did not document up to half the interventions they provided.

The majority of interventions recorded in the PROMISe III project related to either drug selection problems (1,837; 31%) or educational issues prompted by patient requests (1,421; 24%). Pharmacists were able to assign up to four recommendations for each clinical intervention. Frequently, the type of recommendation made by the pharmacist related to a change in therapy (3,841 occasions; 40%)—in particular, a drug change or a dose change. Pharmacists also commonly provided counselling and education sessions to patients (2,441 occasions; 41%) and referred patients to the prescriber (1,794 occasions; 30%).

Factors that may increase pharmacists' intervention rates, some of which were demonstrated throughout the PROMISe projects, include the following[7]:

- Pharmacists' prescription workload. Studies, including the PROMISe III project, have shown that, as pharmacists' workloads increase, their ability to identify drug interactions or other MRPs, or to provide clinical interventions, decreases.[37,38] Therefore, a pharmacist's workload should be managed to ensure that they have sufficient time to identify MRPs, and to provide and document clinical interventions. The Pharmacy Board of Australia's *Guidelines for Dispensing of Medicines* recommends dispensing of a maximum of 150–200 items per pharmacist per day without assistance.[24]
- Clinical knowledge. Results from the PROMISe III project showed that pharmacists with advanced clinical skills were more capable than those with basic clinical knowledge of identifying MRPs and performing clinical interventions that benefit patients. Also, pharmacists with additional qualifications, such as accreditation with the Australian Association of Consultant Pharmacy (AACP), graduate certificates, graduate diplomas or additional degrees with clinical pharmacy background, recorded the highest number of interventions. These findings are consistent with the requirements of the *Professional Practice Standards*[8] and the National Competency Standards.[12] Improving clinical knowledge, therefore, is likely to be an effective way to maximise pharmacists' intervention rates and positive outcomes for patients.
- Continuing professional development (CPD). Consistent with studies demonstrating that continuing medical education improves physician performance,[39-41] the PROMISe projects showed that the rate of clinical interventions recorded increased with an increased number of reported hours spent on continuing professional development each year.

For further information, the PROMISe project reports can be found at: www.ppaonline.com.au

Appendix 2 - Guide for documenting clinical notes (SOAP notes)

Patient history (clinical) notes regarding clinical interventions should be recorded in a concise but comprehensive manner. Documenting clinical notes in this way ensures that they will be accurately interpreted by other healthcare providers (e.g. other pharmacists employed in the pharmacy). A patient-centred format commonly used for documenting clinical notes is SOAP (Subjective, Objective, Assessment and Plan) notes.

SOAP notes

S–Subjective: summary statement from the patient and/or carer describing any symptoms they might be experiencing and their perception of the situation.

O–Objective: observations based on the perceptions of the pharmacist and signs that are seen or measured by the pharmacist.

A–Assessment: observations of the situation based on the subjective and objective observations; may include a tentative diagnosis or summation of the issue and identification of MRPs.

P–Plan: details for resolving the MRP, which forms the basis of the recommendations made by the pharmacist to the patient or prescriber.

Example

Cefalexin 125 mg four times a day is prescribed for a child who weighs 30 kg. The pharmacist contacts the prescriber, who approves an increase in dose to 190 mg four times a day.

MRP category: Prescribed dose too low (O2)

Recommendation(s): Dose increase (R1); refer to prescriber (R9)

Drugs involved: Cefalexin

Clinical notes:

S	Carer presents a new prescription for cefalexin
O	Patient weighs 30 kg; dose prescribed is 125 mg four times a day
A	Dose prescribed is too low (should be 6.25–12.5 mg/kg four times a day)
P	Contacted the prescriber and recommended increasing dose to 190 mg four times a day (accepted by prescriber)

Appendix 3 - Referral letter template

Note: Guidance on specific content is provided in Appendix 2.

Referral letter

Healthcare provider: .....

Address: .....

.....

Pharmacist: .....

Address: .....

.....

Phone: .....

Date: .....

Dear Healthcare provider's name .....

Re: Patient's name .....

Patient's address .....

Date of intervention: ..... Discussed via phone: Yes ☐ No. ☐

I have referred Patient's name .....

to you for review following the identification of a potential issue concerning their care.

Potential issue Describe the MRP briefly, including medicines and/or medical conditions involved .....

.....

.....

Recommendations: List recommendations, e.g.drug change recommended .....

.....

.....

.....

Advice given to Patient's name .....

List recommendations, e.g. dose administration aid recommended .....

.....

Additional notes: .....

.....

.....

References: .....

.....

When you see Patient's name ....., please consider reviewing this potential medication-related issue. Please do not hesitate to contact me for any further information.

Yours sincerely,

Pharmacist's name: ..... Post nomimals: .....

Signature: .....

Appendix 4 - Clinical intervention template

Date: ..... Pharmacist: .....

Patient: .....

Age: ..... Sex: .....

Medicine involved in MRP: .....

Other medicine(s): .....

Relevant medical conditions/allergies: .....

.....

Outcome .....

.....

Follow-up .....

MEDICATION-RELATED PROBLEM (PLEASE CIRCLE)				**RECOMMENDATIONS** (PLEASE CIRCLE)	
Drug selection		Difficulty using dosage form	C5	Dose increase	R1
Duplication	D1	Other compliance problem	C0	Dose decrease	R2
Drug interaction	D2	**Undertreated**		Drug change	R3
Wrong drug	D3	Condition undertreated	U1	Drug formulation change	R4
Incorrect strength	D4	Condition untreated	U2	Drug brand change	R5
Inappropriate dosage form	D5	Preventive therapy required	U3	Dose frequency/schedule change	R6
Contraindication apparent	D6	Other undertreated indication problem	U0	Prescription not dispensed	R7
No indication apparent	D7	**Monitoring**		Other changes to therapy	R8
Other drug selection problem	D0	Laboratory monitoring	M1	**Refer to prescriber**	R9
Over or underdose prescribed		Non-laboratory monitoring	M2	**Refer to hospital**	R10
Prescribed dose too high	O1	Other monitoring problem	M0	**Refer for medication review**	R11
Prescribed dose too low	O2	**Education or information**		**Other referral required**	R12
Incorrect or unclear dosing instructions	O3	Patient requests drug information	E1	Education/counselling session	R13
Other dose problem	O0	Patient requests disease management advice	E2	Written summary of medicines	R14
Compliance		Other education or information problem	E0	Recommend dose administration aid	R15
Under-use by patient	C1	**Not classifiable**		Other written information	R16
Over-use by patient	C2	Not classifiable under another category	N0	**Monitoring: Laboratory**	R17
Erratic use of medication	C3	**Toxicity or adverse reaction**		**Monitoring: Non-laboratory**	R18
Intentional drug misuse	C4	Toxicity, allergic reaction or adverse effect present	T1	**No recommendation necessary**	R19

Adapted from Peterson et al.[7]

Appendix 5 - DOCUMENT MRP and recommendation classification codes

MEDICATION-RELATED PROBLEM		
Category	**Subcategory**	**Code**
Drug selection (Problems relating to the choice of medicine prescribed or taken)	Duplication	D1
	Drug interaction	D2
	Wrong drug	D3
	Incorrect strength	D4
	Inappropriate dosage form	D5
	Contraindication apparent	D6
	No indication apparent	D7
	Other drug selection problem	D0
Over or underdose prescribed (Problems relating to the prescribed dose or schedule of a medicine)	Prescribed dose too high	O1
	Prescribed dose too low	O2
	Incorrect or unclear dosing instructions	O3
	Other dose problem	O0
Compliance (Problems relating to the way the patient takes the medicine)	Under-use by patient	C1
	Over-use by patient	C2
	Erratic use of medication	C3
	Intentional drug misuse (incl. non-prescription medicines)	C4
	Difficulty using dosage form	C5
	Other compliance problem	C0
Undertreated (Problems relating to actual or potential conditions that require management or prevention)	Condition undertreated	U1
	Condition untreated	U2
	Preventive therapy required	U3
	Other undertreated indication problem	U0
Monitoring (Problems relating to monitoring the efficacy or adverse effects of a medicine)	Laboratory monitoring	M1
	Non-laboratory monitoring	M2
	Other monitoring problem	M0
Education or information (Where a patient requests further information about a medicine or disease state)	Patient requests drug information	E1
	Patient requests disease management advice	E2
	Other education or information problem	E0

MEDICATION-RELATED PROBLEM		
Category	**Subcategory**	**Code**
Not classifiable (Problems that cannot be classified under another category)	Clinical interventions that cannot be classified under another category	N0
Toxicity or adverse reaction (Problems relating to the presence of signs or symptoms that may be attributed to a medicine)	Toxicity, allergic reaction or adverse effect present	T1

RECOMMENDATIONS		
Category	**Subcategory**	**Code**
Change of therapy	Dose increase	R1
	Dose decrease	R2
	Drug change	R3
	Drug formulation change	R4
	Drug brand change	R5
	Dose frequency/schedule change	R6
	Prescription not dispensed	R7
	Other changes to therapy	R8
A referral required	Refer to prescriber	R9
	Refer to hospital	R10
	Refer for medication review	R11
	Other referral required	R12
Provision of information	Education or counselling session	R13
	Written summary of medicines	R14
	Recommend dose administration aid	R15
	Other written information	R16
Monitoring	Monitoring: Laboratory	R17
	Monitoring: Non-laboratory	R18
No recommendation necessary	No recommendation necessary	R19

Adapted from Peterson et al.[7]

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