



Government of **Western Australia**  
Department of **Health**

# Guiding Principles for Timely Administration of Medications

## Contents

Introduction	2
1. Time Critical medicines	2
2. Non-time critical medicines	3
3. Meals and medicines	3
4. Recommendations for scheduled medication administration times	3
5. Documenting administration and non-administration of medicines	4
5.1 Withheld W	5
5.2 Fasting F	5
5.3 Not available N	5
5.4 Refused R	5
5.5 Absent A	6
5.6 Vomiting V	6
5.7 On leave L	6
5.8 Self-administering S	6
6. Medication administration outside the period of tolerance	6
7. Governance	7
References	8

## Introduction

Medication administration can be associated with errors or harm due to delayed or omitted treatments. The clinical error rate for medicine administration in the hospital setting ranges between 5% and 10% of medicine administrations, with nurse interruptions during administration associated with increased risk of error.<sup>1</sup> Medication related incidents are one of the most frequently reported clinical incidents in WA hospitals and health services, with medication omissions accounting for 8.8% of all medication-related reported incidents in 2016/17.<sup>2</sup>

These Guiding Principles are provided to assist hospitals in developing local policies and practices to support the timely administration of medicines and to reduce the incidence of errors and harm associated with delayed or omitted treatments.

Each hospital or health service should determine how best to maintain the integrity of their medication administration process while ensuring patient safety. In establishing systems and policies, hospitals should consider the nature of each hospital setting, prescribed medication, and the clinical considerations relevant to the patient.

### 1. Time Critical medicines

Time critical medicines are defined as medicines where early or delayed administration by more than 30 minutes from the prescribed time for administration may cause harm to the patient or compromise the therapeutic effect resulting in suboptimal therapy.

It is recommended that hospitals and health services produce a local list of time critical medicines relevant to their services and treatments they provide. It may be appropriate that a list of time-critical medicines be developed at the ward or speciality unit level in some circumstances, and this should be considered by each unit.

The following framework is provided to assist in determining the situations and factors where medicines should be considered time-critical.

- In acute treatment settings where therapy is initiated, including;
  - 'stat' and immediate doses including resuscitation and other cases of physiological or psychological instability,
  - first and loading doses including intravenous administration of anticoagulants, antibiotics and antiepileptics, or
  - medications requiring incremental dosing.
- Where medicines with narrow therapeutic index/requirement for therapeutic drug monitoring are prescribed.
- Where the pharmacokinetic profile of the medicine is such that minimal variation in timing of doses will have clinical consequences. For example;
  - regular short acting opiates
  - antiparkinsonian medications (e.g. levodopa combinations)
  - immunosuppressive agents (e.g. solid organ transplants and myasthenia gravis)
  - medicines with a dosing interval of 4 hours or less.
- Medicines with drug-drug or drug-food interactions.
- Specially timed medicines, including;
  - time sequenced or concomitant medicines
  - medicines sequenced with other treatments
  - medicines specifically timed to be given before, after or with meals
  - other (for example warfarin at 1600 hours).

- Medicines designated by a prescriber as being time-critical in an individual patient because of the patient's diagnosis or indication.

One situation where there may be risk of harm is when patients on time critical medications with chronic conditions, such as Parkinson's disease or diabetes mellitus, are waiting for admitted to hospital, which may result in missed doses. Clinical handover and documentation should be implemented using the iSoBAR format to communicate a patient's time-critical medicines during the transition of care (as per the [WA Health Clinical Handover Policy \(MP0095/18\)](#)).

## 2. Non-time critical medicines

Most medicines used in hospitals are not time-critical and there should be flexibility and scope for local discretion in how these medicines are safely managed on medication rounds in the hospital. As a general guide, non-time-critical medicines have greater tolerances around the timing of administration. Timing will depend to some degree on the frequency of dosing.

- For medicines administered more frequently than daily but less frequently than four hourly – aim to administer with 60 minutes of the scheduled time;
- For medicines administered daily or less frequently – aim to administer within 2 hours.

The actual timing used in practice is influenced by a number of variables. The above recommendations may not strictly apply to every clinical situation.

## 3. Meals and medicines

Generally, all medicines should be taken at a consistent time in relation to meals. However, for pharmacological or clinical reasons, some medicines have a specific requirement to be taken before, after or with meals. The nature of any meal/medicine interaction varies depending on the medicine formulation, and may be influenced by certain food types. Clinical pharmacists can provide more specific advice about when to take a medicine in relation to meals or possible interaction with food types.

As a guide:

- Taking a medicine with meal means taking the dose within 30 minutes of a meal.
- Taking a medicine on an empty stomach means taking the dose at least one hour before or two hours after a meal.

## 4. Recommendations for scheduled medication administration times

- Scheduled medications are those that are administered according to a standard, repeated cycle of frequency (e.g. every 4 hours, twice daily, or daily).
- As far as practicable the recommended scheduled times provided on the WA Hospital Medication Chart (WAHMC) should be used. If and where there is to be variation from the WAHMC this decision should be at the hospital rather than ward level (for example, through Drug and Therapeutics Committee and Nurse Executive).
- In addition to the times provided on the WAHMC, hospitals should determine the times that medicines are to be given "with food" or "on an empty stomach". Other routine times such as every four hours and bedtime should also be addressed.
- In the situation where the prescriber clearly intends dosing as per routine drug administration times, but the time entered does not fit with the times on the WAHMC or a hospital agreed administration time, then Nursing Practice Guidelines should reflect the WAHMC Guidelines:

*“Medications should be administered according to the recommended administration times unless they must be given at specific times (e.g. some antibiotics, with/before food, Parkinson’s disease medications) or, as in the case of children with variable meal and sleep schedules, a specific schedule is required.*

*If necessary, the clinical/ward pharmacist or nurse will clarify the administration time to correctly administer the medication (e.g. in relation to food) and annotate the chart to indicate that this has occurred. Nursing staff are authorised to change the times to meet local ward/hospital policy BUT, out of courtesy, should inform the prescriber of this action.”*

- Scheduled medications do not include the following:
  - STAT or One-time doses
  - PRN medications
  - First doses and loading doses
  - Specifically timed doses (e.g. antibiotic for surgical prophylaxis before induction)
  - Time-sequenced or concomitant medications (e.g. chemotherapy and rescue agents)
  - Medicines administered at specific times to ensure accurate peak or trough serum levels.

## 5. Documenting administration and non-administration of medicines

Documentation and communication about the administration of medicines on the WAHMC or by electronic means is essential. It is recommended that for time-critical medicines or medicines administered outside their period of tolerance, that the person administering the medicine(s) record the exact time of administration in conjunction with their initials.

In the event of non-administration of a medicine, standard abbreviations must be used in a consistent manner and circled to avoid confusion between the code and the nurse/midwife’s initial (See Figure 1). A blank record provides no information about the reason for non-administration but may also indicate that the medicine was given but not signed. It is recommended that the reason for non-administration is documented and communicated in the notes.

**Figure 1: Reason for not administering codes (from WA Hospital Medication Chart)**

Reason for not administering	
Codes MUST be circled	
Absent	(A)
Fasting	(F)
On leave	(L)
Not available – obtain supply or contact prescriber	(N)
Refused – notify prescriber	(R)
Self administered	(S)
Vomiting	(V)
Withheld – enter reason in clinical record	(W)

Standard coding reasons for non-administration of a dose include:

### 5.1 Withheld W

Used when there is a clinical reason to withhold a dose.

The reason for withholding the dose should be documented and communicated to the prescriber as soon as practicable.

### 5.2 Fasting F

Fasting does not exclude the administration of some medicines. Prescriber direction (e.g. from an anaesthetist) is required in terms of which medicines to administer or not to administer, and how long fasting status should be maintained before recommencing prescribed therapy. A guidance document listing medicines to be given in fasting patients may be developed locally by an anaesthetic team.

Directions should be documented and communicated.

This is not a preventable omission unless the dose was meant to be given even in the fasting patient.

Fasting should not be confused with or considered the same as “nil by mouth”. Withheld (W) is more appropriate coding when “nil by mouth” applies for a short period, otherwise, relevant oral prescriptions should be cancelled by, or at the direction of, the prescriber.

### 5.3 Not available N

A medicine not being available is always a preventable omission.

The following strategies will help avoid “not available” preventable omissions:

- It is the prescriber’s responsibility to prescribe medicines supplied via the hospital formulary, or make the necessary arrangements to obtain supply of non-formulary medicines. Pharmacy should inform the prescriber that the medication is not available and assist in either obtaining supply or providing a suitable alternative.
- It is the responsibility of Pharmacy to maintain the stock and supply of approved medicines. For out of stock items, Pharmacy should make alternative arrangements where possible and communicate with prescribers and wards about the nature of the situation.
- It is the nurse’s responsibility to notify the Pharmacy and/or obtain adequate ward supply, and if necessary, contact the prescriber to advise that the medicine ordered is not available. Actions taken to obtain the required stock should be documented and communicated in the notes.
- Appropriate therapy should be commenced once stock is obtained.

### 5.4 Refused R

A patient refusing to take a regular medication is not a preventable omission, provided that:

- it is the correct medication in the right dose at the right time,
- the reason for giving the medication has been explained to the patient, with consideration to the clinical situation, patient behaviour and cognition, and
- the prescriber has been informed and a management decision made.

## 5.5 Absent A

Used to indicate that the patient is temporarily absent from the ward. Reasons include diagnostic test, procedure, treatment or the patient is unaccounted for/left the ward.

Where possible and appropriate, the delayed dose should be administered and the time of administration documented.

To avoid preventable omissions related to absent patients, the next scheduled time of medication administration should be checked and where appropriate (within tolerance for timeliness) the medications given prior to patients leaving the ward for scheduled procedures, tests and treatments (including dialysis).

Patients should be made aware of the times their regular medications are administered and should be encouraged to be in the ward at these times.

## 5.6 Vomiting V

Vomiting code is used to indicate both before (unable to take) and after (dose not absorbed) medication dosing omission.

## 5.7 On leave L

This code is used when the patient has approved leave from hospital for a day or a week. As medication administration is not observed by hospital staff during this time, a 'L' code is used for when the medication was due.

## 5.8 Self-administering S

This code is used to indicate when a patient has self-administered a medication. It is important to note that whilst in hospital, all administration of medication should be observed and counter-signed by nursing/midwifery staff.

## 6. Medication administration outside the period of tolerance

- Hospitals should provide clear guidelines about the appropriate actions to be taken when a medicine is not administered within the accepted period of tolerance.
- Nurses should work within their scope of practice in deciding about the administration of doses outside the allowed tolerance. Normal nursing practice would apply in terms of referral to senior staff and medical staff.
- The reason for any omitted dose or dose given outside the period of tolerance should be recorded in the medical notes.
- As standard practice, it is recommended that the actual time of administration of each medicine be recorded next to the nurse's initials on the WAHMC.
- Early, delayed or omitted doses should also be communicated during any clinical handover.

## 7. Governance

The appropriate hospital or health service multidisciplinary committee (e.g. Drugs and Therapeutics, Medication Safety, Safety and Quality or equivalent committee) should be responsible for:

- Identifying and promoting a list of medicines where timeliness of administration is crucial. This list might include anti-infectives, anticoagulants, insulin, resuscitation medicines and medicines for Parkinson's disease, and other medicines identified locally;
- Ensuring hospital medicine management procedures include guidance on the importance of prescribing, supplying and administering time-critical medicines, timeliness issues and what to do when a medicine has been omitted or delayed;
- Reviewing and, where necessary, making changes to systems for the supply of urgent medicines within and out-of-hours to minimise risks; reviewing incident reports regularly and carry out an periodic audits of delayed and omitted time-critical medicines for the purpose of continuous system improvement;
- Making all staff aware that delay or omission of time-critical medicines (for inpatients, on admission, and discharge from hospital) outside the period of tolerance are patient safety incidents and should be reported via Datix CIMS.

WA Health acknowledges the work contributed by the WA Medication Safety Group's Timely Administration of Medicines Working Group.



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