WA High Risk Medication Policy

Office of Patient Safety and Clinical Quality
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1. Policy scope

The WA High Risk Medication Policy (the Policy) is based on the National Safety and Quality Health Service Standard (NSQHSS) 4.11 developed by the Australian Commission on Safety and Quality in Health Care.

This policy applies to all West Australian public inpatients and day procedure patients. Health Service Managers and Clinical Directors are advised to bring this policy to the attention of staff to ensure its prompt implementation within their jurisdiction.

All Department of Health clinicians (medical, nursing, midwifery, pharmacy and allied health) providing health services on behalf of the Department of Health must comply with this policy in identifying and managing high risk medications initiated within the Department of Health, or Department of Health funded, services.

This policy is strongly recommended to all non-public health providers in WA.

2. Policy purpose

The purpose of this policy is to improve patient safety by raising awareness amongst all clinical staff that prescribe, dispense or administer high risk medications.

Hospitals and health services must determine which medications are deemed high risk within their patient population and clinical settings in accordance with the National Safety and Quality Health Service Standard 4.

Governance arrangements for medication management and medication safety should include;

- maintaining a list of identified high risk medications for the hospital, and
- assignment of responsibility to the tasks of risk assessment, management, and monitoring the use of high risk medicines.

A risk assessment involving a multidisciplinary, structured approach to identifying potential risks related to high-risk medicines, should be undertaken to determine which high-risk medicines to include for each organisation and to ensure the list is reviewed periodically. Work practices related to high risk medicines should also be periodically reviewed.
The purpose of identifying high risk medications is to establish locally-based safeguards and strategies to reduce the risk of errors with these medicines during all phases of the medication use process. Appendix I provides mitigation strategies to manage risks associated with high risk medications.

The primary goals of implementing risk-reduction strategies are to:

1) prevent errors,
2) encourage transparency when errors are made, and
3) mitigate harm.

Clinical staff must be aware of medicines on this list and of the need to take extra care in their safe storage, handling, prescription and administration with reference to local protocols.

If there is a high risk of death or serious injury to the patient where a medicine is inadvertently misused or administered incorrectly, the medicine should be included in the facility’s Medication Safety Standard 4 Risk Register and appropriate protocols and guidelines developed for safe use.

At a minimum the following medications, recommended by the Australian Commission for Safety and Quality in Health Care, should be considered for inclusion in the high risk medication register.

- A Antimicrobials
- P Potassium and other electrolytes, Psychotropic medications
- I Insulin
- N Narcotics / Opioids
- C Chemotherapeutic agents
- H Heparin and other anticoagulants
- S Systems (e.g. safe administration of liquid medications)

All medications carry risk of adverse events if prescribed, administered or dispensed inappropriately.
Certain patient populations are also deemed as high risk as they handle medications differently to the general population of patients. Such populations include paediatric, neonatal, geriatric, obese, low weight, and those with organ impairment (e.g. renal, hepatic).

Patients may also be considered at high risk due to difficulty with managing medicines because of literacy, language difficulties, dexterity problems, impaired sight, dementia or other cognitive difficulties.

3. Roles and Responsibilities

**Chief Executive, Health Service Executives, Managers**
- Ensure the mandatory policy and standards are implemented at all health facilities.

**Safety and Quality Managers**
- Ensure systems are in place to:
  - Implement the mandatory high-risk medicine policy and standards.
  - Monitor compliance with the high-risk medicine policy and standards.

**Medication Safety Groups / Drug and Therapeutics Committees**
- Ensure a list of high risk medicines is current and maintained.
- Ensure medication safety is a key consideration in all formulary decisions and that when a medicine which is considered to be high-risk is added to the formulary, it is included in the list of high risk medications.
- Development and endorsement of policies, protocols and guidelines relating to high risk medicines.
- Receive reports on high risk medicine incidents, policy compliance rates and formulate corrective action, if indicated.

**Clinical staff involved in medication management**
- Comply with policy and standards for high-risk medicines.
- Follow the local protocol/guidelines described in the facilities high-risk medicines list.
- When prescribing and supplying high-risk medicines, give clear advice to ensure their safe administration.
- Maintain knowledge base relevant to area of practice.
<table>
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<tr>
<th>Health Service Requirements for High Risk Medication Policy</th>
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<th>Unmet X</th>
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<tbody>
<tr>
<td>All public health services must establish a High Risk Medication List</td>
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<tr>
<td>All medicines regarded as high risk must be the subject of local protocol, procedure or guidelines for safe and efficacious management; prepared in consultation with relevant specialists and overseen by the local Medication Safety Group/Drug and Therapeutics Committee.</td>
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<tr>
<td>Each high-risk drug protocol must include patient monitoring which is relevant and appropriate to therapy. This is to ensure a timely response to adverse events or side effects associated with drug treatment.</td>
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<td>All public health services should employ strategies to mitigate the risk of medicines identified on the local high-risk medication list.</td>
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<td>Adverse drug incidents involving high risk medicines should be reported in the Clinical Incident Management System (DatixCIMS) and regularly reviewed through quality management systems.</td>
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<td>Ensure high risk medicines and risk awareness components for medication management are included in workforce orientation and ongoing education programs on medication safety.</td>
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<td>Maintain a Medication Safety Standard 4 Risk Register with risk ratings for high risk medications to prioritise proposed action plans to mitigate identified risks in management of high risk medications.</td>
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<td>Maintain a quality improvement plan that includes actions to address identified risks in medication management of high risk medicines.</td>
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<td>Risk assessments associated with the storing, prescribing, dispensing and administration of high risk medicines are undertaken.</td>
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4. Evaluation

Health services are responsible for carrying out regular audits and evaluating compliance with the Policy.

Feedback of evaluation results should be provided to staff.

Evaluation is fundamentally connected to successful change management.

Setting measurable goals can be a useful tool to enhance uptake and implementation and tracking performance against these goals in a public and meaningful manner can assist with motivation and compliance.

5. Policy Review

This policy will be reviewed by the WA Department of Health within three years from initial release, and every five years thereafter.
Appendix I - High-Risk Medicine Risk Mitigation Strategies

The following are high risk medicine risk mitigation strategies.

**Reducing or eliminating the risk of error:**

- Ensure therapeutic guidance in the form of protocols and guidelines are available for prescription and administration of high risk medications.
- Restrict supply of high risk medications to areas of specified use where possible.
- Ensure the safest means of completing a task is efficient and easily followed.
- Strategies must be applicable in various settings of the hospital/service.
- Remove opportunity for error by separation of error-prone tasks from one another in time or place.
- Ensure that strengths of medicines are clearly visible and clarified in terms of the dosage unit or dose per volume of liquid e.g. mg/mL as opposed to mg/5mL.
- Ensure the route of administration is clearly identified and the use oral/enteral dispensers to prepare and administer all liquid medicines by routes other than injection.
- Remove the need for rapid mathematical calculation and reduce options and choices by standardising concentrations of medicines in solution.
- Purchase for safety as far as possible e.g. review label clarity, visual product discrimination, amount of manipulation and associated equipment needed in administration.
- Set mechanical devices (ie smart infusion pumps) so that they default to the safest setting.
- Low level risk-reduction strategies (ie staff education and passive information) should be used together with high-leverage risk-reduction strategies such as forcing functions and fail safes (such as limiting access or use, constraints, barriers or standardisation).
- Monitor use of medicine by collecting data to determine the effectiveness of risk-reduction strategies for high-risk medications. Communicate results with appropriate committees and individuals.
Making error visible:

• Employ a fully independent double-check, carried out by a second clinician, for key high-risk medicines where locally identified.

• Ensure all clinical staff have the qualifications and skills appropriate to the prescription, supply, preparation and administration tasks they undertake.

• Regularly review local and wider system incidents and near-misses. Use prospective analysis and redesign of systems to mitigate identified issues, and use site specific methods to feedback relevant information to staff.

Minimising the consequences of error:

• Monitor patients carefully according to high risk drug protocols.

Monitoring patients receiving high-risk medicine

• Patients receiving high-risk medicines are vulnerable to medication error if not closely and regularly monitored.

• Monitoring requirements for Therapeutic Drug Monitoring of high-risk medicines will be written into the protocols for each relevant drug. Promptly access laboratory results which may influence decision-making for these medications, such as drug levels, renal and liver function tests.

Reviewing and learning for improvement

• All incidents regarding high-risk medicines must be reported via the Clinical Incident Management System (electronic Datix CIMS) to ensure appropriate implementation of risk management or improvement strategies.

• All available data sources such as clinical incident monitoring system data, internal reports and published articles will be reviewed to identify actual or potential risks associated with high-risk medicines.

• If local vulnerability is identified, risk management techniques will be used to prevent harm or mitigate impact should errors occur.
**Key Strategies for Safeguarding High-Alert Medications**
(ISMP Medication Safety Alert 4th April 2013.)

<table>
<thead>
<tr>
<th>Key Strategies</th>
<th>Description</th>
<th>Examples</th>
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| **Failure Mode and Effects Analysis (FMEA) and Self Assessments** | Proactively identify the ways that processes or medication-related equipment can fail, why it might fail, how it might affect patients and how it can be made safer; assess current systems and practices against best practices. | • Perform an FMEA on a new high-alert medication before initial use.  
• Perform an FMEA on a new infusion pump being considered for purchase.  
• Perform a FMEA on a high risk process associated with medication use.  
• Perform an FMEA on the use of alternative medications during a drug shortage. |
| **Forcing Functions and Fail Safes** | Employ procedures or equipment design features that will:  
• Prevent something from happening until certain conditions are met (forcing function).  
• Prevent malfunctioning or unintentional operation by reverting back to a predetermined safe state if a failure occurs (fail safe). | • Use of oral syringes that cannot connect to IV tubing ports.  
• Use epidural tubing without ports. |
| **Externalise or Centralise Error-Prone Processes** | Transfer error-prone tasks to an external site or centralised areas to help ensure they are completed in a distraction-free environment by those with expertise, with appropriate quality control checks in place. | • Use commercially available products.  
• Have a centralised pharmacy IV admixture service.  
• Use a specialised external service to prepare complicated solutions. |
| **Limit Access or Use** | Use constraints to restrict access to certain medications or error-prone processes; require special education or conditions for prescribing, dispensing, or administering a particular drug; require special authorisation for participation in certain tasks. | • Require special education/credentialing for the ordering, preparation, and use of certain high-alert medications (ie chemotherapy).  
• Carefully select the drugs, concentration and quantities of medications in imprest stock.  
• Establish parameters to change IV therapy to oral therapy as soon as possible to limit IV access.  
• Limit the administration of certain medications unless certain criteria are met. |
### Maximum Access to Information

Use active, not passive, means of providing staff and patients with necessary information at the appropriate time while performing critical tasks.

- Use smart infusion pumps with dose checking software enabled.
- Use of concurrent data monitoring software systems that notify practitioners with critical monitoring information.
- Deploy clinical pharmacists in patient care units for immediate consultation when needed.
- Use electronic prescribing systems with clinical decision support, thus providing immediate warnings if unsafe orders are entered.

### Constraints & Barriers

Use of special equipment or environmental conditions to prevent a hazard from reaching a target.

- Use of personal protective equipment to reduce employee exposure to hazards.
- Use a biologic safety cabinet to prepare chemotherapy.
- Use a needleless system to administer medications and fluids, or for other procedures involving a potential risk of exposure from contaminated sharps.

### Standardise

Create clinically sound, uniform models of care or products to reduce variation and complexity.

- Employ evidence based standard, order sets (1 for each care process).
- Standardise concentrations, container sizes, and drugs used to treat specific conditions.
- Use scales that only weigh patients in ‘kg’.

### Simplify

Reduce the number of steps, hand-offs and options without eliminating crucial redundancies.

- Use commercially available products instead of preparing solutions on the ward.
- Dispense oral and parenteral medications in the most ready-to-use form.
- Use electronic prescribing to eliminate transcription.
- Consult dosing charts instead of manually calculating infusion rates.
Appendix II – Guide for Developing a High Risk Medication List/Register Relevant to the Organisation

This guide has been developed as a framework for WA hospitals and health services to address elements of the National Safety and Quality Standards in Health Care – Medication Safety Standard 4. This document is intended as a tool to guide the development of a local high-risk medicines list. It is not intended as a primary reference for drug information.

Hospitals and health services will need to determine which medications are deemed high risk within their patient population and clinical settings. It is recommended that hyperlinks to supportive documents be added, including appropriate national, state and local documents. Examples have been provided in red, but are only a guide.

At a minimum the following medications, recommended by the Australian Commission for Safety and Quality in Healthcare, should be considered for inclusion in the high risk medication list.

- A Antimicrobials
- P Potassium and other electrolytes, Psychotropic medications
- I Insulin
- N Narcotics / Opioids
- C Chemotherapeutic agents
- H Heparin and other anticoagulants
- S Safer Systems (e.g. safe administration of liquid medications using oral syringes)

All medications carry risk of adverse events if prescribed, administered or dispensed inappropriately. This list will be reviewed on a regular basis.
1. Anti-infectives

Specific anti-infectives that have a high-risk of causing harm include amphotericin, aminoglycosides and vancomycin.

Operational Directive endorsing TGA Antibiotic Guidelines version 14 2010

1.1 Amphotericin

Confusion between the formulations of amphotericin deoxycholate (Fungizone®), liposomal amphotericin (Ambisome®), amphotericin B (Fungizone) and the phospholipid complex (Abelcet®) may result in errors, both of prescribing and administration. Awareness of these multiple formulations and differing dosage recommendations will help reduce the risk of under- or overdosing.

WATAG – WAMSG – Confusion between non-lipid and lipid formulations of injectable amphotericin

1.2 Aminoglycosides

(Gentamicin, tobramycin and amikacin)

Incorrect dosing with respect to age, ideal body weight and renal function may result in significant ototoxicity and nephrotoxicity. Under dosing may result in treatment failure. Monitoring of serum levels, with appropriate dose adjustment, should be undertaken in all patients expected to receive therapy for greater than 72hrs (patients with unstable renal function should be monitored daily).

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

1.3 Vancomycin

Incorrect dosing with respect to weight may rarely cause nephrotoxicity and ototoxicity. Under dosing may result in treatment failures. Monitoring of serum levels, with appropriate dose adjustment, should be undertaken in all patients expected to receive therapy for greater than 72hrs (patients with unstable renal function should be monitored daily)

To reduce the risk of ‘red-man’ syndrome in adults and children 12 years or more, individual doses of vancomycin should be infused at a rate not exceeding 10 mg/minute. Shorter infusion times can be trialled and used if tolerated, but should not be less than 60 minutes. If ‘red-man’ syndrome occurs, the infusion time should be extended. In children less than 12 years, individual doses should be infused over 2 hours.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
2 Potassium and Other Electrolytes

2.1 Potassium

Potassium salts are administered intravenously to replace clinical deficiency in patients who cannot receive the electrolyte orally or when urgent replacement is required. Potassium chloride is the most commonly used salt, with phosphate and acetate less often used. This policy outlines the minimum criteria for safe therapeutic use of potassium associated with its preparation and administration in parenteral solutions. Errors in the preparation and administration of intravenous potassium can be fatal.

**Adverse incidents which relate to potassium use include:**

**Too rapid administration**

Patients can die as a result of receiving a potassium chloride infusion too rapidly, even when appropriately diluted.

**Selection of the wrong ampoule**

Potassium chloride ampoules can be mistaken for ampoules of similar appearance, for example, sodium chloride 0.9% (normal saline) when reconstituting a drug for injection. Consequently, the patient can be administered an unintended bolus of potassium.

**Cognitive error**

Using a potassium chloride ampoule instead of frusemide: this type of cognitive error is thought to arise due to the frequent use of potassium chloride in patients who are also receiving frusemide therapy, conditioning staff to the familiar pairing of the two drugs.

**Preparation error**

An intravenous infusion of potassium chloride is prepared incorrectly.

**Use of an excessively strong solution**

Patients can die as a result of receiving concentrated potassium chloride as a direct push injection. Cardiac arrest may occur when potassium chloride concentrate has been added to an infusion without mixing prior to administration.

High concentration potassium solutions for intravenous administration (including potassium chloride, potassium dihydrogen phosphate, potassium acetate) are restricted to pharmacy and approved clinical areas where they are used at a high infusion / concentration rate, in the acute setting. On these wards these solutions must be stored separately.

*Policy for Intravenous Potassium Chloride OD 0444/13*


Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
3. Insulin

Errors in insulin therapy can cause serious harm or can be fatal.

3.1 Insulin by Subcutaneous Injection

3.1.1 Prescribing insulin for subcutaneous injection

The insulin should be prescribed on the medication chart with full dosage instructions.

Care must be taken to ensure that the insulin type is fully documented i.e.

- Full Trade name (e.g. Humulin 30/70 not just Humulin, Humalog Mix 50 not just Humalog Mix)
- Device (vial/cartridge/disposable pen)
- Specify time of administration (i.e. immediately before meals or specific time to be given in respect to food)
- Dose - ensure that the word ‘UNITS’ is written in full to avoid confusion.

Mix-ups may occur because of sound-a-like names (e.g. Humalog and Humulin), multiple types of insulins.

3.1.2 Administering insulin by subcutaneous injection

Insulin pens are for individual patient use.

Ensure insulin is given subcutaneously at the prescribed dose using an insulin syringe or insulin pen specific to the brand of insulin prescribed.

Choose the smallest syringe that’s big enough to hold the largest dose. The smaller the syringe, the easier it is to read the markings and draw up an accurate insulin dose.

3.1.3 Storage of insulin

Insulin vials must be for individual patient use only.

Unopened vials /Cartridges /prefilled pens should be stored in a fridge (2-8 Degrees C)

Insulin in use can be stored at room temperature (below 25 Degrees C) for up to 28 days.

When the insulin is used for the first time, ensure a label is used to note the date and time of opening.

Ensure insulin is discarded if it has been out of the fridge for 28 days or more.
Do not place insulin in or close to the freezer compartment as it should not be frozen.

Do not expose vials, cartridges or pre filled pens to sunlight or high temperatures.

Do not use insulin if it has expired (always check the pack for the expiry date).

### 3.2 Administering Insulin by Intravenous Infusion

Double check the **concentration** and the **infusion rate** are consistent with the prescription to ensure the correct dose is administered to the patient.

IV insulin is lethal if given in substantially excessive doses or in place of other medications (insulin and heparin are often mistaken for one another since both are ordered in units).

Problems may arise if pumps are programmed incorrectly.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
4. Narcotics/ Opioids and Sedative Agents

Opioids and sedative agents that have a high risk of causing harm include fentanyl, hydromorphone, morphine, oxycodone and midazolam.

Prescribers can access information about these medications from the intranet or by contacting a consultant specialist in pain management where available. (eg Acute Pain Service or Anaesthetist)

4.1 Prescribing Opioids and Sedative Agents

Incorrect dosing of opioids can lead to inadequate analgesia, excessive sedation and potentially lethal respiratory depression. Caution with prescribing in elderly patients and patients with impaired clearance. Dosing should follow “Start low and go slow” philosophy.

Take care when prescribing an opioid switch. Independently check doses where possible.

Where intravenous patient controlled analgesia (PCA) is prescribed the Prescription and Management of Patient Controlled Analgesia Policy must be followed to ensure that prescription, administration and monitoring of PCA is safe and appropriate.

Prescription and Management of Patient Controlled Analgesia Operational Directive: OD 0416/13

4.2 Administering Opioids and Sedative Agents

Watch for cumulative sedation from medications used for symptomatic relief post surgery, for example the use of benzodiazepines for muscle spasm or sedating antihistamines for itch.

Regularly review the patient using the appropriate pain scoring tool to assess analgesia. Monitor sedation levels.

For all infusions, double check that the concentration and the infusion rate is consistent with the prescription.

Fentanyl (and other narcotic analgesic) patches require safe storage and disposal. Note that the effects of these medications can be increased by certain other medications, alcohol consumption, increased body temperature or exposure to heat.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
4.3 Narcotic Transdermal Patch Delivery Systems

- A number of different medications are available as patch formulation including potent opioid analgesics (eg fentanyl and buprenorphine).
- It is important to ascertain the presence of any transdermal patches at time of admission.
- Absorption of the drug from a patch can be increased by exposing the patch to heat sources such as heat packs, electric blankets and hot baths. A high fever can also increase absorption.
- Record time of application and time of removal on medication chart. Document site of application of the patch in the patient’s medical record.
- Ensure that the medicated patch has been removed if the prescription order has been ceased.
- Ensure that the previous patch has been removed before applying a new patch. Both the application and removal of patch should be recorded on the medication chart.
- Never use in opioid-naïve patients and only for chronic pain management.
- A significant amount of the drug remains in the patch after its intended application period has expired. Used transdermal patches must be disposed of carefully.
- The patch should be folded in half so that the sticky side of the patch sticks to itself and discarded into a secure sharps or medication bin.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
6. Chemotherapeutic Agents

- All chemotherapeutic agents are considered high risk medications.

- Procedures and policies must be in place regarding the safe prescription, preparation, administration and monitoring of chemotherapeutic agents.

- Oral preparations of chemotherapeutic agents should be clearly identified as cytotoxic to all staff that may handle the medication. A cytotoxic sticker can be placed on the dispensed medication container and/or the medication administration chart to identify this risk.

- Procedures and policies should be in place to provide direction and clear instruction on working practices to staff involved in providing chemotherapy and targeted therapy.

- All staff should have access to information applicable to the patient and the treatment including diagnosis, patient’s history, patient’s weight and height, pathology results and the treatment plan.

- All chemotherapy and targeted therapy should be prescribed on the basis of a documented, referenced protocol and a treatment plan documented for all patients.

- All prescriptions for oral chemotherapy and targeted therapy should include a start and stop date for intermittent therapy.

- Protocols should outline all therapy, dosages and scheduling relevant to the treatment. Dose adjustments should be clearly documented in the treatment plan and duplicated on the order and/or prescription.


eviQ Cancer Treatments Online: A point of care clinical information resource that provides health professionals with current evidence based, peer reviewed, best practice cancer treatment protocols and information.

5.1 Vincristine

Vincristine can be fatal if given by the intrathecal route. All vinca alkaloids are to be made up in 50mL minibags.

Policy for the Safe Administration of Vinca Alkaloid Drugs OD 0021/06

Policy for the Safe Administration of Intrathecal Chemotherapy OD 0020/06

See NSW Health Alert: Safe use of Vincristine:
Referred to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.
5.2 Methotrexate

Australian cases with fatal consequences have been reported when oral methotrexate has been prescribed and administered more frequently than *once weekly* for autoimmune or inflammatory disorders.

Ensure when prescribing, administering and dispensing weekly doses of methotrexate that it is clearly stated **which dose and which day of the week** the methotrexate is to be administered on the National Inpatient Medication Chart, and that the remainder of the relevant administration boxes have been crossed out to flag dose(s) not to be administered to reduce the risk of patients receiving unintended doses of methotrexate.

Ensure that written drug information leaflets are given to patients and that they contain clear advice about the weekly dosage schedule, not a daily dosing schedule. Provide patients with clear written instructions that name a specific day of the week for taking the tablet(s). When possible avoid choosing Monday since it could be misread as "morning."

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

**See NSW Health Policy Directive - Safe use of oral Methotrexate**

**Institute for Safety Medication Practices – Methotrexate overdose due to inadvertent administration daily instead of weekly.**

5.3 Etoposide

Etoposide is available as the base drug etoposide (Vepesid®) and the phosphate salt (Etopophos®). They contain different amounts of etoposide and cannot be directly substituted. Confusion may result when prescribing or administering the medication and this can result in under or over dosing of the medication. Site should stock one formulation to minimise confusion between products.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

Hospitals should only stock etoposide phosphate. Prescriptions for etoposide should be on pre-printed charts to minimise confusion.
6. Heparin and Other Anticoagulants

There is potential for excessive bleeding with warfarin, heparin and other anticoagulants. The incorrect dose or failure to monitor therapy can contribute to this event. It is recommended that prescribers contact the Haematology team for advice on dosing if required.

Revision of the Adult WA Anticoagulation Medication Chart (WA AMC) OD 0522/14

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

Medication Safety Self Assessment® for Antithrombotic Therapy in Australian Hospitals

6.1 Warfarin

Warfarin has the potential to interact with many medications that can affect the International Normalised Ratio (INR). Be aware that changing concurrent medications (by ceasing or adding a medication) may result in changes to INR and the dose of warfarin may require adjustment.

Living with Warfarin Patient Counselling Booklet and DVD.

6.2 Heparin

Heparins can be sub-classified as unfractionated heparin (UFH) and the low molecular weight heparins (LMWH) such as enoxaparin, danaparoid and dalteparin.

6.2.1 Prescribing unfractionated heparin

Ensure that the word ‘UNITS’ is written in full to avoid confusion.

6.2.2 Administration of unfractionated heparin by intravenous infusion

Double check the correct number of units has been added to the syringe for infusion and the infusion rate is consistent with the prescription to ensure the correct dose is administered to the patient.

6.2.3 Monitoring heparins

The activated partial thromboplastin time (aPTT) has been used most widely for monitoring of therapeutic doses of UFH in venous thromboembolism. A target ratio versus midpoint of normal range of 1.5–2.5 is employed.

Standardisation between laboratories in the control of heparin therapy using the aPTT has not been achieved across all hospitals because of the considerable variation observed between reagents and instruments used to measure the aPTT.
Platelet counts should be monitored every one to two days when prescribing heparin therapy. Heparins can cause thrombocytopenia which does not appear to be dose-related.

A baseline renal function test and full blood count should be done before commencing a LMWH. Dosing is weight based and must be modified in patients with renal insufficiency (creatinine clearance ≤ 30mL/minute). If monitoring of LMWH is undertaken, it is recommended that an anti-Xa chromogenic assay is used. Alternatively the WHO Standard for LMWH may be used. Samples taken at 4–6 hours after subcutaneous administration are suitable for assessment of peak anti-Xa level.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

6.3 Fixed Dose New Oral Anticoagulants (NOACs)

Fixed dose new oral anticoagulants include: rivaroxaban, dabigatran and apixaban.

New fixed dose oral anticoagulants have NO SPECIFIC REVERSAL AGENT.

Care is required when selecting patients for newer anticoagulant treatment:

(i) Use in Impaired Renal Function (CrCl = Creatinine Clearance)
   - CrCl 30 – 50 mL / min - increased anticoagulation
   - CrCl < 30 mL / min - newer oral anticoagulants are contraindicated
   - Use Cockroft-Gault – do not rely on eGFR.

(ii) Use with caution in elderly (> 75 years) and low body weight (< 50 kg).

(iii) Check for drug interactions and use of other anticoagulants, antiplatelet agents and NSAIDS.

(iv) Check for any existing co-morbidities with high risk of bleeding.

(v) Plan ahead for surgery and other procedures – dabigatran is not reversible and must be withheld prior to surgery.

(vi) Prescribe on WA Anticoagulation Chart in the regular dose orders section (reduces the risk of unintended concurrent anticoagulant prescribing).

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

“Living with a New Oral Anticoagulant” produced by WAMSG

PRESCRIBING GUIDELINES FOR DABIGATRAN, RIVAROXABAN AND APIXABAN –WATAG Advisory Note

Hospital and Community Use Of Dabigatran (Pradaxa®) IC 0108/11
7. Psychotropic agents

Psychotropic agents (including antipsychotics, antidepressants, benzodiazepines and stimulants) carry certain risks. Procedures and policies must be in place regarding the safe prescription, preparation, administration and monitoring of psychotropic agents.

While psychotropics generally do not carry high risks as broad category, they raise risks with different subgroups or situations:

- Risk is increased when prescribed in combination or in high doses.
- Given that self harm and suicide are raised within cohorts of individuals with mental illness, psychotropics may pose an increased risk of overdose for those individuals who have associated risk factors (also noting the therapeutic impact of psychotropics can reduce suicide rates).
- Antipsychotic medications pose long term health risks cumulative with associated inherent mental illness risk predisposing patient to metabolic syndrome.
- Stimulants and sedative medication may pose a potential risk of diversion to illicit use.

7.1 Clozapine

Clozapine requires strict monitoring in light of its potential to cause neutropenia, agranulocytosis, myocarditis and cardiomyopathy. Other significant adverse effects include marked sedation, weight gain, dyslipidaemia and hyperglycaemia, lowered seizure threshold, hypersalivation, asthenia, sedation and severe constipation. Its prescription is limited to registered centres and all patients must be part of a clozapine monitoring system, which mandates systematic evaluation of haematological parameters.

Concomitant use of other medications with the potential to cause agranulocytosis is discouraged and increased vigilance should be maintained where this is necessary. Carbamazepine should never be used concomitantly with clozapine. This combination has been shown to be synergistic for agranulocytosis.

Clozapine Connect

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

WA Clozapine Initiation and Re-titration Chart
7.2 Lithium

At supratherapeutic concentrations lithium toxicity can cause: ataxia, vomiting, coarse tremor, disorientation, dysarthria, muscle twitches, impaired consciousness, acute renal failure and death. Prolonged toxic concentrations may lead to irreversible brain damage. Toxicity usually occurs at concentrations greater than 2mmol/L, but may develop at considerably lower concentrations, especially in older persons. Patients should be monitored for signs and symptoms of lithium toxicity, including: confusion, unsteadiness, nausea, diarrhoea or worsening tremor.

The most important causes of lithium toxicity are:

- interactions with drugs that affect renal function (eg diuretics, nonsteroidal anti-inflammatory drugs (NSAIDs), angiotensin converting enzyme (ACE) inhibitors or angiotensin II receptor blockers).
- reduced fluid intake.
- fluid loss from vomiting, diarrhoea or excessive sweating.
- toxicity may also be caused by deliberate or inadvertent overdose.

It is important to frequently monitor the patient’s parameters, including renal function, thyroid function, urea and electrolytes and lithium levels to ensure toxicity does not eventuate.

Refer to: Hospital Guidelines or where no guidelines exist refer to standardised relevant evidence based resources.

Copyright notice and disclaimer for Appendix II:

This Guide for Developing a High Risk Medication List has been developed in consultation with the WA Medication Safety Network and WA Medication Safety Group for use in WA Health.

WA Health acknowledges contributions from the Children’s Hospital at Westmead (CHW), NSW High Risk Medication Policy and Fremantle Hospital and Health Service in the development of this document.

WA Health has done everything practicable to make this document accurate, up-to-date and in accordance with accepted legislation and standards at the date of publication. If this document is printed, it is only valid to the date of printing.
Appendix III: Recommended Clinical Indicators

The following are recommended clinical indicators for health services to use to monitor the management of high risk medications.

The decision to adopt a clinical indicator is to be determined by the health service’s Medication Safety Governance Group (or Drug and Therapeutics Committee) determined by the high risk medication risk list and action plans of the health service.

<table>
<thead>
<tr>
<th>Anti-infectives</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Antimicrobial Stewardship is in place to review and monitor prescribing of antimicrobials.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of prescriptions for restricted antibiotics that are concordant with Drug and Therapeutics Committee approved criteria (QUM indicator 2.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of patients with a toxic or sub-therapeutic aminoglycoside concentration whose dosage has been adjusted or reviewed prior to the next aminoglycoside dose (QUM indicator 3.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational material is developed for the workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intravenous Potassium Chloride</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Risk Medicine Management Policy on intravenous potassium chloride and associated protocols are readily available in all clinical areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance with the intravenous potassium chloride use policy is regularly assessed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A range of premixed potassium chloride containing intravenous solutions is continuously available in all clinical treatment areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrated potassium chloride injections are removed from ward stock in general clinical areas. (MSSA 5.27)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Service protocols are established to limit allowable concentration of potassium in intravenous solutions which can be administered in general clinical areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational material is developed for the workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Anticoagulants

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health site has implemented WA Anticoagulation Chart</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peri-operative instructions regarding anticoagulation are documented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warfarin therapy is initiated with a starting dose defined according to the guidelines on the WA Anticoagulation Chart (based on QUM indicator 1.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No patient receiving warfarin has a measured INR greater than 4.0 without prompt review and dose adjustment. (QUM indicator 1.5)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>All patients transferred home on warfarin or New Oral Anticoagulants receive written information prior to transfer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A baseline renal function is obtained before commencing therapeutic doses of low molecular weight heparins.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of patients prescribed enoxaparin whose dosing schedule is appropriate (QUM indicator 1.3)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Educational material is developed for the workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Insulin

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin is promoted as a high risk medicine in your organisation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The word ‘units’ in full instead of the dangerous abbreviation ‘u’ in must be used for insulin prescriptions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines exist for monitoring and responding to blood glucose levels.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidelines for insulin use are available on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Pen cartridges are for single patient use only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Storage for ward stock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Storage for individual patient use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Labelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Dose validation for unusual doses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Self administration of insulin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulin guidelines and procedures are part of the organisation’s training programmes (i.e. orientation and continuing education).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patients receive appropriate education, and insulin delivery devices for home administration

Educational materials are available to increase awareness of the range and names of insulin products available.

100 unit syringes been removed from ward areas. Syringes for doses greater than 50 units are supplied on a named patient basis following dose verification.

<table>
<thead>
<tr>
<th>Narcotic Analgesics</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of respiratory rate and sedation scores is documented for the patient when administered opioid analgesics.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hospital guidelines indicate a single standardised concentration of opioid solutions used throughout the hospital.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient selection criteria has been established for using Patient Controlled Analgesia which exclude patients who will not be able to deliver the medication themselves due to their level of consciousness, physiological condition, or limited intellectual, developmental or psychological capacity (MSSA 1.19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum doses have been established for opioids and included on prescribing guidelines as a reference for prescribers, nurses and pharmacists. (MSSA 2.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of parenteral opioid dosage units that are pethidine (QUM indicator 6.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of postoperative patients that are given a written pain management plan at discharge and a copy is communicated to the primary care clinician (QUM indicator 4.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antidotes for moderate sedation and PCA/other IV infusion to treat pain and accompanying guidelines for emergency use are readily available near the point of use. (MSSA 5.15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational material is developed for the workforce.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Vincristine

<table>
<thead>
<tr>
<th>Percentage of patients receiving cytotoxic chemotherapy whose treatment is guided by a hospital approved chemotherapy treatment protocol (QUM indicator 3.6).</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
</table>

Compliance with the Policy for the Safe Administration of Vinca Alkaloid Drugs is regularly assessed.

Protocols exist to ensure that only staff specifically trained and experienced in cancer treatments may prescribe, prepare, dispense, or administer vincristine to patients.

All intravenous vincristine doses are administered via a minibag.

All minibags containing vincristine are prepared in a cytotoxic drug safety cabinet or isolator.

Prepared doses of intravenous vincristine are not released from the Pharmacy Department until the day of administration.

Extravasation guidelines are in place for all chemotherapy likely to cause tissue damage on extravasation including vincristine.

Cytotoxic drug spill kits are present in all areas where chemotherapy is transported or administered.

Educational material is developed for the workforce.

### Psychotrophic Medications

<table>
<thead>
<tr>
<th>All components of the Clozapine Alert Program (CAP) or Clozapine Patient Management System (CPMS) are complied with.</th>
<th>Met</th>
<th>Not Met</th>
<th>Date Assessed</th>
</tr>
</thead>
</table>

Concomitant use of other medications with the potential to cause agranulocytosis is discouraged and increased vigilance should be maintained where this is necessary.

Baseline laboratory tests should be performed on all patients on lithium therapy on admission including renal function, thyroid function, serum electrolytes and lithium levels.

All patients commenced on lithium should be provided with full information on lithium treatment and this education recorded in the patient’s notes.

Educational material is developed for the workforce.
QUM Indicators

MSSA
Clinical Excellence Commission. Medication Safety Self Assessment Tool
Appendix IV – Guiding principles for timely administration of medications

Clinical error rate for medicine administration in the hospital setting ranges between 5% and 10% of medicine administrations. Interruptions of the nurse during administration were associated with increased risk of error (Roughead et al). Medication-related incidents are one of the most frequently reported clinical incidents in WA hospitals and health services. In 2012/13 medication omissions accounted for 44.7% of all medication-related reported incidents (extracted from “Your safety in our hands in hospital” 2012/13).

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 relevant patient and their clinical considerations.

Time-critical medicines

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

For a few medicines and clinical situations, there will be a clinical need to administer the medicine within a time-critical window. For these medicines or conditions, delayed administration can cause patient harm or death. Patients with chronic conditions, such as Parkinson’s disease or diabetes mellitus, are also at risk of harm while waiting or being admitted to hospital.

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.

1. 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.

2. Where medicines with narrow therapeutic index/requirement for therapeutic drug monitoring are prescribed.

3. 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 (solid organ transplants and myasthenia gravis)
   - medicines with a dosing interval of 4 hours or less.

4. Medicines with drug-drug or drug-food interactions.

5. 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.

6. Clinical handover and documentation using the iSoBAR format to communicate a patient’s time-critical medicines during the transition of care as per the WA Department of Health Clinical Handover Policy (OD 0403/12).

7. Medicines designated by a prescriber as being time-critical in an individual patient because of the patient’s diagnosis or indication.
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 about 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 influence by a number of variables. The above recommendations may not strictly apply to every clinical situation.

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.
Recommendations for scheduled drug administration times

1. Scheduled medications are those that are administered according to a standard, repeated cycle of frequency (eg, every 4 hours, twice daily, or daily).

2. As far as practicable the recommended scheduled times provided on the National Inpatient Medication Chart (NIMC) should be used. If and where there is to be variation from the NIMC this decision should be at the hospital rather than ward level (for example, through Drug and Therapeutics Committee and Nurse Executive).

3. In addition to the times provided on the NIMC, hospitals should address 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.

4. 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 NIMC or a hospital agreed administration time then Nursing Practice Guidelines should reflect the WA NIMCGuidelines (page 13)

“4.2 Regular Medicines

f. Frequency of administration times

Note: Medical officers should enter administration times using the Recommended Administration Times that are listed in the margins of the Chart. Nursing staff are authorised to change times to meet local ward polices BUT, out of courtesy, should inform the prescribing medical officer of the action. A nurse changing the administration time, is not considered to be attempting to interpret the frequency in the prescription and therefore not encountering the risk of transcriptional error. ....” WA NIMC Guidelines August 2012

5. Scheduled medications do not include the following:

- STAT or One-time doses
- PRN medications
- First doses and loading doses
- Specifically timed doses (eg, antibiotic for surgical prophylaxis before induction)
- Time-sequenced or concomitant medications (eg, chemotherapy and rescue agents)
- Medicines administered at specific times to ensure accurate peak or trough serum levels.
Documenting administration and non-administration of medicines

Documentation and communication about the administration of medicines on the NIMC 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. 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.

Standard coding reasons for non-administration of a dose:

**Withheld**  
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.

**Fasting**  
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.  
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.  
Prevention example: A guidance document listing medicines to be given in fasting patients may be developed by an anaesthetic team.
Not available (N)
A medicine not being available is always a preventable omission.
Prevention:

a) 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 drug is not available and assist in either obtaining supply or providing a suitable alternative.

b) 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.

c) 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.

d) Appropriate therapy should be commenced once stock is obtained.

Refused (R)
A patient refusing to take a regular medication is not a preventable omission, provided

a) it is the correct medication in the right dose at the right time,

b) the reason for giving the medication has been explained to the patient, with consideration to clinical situation, patient behaviour and cognition, and

c) the prescriber has been informed and a management decision made.

Prevention: Check right drug, right dose, right time. Check that the patient understands the reason for taking the medication. Inform prescriber.
Absent

Used to indicate that the patient is temporarily absent from the ward. Reasons include diagnostic test, procedure, treatment or the patient has wandered off. Where possible and appropriate, the delayed dose should be administered and the time of administration documented. Prevention: Where patients are scheduled for procedures, tests and treatments (including dialyses) that will take them away from the ward, the next scheduled time of drug administration should be checked and where appropriate (within tolerance for timeliness) the medications given prior to leaving the ward. 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.

Vomiting

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

On leave

Never a preventable omission.

Self administering

Never a preventable omission.
## Strategies for managing non-administered medications

<table>
<thead>
<tr>
<th>Code</th>
<th>Clinical</th>
<th>Preventable</th>
<th>Patient mediated</th>
<th>Strategies to prevent</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
| F    | Yes      | Yes - when withheld inappropriately | No | Ensure medications are administered unless inappropriate by  
  - Providing guidance for nurses  
  - Requiring doctors to withhold drugs when appropriate in fasting patients |
| V    | Yes      | Yes - when appropriate action not taken | No | Ensure appropriate management of vomiting patient |
| Blank| No       | Always      | No               | For discussion  
  - Organisation of wards  
  - Organisation of drug rounds  
  - Other |
| N    | No       | Usually     | No               | - Ensure only medications available on hospital formulary are prescribed  
  - Ensure nurses are aware of their responsibilities when prescribed medication not available  
    - Notify the pharmacy and/or obtain supply,  
    - Contact the prescriber to advise that the medicine ordered is not available. |
| R    | No       | Usually     | Always           | - As far as possible ensure patient has appropriate understanding and agrees with treatment regimen/plan.  
  - Notify prescriber, as appropriate. |
| A    | No       | Usually     | Sometimes        | - Be aware of scheduled medications, and make appropriate decisions regarding medication administration prior to patient leaving the ward for procedures/test etc.  
  - Advise patient of medication times and request that patient be on the ward at these times.  
  - System for ensuring any outstanding medications are administered as soon as patient returns to ward. |
**Drug 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 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 a standard practice, it is recommended that the actual time of administration of each medicine should be recorded next to the nurse’s initials on the NIMC.

- Early, delayed or omitted doses should also be communicated during any clinical handover.

**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:

1. Identifying 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;

2. 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;

3. 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;

4. Making all staff aware that delay or omission of time-critical medicines (for inpatients, on admission, and discharge from hospital) are patient safety incidents and should be reported via CIMS.
WA Health acknowledges the work contributed by the WAMSG Timely Administration of Medicines Working Group.

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9. Glossary

**Accountability** – the act of accepting, acknowledging and assuming the responsibility for action/decision, encompassing the obligation to report, explain and be answerable for resulting consequences.

**High Risk Medication** – are medications that have a heightened risk of causing significant or catastrophic harm when used in error and include:

- Medications with a low therapeutic index
- Medications that present a high risk when administered via the wrong route or when other systems errors occur.

**Clinical handover** – refers to any situation in which responsibility and accountability for some or all aspects of a patient’s care is passed from one clinician, or group of clinicians, to another.

**Clinician** – Clinicians include doctors, nurses, pharmacists and allied health professionals.

**Patient record** – the complete electronic or paper file associated with each patient.

**Policy** – refers to this document.

**Protocol** – refers to a site-specific operating guidance document based on this document.

**WA Health Service** – The definition of a WA Health service for the purpose of this policy means all public hospitals, public health services and multi-purpose services established under the Health Services Act 1988 which includes the following entities:

- Metropolitan Health Services
- WA Country Health Service
- Joondalup Health Campus
- Peel Health Service

Key Words: High Risk Medication, medication safety.
References


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Clinical Excellence Commission – High Risk Medicines


Clinical Excellence Commission. Medication Safety Self Assessment Tool


ISMP Acute Care Guidelines for Timely Administration of Scheduled Medications.


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This document can be made available in alternative formats on request for a person with a disability.