High Risk Medications Procedure

1. Purpose

High risk medicines are those that have a heightened risk of causing significant patient harm or death if they are misused or used in error.[1] Although errors involving high risk medications are not necessarily more common than with other medications, the consequences of an error can be more severe for patients. The National Safety and Quality Health Service Standards and the WA Health MP 0131/20 High Risk Medication Policy require organisations to identify high risk medications and establish systems to manage them safely.[2]

This procedure outlines specific requirements and recommendations for WA Country Health Service (WACHS) sites on the safe storage, handling, prescription, dispensing and administration of high risk medications to enhance patient safety.

This procedure must be followed in conjunction with the following policies:

- WACHS Medication Prescribing and Administration Policy
- WACHS Medication Handling and Accountability Policy.

2. Procedure

This WACHS High Risk Medications List (Appendix A) is based on the Australian Commission for Safety and Quality in Healthcare's classification[1] summarised by the acronym APINCHS:

A Antimicrobials
P Potassium and other electrolytes; Psychotropic medications
I Insulin and insulin-like substances
N Narcotics (opioids) and sedative agents; Neuromuscular blocking agents
C Chemotherapeutic agents (systemic anticancer therapy)
H Heparin and other anticoagulants
S Safer Systems (e.g. safe administration of liquid medications using enteral syringes).

The WACHS High Risk Medications List also includes:

- Schedule 4 Restricted (S4R) medications
- Phenytoin
- Monoclonal antibodies
- Medications requiring therapeutic monitoring
- Clinical trials medications
- Voluntary assisted dying (VAD) substance(s).

The High Risk Medications List (Appendix A) details the risk associated with each medication and appropriate risk mitigation strategies to ensure their safe use.

Clinical staff must be aware of the medications on this list and exercise heightened caution in their storage, handling, prescribing, administration and monitoring. Staff should refer to WACHS Library Medications Information for information in addition to Appendix A.

The Statewide Medicines Formulary (SMF) is a comprehensive list of approved medicines, including any associated restrictions or guidance for their use, to ensure consistent and equitable clinical care. Restrictions on prescribing are outlined within MP 0077/18 Statewide Medication Formulary Policy. Restricted medications on the formulary are to be prescribed by practitioners working within the specialty teams defined within the Formulary. Where a specialty listed in the formulary is not available in the region, prescribing teams must seek the advice of the appropriate specialty prior to prescribing.

High Risk Medications – Clinical Area (Appendix C) is a support tool designed for clinical area managers, to assess their current practices and compliance to requirements for high risk medications. This will allow clinical areas to identify any areas of improvement for managing high risk medications within their specified clinical area.

Involving the patient and/or their carer at key stages of prescribing, administering, monitoring, supply and education, can reduce the risk of harm associated with high risk medications by enabling the early detection of potential errors.

When proceeding with a proposed treatment, it is essential to ensure patients are informed about the associated risks, benefits, and alternatives. Patients have the right to make informed decisions about their treatment, including the use of high risk medicines. Health practitioners must obtain and document patient consent in accordance with the WACHS Consent to Treatment Policy.

Treatment in an emergency does not include emergency psychiatric treatment; refer s.202 *Mental Health Act 2014* (WA). For information regarding consent for emergency psychiatric treatment – refer to WACHS Consent to Treatment - Tool 1: Emergency Psychiatric Treatment.

An eLearning module, High Risk Medications: Introduction (HRMINT EL2) is available to clinicians for training purposes.

3. Roles and Responsibilities

The following groups and positions have specific responsibilities associated with the implementation and monitoring of this procedure.

The **WACHS Medication Safety Committee (MSC)** is responsible for:

- ensuring the High Risk Medications List (Appendix A) is regularly maintained and reviewed
- developing and endorsing policies, procedures and guidelines specific to high-risk medications.

The **Regional Medicines and Therapeutics Committee (MTC) (or equivalent)** is responsible for:

- reviewing reports on high-risk medication incidents
- reviewing and endorsing medications for High Risk Medications Requiring Endorsement for Imprest (Appendix B)
- receipting completed the High Risk Medications - Clinical Area Checklist (Appendix C) to review results and support corrective actions where necessary.

The **clinical staff involved in medication management** are responsible for:

- following requirements and recommendations outlined within the High Risk Medication List (Appendix A)
- using appropriate parenteral infusion pump system (PIPS) and, where available, the current version of the Dose Error Reduction Software (DERS) Medication Library for administration of infusions.
- ensuring close monitoring of patients receiving, high risk medications throughout their stay, and identify high risk medications at discharge with comprehensive patient education provided.
- managing clinical incidents involving high risk medications.
- maintaining up to date knowledge and best practices for the safe handling and use of high risk medications.
- working within their scope of practice and apply sound clinical judgement to patient care
- complying with all WACHS policies to ensure that WACHS is a safe, equitable and positive workplace.

Prescribers are responsible for prescribing high-risk medications clearly and safely using a WACHS-endorsed medication chart or an approved electronic medication management (EMM) system when available. They must also ensure ongoing review and monitoring of these medications to support safe and effective patient care.

Pharmacists are responsible for providing clinical review of patients on high risk medications and ensuring safe storage and supply of high risk medications.

Nurse and midwives are responsible for the safe storage, administration, monitoring and supply of high risk medications.

Clinical area managers are recommended to complete the High Risk Medications – Clinical Area Checklist (Appendix C) annually, review the results, implement corrective actions as needed, and report its completion to the regional MTC.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Adverse events and clinical incidents involving high risk medications must be notified through the WACHS-endorsed Clinical Incident Management System (CIMS) and managed in accordance with the WACHS Medication Prescribing and Administration Policy and MP 0122/19 Clinical Incident Management Policy. The WACHS Medication Safety Committee and regional Medicines and Therapeutics Committees are responsible for reviewing clinical incident data related to high-risk medications. This procedure will be evaluated periodically, and at least every five years, to ensure its effectiveness, relevance, and currency, with a mandatory review by the WACHS Medication Safety Committee.

5. References

1. Australian Commission on Safety and Quality in Health Care. High Risk Medicines Sydney [Accessed: 16 December 2024].

2. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards 2nd Ed. Medication Safety Standard 4. Sydney: ACSQHC; 2021. p. 35-42.

3. Institute for Safe Medication Practices. ISMP Targeted Medication Safety Best Practices for Hospitals. ISMP; 2024 [Accessed: 16 December 2024]

4. Australian Commission on Safety and Quality in Health Care. Electronic medication management systems: a guide to safe implementation, 3rd edition. Sydney: ACSQHC; 2019 [Accessed: 16 December 2024]

5. Australian Injectable Drugs Handbook. Abbotsford: Society of Hospital Pharmacists of Australia; 2023. Available from: https://aidh-hcn-com-au.wachslibresources.health.wa.gov.au/browse/about_aidh.

6. Australian Medicines Handbook. Adelaide; 2023. Available from: https://amhonline-amh-net-au.wachslibresources.health.wa.gov.au/.

7. Telstra Health. AusDI. Haymarket; 2023. Available from: https://ausdi-hcn-com-au.wachslibresources.health.wa.gov.au/quickSearch.hcn

6. Definitions

Term	Definition
Chemical restraint	Chemical restraint is a practice or intervention that is or involves the use of medication or chemical substance for the primary purpose of influencing a person's behaviour. It does not include the use of medication prescribed by a medical practitioner for the treatment of, or to enable treatment of, a diagnosed mental disorder, a physical illness, or end-of-life care.
Electronic medication management systems	The entire electronic medication process, including software and associated hardware used to create and document the prescriber's medication order, the pharmacist's review of the medication order, the supply of medication, the documentation of medication administration, and all the processes in between. Electronic medication management (EMM) systems can apply to: • prescribing systems, such as general practitioner desktop systems or hospital clinical information systems that have electronic ordering • decision support systems, such as evidence-based order sets, allergy checking and medicine interactions

	• dispensing systems, such as pharmacy software and automated dispensing systems • ordering and supply solutions, such as the Electronic Transfer of Prescriptions (ETP) and inventory solutions • electronic medical records. For the purposes of generating digital prescriptions, the following systems are endorsed for use in WACHS: • eMedication • Oncology Management System (OMS) - Charm® For the purposes of documenting the administration of medications digitally, the following systems are endorsed for use in WACHS: • Oncology Management System (OMS) - Charm®
High risk medication	High risk medication includes any medication that has a heightened risk of causing significant or catastrophic harm when prescribed, administered or dispensed in error and includes: • medications with a low therapeutic index, • medications that present a high risk when administered via the wrong route This term has been assigned to these medications to draw attention to their potential dangers, so that all clinicians involved in their use will treat them with the special attention and respect they require.
Oncology Management System - Charm®	The Charm® Oncology Management System is an end-to-end electronic medication management (EMM) system supporting treatment for haematology and oncology patients. The system includes a central library of systemic anticancer therapy pathways, pharmacy management, patient scheduler, electronic medical record (EMR) and reporting. An Oncology Management System (OMS) improves patient safety by removing paper and related prescribing and administration errors. The OMS - Charm® is endorsed for use in WACHS.
Systemic anticancer therapy	Systemic anticancer therapy are medications used to treat cancer, including all chemotherapy, immunotherapy, targeted therapy, and hormone therapy

7. Document Summary

Coverage	WACHS-wide
Audience	Medical, nursing, midwifery, pharmacy, and any staff who work with medicines
Records Management	Clinical: Health Record Management Policy
Related Legislation	• Medicines and Poisons Act 2014 *(WA)* • Medicines and Poisons Regulations 2016 *(WA)* • Voluntary Assisted Dying Act 2019 *(WA)* • Mental Health Act 2014 (WA)
Related Mandatory Policies / Frameworks	• MP 0122/19 Clinical Incident Management Policy 2019 • MP 0131/20 High Risk Medication Policy • MP 0078/18 Medication Chart Policy • MP 129/20 Medicines Handling Policy • MP 0104/19 Medication Review Policy • MP 0077/18 Statewide Medication Formulary Policy • Clinical Governance, Safety and Quality Policy Framework • Public Health Policy Framework
Related WACHS Policy Documents	• Acute Behavioural Disturbance in Emergency Departments Guideline • Acute Stroke Clinical Standards and Guidelines – Endorsed for Use in Clinical Practice Policy • Adult Diabetic Ketoacidosis Guideline • Anticancer Therapy Prescribing Procedure • Antimicrobial Stewardship Policy • Child and Adolescent Mental Health Services Resources Endorsed for Use in Clinical Practice Policy • Cognitive Impairment Clinical Practice Standard • Diabetes - Inpatient Management Clinical Practice Standard • Epidural / Spinal Analgesia Management Policy • Handling and Storage of Patient's Own Medications – including Schedule 4 Restricted and Schedule 8 Medications Procedure – South West • Handling and Supply of Concentrated Potassium-Containing Solutions Procedure – South West • Hyperkalaemia Guideline • Intrathecal Pain Management in the Palliative Care Setting Procedure • Intravenous Opioid Administration Policy • Ketamine Infusion (Low Dose Intravenous Analgesia) in the Acute Care Setting Procedure – South West • Management of Potassium Ampoules Procedure - Albany Hospital • Medication Handling and Accountability Policy

	• Medication Prescribing and Administration Policy • Medication Review Procedure • Nurse Compounding of Antibiotics in Elastomeric Devices Guideline • Oxygen Therapy and Respiratory Devices - Adults Clinical Practice Standard • Patient Identification Policy • Potassium Supplementation Policy • Regional Analgesia Management (Adult) Procedure • Safe Handling, Preparation and Administration of Monoclonal Antibodies Policy • Subcutaneous Infusions in the Palliative Care Setting via CADD®-Solis Procedure • Subcutaneous Infusions in the Palliative Care Setting via NIKI T33™ Procedure • Supply and Management of Potassium Ampoules Procedure - Midwest • Systemic Anticancer Therapy Procedure • Specialised Medication - Abatacept for ADULT Patients Guideline • Specialised Medication – Intravenous Phosphate Supplementation in Adults Guideline • Specialised Medication - Intravenous Aminoglycosides for ADULT Non-pregnant Patients Guideline • Specialised Medication – Intravenous Vancomycin in Adults Guideline • Specialised Medication – Lithium Guideline • Specialised Medication – Intravenous Phosphate Supplementation in Adults Guideline • Voluntary Assisted Dying Policy • Specialised Medication - Zuclopenthixol Acetate - Clopixol Acuphase® Guideline
Other Related Documents	• Antimicrobial Stewardship Clinical Care Standard • CAMHS Psychotropic Medication – Monitoring Adverse Physical Health Effects Policy • Cardiac Thrombolysis Pack Contents List • Guidelines for Managing Specific High Risk Medications Relevant to the Organisation • Guidelines for the Safe and Quality Use of Clozapine Therapy in the WA health system • Guidelines for the use of the WA Agitation and Arousal PRN Medication Chart • Handling and completion of entries in Schedule 4 Restricted and Schedule 8 Registers and Requisitions Books Information Sheet – South West • Mandatory Standard for Intravenous Potassium • Mandatory Standard for Vinca Alkaloids • Opioid Analgesic Stewardship in Acute Pain Clinical Care Standard

	• PCH Diabetic Ketoacidosis • PCH Diabetes Sick Day Management • PCH Diabetes Hypoglycaemia Management • PCH Insulin Pump Management • PCH Procedural Sedation • PCH Phenytoin – Paediatric • PCH Potassium Chloride – Paediatric • Policy for Mandatory Reporting of Notifiable Incidents to the Chief Psychiatrist • Principles for the safe selection and storage of medicines • Psychotropic Medicines in Cognitive Disability or Impairment Clinical Care Standard | Australian Commission on Safety and Quality in Health Care • Recommendation for terminology, abbreviations and symbols used in medicines documentation • WA Health Code of practice for clinical and related waste management • Western Australian Voluntary Assisted Dying Guidelines • WNHS Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy Clinical Practice Guideline
Related Forms	• MR1B WACHS Chest Pain Pathway (Emergency Chest Pain Kit) • MR12 WACHS Emergency Department Procedural Sedation Record • MR113a WACHS South-West Ketamine Infusion Analgesia Record • MR140A Adult Observation and Response Chart • MR156A WACHS Insulin Subcutaneous Order and Blood Glucose Record - Adult Form • MR156B WACHS Obstetric Subcutaneous Insulin Order and Blood Glucose Record • MR157A WACHS Adult Variable Rate Intravenous Insulin (Actrapid) Infusion Chart • MR157B WACHS Adult Diabetic Ketoacidosis (DKA) Treatment & Monitoring Chart • MR170.1 WACHS Medication History and Management Plan • MR170.2 WACHS Epidural / Spinal Prescription and Additional Observation Chart • MR170.3 WACHS Epidural / Spinal Morphine Record • MR 170.4 WA Adult Clozapine Initiation and Titration Chart • MR 170.4.1 Clozapine Monitoring Form • MR170.5 WACHS PCIA-IV Opioid Infusion Prescription and Additional Observation Chart • MR170.6 WACHS PCIA-IV Opioid Infusion Continuation Sheet

	• MR170.8 Agitation and Arousal PRN Medication Chart • MR170.9 WA Intramuscular Long-Acting Injection Chart (Depot Antipsychotic) • MR170C WACHS Anticoagulant Medication Chart • MR170G WACHS Specific Cancer Treatment Chart series • MR860 Fiona Stanley Standard Order Set • MR 170H Continuous Subcutaneous Infusion & Patient Controlled Dosing via CADD® Pump Chart • MR170H.1 WACHS Continuous Subcutaneous Infusion via T34™ Pump Chart • MR170i WACHS Intrathecal Therapy (Palliative) Prescription and Additional Observation Record • MR170i.1 WACHS Intrathecal Therapy (Palliative) Continuation Sheet • MR170K WACHS Regional Analgesia Prescription and Additional Observation Record • MR170K.1 WACHS Regional Analgesia Continuation Sheet • MR172A WACHS Tenecteplase Checklist • MR173A WACHS Specialised Medication - Infliximab Pre-Infusion Checklist • MR173B WACHS Specialised Medication - Natalizumab Pre-Infusion Checklist • MR173C WACHS Intravenous Iron Consent and Prescription • MR173D WACHS Specialised Medication - Rituximab Pre-Infusion Checklist • MR173E WACHS Specialised Medication - Abatacept Pre-Infusion Checklist • MR137F WACHS Specialised Medication - Tocilizumab Pre-Infusion Checklist
Related Training	Available from MyLearning: • High Risk Medications: Introduction (HRMINT EL2) • High Risk Medications: Insulin Declaration (HRMI EL2) • High Risk Medications: Anticoagulants Declaration (HRMA EL2) • High Risk Medications: Clozapine Declaration (HRMC EL2) • National Standard Medication Charts Declaration (NMCWA EL2) • Get it right! Taking the Best Possible Medication History Declaration (MDGIR EL2) • Medication Safety (MDSWA EL2)
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 3658

National Safety and Quality Health Service (NSQHS) Standards	1.03, 1.07, 1.27, 4.01, 4.02, 4.03, 4.04, 4.05, 4.06, 4.13, 4.14, 4.15
Aged Care Quality Standards	1, 8
Chief Psychiatrist's Standards for Clinical Care	Physical Health Care of Mental Health Consumers (1.3, 1.4, 2.7)
Other Standards	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
5.01	2 September 2024	2 March 2023	Updates to facilitate WACHS Oncology Management System – Charm® implementation including: • Addition of definitions: eMM systems, OMS - Charm® and SACT • Clarity about electronic means of prescribing (OMS - Charm®) and forms • Appendix A - Cytotoxic/SACT to include reference to OMS - Charm® • High Risk Medication List - C of APINCHS changed from cancer therapy to systemic anticancer therapy
6.00	16 May 2025	16 May 2025	• Included clinical trials and therapeutic monitoring • Significant updates to psychotropic medications section, differentiating behavioural disturbance treatments and addressing risks related to long-acting antipsychotic injections. • Replaced sodium valproate section with broader developmental/reproductive hazard criteria • Added Appendix B and Appendix C.

9. Approval

Policy Owner	Executive Director Clinical Excellence
Co-approver	Executive Director Nursing and Midwifery
Contact	WACHS Chief Pharmacist
Business Unit	Pharmacy Services
EDRMS #	ED-CO-15-20291

This document can be made available in alternative formats on request.

Appendix A: High Risk Medications List

ANTIMICROBIALS

Antimicrobial stewardship (AMS) within WACHS is essential to prevent unnecessary use of antimicrobials and ensure careful application to minimise antimicrobial resistance. AMS focuses on limiting inappropriate prescriptions, improve patient outcomes and mitigate the resistance, preventable patient harm and costs associated with medication resistant infections. To support safe prescribing WACHS endorses the use of the Therapeutic Guidelines: Antibiotic as the primary reference for guiding antimicrobial use. Each region should have an AMS Program managed by a relevant governance committee. This group may impose additional restrictions on the prescribing of antimicrobials above the Therapeutic Guidelines: Antibiotic or develop local procedures as necessary.

The WACHS Antimicrobial Stewardship Policy outlines key aspects including:

- Automatic stop orders may apply to the administration of intravenous, oral, and topical antimicrobials at the direction of the regional AMS Program
- Intravenous (IV) antimicrobial orders should be reviewed as a minimum every third day and transitioned to oral therapy as soon as clinically appropriate.
- Antimicrobial prescriptions must follow the Antimicrobial Pathways (AMPS) decision support tool or based on guidance from an infectious disease physician or Clinical Microbiologist.

AMPS provides guidance on the appropriate selection, dosage and duration of antimicrobial therapy, ensuring evidence-based patient specific care. When prescribing restricted antimicrobials as recommended on AMPS, prescribers must record:

- Approval code provided by AMPS on the patient's medication chart.
- Approval code must be documented in the patient's medical record.

Specific antimicrobials that have a high risk of causing harm are detailed below.

Aminoglycosides (parenteral gentamicin, tobramycin, amikacin)

Incorrect dosing based on age, ideal body weight and renal function can lead to significant risks of ototoxicity and nephrotoxicity. Under-dosing may result in treatment failure. Serum levels should be monitored and doses adjusted accordingly for all patients where therapy is expected to continue beyond 48 hrs. Patients with unstable renal function should be monitored daily.

WACHS

- Specialised Medication - Intravenous Aminoglycosides for ADULT Non-Pregnant Patients Guideline

Amphotericin

Confusion between the intravenous formulations of amphotericin can lead to prescribing and administration errors. Being aware of the different formulations and specific dosage and administration recommendations can help reduce the risk of under- or over-dosing and potential associated toxicity.

Prescribing using both the generic medication name and brand name is recommended.

WACHS
- WAMSG Alert - Confusion between non-lipid and lipid formulations of injectable amphotericin

Nebulised antibiotics and antifungals

Approved antibiotics and antifungals for nebulisation should be administered via a filtered nebuliser system to prevent aerosolisation of the medicine into the environment, protecting staff and other patients from exposure. The WACHS Oxygen Therapy and Respiratory Devices - Adults Clinical Practice Standard should be followed when administering inhaled medications, referring to Appendix 5.

In addition to standard precautions for nebulised antibiotics and antifungals, nebulised pentamidine MUST be administered in a negative pressure room.

WACHS
- Oxygen Therapy and Respiratory Devices - Adults Clinical Practice Standard

Guanine analogues (aciclovir, famciclovir, ganciclovir, valaciclovir, valganciclovir)

Dose adjustment is required in patients with renal impairment, as use in these individuals may increase the risk of neurotoxicity. Adequate hydration is required to reduce the risk of nephrotoxicity due to crystallisation of the medication in the renal tubules.

Vancomycin

Incorrect dosing may rarely lead to nephrotoxicity and ototoxicity, while under-dosing may cause treatment failure and contribute to the development of resistant strains. Monitoring of serum levels, with appropriate dose adjustment is recommended for all patients treated with vancomycin for longer than 48 hours. Trough levels should be checked based on patients' clinical condition, with increased monitoring for patients with impaired or unstable renal function. For patients at steady state, monitor at least weekly and twice weekly monitoring is required if steady state not obtained.

Infusion rates of vancomycin should not exceed 10 mg/minute to reduce the risk of 'red-man' syndrome. Red man syndrome is a rate-dependent infusion reaction specific to vancomycin and differs from an IgE medicated allergic response. It is caused by direct mast cell activation and can occur within the first dose. Clinical features include flushing, erythema and pruritus usually affecting the upper body, neck and face and less commonly, muscle spasms, dyspnoea and hypotension. Symptoms generally resolve once the infusion is stopped and be prevented by restarting at a slower rate. Careful consideration is needed when deciding whether the patient is recorded as having an adverse reaction or allergy to vancomycin, as this has clinical implications for future antimicrobial options.

WACHS
- Specialised Medication – Intravenous Vancomycin in Adults Guideline

Other

Other antimicrobials considered high risk, but not routinely utilised within WACHS, include cidofovir, flucytosine and foscarnet. Should these medications be required please consult with your pharmacy department.

WACHS
- Antimicrobial Stewardship Policy
- Nurse Compounding of Antibiotics in Elastomeric Devices Guideline

Other
- Australian Commission on Safety and Quality in Health Care, Antimicrobial Stewardship Clinical Care Standard

PSYCHOTROPIC MEDICATIONS

Psychotropic medications present heterogenous risks, including.
- Narrow therapeutic range (e.g. lithium).
- Adverse effect profiles such as metabolic abnormalities, QT prolongation, extrapyramidal side effects and haematological effects.
- Increased risk of stroke and mortality when used in treating the behavioural symptoms of dementia.
- Risk for diversion for illicit use, particularly stimulant and sedative medications.
- Potential overdose risk in individuals with self-harm risk factors (although the therapeutic effect of psychotropics can reduce this risk).
- Cumulative and adverse effects when used in combination, at high dose or in high risk populations such as young people, the elderly or those with dementia.

The Psychiatric Services Online Information System (PSOLIS) is used to document mental health clinical information for inpatient and community mental health services in WA. The administration of antipsychotic depots in community health services is recorded in PSOLIS and as such, PSOLIS should be referred to when determining an individual's medication history.

Clinical Incidents related to medication shall be reported in accordance with MP 0122/19 Clinical Incident Management Policy 2019 and the Policy for Mandatory Reporting of Notifiable Incidents to the Chief Psychiatrist.

Psychotropics Used for Behavioural Disturbances

Acute Behavioural Disturbances

Psychotropics are sometimes used to manage agitation, aggression, and behavioural disturbances. Psychotropics, in particular parenteral psychotropics have the increased risk of adverse effects such as oversedation, extrapyramidal adverse effects and QT prolongation.

To ensure safe and effective use of psychotropics in acute behavioural disturbances, guidelines and procedures are to be followed if clinically appropriate.

WACHS
- Acute Behavioural Disturbance in Emergency Departments Guideline
- Acute Behavioural Disturbances in Mental Health Inpatient Units (in development)

Department of Health
- Guidelines for the use of the WA Agitation and Arousal PRN Medication Chart
- MR170.8 Agitation and Arousal PRN Medication Chart

Other
- PCH Procedural Sedation Guideline
- FSFHG Agitation, arousal Mental Health inpatients: Medication management

Dementia and Delirium

Psychotropic medications have a limited role in managing the behaviours and psychological symptoms of dementia and delirium. Pharmacological treatment should only be considered if a patient is severely distressed or at immediate risk of harm to themselves or others, and non-pharmacological interventions (see Management of Agitation flowchart) have proven ineffective. When antipsychotics are prescribed:
- Risks and benefits must be discussed with the patient and/or substitute decision maker.
- Informed consent must be obtained, unless in an emergency.
- Document the reasons for use and provide instructions for follow up to community prescribers.
- In the aged residential care setting, the Quality of Care Principles 2014 and National Disability Insurance Scheme (Restrictive Practices and Behaviour Support) Rules 2018 require compliance with conditions for chemical restraint use and mandatory notification to the relevant authority (Aged Care or NDIS Commission) for any non-compliant use.
- The response to psychotropic medication use will be regularly monitored and reviewed with dose adjustment or cessation considered at each review.

WACHS
- Cognitive Impairment Clinical Practice Standard
- Management of Agitation in Older Adults with Dementia or Delirium

Other
- NDIS Behaviour support and restrictive practices
- Australian Commission on Safety and Quality in Health Care, Psychotropic Medicines in Cognitive Disability or Impairment Clinical Care Standard

Clozapine

Clozapine has the potential to cause adverse effects such as neutropenia, agranulocytosis, myocarditis, cardiomyopathy, and clozapine induced gastrointestinal hypomobility (CIGH). Plasma clozapine concentrations can increase significantly in

patients who reduce smoking or switch to other forms of nicotine consumption such as vaping and nicotine replacement therapy (NRT), which may lead to clozapine toxicity.

Treatment with clozapine must be under supervision of a Consultant Psychiatrist and adhere to the Guidelines for the Safe and Quality Use of Clozapine Therapy in the WA health system and the WACHS clozapine procedure (in development). Prescribing and dispensing is limited to registered centres and all patients must be enrolled in a clozapine monitoring system, which mandates systematic evaluation of haematological parameters.

Any change in a patient's smoking status should be documented and promptly communicated to the treating team for dose reassessment.

The MR170.4 Clozapine Initiation and Titration Chart should be used when commencing treatment and adjusting clozapine titration doses for inpatients.
Clozapine should be dispensed for individual patient use, and not be kept on imprest. Any decision to include in specific imprest locations must be approved by the regional MTC. When stored on imprest (e.g. for afterhours access).

WACHS
- MR 170.4 WACHS Clozapine Initiation and Titration Chart
- MR 170.4.1 Clozapine Monitoring Form
- High Risk Medications: Clozapine Declaration (HRMC EL2)
- Clozapine Procedure (in development)

Department of Health
- Mental Health Charts and Clozapine Resources
- Guidelines for the Safe and Quality Use of Clozapine Therapy in the WA health system

Other
- ClopineCentral

Lithium

Lithium is a medication with a narrow therapeutic range and can cause lithium toxicity, sometimes, when in therapeutic range for high risk patients. Patients who are prescribed lithium must be monitored and educated on monitoring for signs and symptoms of lithium toxicity, including confusion, unsteadiness, nausea, diarrhoea or worsening tremor, and have regular therapeutic plasma monitoring performed.

Routine monitoring is required as outlined in the Specialised medication – Lithium Guideline to ensure early detection of adverse effects of lithium therapy and minimise risk factors for lithium toxicity.

Medication interactions can further increase the risk of lithium toxicity; therefore, a thorough review of concurrent medications is important to manage potential interactions effectively.

Lithium carbonate and lithium citrate are not bioequivalent. Caution is to be taken when converting doses between lithium carbonate and lithium citrate.

WACHS
- Specialised Medication - Lithium Guideline

Zuclopenthixol Acetate

Zuclopenthixol acetate (Clopixol Acuphase®) is an intermediate acting intramuscular injection indicated for managing acute psychosis and mania in adults, when other treatment modalities have been ineffective or inappropriate. It can only be prescribed after consultation with a consultant psychiatrist. It can lead to significant extrapyramidal side effects (EPSE) and drowsiness that persists for a prolong period and a risk of cardiopulmonary adverse effects such as postural hypotension, QTc prolongation and sedation. Prescribing, administration and monitoring of zuclopenthixol acetate must adhere to the Specialised Medication – Zuclopenthixol Acetate – Clopixol Acuphase ® Guideline.

Zuclopenthixol acetate must not be confused with zuclopenthixol decanoate (Clopixol Depot®), which is a long-acting intramuscular antipsychotic injection used for maintenance therapy and has similar packaging.

WACHS
- Specialised Medication - Zuclopenthixol Acetate - Clopixol Acuphase® Guideline

Antipsychotic Long Acting Injection (LAI)

Antipsychotic LAIs are considered high risk due to their prolonged duration of action and the irreversible nature of the medication once administered.

Incorrect administration techniques or errors in administration and prescribing could lead to serious adverse effects and poor patient outcomes. There is LAI that have similar packaging or names (e.g. zuclopenthixol decanoate vs flupentixol decanoate, Invega Trinza vs Invega Sustenna) that increases the risk of selection errors.

Prescribing and administration of antipsychotic LAIs will be on MR170.9 WA Intramuscular Long-Acting Injection Chart (Depot Antipsychotic).

Given the increased risks of medication misadventure with antipsychotic LAI, tolerability of the antipsychotic is to be established by using oral or short acting injection test dose/s before prescribing. Clinicians administering all antipsychotic LAI will:

1. Be familiar with the reconstitution, injection technique and monitoring requirements of the antipsychotic LAI.
2. Due date for doses is to be confirmed before administration.
3. Independent double checks are to be performed before administration wherever possible.
4. Document next due date of the antipsychotic LAI in the WA Intramuscular Long-Acting Injection Chart (Depot Antipsychotic), progress notes and PSOLIS.
5. Handover all information to the next clinical service provider if patient is discharged or transferred from the current service.

Olanzapine pamoate injection has the extra risk of post injection syndrome. The Specialised Medication – Olanzapine Pamoate (Zyprexa Relprevv®) Guideline is to be adhered to and the Olanzapine Pamoate Post Injection Checklist is to be used for post injection syndrome monitoring.

WACHS
- Specialised Medication – Olanzapine Pamoate (Zyprexa Relprevv®) Guideline (pending)
- Olanzapine Paomate Post Injection Checklist (pending)
- MR 170.9 WA Intramuscular Long-Acting Injection Chart (Depot Antipsychotic)

POTASSIUM AND OTHER ELECTROLYTES

Potassium and certain other electrolytes may be required intravenously (IV) to correct deficiency in patients when oral supplementation is not appropriate or urgent replacement is required. The use of pre-mixed preparations of electrolytes for intravenous admin is preferred where they are available.

Refer to Australian Injectable Drugs Handbook (AIDH) for further information on potassium and electrolyte administration in addition to other documents presented.

Potassium Salts IV

Potassium is available as chloride, phosphate and acetate salts.

Errors in the preparation and administration of intravenous potassium can be fatal.

Adverse incidents which relate to potassium use include, infusions rates faster than recommended, selection of the wrong ampoule or product, preparation errors and use of an excessively concentrated solution.

The WACHS Potassium Supplementation Policy must be adhered to and describes the distribution, prescribing and administration requirements for WACHS.

WACHS
- Potassium Supplementation Policy

WACHS Regions
- South West, Handling and Supply of Concentrated Potassium-Containing Solutions Procedure
- Great Southern, Management of Potassium Ampoules Procedure - Albany Health Campus
- Midwest, Supply and Management of Potassium Ampoules Procedure

Department of Health
- Mandatory Standard for intravenous potassium

Other
- PCH, Potassium Chloride Monograph

Calcium IV

Calcium is available as a calcium chloride or calcium gluconate salt. Calcium chloride is three times more potent than calcium gluconate.
Calcium gluconate is a supersaturated solution and precipitation may occur. Vials should not be used if the solution is discoloured, cloudy, turbid or if a precipitate is present with visual inspection.
Solutions are highly irritant, and extravasation can cause severe complications.

Calcium IV is rapidly fatal in overdose. If injected too rapidly, it can cause peripheral vasodilation, bradycardia, cardiac arrhythmias, and cardiac arrest. Additional monitoring, such as ECG, serum calcium and other electrolytes may be required during administration of calcium injection, depending on the indication. Monitoring requirements and frequency must be determined by the treating team.

Calcium gluconate for the management of hyperkalaemia can be administered on a ward and should not be delayed.

WACHS
- Hyperkalaemia Guideline

Hypertonic Saline IV

Hypertonic saline may be used to treat hyponatremia. Caution is required due to the risk of osmotic demyelination, which may be fatal, if abnormalities in plasma sodium are corrected too rapidly.

The use of 3% hypertonic saline in a pre-made Viaflex® bag is preferred to reduce preparation error.

The availability of hypertonic sodium chloride ampoules should be restricted to pharmacy and approved clinical critical care areas, which may include critical care areas.

WACHS
- Therapeutic Guidelines (TG) – Other Electrolyte Abnormalities (WACHS Library)

Magnesium IV

Magnesium for injection is available as magnesium chloride and magnesium sulfate salts and formulations are not directly interchangeable due to differing concentrations.

Excessive administration can cause nausea, vomiting, hypotension, muscle weakness, muscle paralysis, CNS depression.

Ensure an IV preparation of a calcium salt is available during magnesium infusion to reverse the effects of magnesium toxicity if required.

WACHS
- Therapeutic Guidelines (TG) – Other Electrolyte Abnormalities (WACHS Library)

KEMH
- Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy Clinical Practice Guidelinehttps://tgldcdp-tg-org-au.wachslibresources.health.wa.gov.au/viewTopic?etgAccess=true&guidelinePage=Other&topicfile=electrolyte-abnormalities&guidelinename=Other&sectionId=toc_d1e1702

Phosphate IV

Phosphate is available as sodium or potassium salts. The sodium salt is preferred unless there is a clinical need for intravenous potassium supplementation.

If potassium phosphate is indicated refer to WACHS Potassium Supplementation Policy for more information and see section “Potassium Salts IV” within this document for additional information around safety of potassium salts.

Excessive IV phosphate may cause hyperphosphataemia. Monitor serum sodium, potassium, phosphate, calcium levels and renal function every 12 to 24 hours.

Phosphate administration is contraindicated in patients with severe renal impairment. Rapid injection of sodium dihydrogen phosphate may lead to hypernatraemia and fluid overload.

Potentially fatal hyperkalaemia can develop rapidly and asymptomatically with use of the potassium dihydrogen phosphate and dipotassium hydrogen phosphate salts.

WACHS
- Potassium Supplementation Policy
- Hyperkalaemia Guideline
- Specialised Medication – Intravenous Phosphate Supplementation in Adults Guideline

INSULIN

Insulin is a high-risk medication due to its most frequent and serious adverse effect; hypoglycaemia, which can manifest as sweating, hunger, faintness, palpitations, tremor and in severe cases, coma, and death.

Insulin can be lethal if given in excessive doses.

Additionally, insulin is considered high risk due to, the variety of insulin types, routes available for administration, indications and the potential for confusion with other medications (e.g. insulin and heparin are often mistaken for one another since both are ordered in units).

Prescribing Insulin

Due to the many different insulin preparations available, prescribing must be in a standardised and precise manner. Insulins are one of the few exceptions where prescribing in trade/brand name is recommended (instead of generic name) to reduce confusion between insulin products.

Confirmation of the patient's usual insulin, including device type (e.g. cartridge, prefilled pen, vial) is important for continuity and should be recorded on the MR170.1 WACHS Medication History and Management Plan is important for continuity and should be recorded on the MHMP and the "diabetes treatment prior to admission" section of the MR156A WACHS Insulin Subcutaneous Order and Blood Glucose Record – Adult and the "diabetes treatment prior to admission" section of the MR156A WACHS Insulin Subcutaneous Order and Blood Glucose Record – Adult.

Prescribing insulin subcutaneously

Subcutaneous insulin should be prescribed on MR156A WACHS Insulin Subcutaneous Order and Blood Glucose Record – Adult , MR156B WACHS Obstetric Subcutaneous Insulin Order and Blood Glucose Record or WACHS endorsed chart.

Medication orders must include.

- Full trade/brand name (e.g. Humulin 30/70® not just Humulin®, Humalog Mix 50® not just Humalog Mix®)

Prescription orders must include the concentration of the insulin for high concentration insulin ≥200 units per mL.
Specify the time of administration but also the additional administration requirements such as immediately before meals or a specific time to be given in respect to food.
Dose - ensure that the word '**UNITS**' is written in full to avoid confusion (not required for the MR156A chart as the word units is pre-printed for safety).

Insulin for administration via continuous subcutaneous insulin infusion pump is to be prescribed using the WACHS Continuous Subcutaneous Insulin Infusion Pump Order and Blood Glucose Record.

Prescribing insulin for intravenous infusion

Insulin for intravenous infusion should be prescribed on MR157A WACHS Adult Variable Rate Intravenous Insulin (Actrapid) Infusion Chart.

Administration of Insulin

Administering insulin by subcutaneous injection

Ensure insulin is given subcutaneously at the prescribed dose. Self-administration by the patient is ideal, where clinically appropriate.

- A pen device is the recommended device for subcutaneous injections.
- A safety needle with automatic protective shields should be used. Always dispose of the safety needle immediately after use - do not store disposable insulin pens with a needle attached.
- Insulin pens, vials and cartridges are for individual patient use.

If administration from a vial or cartridge is required for subcutaneous injection an insulin syringe must be used, this allows for insulin to be measured in units and not by volume. A 1 mL insulin syringe should be always available.

Administering insulin by intravenous infusion

An independent double check of the **concentration** and the **infusion rate** against the prescription must occur to ensure the correct dose is administered to the patient.

Intravenous insulin infusions should be administered using an appropriate parenteral infusion pump system (PIPS) and, where available, the current version of the Dose Error Reduction Software (DERS) Medication Library.

Insulin infusions should be prescribed on the MR157A WACHS Adult Variable Rate Intravenous Insulin (Actrapid) Infusion Chart.

Storage of insulin

- Insulin vials and prefilled pens must be for individual patient use only.
- Cartridges are for single use only unless in a compatible insulin delivery system.
- **Unopened** vials /cartridges /prefilled pens should be stored in a fridge (2-8 degrees Celsius). Do not place in or close to the freezer compartment as it should not be frozen.
- When the insulin is used for the first time, for individual patient use, ensure a label is used to note the date and time of opening and the patient's identification.
- Once opened, insulin for individual patient use, can be stored at room temperature (below 25 degrees Celsius) for up to 28 days.
- Do not return insulin stored at room temperature to the fridge.
- Discard insulin if not required for patient discharge, is no longer indicated or if it has been out of the fridge for 28 days or more.
- Prefilled pens may be prescribed and dispensed to a patient on discharge if clinically appropriate and appropriately labelled as per the WACHS Medication Prescribing and Administration Policy.

High concentration insulin products

Most insulin formulations in Australia contain 100 units per 1mL. However, certain high concentration formulations are available to minimise the number of injections or volume of insulin required to be administered for insulin resistant patients requiring high doses.

These products have up to 2-5 times the concentration of insulin compared to standard formulations and there is a high risk of error with prescribing, dispensing and administration of these products.
Currently 3 products exist:

- 300 units / 1mL insulin GLARGINE, trade/brand name Toujeo®
- 500 units / 1mL insulin NEUTRAL, trade/brand name Humulin R-500 Kwikpen® (SAS product)
- 200 units / 1mL insulin LISPRO, trade/brand name Humalog U-200 KwikPen®

- Prescription orders must include the concentration of the insulin in addition to the other insulin prescribing requirements.
- Storage of these insulins must be away from clinical area imprest and other formulations of insulin, however if required on imprest then it must be endorsed by Regional MTC.
- Any high concentration insulin pens which are in use must be labelled with the patient's name and stored at the bedside in a locked drawer.
- Administer using the insulin device and dual retractable insulin pen needles.

WACHS

- Diabetes - Inpatient Management Clinical Practice Standard
- Adult Diabetic Ketoacidosis (DKA) Guideline
- MR156A WACHS Insulin Subcutaneous Order and Blood Glucose Record - Adult
- MR156B WACHS Obstetric Subcutaneous Insulin Order and Blood Glucose Record
- MR157A WACHS Adult Variable Rate Intravenous Insulin (Actrapid) Infusion Chart
- MR157B WACHS Adult Diabetic Ketoacidosis (DKA) Treatment & Monitoring Chart
- High Risk Medications: Insulin Declaration (HRMI EL2) eLearning

Department of Health

- WATAG Advisory Note - Strategies to reduce insulin-related medication errors
- WATAG Advisory Note – Saftey Alert: High Concentration insulin
- High Concentration Insulin - Toujeo®

Other

- Australian Commission on Safety and Quality in Health Care, Recommendation for terminology, abbreviations and symbols used in medicines documentation
- FSFHG, Know your insulins
- CAHS Diabetes Sick Day Management (Inpatients) Procedure
- PCH Diabetic Ketoacidosis
- PCH Diabetes Hypoglycaemia Management Procedure
- PCH Insulin Pump Management Procedure

NARCOTICS (OPIOIDS) AND SEDATIVE AGENTS

Narcotics (Opioids) and Sedative Agents

Opioids and sedative agents have a high risk of causing harm. Risks include respiratory depression, falls, and overdose. These risks can be significantly increased when opioids or benzodiazepines are taken in conjunction with other medications, particularly central nervous system depressants or alcohol. Additionally, some opioids and sedative agents have potential for medication dependence and diversion for illicit use.

Confusion regarding short and long acting oral formulations, look alike/sound alike names (e.g. tramadol and tapentadol, hydromorphone and morphine), and differences in relative potencies or conversions between individual opioids and sedatives, can result in these medications having significant potential for harm.

Opioid prescribing should be reserved for prescribers experienced in their use and be aligned with the SMF.

Services such as Acute Pain Service, anaesthetists and palliative care, can provide additional information about these medicines and pain management.

WACHS endorses the use of the Therapeutic Guidelines: Pain and Analgesia and Therapeutic Guidelines: Palliative Care, SMF when required.

Prescribing Narcotics (Opioids) and Sedative Agents

The careful titration of dosing of opioids and sedative medications is vital, particularly if prescribed together. Inadequate doses of opioids may lead to inadequate analgesia, while large doses may cause excessive sedation and potentially lethal respiratory depression. Elderly patients and patients with renal or hepatic impairment are particularly at risk. Dosing should follow the “start low and go slow” philosophy.

Care should be taken when considering an opioid rotation. Independently check doses and opioid conversion tables prior to prescribing and administration. Refer to the WA Cancer and Palliative Care Services Opioid Conversion Guide for further information on opioid conversion. Continue to monitor your patient frequently to assess pain level, sedation and respiratory rate until the new opioid is at steady state (i.e. continue monitoring for 72 hours for a fentanyl patch).

If a slow release preparation is prescribed, ensure the red box “tick if slow release” is marked on the WA Hospital Medication Chart.

ScriptCheckWA is a clinical tool, which can be accessed by prescribers and pharmacists. It contains real time information about which monitored medicines have been prescribed and dispensed for a patient.

Administering Narcotics (Opioids) and Sedative Agents

The effects of opioids and sedative agents can be increased by other medications, alcohol consumption, increased body temperature or exposure to heat.

Naloxone should be available in clinical areas for opioid reversal.

Adult and paediatric patients receiving opioids require regular monitoring (e.g. pain score, consciousness level, respiratory rate, blood pressure and oxygen saturation). The frequency and duration of monitoring will be dependant on the route of administration, the formulation, clinical indication for analgesia (e.g. post-operative) and the location of the patient. Spinal (intrathecal, epidural, patient-controlled epidural analgesia) and intravenous administration (e.g. bolus dosing, patient-controlled intravenous analgesia) guidelines are described in the relevant policies and monitoring charts. Observations should be recorded as per MR140A Adult Observation and Response Chart or other WACHS additional observation chart.

Transdermal Patch Delivery Systems

Numerous medications, including potent analgesics (e.g. fentanyl and buprenorphine) are available in patch formulation, and are considered high risk medications due to their, delayed onset and prolonged duration of effect, even after removal. Misuse or incorrect handling can lead to adverse outcomes given the significant residual medication that remains in the patch after its intended application period.

Fentanyl patches are not recommended in opioid-naïve patients due to increased risk of life threatening respiratory depression and should be reserved for specialist advised pain management.

- Ascertain the presence of any transdermal patches at time of admission, including application and replacement times.
- Prescribers are to appropriately annotate the medication chart by crossing out non application days, to minimise the risk of the patch being replaced on the incorrect day.
- During administration, confirm the previous patch has been removed before applying a new patch, documenting the time of patch application and removal on the endorsed WACHS medication chart.
- Document the site of patch application within the patients' medical record as well and use the patch check sticker (item number (UCN) 189916K) on the medication chart on the to document that the patch is in place at each shift handover.
- Confirm removal of patch if the prescription order has been ceased.
- Dispose of used patches by wearing gloves and folding the patch in half so that the adhesive sides stick together, cut into small pieces with scissors and discarding into a secure sharps or medication bin.

WACHS

- Intravenous Opioid Administration Policy
- Epidural / Spinal Analgesia Management Policy
- Intrathecal Pain Management in the Palliative Care Setting Procedure
- Regional Analgesia Management (Adult) Procedure
- Subcutaneous Infusions in the Palliative Care Setting via CADD®-Solis Procedure
- Subcutaneous Infusions in the Palliative Care Setting via NIKI T34™ Procedure
- MR12 WACHS Emergency Department Procedural Sedation Record
- MR140A Adult Observation and Response Chart
- MR170.2 WACHS Epidural / Spinal Prescription and Additional Observation Chart
- MR170.3 WACHS Epidural / Spinal Morphine Record

- MR170.5 WACHS PCIA-IV Opioid Infusion Prescription and Additional Observation Chart
- MR170.6 WACHS PCIA-IV Opioid Infusion Continuation Sheet
- MR170H WACHS Continuous Subcutaneous Infusion & Patient Controlled Dosing via CADD® Pump Chart
- MR170H.1 WACHS Continuous Subcutaneous Infusion via T34™ Pump Chart
- MR170i WACHS Intrathecal Therapy (Palliative) Prescription and Additional Observation Record
- MR170i.1 WACHS Intrathecal Therapy (Palliative) Continuation Sheet
- MR170K WACHS Regional Analgesia Prescription and Additional Observation Record
- MR170K.1 WACHS Regional Analgesia Continuation Sheet

WACHS South West Region

- Ketamine Infusion (Low Dose Intravenous Analgesia) in the Acute Care Setting Procedure
- WACHS SW MR113a Ketamine Infusion Analgesia Record

Department of Health

- MP 139/20 Medicines Handling Policy
- WA Cancer and Palliative Care Services Opioid Conversion Guide
- ScriptCheckWA
- WATAG Recommendations for prescribing analgesia on discharge following surgery or acute injury
- WATAG Safety Alert: HYDROmorphone higher concentrated formulation
- WA Medication Safety Alert – Gabapentinoids in combination with opioids and the risk of respiratory depression

Other

- Australian and New Zealand College of Anaesthetists Acute Pain Management: Scientific Evidence (fifth edition)
- WA Community Program for Opioid Pharmacotherapy (CPOP)
- Australian Commission on Safety and Quality in Health Care's Opioid Analgesic Stewardship in Acute Pain Clinical Care Standard
- PCH Procedural Sedation

NEUROMUSCULAR BLOCKING AGENTS

Neuromuscular blocking agents are considered high risk medications due to potential for respiratory arrest, permanent harm, and death if used incorrectly. This risk is particularly heightened when there is limited access to airway support, or a shortage of medical staff trained in airway management. Serious incidents have occurred when neuromuscular blocking agents were inadvertently administered instead of another agents, such as sedatives.

Examples of neuromuscular blocking agents include:

- atracurium
- cisatracurium

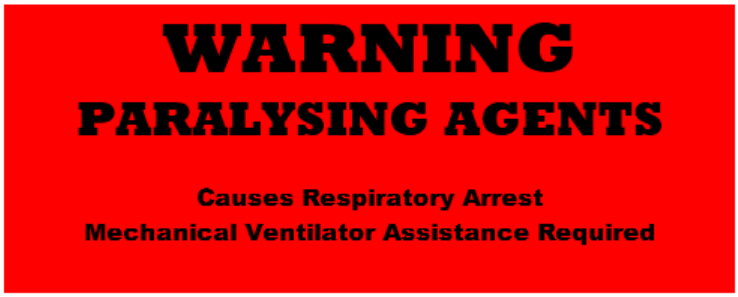
- mivacurium
- pancuronium
- rocuronium
- suxamethonium
- vecuronium

Neuromuscular blocking agents are used primarily during tracheal intubation, during surgery of intubated patients, and to facilitate mechanical ventilation in critically ill patients.

Errors involving neuromuscular blocking agents have been associated with look-alike packaging and labelling, and look-alike/sound-alike (LASA) medication names. To minimise these risks segregate, and store neuromuscular blocking agents separately from all other medications.

Storage of neuromuscular blocking agents

- Neuromuscular blocking agents must only be stored on imprest in areas of the hospital/health service that routinely use these medications, such as operating theatres, or where required to be kept as part of the Emergency Telehealth Services (ETS) list of medicines. They should not be imprest on general wards.
- Approved imprest locations must be determined by the regional MTC, in consultation with clinicians who prescribe neuromuscular blocking agents and pharmacy.
- Periodic reviews of neuromuscular blocking agents storage locations, should be conducted, including all approved imprest locations, theatre, and medication trolleys.
- Storage of neuromuscular blocking agents within a specific container, acts as a physical and visual prompt to reduce the chance of unintentional selection. Neuromuscular blocking agents may be stored in the same container, noting any temperature requirements (e.g. vecuronium is stored at room temperature but some brands may be stored in the refrigerator).
- Where large quantities are required (e.g. theatres), consider a dedicated cupboard after consultation with pharmacy staff.
- In standardised anaesthetic trolley drawers, compartments may be considered equivalent to a sealed container. However, in standard medication or resuscitation trolleys, without individual compartments, use clearly marked containers with lids to ensure neuromuscular blocking agents are distinct from other medications. In all instances, neuromuscular blocking agents must be labelled with an auxiliary warning label.
- Within pharmacy store NMBAs in isolated or dedicated containers separate from other medications.
- Where NMBA storage is permitted, they must be stored in a storage container, sealed with a lid and an auxiliary warning label that states the following:



Prescribing of neuromuscular blocking agents

- Outside operating theatres or procedural areas, orders should be restricted to intubation protocols for maintaining paralysis during mechanical ventilation.
- Prescribing should be restricted to clinicians with appropriate training and knowledge, following the Statewide Medicines Formulary.

Preparation and administration of neuromuscular blocking agents

- Only staff with experience in maintaining an adequate airway and respiratory support, should administer neuromuscular blocking agents and only within clinical areas equipped for respiratory support, including ETS sites.
- Administer all neuromuscular blocking agent infusions using an appropriate parenteral infusion pump system (PIPS) and, where available, the current version of the Dose Error Reduction Software (DERS) Medication Library.
- Syringe labelling must comply with the National Standards for User-applied Labelling of Injectable Medicines, Fluids and Lines.
- Ensure availability of appropriate neuromuscular blocking agents reversal agents for qualified staff.

Department of Health

- Guideline for Managing Specific High Risk Medications Relevant to the Organisation

General

- Institute for Safe Medication Practices Three New Best Practices in the 2022-2023 Targeted Medication Safety Best Practices for Hospitals
- National Safety and Quality Health Service (NSQHS) National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines

CHEMOTHERAPEUTIC AGENTS (SYSTEMIC ANTICANCER THERAPY)

All chemotherapeutic agents {systemic anticancer therapy (SACT)} are considered high risk medication, noting that specific agents may be used for indications relating to cancer and non-cancer indications, e.g. rheumatoid arthritis.

All staff involved in the handling of chemotherapeutic agents must have the relevant knowledge and skills and be competent to perform the tasks required of their role, which may include prescribing, dispensing, preparation, or administration of chemotherapeutic agents.

- A cytotoxic warning label or the words “cytotoxic” should be indicated on all preparations of cytotoxic agents, including oral forms, as well as on the WA Hospital Medication Chart, if being utilised for oral administration. This labelling helps ensure that cytotoxic precautions must be adhered to when handling these medications.
- All chemotherapeutic agents must be prescribed based on a referenced protocol and the treatment plan documented in the patient’s healthcare record or the Oncology Management System.

- A start and stop date must be documented for intermittent therapy.
- Where a designated cancer service exists, all treatments must be clinically verified by a chemotherapy competent pharmacist prior to dispensing and by a chemotherapy competent nurse prior to administration.
- Dose adjustments should be clearly documented in the treatment plan and duplicated on the prescription.
- Appropriate personal protective equipment (PPE) should be utilised by staff handling chemotherapeutic agents.
- Chemotherapeutic agents for the treatment of cancer, must be prescribed as per the WACHS Anticancer Therapy Prescribing Procedure and administered routinely within designated cancer units.
- Intrathecal chemotherapeutic therapy is not provided within WACHS.
- Patients should be provided with both written and verbal information about all their treatment medications, expected side effects, how to take supportive medication and who to contact in the event of an emergency or severe adverse events.
- Healthcare workers, both male and female, who are trying to conceive, or women who are pregnant, breastfeeding, or may become pregnant, should follow WACHS policies on safe handling and PPE when working with hazardous or teratogenic medications.

Vinca alkaloids

Inadvertent intrathecal administration of vinca alkaloids has resulted in permanent disability or death and remains a potential risk.
Vinca alkaloids can be fatal if given by the intrathecal route and must only be administered intravenously.

Vinca alkaloids are a class of chemotherapeutic agents which includes vinblastine, vincristine, vinflunine and vinorelbine.

- All vinca alkaloids are to be supplied to WACHS in 50 mL minibags for infusion.
- All vinca alkaloids must be labelled clearly with the warning:
  'FOR INTRAVENOUS USE ONLY – FATAL IF ADMINISTERED BY ANY OTHER ROUTE'.

All sites must adhere to the WA Health Mandatory Standard for vinca alkaloids.
Refer to eviQ Cancer Treatments Online and OMS - Charm® for protocols related to the prescription and administration of these agents at WACHS.

Australian Commission on Safety and Quality in Health Care
- Vincristine – Medication Alert – Vincristine can be fatal if administered by the intrathecal route.
- National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines

Department of Health
- Mandatory Standard for vinca alkaloids

Methotrexate (oral)

Oral methotrexate, for treatment of autoimmune or inflammatory disorders carries a high risk, due to being prescribed and administered more frequently than the indicated **once weekly.** Fatal consequences have been reported in Australia due to incorrect dosing frequency.

When prescribing, administering, and dispensing weekly doses of methotrexate, clearly specify the **dose and the exact day of the week** the methotrexate is to be administered on the WA Hospital Medication Chart. Cross out days where methotrexate is not required to prevent unintended doses being administered.

Concurrent folic acid administration is recommended to reduce the risk of mucositis. To avoid interaction folic acid should be prescribed on days **other** that the methotrexate administration day. Always consider potential clinical interactions in patients who are prescribed methotrexate.

In addition to a clear and unambiguous medication chart order, the following will reduce the risk of administration error:

- Patients being treated with oral methotrexate should all receive a medication review to confirm that methotrexate is a current medication and confirm the dose, day of administration, and date of the last dose.

Oral methotrexate should generally not be kept on imprest – the decision to include in specific imprest locations must be determined by the regional MTC.
Supply the exact number of tablets required for one dose as close to the day of dosing as practicable. If supplying more than one dose at a time, store separately from other patient's medications.

- Return all unused supplies to pharmacy when no longer needed.
- Where relevant, on discharge supply no more than 4 weeks supply.

General

- Medication Safety Update – Misadventures in oral methotrexate dosing
- Institute for Safety Medication Practices – Patient Information Leaflet - Methotrexate

Etoposide

Etoposide is available as the base etoposide and as etoposide 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.

Etoposide phosphate is the preferred injectable formulation of etoposide in WACHS and represented as "etoposide (as phosphate)" however base etoposide may be required if approved by a clinical pharmacist.

Refer to eviQ Cancer Treatments Online and OMS - Charm® for protocols related to the prescription and administration of these agents at WACHS.

WACHS

- Anticancer Therapy Prescribing Procedure.
- Systemic Anticancer Therapy Procedure
- MR170G WACHS Specific Cancer Treatment Chart series
- MR860 Fiona Stanley Standard Order Set

Department of Health/General

- Code of practice for clinical and related waste management
- COSA Guidelines for the safe prescribing, dispensing and administration of systemic cancer therapy. Clinical Oncologist Society of Australia. 2018
- eviQ Cancer Treatments Online

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 these events and conversely, inadequate treatment can precipitate poor clinical outcomes.

All anticoagulants should be prescribed on the WA Anticoagulation Medication Chart, except in dialysis settings where the long-stay medication chart may be used. In all other setting the WA Anticoagulation Medication Chart is required.

Prior to initiating anticoagulant therapy, the patient's bleeding risk should be assessed and documented on the Anticoagulation Medication Chart. A Venous Thromboembolism (VTE) risk assessment must be completed on the WA Hospital Medication Chart and this chart is to be annotated to identify when an Anticoagulation Medication Chart is in use.

WACHS

- MR170C WA Anticoagulant Medication Chart
- High Risk Medications: Anticoagulants Declaration (HRMA EL2)

Department of Health

- MP 0078/18 Medication Chart Policy

Warfarin

Warfarin interacts with a range of medications which can result in changes in the patient's International Normalised Ratio (INR) stability and alter the patient's bleeding risk. Doses of warfarin may require adjustment due to these interactions.

Regular monitoring of the INR is required, and patients should be educated on recognising signs of bleeding.

Warfarin is available as Marevan® and Coumadin® and due to warfarin's narrow therapeutic window, the two brands are not interchangeable. Marevan® is the default brand in WACHS as per the Statewide Medicines Formulary. Coumadin® should not be available in clinical area imprest unless approved by the regional MTC and should only be prescribed and supplied to patients already stabilised on Coumadin® prior to admission.

WA Health
- Living with warfarin – Information for patients

Heparin

Heparin is classified into two types, unfractionated heparin (UFH) and low molecular weight heparins (LMWH) including enoxaparin, danaparoid and dalteparin.
UFH is available in multiple strengths, with similar appearances, so regions should review their stores of heparin to minimise look-alike products. Further information on heparin can be found in Australian Injectable Drugs Handbook.

Prescribing unfractionated heparin, danaparoid and dalteparin

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

Monitoring heparins

- The activated partial thromboplastin time (aPTT) is widely used for monitoring of therapeutic doses of UFH. Standardisation between laboratories has not been achieved due to variations in reagents and instruments used to measure the aPTT. Therefore, reference ranges calibrated to each facility's pathology provider should be used and hospitals should ensure that their Anticoagulation Chart is specific to their facility in this regard and considered when interpreting results from patients transferred from another site.
- It is recommended that platelet counts are monitored every two days when prescribing heparin therapy as 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 ≤ 30 mL/minute).

Direct Oral Anticoagulants

Direct oral anticoagulants include rivaroxaban, dabigatran and apixaban and were previously called New/Novel Oral Anticoagulants (NOACs).

Apixaban and rivaroxaban currently have no specific reversal agent widely available for use. Idarucizumab is the commercially available reversal agent for dabigatran.

Care is required when selecting patients for anticoagulant treatment due to the following considerations:
- Dosing recommendations for each agent vary depending on the patient age, indication and degree of renal function. Inappropriate dosing can lead to under or over anticoagulation.
- Use with caution in the elderly patients (> 75 years) and those with low body weight (< 50 kg) as they may be more susceptible to adverse effects.
- Check for potential medication interactions that can affect the efficacy and safety of therapy.

Department of Health
- Living with a direct-acting oral anticoagulant (DOAC)
- Clinical Excellence Commission DOAC Guidelines
- Know your DOACs

Thrombolytics

Thrombolytics carries a high risk of bleeding events, including intracerebral haemorrhage. Thrombolytics are utilised in the acute treatment of pulmonary embolism, stroke and acute coronary syndrome and care must be taken screening patients regarding timing and benefit of thrombolytic use. For further information on thrombolytics, refer to Therapeutic Guidelines .

Department of Health/General
- Protocol for Intravenous Thrombolysis in Acute Ischaemic Stroke
- Australian Commission on Safety and Quality in Health Care Coronary Syndromes Clinical Care Standard

WACHS
- Cardiac Thrombolysis Pack Contents for Emergency Departments and Services
- MR1B WACHS Chest Pain Pathway
- Acute Stroke Clinical Standards and Guidelines - Endorsed for Use in Clinical Practice Policy
- MR172A WACHS Tenecteplase Checklist
- WACHS Cardiac Thrombolysis - Tenecteplase Patient Information Sheet

SAFER SYSTEMS

Standardisation of processes and systems is designed to facilitate safe medication use.
High Risk Populations

It is recognised that certain patient populations are also deemed as high risk. These include geriatric patients, obese patients, low-weight patients, patients with renal or hepatic impairment and patients managing more than five (5) regular medications (polypharmacy).

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

Some medications are considered high risk when used in patients that are pregnant or breastfeeding as well as when used prior to conception for both mothers and fathers. Further information can be found at Pregnancy and Breastfeeding - Find Medications Information - WACHS Library at Western Australia Department of Health.

Refer to the WACHS Medication Review Procedure Table 1 for factors that may increase a patients risk of medication-related harm.

External Resources

- WA Psychotropic Medication Group (WAPMG) Alert - Sodium Valproate in Pregnancy
- NIOSH Hazardous Drugs List 2020 refer to table 2 for medications that are known to be or probably a human carcinogen.

Look alike, sound alike names

Issues can arise when medication names or packaging look alike or sound alike. Some examples include:

- heparin 5 mL plastic ampoules and heparinised saline 5 mL plastic ampoules
- Celapram® and Celebrex® brand - Celepram® is citalopram, an antidepressant while Celebrex® is celecoxib, an anti-inflammatory.
- Lidocaine - be aware of different formulations, uses and risk of toxicity. Lidocaine 10% requires regional MTC endorsement for impresting in specific clinical areas.

The Therapeutic Goods Administration (TGA) is currently reviewing its requirements around labelling and packaging requirements to reduce the risks associated with look alike and sound alike products in Australia.

Additionally, the Australian Commission on Safety and Quality in Health Care (ACSQHC) uses "Mixed-case" lettering (previously known as Tall Man lettering) to make similar-looking medicine names more distinguishable. The Commission maintains a list of approved mixed-case names, developed with its Health Services Medication Expert Advisory Group. All sites should manage look alike and sounds alike risks by separating products, adding extra alerts, or segregating stock.

Alternative salts

Medications may be available as multiple salts of the same product. These salts may affect the equivalence of the products therefore requiring adjustments in strength or dose.

Examples include phenytoin and perindopril.

Clinical staff should refer to WACHS Library Medications Information for further information on the equivalence of these products.

Off-label use of medicines

Products are registered for use in TGA for specific indications.

The principles developed by Council of Australian Therapeutic Advisory Groups (CATAG) should be followed when considering the use of a medicine in an off-label manner including all relevant patient consent (see Guiding Principle 3 in CATAG document).

1. **Only consider off-label use of a medicine when all other options, including the use of** medicines approved by the TGA, are unavailable, exhausted, not tolerated or unsuitable for individual patients.
2. Use high quality evidence to determine appropriateness of off-label medicine use.

3. Involve the patient/carer in shared decision making when recommending the use of an off-label medicine.
4. Consultation with the Medicines and Therapeutics Committee should occur when prescribing an off-label medicine that is not included on the Statewide Medicines Formulary. An Individual Patient Approval application process is required for all non-formulary medications.
5. Ensure appropriate information is available at all steps of the medicines management cycle.
6. Monitor outcomes, effectiveness and adverse events.

Prescribers must also be aware of the effect of prescribing off-label medications on the ongoing availability of the product for patients. For example, lack of PBS subsidy on restricted items and / or authority prescriptions.

Intrathecal Medications

The administration of medications via the intrathecal route is considered an advanced practice skill to be undertaken by nurses, midwives and medical officers working within their scope of practice appropriate to their level of training and responsibility.

Epidural Therapy

Administration of medications via the epidural route is considered an advanced practice skill to be undertaken only by a WACHS certified competent RN or midwife.

Safe Administration of Enteral (Oral) and Nebuliser Liquid Preparations

The risk of serious “wrong route” medication errors has been documented, arising from accidental parenteral administration of solutions intended for an oral, enteral or nebuliser delivery. These incidents, reported both nationally and internationally, often result from drawing such preparations into parenteral luer-lock syringes and inadequate labelling, leading to errors in administration via the wrong route.

When medications intended for oral, enteral or inhalation use are inadvertently administered parenterally, the therapeutic agents are rapidly adsorbed into the blood stream. This can significantly increase the risk of catastrophic and potentially irreversible outcomes.

Enteral (oral) solutions

- Enteral (oral) syringes must be available in all clinical areas. Store these away from parenteral (luer) syringes. Enteral (oral) syringes which meet the requirements of the DoH Guidelines for Managing Specific High Risk Medications are purple ENFit® syringes (available from Stores/Supply via the Enteral Feeding Systems, Infant Feeding Systems and Consumables Contract (HSS101417)).
- Enteral administration sets should be clearly labelled “For Enteral Use Only”.
- ‘For Enteral Use Only’ labels must be applied as per National Standard for User Applied Labelling of Injectable Medicines, Fluids and Lines.
- Patients discharged or treated as outpatients with enteral (oral) medications should also be provided with appropriately labelled enteral (oral) syringes.

Solutions for inhalation (nebulisation)

- Single use nebules are to be purchased wherever possible to avoid the need to draw solutions into a syringe prior to administration.
- Where stock solutions must be used, doses should be drawn up into a non-luer syringe (oral/enteral syringe) using a compatible non-luer straw and expelled into the inhalation nebuliser pots.
- Where a nebuliser solution must be measured from an ampoule, the dose needs to be measure using a Nutrisafe 2 connection (or current tender equivalent) with the needle attached to the non-luer syringe.
- If a medication is to be drawn up into a syringe, the syringe used must be labelled with the intended route of administration – "For Inhalation Use Only".
- 'For Inhalation Use Only' labels must be applied as per National Standard for User Applied Labelling of Injectable Medicines, Fluids and Lines.

User-applied labelling of injectable medicines, fluids and lines

Guidance is provided in National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines

WACHS
- Medication Prescribing and Administration Policy
- Medication Handling and Accountability Policy
- Get it right! Taking the Best Possible Medication History Declaration (MDGIR EL2)

Department of Health
- MP 0078/18 Medication Chart Policy
- MP 0104/19 Medication Review Policy
- Department of Health information about the National standard for user-applied labelling of injectable medicines, fluids and lines
- Guidelines for Managing Specific High Risk Medications Relevant to the Organisation

Other
- CATAG Rethinking medicines decision-making in Australian Hospitals: Guiding Principles for the quality use of off-label medicines
- Australian Commission on Safety and Quality in Healthcare Recommendations for terminology, abbreviations and symbols used in medicines documentation, December 2016
- Australian Commission on Safety and Quality in Healthcare Mixed-case lettering: Principles for application
- Australian Commission on Safety and Quality in Healthcare, Principles for the safe selection and storage of medicines
- Australian Commission on Safety and Quality in Healthcare National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines

SCHEDULE 4 RESTRICTED MEDICATIONS

Schedule 4 Restricted Medications are a range of Schedule 4 medications that are liable to abuse and diversion. Additional controls around storage and record keeping are required.

Department of Health
- MP 139/20 Medicines Handling Policy

WACHS
- Medication Handling and Accountability Policy

WACHS South West Region
- Handling and Storage of Patient's Own Medications – including Schedule 4 Restricted and Schedule 8 Medications Procedure
- Handling and completion of entries in Schedule 4 Restricted and Schedule 8 Registers and Requisitions Books Information Sheet

PHENYTOIN

Intravenous phenytoin is considered high risk due to its narrow therapeutic range and the potential for significant cardio-pulmonary adverse effects and requires specific monitoring. Many of these adverse effects are related to infusion rate.

Administration of loading doses is to be only given in a setting with suitably qualified staff with the ability to implement continuous cardiac monitoring and blood pressure monitoring, along with observation for respiratory depression during administration. Blood pressure and pulse are to be monitored every 15 minutes for one hour after administration. For maintenance dosing, blood pressure, pulse readings and observation for respiratory depression are to be monitored every 15 minutes during administration and for one hour after completion of the infusion.

Enteral feeds can reduce the absorption of oral phenytoin and feeds may need to be altered to ensure adequate absorption.
Caution is required when changing from one phenytoin product to another as they may not contain equivalent amounts of phenytoin.
Dose changes need to be made carefully as a small change in dose can result in a large change in phenytoin concentration. This is due to the saturation of hepatic metabolism.

Therapeutic monitoring is recommended when changing product and dose. Measurement of free phenytoin levels and total phenytoin levels are recommended due to the binding of phenytoin to albumin.

Other
- PCH: Phenytoin Monograph

MONOCLONAL ANTIBODIES

Monoclonal antibodies are utilised for both cancer and non-cancer indications. When prescribed as a chemotherapeutic agent for the treatment of cancer, they must be prescribed as per the WACHS Anticancer Therapy Prescribing Procedure and administered within designated cancer units.

When utilised as therapeutic infusions for other indications such as for rheumatological, gastrointestinal or neurological indications, preparation may occur at a ward level in line with the Safe Handling, Preparation and Administration of Monoclonal Antibodies Policy.

WACHS

- Safe Handling, Preparation and Administration of Monoclonal Antibodies Policy
- Specialised Medication – Abatacept for ADULT Patients Guideline
- MR173A WACHS Specialised Medication – Infliximab Pre-Infusion Checklist
- Specialised Medication – Natalizumab Guideline
- MR173B WACHS Specialised Medication – Natalizumab Pre-Infusion Checklist
- Specialised Medication – Rituximab Guideline for ADULT patients
- MR173D WACHS Specialised Medication – Rituximab Pre-Infusion Checklist
- Specialised Medication – Tocilizumab Guideline
- MR173E WACHS Specialised Medication – Abatacept Pre-Infusion Checklist
- Specialised Medication – Infliximab Guideline
- MR173F WACHS Specialised Medication – Tocilizumab Pre-Infusion Checklist

Other

- Internal Medicine Journal Australian consensus guidelines for the safe handling of monoclonal antibodies for cancer treatment by healthcare personnel

MEDICATIONS REQUIRING THERAPEUTIC MONITORING

In WACHS, medications requiring therapeutic monitoring may be considered high risk due to limitations in testing availability and accessibility across regional sites. Therapeutic monitoring is essential to measure medication concentrations in the blood, ensuring therapeutic levels are maintained and toxicity is avoided. However, therapeutic monitoring may only be available at selected WACHS sites and specific requirements for sample collection, e.g. in relation to dosing times, may not always be able to be achievable.

Laboratory services, such as PathWest, should be consulted to confirm the availability of therapeutic monitoring for medications, noting that access may be limited, or timeframes may differ compared to in the metropolitan setting.

- **Aminophylline intravenous**

Intravenous aminophylline carries a high risk of harm due to its narrow therapeutic range and potential for toxicity if not monitored adequately.

Given these risks, as per the SMF, aminophylline injection must only be prescribed and managed by a specialist or under specialist supervision to ensure safe administration and monitoring.

CLINICAL TRIAL MEDICATIONS

Clinical trial medications, whether novel investigational drugs or registered treatments tested outside standard guidelines, are high risk due to the potential for unknown side effects, unproven efficacy, and unpredictable reactions in individuals, as they have not been fully validated in broader, long-term use. Additionally, complex dosing regimens and the use of placebos further contribute to potential risk.

Clinical trial medications are exclusively for participants enrolled in clinical trials. Their use must adhere strictly to the clinical trial protocol and only authorised prescribers are permitted to prescribe these medications.

In addition, if there is a need to prescribe any new medication for a patient enrolled in a clinical trial, it is essential to consult the research team. This ensures compliance with the protocol and proper documentation. For clinical trials, contact warccc@health.wa.gov.au

Clinical trial medicines may brought in by the patient during their admission, in which case they should be treated as patient's own medicines, stored securely, be used only for the patient, and returned to the patient on discharge as guided by the clinical trial team. In rare instances, clinical trial medications for emergency or urgent use may be stored on imprest locations. Clinical staff must ensure that these medications are used solely for patients participating in the specific clinical trial.

VOLUNTARY ASSISTED DYING SUBSTANCE(S)

The Voluntary Assisted Dying (VAD) substance(s) is a medication that an eligible person can legally access to cause their death. The substance(s) are available as oral medication for self-administration or as an IV medication for practitioner administration.

The Voluntary Assisted Dying Act 2019, outlines the specific people able to prescribe, dispense, supply and dispose of the substance(s) and more detailed guidance is covered in the WACHS Voluntary Assisted Dying Policy.

For information and prescribing restrictions related to the Voluntary Assisted Dying substance(s) refer to the WACHS Voluntary Assisted Dying Policy and the WA Voluntary Assisted Dying Guidelines.

WACHS

- Voluntary Assisted Dying Policy

Other

- Department of Health, Voluntary Assisted Dying
- Department of Health, WA Voluntary Assisted Dying Guidelines
- Voluntary Assisted Dying Act 2019

Appendix B: High Risk Medications Requiring Endorsement for Imprest

The medications listed in the table below have been identified in the High Risk Medications Procedure as those that should not be stored on imprest, unless endorsed by the regional MTC (or equivalent). The decision to store these medications in specific imprest locations must be based on appropriate clinical need and safety.

The regional MTC (or equivalent) are responsible for regularly reviewing this list to ensure its appropriateness. Imprest locations should be regularly reviewed by staff, as allocated by the regional MTC. New medications and locations may be added if endorsed by the committee and high risk medications that are not endorsed should be removed.

Including the date of endorsement for each imprest location allows appendix B to be used as a consolidated endorsed list for the region.

Region:	**Date of review:**	
Medication	**Endorsed imprest locations.** *Include date of endorsement.*	**Imprested in a location awaiting endorsement.** *Determine if imprest is needed, then table for endorsement at regional MTC.*
Clozapine tablets or oral liquid		
Insulins of high concentration 200 units/mL – 500 units/mL		
Lidocaine 10% ampoules		
Methotrexate tablets		
Neuromuscular blocking agents • atracurium • cisatracurium • mivacurium • pancuronium • rocuronium • suxamethonium • vecuronium **(Not recommended for storage in general ward areas)**		
Potassium chloride or		

potassium dihydrogen phosphate vials or ampoules		
Sodium chloride 20% (hypertonic) ampoules		
Warfarin Coumadin® brand tablets		
Zuclopenthixol acetate IM injections		

Appendix C: High Risk Medications - Clinical Area Checklist

Completed checklists are intended to support clinical areas to identify gaps and determine corrective actions where necessary, to enhance patient safety.

It is recommended for clinical areas to complete this checklist annually.

Clinical areas are to share their reports with the regional MTC (or equivalent).

Site: **Clinical area:**			**Date:**
General	Yes	No	N/A or Comment
Is there a local process to return non-imprest high risk medications, immediately to pharmacy when not required?			
Are imprest reviews conducted regularly (e.g. annually) or as required? Refer to the nurse unit manager or senior staff to confirm previous imprest review dates. If a review has not been completed recently, consider liaising with pharmacy.			
Review “Appendix B High Risk Medications requiring endorsement for Imprest”. If you have any of these medications located on imprest, have they been endorsed for storage within the specified clinical area by regional MTC?			
Antimicrobials	Yes	No	N/A or Comment
Nil questions.			
Potassium and other electrolytes	Yes	No	N/A or Comment
Nil questions.			
Psychotropics and antipsychotics	Yes	No	N/A or Comment
Are all components of the clozapine prescription and supply complied with, including use of ClopineCentral for monitoring of blood cell count?			
Are zuclopenthixol acetate and zuclopenthixol decanoate stored separately or have alerts for staff to double check the medication name, prior to selection?			
Insulin and insulin-like substances	Yes	No	N/A or Comment
Review insulin storage in your clinical area (e.g. medication fridge and patient bedside). Is it clear which insulin product are in storage or in use? For insulin in use, are insulin devices labelled with patient details, date and time of opening?			

Is high concentration insulin (200 units/1mL – 500 units/1mL) stored in the clinical area imprest? If yes, has this been endorsed on Appendix B by the regional MTC?			
Neuromuscular blocking agents	Yes	No	N/A or Comment
Are neuromuscular blocking agents available in this clinical area? If “yes”, are they stored separately from other medications in a clearly marked sealed container that are labelled with a statement “WARNING: Paralysing agents – causes respiratory arrest – mechanical ventilator assistance required”?			
Chemotherapeutic agents	Yes	No	N/A or Comment
Is systemic anticancer therapy administered in this clinical area? If “yes”, is a cytotoxic drug spill kit stored in the area and within the expiry date?			
Systems	Yes	No	N/A or Comment
Does your clinical area use the ENFit® syringes for administration of oral (enteral) liquids? Are the ENFit® syringes stored separately from parenteral (luer) syringes?			
Are labels available within the clinical area for user-applied labelling or injectable medicines, fluids and lines, as per National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines?			

There are no specific questions for the following medications/medication groups, however, consider the relevant information provided in appendix A for management of these medicines in your clinical area:

- Antimicrobials
- Potassium and other electrolytes
- Narcotics (opioids) and sedative agents
- Heparin and other anticoagulants
- Schedule 4 Restricted (S4R) medications
- Phenytoin
- Monoclonal antibodies
- Medications requiring therapeutic monitoring
- Clinical trials medications
- Voluntary assisted dying (VAD) substance(s)