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# Critical Care Medication Administration for Adults Guideline

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## Contents

Critical Care Medication Administration for Adults Guideline .....	1
1. Purpose.....	2
2. Guideline.....	2
2.1 Dose Error Reduction Software (DERS) .....	3
2.2 Medical Emergency Quick Reference Guide (Adults) .....	4
2.3 Critical Care Intravenous Infusion Guide (Adults) .....	11
2.4 Guideline Information and Document Control .....	42
3. Roles and Responsibilities .....	44
4. Monitoring and Evaluation.....	44
5. References.....	45
6. Definitions .....	50
7. Document Summary .....	51
8. Document Control .....	53
9. Approval.....	53
Appendix A: Initial Rate Calculation Table .....	54
Appendix B: Weight-Based Infusion Rate Calculation Guide .....	55
Appendix C: Paediatric Medication Monograph Quick Links .....	59

## 1. Purpose

To provide information on the prescribing and administration of common medications administered by intravenous (unless otherwise specified) access in [critical care areas](#) or as part of a medical emergency response. Use outside of these areas/clinical situations should be based on clinical appropriateness and availability of appropriate staffing/equipment in line with monitoring requirements of each medication. This information aims to support medical, nursing, midwifery, and pharmacy staff in safe medication use.

This document does not apply to the Bunbury Intensive Care Unit. See [Intravenous Infusion Orders for Common Medications in the Emergency Department and Intensive Care Unit Guideline](#)

## 2. Guideline

This guideline is separated into sections:

- [Section 1](#) contains quick reference links and brief Guideline information.
- [Section 2](#) – **Medical Emergency Quick Reference Medication Guide (Adults)**, contains information relating to medications commonly administered in emergency situations (e.g. medical emergency response) and is applicable to **adult** patients.
  - For paediatric patients, refer to the Monash Children’s Hospital Paediatric Emergency Medication Book <sup>(1)</sup> and the PCH Emergency Department Guidelines
  - For neonatal patients, refer to the Women and Newborn Health Service’s (WNHS) Neonatal Medication Protocols, and the Newborn Emergency Transport Service’s (NETS WA) Guidelines.
    - See Also: [NETS WA Resuscitation and Intubation Calculator](#) (Excel spreadsheet for download) and [NETS NSW Clinical Calculator](#) (web-based)
- [Section 3](#) – **Critical Care Intravenous Infusion Guideline (Adults)**, contains information relating to medications commonly administered in critical care areas via infusion control devices (volumetric or syringe pump) and is applicable to **adult** patients.
  - For **paediatric** patients, refer to the [Australian Medicines Handbook Children’s Dosing Companion](#) or [PCH Medication Monographs](#)
  - For infusion information previously obtained from the RFDS Clinical Manual Part 2 – Medication Infusion Guidelines, see [Appendix C](#)
  - For **neonatal** patients, refer to WNHS [Neonatal Medication Protocols](#), or the [Australasian Neonatal Medicines Formulary \(ANMF\)](#)
- [Section 4](#) contains standard Guideline and document control information.
- [Appendix A: Initial Rate Calculation Table](#)
- [Appendix B: Weight-Based Infusion Calculation Guide](#)
- [Appendix C: Paediatric Medication Monograph Quick Links](#)

## 2.1 Dose Error Reduction Software (DERS)

This guideline is designed to complement the DERS system on the B. Braun Space® family of infusion control devices and has accommodations for use of non-DERS enabled devices (e.g., BD Alaris family, BD BodyGuard family, and pre-rollout B. Braun Space family devices).

Applicable DERS programs can be found in the Comments column of Section 3. Some medications may require administration of ‘top-up’, or ‘bolus’ doses, doses of this nature are **NOT** to be administered from a hanging infusion bag unless the administration is programmed using the DERS system.

To ensure accurate medication/fluid delivery on DERS-enabled devices, a corresponding volume of fluid must be removed from the diluent container before adding any medications. This is necessary to facilitate the accurate administration of intravenous medications/fluids using the B. Braun infusion pumps and associated DERS Libraries.

### Worked Example

To prepare an 80 mg/100 mL infusion of pantoprazole:

1. Reconstitute two 40 mg pantoprazole vials with 10 mL sodium chloride 0.9% each.
2. Withdraw the required dose (80 mg) from the reconstituted vials (20 mL)
3. Remove a corresponding volume (20 mL) from a 100 mL sodium chloride 0.9% minibag.
4. Add the required dose (80 mg/20 mL) to the sodium chloride 0.9% minibag for a final preparation of 80 mg/100 mL



#### ATTENTION

The primary reference for administration of medication by parenteral access is the Australian Injectable Drugs Handbook (AIDH). Further information on compatible diluents and administration instructions can be sought from this reference.

All staff are required to work within their scope of practice appropriate to their level of training and job role description.

Specific information for management of envenomation and poisoning is not included in this guideline. Seek toxicology input and refer to [Antidotes and Antivenom – Administration Guide](#)

## 2.2 Medical Emergency Quick Reference Guide (Adults)

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>adenosine</b> <i>Resuscitation</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>IV:</b> 1 <sup>st</sup> dose: 6 mg <sup>(2)</sup> 2 <sup>nd</sup> dose: 12 mg <sup>(2)</sup> 3 <sup>rd</sup> dose: 12 mg <sup>(2)</sup>	2 mL (undiluted) <sup>(2)</sup> 4 mL (undiluted) <sup>(2)</sup> 4 mL (undiluted) <sup>(2)</sup>	-Give over 2 seconds, followed immediately by a <b>RAPID</b> 20 mL sodium chloride 0.9% flush <sup>(3)</sup> -Wait 1 to 2 minutes between doses to assess effect and need for repeated dosing. <sup>(4)</sup> <a href="#">Pregnancy Category B2</a>
<b>adrenaline (epinephrine)</b> <i>Resuscitation</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">VASOPRESSOR ETS ✓</div>	<b>IV:</b> 1 mg <sup>(5)</sup>	1 mL (1:1,000) OR 10 mL (1:10,000)	-Give by <b>RAPID</b> IV push, followed by 20 mL flush if given via PIVC <sup>(3)</sup> <b>VF/Pulseless VT:</b> Give 1 <sup>st</sup> dose just after second shock, then every 2 <sup>nd</sup> CPR cycle thereafter <sup>(5)</sup> <b>Asystole/Pulseless Electrical Activity:</b> Give as initial treatment, then every 2 <sup>nd</sup> CPR cycle thereafter <sup>(5)</sup> <b>-For infusion refer to <a href="#">Section 3</a></b> <a href="#">Pregnancy Category A</a>
<b>adrenaline (epinephrine)</b> <i>Acute Hypotension</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">VASOPRESSOR ETS ✓</div>	<b>IV:</b> 25 to 50 microg <sup>(6)</sup>	Draw up 10 mL of 1 mg/10 mL (1:10,000) ampoule to give 100 microg/mL <sup>(3)</sup> <b>OR</b> Dilute 1 mL of 1 mg/1 mL (1:1,000) ampoule to 10 mL with sodium chloride 0.9% to give 100 microg/mL <sup>(3)</sup>	-Give 25 to 50 microg (0.25 to 0.5 mL) every 3 to 5 minutes to maintain target MAP <sup>(6)</sup> <a href="#">Pregnancy Category A</a>
<b>adrenaline (epinephrine)</b> <i>ANAPHYLAXIS</i>	<b>IM:</b> 500 microg <sup>(7)</sup> (300 or 500 microg if using an auto-injector.) <sup>(7)</sup>	0.5 mL of 1 mg/mL (1:1,000) ampoule <sup>(7)</sup> <b>OR</b> Use a 300 microg or 500 microg auto-injector <sup>(7)</sup>	-Give into the outer mid-thigh. <sup>(7)</sup> If repeated doses required, inject into the opposite thigh. <sup>(3)</sup> Do not inject into gluteal sites. <sup>(3)</sup> -If using an auto-injector, follow manufacturer directions. Patients may self-administer auto-injectors in hospital. <sup>(8)</sup> <b>-For infusion refer to <a href="#">Section 3</a></b>
<b>amiNOPHYLLine</b> <i>LOAD</i>	<b>IV:</b> 6 mg/kg <sup>(9)</sup>	Undiluted <sup>(3)</sup>	-Give at a rate not faster than 1 mL/minute. A loading dose may not be required in all patients. <sup>(3) (9)</sup> <b>-For use ONLY under express instruction of FACEM / ETS / Intensivist.</b> <b>-For infusion refer to <a href="#">Section 3</a></b> <a href="#">Pregnancy Category (theophylline) A</a>
<b>amiODAROne</b> <i>Resuscitation</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>IV:</b> 300 mg <sup>(5)</sup>	Dilute 2 x 150 mg/3 mL ampoules to 20 mL with glucose 5% <sup>(3)</sup> <b>OR</b> Give 6 mL (undiluted) immediately followed by at least 20 mL sodium chloride 0.9% <sup>(3)</sup>	<b>Cardiac Arrest:</b> Give by IV push over 1 to 2 minutes <sup>(3)</sup> Consider additional 150 mg in 20 mL (after 5 <sup>th</sup> shock) for recurrent/refractory VF or pulseless VT <sup>(2)</sup> <b>Tachyarrhythmias with Pulse:</b> <b>Unstable:</b> Give 300 mg in 100 mL (CVC) or 250 mL glucose 5% (PIVC) over 10 to 20 minutes. <sup>(2)</sup> <b>Stable:</b> Give 300 mg in 100 mL (CVC) or 250 mL glucose 5% (PIVC) over 20 to 60 minutes. <sup>(2)</sup> <b>-For infusion refer to <a href="#">Section 3</a></b> <a href="#">Pregnancy Category C</a>
<b>atropine</b> <i>Resuscitation</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ANTICHOLINERGIC AGENT ETS ✓</div>	<b>IV:</b> 600 microg <sup>(2)</sup>	1 mL (undiluted) <sup>(2)</sup>	-Give by <b>RAPID</b> IV push over a few seconds <sup>(3)</sup> -Titrate to effect, <b>maximum</b> total dose is 3 mg (5 ampoules) <sup>(2)</sup> unless suspected or confirmed organophosphate poisoning (see <a href="#">eTG</a> ) <sup>(10)</sup> <a href="#">Pregnancy Category A</a>
<b>benzatropine</b> <i>Acute Dystonic Reaction</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: orange; font-weight: bold;">ETS □</div>	<b>IV / IM:</b> 1 to 2 mg <sup>(9)</sup>	1 to 2 mL (undiluted) <sup>(3)</sup>	-Onset of action is similar for the IM and IV route. <sup>(3)</sup> <a href="#">Pregnancy Category B2</a>



Section 2: Medical Emergency Quick Reference Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>calcium gluconate</b> Hyperkalaemia Hypermagnesaemia ETS ✓	<b>IV:</b> 1 g (≡ 2.2 mmol calcium) <sup>(10) (11)</sup>	10 mL (undiluted) <sup>(11)</sup>	-Give over at least 5 minutes into a large vein <sup>(3)</sup> -May be given faster (maximum 10 mL/minute) in cardiac arrest. <sup>(3)</sup> -In hyperkalaemia, calcium is cardioprotective but <b>does not</b> lower serum potassium <sup>(11)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>calcium gluconate</b> Hypocalcaemia ETS ✓	<b>IV Bolus:</b> 2 g <sup>(10)</sup> (≡ 4.4 mmol calcium)  <b>IV Infusion:</b> 10 g <sup>(10)</sup> (≡ 22 mmol calcium)	<b>Bolus:</b> 20 mL (undiluted) <sup>(3)</sup>  <b>Infusion:</b> add to 900 mL sodium chloride 0.9% <sup>(3)</sup>	<b>Bolus:</b> Give slowly over 3 to 10 minutes, <sup>(3) (10)</sup> followed by:  <b>Infusion:</b> Start at 1.1 mmol/hour (50 mL/hour) and titrate to maintain corrected serum total calcium of 2 to 2.3 mmol/L <sup>(10)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>CLONazepam</b> Seizures BENZODIAZEPINE S4R	<b>IV:</b> 1 mg <sup>(10)</sup>	Dilute to 2 mL with supplied diluent <sup>(3)</sup>	-Give over at least 2 minutes <sup>(3)</sup> -May cause thrombophlebitis if given into a small vein or at a faster rate. <sup>(3)</sup> <a href="#">Pregnancy Category B3</a>
<b>DIazepam</b> Seizures BENZODIAZEPINE S4R	<b>IV:</b> 10 mg <sup>(10)</sup>	2 mL (undiluted) <sup>(3)</sup>	-Give over at least 2 minutes into a LARGE vein. -Do not use the veins in the back of the hand or wrist <sup>(3)</sup> <a href="#">Pregnancy Category C</a>
<b>DIazepam</b> Rapid Tranquillisation BENZODIAZEPINE S4R	<b>IV:</b> 5 to 10 mg <sup>(10)</sup>	<b>IV:</b> Undiluted <sup>(3)</sup>	-Give at a maximum rate of 5 mg/minute <sup>(3)</sup> , repeat dose every 3 to 4 minutes as required or until the patient is sedated but rousable <sup>(10)</sup> -Use the lower end of the dosage scale in elderly, frail or cachectic patients. -Seek specialist advice when considering rapid tranquillisation. <sup>(10)</sup> -Ensure antidotes (e.g., flumazenil / benztropine) and resuscitation facilities are available before initiating rapid tranquillisation. <sup>(10)</sup> <a href="#">Pregnancy Category C</a>
<b>digoxin</b> Resuscitation	<b>IV:</b> 250 to 500 micrograms <sup>(9)</sup>	Dilute with 4 times the volume sodium chloride 0.9% <sup>(3)</sup>  e.g. dilute 250 microg/1 mL with 4 mL sodium chloride 0.9% <sup>(3)</sup>	-Give over at least 5 minutes <sup>(3)</sup> <a href="#">Pregnancy Category A</a>
<b>droperidol</b> Rapid Tranquillisation ETS ✓	<b>IM:</b> 5 to 10 mg <sup>(10)</sup>  <b>IV:</b> 2.5 to 10 mg <sup>(10) (4)</sup>	<b>IM:</b> Undiluted <sup>(3)</sup>  <b>IV:</b> Undiluted <sup>(3)</sup>	-If required, repeat the dose once after at least 15 minutes. <sup>(10)</sup> -Ensure antidotes (e.g., flumazenil / benztropine) and resuscitation facilities are available before initiating rapid tranquillisation. <sup>(10)</sup>  <b>IV:</b> Give over at least 3 minutes <sup>(3)</sup> <a href="#">Pregnancy Category C</a>
<b>ergometrine</b> Post-partum Haemorrhage ETS ✓	<b>IM:</b> 250 to 500 microg <sup>(12)</sup>  <b>IV:</b> 250 microg <sup>(12)</sup>	<b>IM:</b> Undiluted <sup>(3)</sup>  <b>IV:</b> Dilute to 5 mL with sodium chloride 0.9% <sup>(3)</sup>	-This medication is stored in the <b>fridge</b> - <b>IM</b> injection is preferred <sup>(3)</sup> -Give <b>IV</b> over at least 1 minute <sup>(3)</sup> - <b>IV</b> route is more likely to cause hypertension, nausea, and vomiting <sup>(12)</sup> <a href="#">Pregnancy Category C</a>



Section 2: Medical Emergency Quick Reference Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment	
<b>fentanyl</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>OPIOID</b>  <b>ETS ✓</b> </div> 	<b>IV:</b> 1 to 3 microg/kg <sup>(6)</sup>	Undiluted <sup>(3)</sup> <b>OR</b> Dilute 100 microg to 10 mL with sodium chloride 0.9% to give 10 microg/mL <sup>(3)</sup>	-Give over 3 to 5 minutes <sup>(3)</sup>  -If using 10 microg/mL dilution: -Give in 1 to 2 mL (10 to 20 microg) increments until desired sedation is achieved. <a href="#">Pregnancy Category C</a>	
<b>fentanyl</b> <i>Analgesia</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>OPIOID</b>  <b>ETS ✓</b> </div> 	<b>IntraVENOUS</b> 15 to 30 microg <sup>(10)</sup>  Use 30 to 75 microg as an initial dose in patients who have not already received an IV opioid <b>and</b> are <70 years <sup>(10)</sup>	<b>IV:</b> Dilute 100 microg ampoule to 10 mL with sodium chloride 0.9% to give 10 microg/mL <sup>(3)</sup>	-Give over 3 to 5 minutes. May be given more rapidly if appropriate monitoring and resuscitation facilities in place. -Wait 5 minutes <sup>(10)</sup> before reassessing pain scores to guide repeated dosing. -Reduce the dose by 50% and titrate slower in patients who are frail, cachectic, or ≥70 years <sup>(10)</sup>  <a href="#">Pregnancy Category C</a>	
	<b>IntraNASAL</b>		Use 100 microg/2 mL ampoule (undiluted) <sup>(4)</sup> Draw up an additional 0.1 mL to allow for priming the atomiser <sup>(4)</sup>	-Give in 0.3 mL <sup>(10)</sup> aliquots, alternating between nostrils to minimise swallowing and sneezing <sup>(4)</sup> -Use the lower end of the dose range for cachectic or frail patients <sup>(10)</sup>
	<b>Age (years)</b>	<b>Dose</b> <sup>(10)</sup>		
≤49	75 to 100 microg			
50 to 75	50 to 75 microg			
>75	25 to 50 microg			
<b>flumazenil</b> <i>Benzodiazepine Overdose</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>BENZODIAZEPINE ANTAGONIST</b>  <b>ETS ✓</b> </div>	<b>IV:</b> 100 to 300 microg <sup>(4)</sup>	Undiluted <sup>(3)</sup>	-Give over 15 seconds <sup>(3)</sup> -Repeat dose every minute until reversal of sedation is achieved <sup>(3)</sup> -Titrate to effect, <b>maximum</b> total dose is 2 mg (4 ampoules) <sup>(4)</sup> <a href="#">Pregnancy Category B3</a>	
<b>glucose 50%</b> <i>Acute Hypoglycaemia</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>ETS ✓</b> </div>	<b>IV:</b> 12.5 g <sup>(2)</sup>	25 mL (undiluted) <sup>(2)</sup>	-Give via CVC or large peripheral vein over 1 to 2 minutes. Repeat as necessary <sup>(2)</sup> . <a href="#">Exempt from Pregnancy Categorisation</a>	
<b>haloperidol</b> <i>(Serenace® only) Rapid Tranquilisation</i>	<b>IM / IV:</b> 0.5 to 10 mg <sup>(4)</sup>	<b>IM / IV:</b> Undiluted <sup>(3)</sup>	-Titrate to effect, if required, repeat the dose as often as every 30 minutes (IV) or 60 minutes (IM) <sup>(9)</sup> -Inject over 3 to 5 minutes <sup>(3)</sup> -Ensure antidotes (e.g., flumazenil / benztropine) and resuscitation facilities are available before initiating rapid tranquilisation. <sup>(10)</sup>  <a href="#">Pregnancy Category C</a>	
<b>hydrocortisone</b> <i>Asthma</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>ETS ✓</b> </div>	<b>IV:</b> 200 mg <sup>(13) (14)</sup>	Reconstitute each 100 mg vial with 2 mL sodium chloride 0.9% or water for injections <sup>(3)</sup>	-Give 200 mg (4 mL) over 30 seconds to 5 minutes <sup>(3) (9)</sup> <b>NB:</b> Follow manufacturer instructions for use of Act-O-Vial® presentations <a href="#">Pregnancy Category A</a>	
<b>hydrALAZINE</b> <i>Hypertensive Emergency</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>ETS ✓</b> </div>	<b>IV:</b> 5 to 10 mg <sup>(15)</sup>  (5 mg if foetal compromise) <sup>(15)</sup>	<b>IM:</b> Reconstitute with 1 mL water for injections and administer undiluted <sup>(3)</sup>  <b>IV:</b> Reconstitute with 1 mL water for injections then dilute to 10 mL with sodium chloride 0.9% <sup>(15)</sup>	-Give IV over 3 to 5 minutes <sup>(3)</sup> -If necessary, repeat dose after 20 to 30 minutes if target BP is not achieved. <sup>(15)</sup>  <a href="#">Pregnancy Category C</a>	

Section 2: Medical Emergency Quick Reference Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>insulin</b> Hyperkalaemia ETS ✓	IV: 10 units (Actrapid®) <sup>(16)</sup>	50 mL (glucose 50%) <sup>(16)</sup>	-Add 10 units Actrapid® insulin to 50 mL glucose 50% and give over 15 minutes. -Subsequent glucose infusions (without insulin) may be required to stabilise BGL -Measure BGL 15 to 30 minutes after insulin treatment, then hourly for up to 6 hours (12 hours in renal impairment). BGL must be recorded on <b>MR 156A</b> <sup>(16)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>ketamine</b> Rapid Sequence Induction INDUCTION AGENT ETS ✓ 	IV: 1 to 2 mg/kg <sup>(17)</sup> <sup>(6)</sup>	Dilute with an equal volume of sodium chloride 0.9% <sup>(9)</sup>	-Give over at least 1 minute <sup>(3)</sup> <a href="#">Pregnancy Category B3</a>
<b>ketamine</b> Conscious Sedation INDUCTION AGENT ETS ✓ 	IV: 0.25 to 0.5 mg/kg (initially) <sup>(10)</sup>	Dilute to 50 mg/mL <sup>(3)</sup>	-Give over at least 1 minute <sup>(3)</sup> -If necessary, give additional 0.25 mg/kg doses every 2 to 3 minutes until adequate sedation and analgesia is achieved. <sup>(10)</sup> -Do not exceed a total dose of 1 mg/kg <sup>(10)</sup> <a href="#">Pregnancy Category B3</a>
<b>labetalol</b> Hypertensive Emergency ETS □	IV: 20 mg <sup>(18)</sup>	4 mL (undiluted) <sup>(18)</sup>	-Give over 2 minutes <sup>(3)</sup> -Monitor BP and HR every 5 to 10 minutes <sup>(3)</sup> -If necessary, repeat dose after 10 to 20 minutes to a maximum of 4 doses (80 mg) <sup>(18)</sup> -If BP is not controlled after 2 bolus doses, consider starting an IV infusion: See <a href="#">Section 3 – labetalol</a> <sup>(18)</sup> -Extravasation may cause irritation and tissue damage <sup>(3)</sup> <a href="#">Pregnancy Category C</a>
<b>levetiracetam</b> Seizures ETS ✓	IV: 60 mg/kg (up to 4500 mg) <sup>(10)</sup>	Undiluted <sup>(3)</sup>	-Give over 5 minutes <sup>(3)</sup> <a href="#">Pregnancy Category B3</a>
<b>magnesium sulfate</b> Cardiac Arrest ETS ✓	IV: 10 mmol magnesium <sup>(2)</sup> <sup>(19)</sup>	5 mL (undiluted) <sup>(2)</sup> <sup>(19)</sup>	-Give over 1 to 2 minutes <sup>(2)</sup> <sup>(19)</sup> and follow with infusion if required (see <a href="#">Section 3</a> ) <a href="#">Exempt from Pregnancy Categorisation</a>
<b>magnesium sulfate</b> Asthma Hypomagnesaemia ETS ✓	IV: 10 mmol magnesium <sup>(10)</sup>	Dilute to 100 mL with sodium chloride 0.9% <sup>(10)</sup>	-For Asthma: Give over 20 minutes <sup>(10)</sup> -For Hypomagnesaemia: Give over 20 to 60 minutes <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>magnesium sulfate</b> Torsades de Pointes ETS ✓	IV: 5 mmol magnesium <sup>(20)</sup>	2.5 mL (undiluted) <sup>(3)</sup>	-Give over 10 minutes <sup>(20)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>magnesium sulfate</b> Pre-Eclampsia Eclampsia ETS ✓	IV: 16 mmol magnesium <sup>(21)</sup> <sup>(22)</sup>  (8 mL of 2.47 g/5 mL solution)	Dilute to 100 mL with sodium chloride 0.9% <sup>(3)</sup>	-Give over 20 minutes and follow with a maintenance infusion <sup>(21)</sup> <sup>(22)</sup> – See <a href="#">Section 3</a> -If using pre-mixed bags, See <a href="#">Section 3</a> <a href="#">Exempt from Pregnancy Categorisation</a>

Section 2: Medical Emergency Quick Reference Guide (Adults)



Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>mannitol 20%</b> <i>Reduction of ICP</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">ETS ✓</div>	<b>IV:</b> 0.25 g/kg (1.25 mL/kg) <sup>(9)</sup>	Undiluted (20%) <sup>(9)</sup>	-Give over 10 to 30 minutes <sup>(23)</sup> via CVC (preferred) or large peripheral vein <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>mannitol 20%</b> <i>Reduction of IOP</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">ETS ✓</div>	<b>IV:</b> 1.5 to 2 g/kg (7.5 to 10 mL/kg) <sup>(9)</sup>	Undiluted (20%) <sup>(9)</sup>	-Give over 30 to 60 mins <sup>(3) (4)</sup> via CVC (preferred) or large peripheral vein <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>Massive Transfusion Protocol</b>	See local policies for availability of blood products and appropriate clinical contact(s).  RFDS: 1800 625 800		FSH: (08) 6152 2222 SCGH: (08) 6457 3333 RPH: (08) 9224 2244 PCH: (08) 6456 2222 KEMH: (08) 6458 2222
<b>metaraminol</b> <i>Acute Hypotension</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">VASOPRESSOR</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 2px;">ETS ✓</div>	<b>IV:</b> 0.5 to 1 mg <sup>(24)</sup>	Dilute 10 mg up to 20 mL with sodium chloride 0.9% to give 0.5 mg/mL <sup>(3)</sup> <b>OR</b> Use pre-filled syringes	<b>Do not bolus entire syringe contents as a single dose</b> <sup>(3)</sup> -Give doses every 2 to 5 minutes according to response. If a cumulative dose of 10 mg is reached, consider transitioning to infusion <sup>(24)</sup> - <a href="#">See Section 3</a>
<b>metoprolol</b> <i>Hypertensive Emergency</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">ETS ✓</div>	<b>IV:</b> 1 to 2 mg <sup>(10)</sup>	Undiluted <sup>(3)</sup>	-Give over 1 min <sup>(9) (3)</sup> -Repeat every 1 minute as needed <sup>(9) (3) (10)</sup> <a href="#">Pregnancy Category C</a>
<b>metoprolol</b> <i>Arrhythmia</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">ETS ✓</div>	<b>IV:</b> 2.5 to 5 mg <sup>(10)</sup>	Undiluted <sup>(3)</sup>	-Give over 2 to 3 minutes <sup>(3)</sup> -Repeat every 5 minutes as needed <sup>(4)</sup> <a href="#">Pregnancy Category C</a>
<b>midazolam</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">BENZODIAZEPINE</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 2px;">ETS ✓</div> <div style="background-color: #00AEEF; color: white; border-radius: 50%; padding: 2px; display: inline-block; margin-top: 2px;">S4R</div>	<b>IV:</b> 1 to 2.5 mg <sup>(2)</sup>	Undiluted <sup>(3)</sup> <b>OR</b> Dilute up to 10 mL with sodium chloride 0.9% to facilitate slow injection <sup>(3)</sup>	-Give over at least 2 minutes to reduce risk of respiratory and/or cardiac arrest. <sup>(9)</sup> -Titrate to response and give subsequent doses (every 3 to 5 minutes) if required <sup>(2)</sup> - <b>Check ampoule strength:</b> Use the lowest concentration ampoule available <a href="#">Pregnancy Category C</a>
<b>midazolam</b> <i>Seizures</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">BENZODIAZEPINE</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 2px;">ETS ✓</div> <div style="background-color: #00AEEF; color: white; border-radius: 50%; padding: 2px; display: inline-block; margin-top: 2px;">S4R</div>	<b>IM / BUCCAL / NASAL:</b> 5 to 10 mg <sup>(10)</sup>  <b>IV:</b> 10 mg <sup>(10)</sup>	<b>IM / BUCCAL / NASAL:</b> 1 to 2 mL (undiluted) <sup>(3)</sup>  <b>IV:</b> 10 mL (undiluted) <sup>(3)</sup>	- <b>Check ampoule strength:</b> <b>IM / BUCCAL / NASAL:</b> use 5 mg/1 mL <sup>(9) (3)</sup> -The plastic ampoules are preferred for BUCCAL / NASAL administration <sup>(3)</sup>  <b>IV</b> use 5 mg/5 mL Give over at least 2 minutes <a href="#">Pregnancy Category C</a>
<b>midazolam</b> <i>Rapid Tranquillisation</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">BENZODIAZEPINE</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 2px;">ETS ✓</div> <div style="background-color: #00AEEF; color: white; border-radius: 50%; padding: 2px; display: inline-block; margin-top: 2px;">S4R</div>	<b>IM:</b> 5 to 10 mg <sup>(10)</sup>  <b>IV:</b> 2.5 to 5 mg <sup>(10)</sup>	<b>IM:</b> Undiluted <sup>(3)</sup>  <b>IV:</b> Undiluted <sup>(3)</sup>	- <b>Check ampoule strength:</b> <b>IM:</b> use 5 mg/1 mL <sup>(9) (3)</sup> Wait at least 15 minutes before repeating the dose. <sup>(10)</sup>  <b>IV:</b> use 5 mg/5 mL <sup>(3)</sup> Give over at least 2 minutes <sup>(3)</sup> , repeat dose every 3 to 4 minutes as required or until the patient is sedated but rousable <sup>(10)</sup> -Ensure antidotes (e.g., flumazenil / benztropine) and resuscitation facilities are available before initiating rapid tranquillisation. <sup>(10)</sup>  <a href="#">Pregnancy Category C</a>



Section 2: Medical Emergency Quick Reference Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>morphine sulfate</b> <i>Acute Pain</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>OPIOID</b>  <b>ETS ✓</b> </div> 	<b>IV:</b> 1 to 2 mg (initially) <sup>(10)</sup>  Use 2 to 5 mg in patients who have not already received an IV opioid and are <70 years <sup>(10)</sup>	Dilute to 1 mg/mL with sodium chloride 0.9% or water for injections. <sup>(3)</sup>  e.g., Dilute 10 mg ampoule to 10 mL to give 1 mg/mL <sup>(3)</sup>	-Give slowly over 4 to 5 minutes -Wait 5 minutes and reassess patient before administering subsequent doses. Time to peak effect of each dose may be up to 15 minutes. <sup>(3)</sup>  -Use lower doses and titrate slower in patients who are frail, cachectic, or ≥70 years <sup>(10)</sup> <a href="#">Pregnancy Category C</a>
<b>naloxone</b> <i>Opioid Overdose</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>OPIOID ANTAGONIST</b>  <b>ETS ✓</b> </div>	<b>IV:</b> 100 microg <sup>(9)</sup>	Dilute 400 microg/2 mL ampoule up to 8 mL with sodium chloride 0.9% to give 50 microg/mL <sup>(3)</sup>	-Give in 100 microg (2 mL) increments every 2 to 3 minutes. -Titrate to effect, <b>maximum</b> total dose is 10 mg (25 ampoules) <sup>(9) (6)</sup> <a href="#">Pregnancy Category B1</a>
<b>olanzapine</b> <i>(Zyprexa IM® only)</i> <i>Rapid Tranquilisation</i>	<b>IM:</b> 5 to 10 mg <sup>(10)</sup>	Reconstitute vial with 2.1 mL water for injections to make a 5 mg/mL solution <sup>(3)</sup>	-Do not give within 1 hour of IM/IV benzodiazepines. <sup>(3,9)</sup> -Up to 30 mg/24 hours may be used under Psychiatrist advice <sup>(10)</sup> -Ensure antidotes (e.g., flumazenil / benzatropine) and resuscitation facilities are available before initiating rapid tranquilisation. <sup>(10)</sup>  <a href="#">Pregnancy Category C</a>
<b>phenytoin</b> <i>Seizures</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>ETS ✓</b> </div>	<b>IV:</b> 15 to 20 mg/kg <sup>(4)</sup>	Undiluted <sup>(3)</sup>	-Give at a maximum rate of 50 mg/minute (1 mL/minute) <sup>(3)</sup> -Give at a maximum rate of 25 mg/minute, and if necessary, further reduce to 5 to 10 mg/minute in elderly patients and those with comorbidities <sup>(3)</sup> <a href="#">Pregnancy Category D</a>
<b>phytomenadione (Vitamin K)</b> <i>Warfarin Overdose</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>ETS ✓</b> </div>	<b>With no, or minor bleeding:</b> <b>INR 4.5 to 10:</b> <b>IV:</b> 0.5 to 1 mg <sup>(10)</sup> <b>INR &gt;10:</b> <b>IV:</b> 3 to 5 mg <sup>(10)</sup>  <b>Severe bleeding:</b> 5 to 10 mg <sup>(10)</sup>	Undiluted <sup>(3)</sup>	-Give over 30 seconds <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>propOFol</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>INDUCTION AGENT</b>  <b>ETS □</b> </div> 	<b>IV:</b> 1.5 to 3 mg/kg <sup>(19)</sup>	Undiluted <sup>(3)</sup>	-Shake well before use <sup>(3)</sup> -Give slowly until desired sedation achieved. <sup>(3)</sup>  <a href="#">Pregnancy Category C</a>
<b>rocuronium</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>PARALYSING AGENT</b>  <b>ETS □</b> </div>	<b>IV:</b> 1 mg/kg IBW <sup>(2) (4)</sup>	Undiluted <sup>(3)</sup>	-Give over a few seconds <sup>(3)</sup> -Ensure patient is fully sedated before administering. -Flush pre- and post- administration with 10 to 20 mL sodium chloride 0.9% to prevent inadvertent re-paralysis. <sup>(3)</sup> <a href="#">Pregnancy Category B2</a>

Section 2: Medical Emergency Quick Reference Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine	Dose	Volume/Preparation	Rate / Comment
<b>salbutamol</b> <i>Asthma</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>IV Bolus:</b> 200 to 300 microg <sup>(9)</sup>	<b>Bolus:</b> 0.4 to 0.6 mL (undiluted) <sup>(9)</sup>	-Check ampoule strength: <b>USE 500 microg/1mL AMPOULE</b>  <b>Bolus:</b> Give over 1 minute, and repeat after 15 minutes if required, or start infusion <sup>(3) (9)</sup> <a href="#">Pregnancy Category A</a>
	<b>IV Infusion:</b> 5 mg <sup>(3)</sup>	<b>Infusion:</b> 500 mL <sup>(3)</sup> sodium chloride 0.9%	
<b>salbutamol</b> <i>Hyperkalaemia</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	10 to 20 mg <b>nebulised</b> <sup>(11)</sup>	Undiluted <sup>(9)</sup>	<b>Nebulised</b> over 10 minutes <sup>(11)</sup> <a href="#">Pregnancy Category A</a>
<b>sodium bicarbonate 8.4%</b> <i>Hyperkalaemia</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>IV:</b> 4.2 g (≡ 50 mmol sodium and 50 mmol bicarbonate) <sup>(11)</sup>	50 mL (undiluted) <sup>(11)</sup>	-Give into a large vein over 5 to 15 minutes. <sup>(11)</sup> -The undiluted solution is highly irritant <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
<b>sugammadex</b> <div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #f8d7da; color: #555; font-weight: bold;">RELAXANT REVERSAL AGENT</div>	<b>IV:</b> 16 mg/kg <sup>(9)</sup>	Undiluted <sup>(3)</sup>	-Give by <b>RAPID</b> injection over less than 10 seconds <sup>(3)</sup> -Suitable for reversal of rocuronium and vecuronium <b>ONLY</b> <sup>(9)</sup> <a href="#">Pregnancy Category B2</a>
<b>Suxamethonium</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #dc3545; color: white; font-weight: bold;">PARALYSING AGENT</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: orange; font-weight: bold;">ETS ☐</div>	<b>IV:</b> 1 to 2 mg/kg ABW <sup>(6)</sup>	Undiluted <sup>(3)</sup>	-Give over 10 to 30 seconds <sup>(3)</sup> -Ensure patient is fully sedated before administering. -Flush pre- and post- administration with 10 to 20 mL sodium chloride 0.9% to prevent inadvertent re-paralysis. <sup>(3)</sup> <a href="#">Pregnancy Category A</a>
<b>tenecteplase</b> <i>Myocardial Infarction Pulmonary Embolism</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>Patient Weight</b>	<b>IV Dose</b> <sup>(9)</sup>	Reconstitute the vial(s) by <b>slowly</b> injecting the supplied diluent. Once reconstituted, withdraw the required dose. <sup>(9)</sup>
	<60 kg	30 mg/6 mL	
	60 to 69 kg	35 mg/7 mL	
	70 to 79 kg	40 mg/8 mL	
	80 to 89 kg	45 mg/9 mL	
<b>tenecteplase</b> <i>Acute Ischaemic Stroke</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>Patient Weight</b>	<b>IV Dose</b> <sup>(25)</sup>	-Give over 10 seconds. <sup>(3)</sup> -Flush post administration with sodium chloride 0.9% to prevent precipitation in the line. <sup>(3)</sup> -See <a href="#">MR172A WACHS Tenecteplase Checklist</a> <a href="#">Pregnancy Category C</a>  -Give over 5 seconds. <sup>(3)</sup> -Flush post administration with sodium chloride 0.9% to prevent precipitation in the line. <sup>(3)</sup> -See <a href="#">Protocol for Intravenous Thrombolysis in Acute Ischaemic Stroke</a> <a href="#">Pregnancy Category C</a>
<60 kg	15 mg/3 mL		
60 to 69 kg	17.5 mg/3.5 mL		
70 to 79 kg	20 mg/4 mL		
80 to 89 kg	22.5 mg/4.5 mL		
<b>thiopental</b> <i>Rapid Sequence Induction</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #ffc107; font-weight: bold;">INDUCTION AGENT</div>	<b>IV:</b> 3 to 4 mg/kg <sup>(9)</sup>	Dilute 470 mg vial with 18.8 mL sodium chloride 0.9% to give 25 mg/mL <sup>(9)</sup>	-Give over 15 seconds and allow at least 20 to 40 seconds between doses to assess response <sup>(3)</sup> <a href="#">Pregnancy Category A</a>
<b>tranexamic acid</b> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green; font-weight: bold;">ETS ✓</div>	<b>IV:</b> 1 g <sup>(19) (6)</sup>	Undiluted <sup>(3)</sup>	-Give over a minimum of 10 minutes <sup>(3)</sup> -Rapid administration may cause dizziness and hypotension <sup>(3)</sup> -See <a href="#">Section 3</a> for infusion information. <a href="#">Pregnancy Category B1</a>
<b>vecuronium</b> <div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #dc3545; color: white; font-weight: bold;">PARALYSING AGENT</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; color: orange; font-weight: bold;">ETS ☐</div>	<b>IV:</b> 0.1 mg/kg IBW <sup>(9)</sup>	Reconstitute 10 mg vial with 5 mL water for injections to give 2 mg/mL <sup>(3)</sup>	-Give over a few seconds <sup>(3)</sup> -Ensure patient is fully sedated before administering. -Flush pre- and post- administration with 10 to 20 mL sodium chloride 0.9% to prevent inadvertent re-paralysis. <sup>(3)</sup> <a href="#">Pregnancy Category C</a>

## 2.3 Critical Care Intravenous Infusion Guide (Adults)

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>acetylcysteine</b> <i>Paracetamol Poisoning</i> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK INDICATION</b>  ETS ✓ </div>	<b>First infusion:</b> 200 mg/kg*  <b>Second infusion*:</b> 100 mg/kg*  *When used for paracetamol poisoning, the patient weight should be rounded <b>up</b> to the nearest 10 kg (capped at 110 kg) <sup>(3)</sup>  *In consultation with ETS or Toxicology, the second infusion may be dosed at 200 mg/kg <sup>(3)</sup>	<b>First infusion:</b> 500 mL <sup>(3)</sup>  <b>Second infusion:</b> 1000 mL <sup>(3)</sup>  <i>Glucose 5%</i> <sup>(9)</sup>	<b>First infusion:</b> 4 hours <sup>(3)</sup>  <b>Second infusion:</b> 16 hours <sup>(3)</sup>	-The preferred diluent is glucose 5%, however, some brands may be compatible with sodium chloride 0.9% <sup>(3)</sup>  <a href="#">Pregnancy Category B2</a>  <a href="#">PathWest Paracetamol Poisoning Treatment Nomogram (Immediate Release Preparations Only)</a>  <b>DERS Entries:</b> acetylcysteine 1 <sup>st</sup> dose acetylcysteine 2 <sup>nd</sup> DS acetylcysteine 2 <sup>nd</sup> SS
<b>acetylcysteine</b> <i>Acute Liver Failure</i> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK INDICATION</b>  ETS ✓ </div>	<b>First infusion:</b> 200 mg/kg <sup>(26)</sup>  <b>Second infusion:</b> 100 mg/kg <sup>(26)</sup>	<b>First infusion:</b> 250 mL <sup>(26)</sup>  <b>Second infusion:</b> 250 mL <sup>(26)</sup>  <i>Glucose 5%</i> <sup>(3)</sup>	<b>First infusion:</b> 4 hours <sup>(26)</sup>  <b>Second infusion:</b> 16 hours <sup>(26)</sup>  -The second infusion may be repeated up to a total treatment duration of 72 hours <sup>(26)</sup>	

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>adrenaline (epinephrine)</b> ANAPHYLAXIS  <div style="border: 1px solid black; padding: 2px; width: fit-content;">                         CHECK INDICATION                          VASOPRESSOR                          ETS ✓                     </div>	1 mg <sup>(7)</sup>	<b>Standard:</b> 1000 mL <sup>(7)</sup>  <b>Low Volume:</b> 100 mL  Glucose 5% <sup>(3)</sup>	Initially 0.1 microg/kg/min then titrate to effect <sup>(7)</sup>  <i>approx. 6 mL/kg/hour (standard)</i>  <i>approx. 0.6 mL/kg/hour (low                      volume)</i>	-Continuous cardiac monitoring required. <sup>(3)</sup> -Extravasation may cause local ischaemia and necrosis. <sup>(3)</sup>  <a href="#">Pregnancy Category A</a>  <b>DERS Entries:</b> adrenaline ANAPHYLAXIS adrenaline ANAPHYLAXIS LV
<b>adrenaline (epinephrine)</b> CENTRAL  <div style="border: 1px solid black; padding: 2px; width: fit-content;">                         CHECK ROUTE                          VASOPRESSOR                          ETS ✓                     </div>	6 mg (via infusion pump) <sup>(3)</sup>  3 mg (via syringe driver) <sup>(3)</sup>	100 mL (via infusion pump) <sup>(3)</sup>  Glucose 5% <sup>(3)</sup>  50 mL (via syringe driver) <sup>(3)</sup>  Glucose 5% <sup>(3)</sup>	Initially 0.05 microg/kg/min then titrate to effect <sup>(27)</sup>  <i>approx. 0.05 mL/kg/hour</i>	-Double and quadruple strength infusions are available in the DERS Library for patients with increased requirements. -May be given via larger peripheral vein in emergency situations while awaiting central access. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(3)</sup> <a href="#">Pregnancy Category A</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication                      Chart</a> (or approved local variant)  <b>DERS Entries:</b> adrenaline CENTRAL
<b>adrenaline (epinephrine)</b> Peripheral  <div style="border: 1px solid black; padding: 2px; width: fit-content;">                         CHECK ROUTE                          VASOPRESSOR                          ETS ✓                     </div>	3 mg <sup>(17)</sup>	500 mL <sup>(17)</sup>  Glucose 5% <sup>(3)</sup>	Initially 0.05 microg/kg/min then titrate to effect <sup>(23)</sup>  <i>approx. 0.5 mL/kg/hour</i>	-Suitable for initial infusions only, transition to central line for subsequent infusions. -Continuous cardiac monitoring required. <sup>(3)</sup> <a href="#">Pregnancy Category A</a>  See: - <a href="#">Peripheral Vasopressor Infusion Guideline -                      Adults</a> - <a href="#">MR170V WACHS Variable Rate Medication                      Chart</a> (or approved local variant)  <b>DERS Entries:</b> adrenaline peripheral

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>alteplase</b> <i>Myocardial Infarction</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;"> <b>CHECK INDICATION</b>  <b>HIGH RISK MEDICINE</b> </div>	<p><b>&lt;65 kg:</b> 15 mg bolus, then 0.75 mg/kg (max. 50 mg) in <b>Step 1</b>, and 0.5 mg/kg (max. 35mg) in <b>Step 2</b> <sup>(9)</sup></p> <p>The total infusion dose is 1.25 mg/kg</p> <hr/> <p><b>≥65 kg:</b> 15 mg bolus, then 50 mg in <b>Step 1</b>, and 35 mg in <b>Step 2</b> <sup>(9)</sup></p>	<p>-Reconstitute vials as per manufacturer instructions. -Withdraw bolus dose from vial and administer. -Withdraw infusion dose from vial and add to 100 mL bag <sup>(9)</sup> then administer as per steps 1 and 2.</p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Bolus:</b> 1 to 2 minutes <sup>(9)</sup></p> <p><b>Step 1:</b> 30 minutes <sup>(9)</sup></p> <p><b>Step 2:</b> 60 minutes <sup>(9)</sup></p>	<p><a href="#">Pregnancy Category B1</a></p> <p><b>DERS Entries:</b> alteplase STEMI &lt;65kg alteplase STEMI ≥=65kg</p> <p>-Ensure the weight used to calculate the dose is the weight entered on the infusion control device, if prompted. -This is a stepped program, and the B. Braun infusion pumps will change the rate automatically if the VTBI is set as 100 mL</p>
<b>alteplase</b> <i>Ischaemic Stroke</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;"> <b>CHECK INDICATION</b>  <b>HIGH RISK MEDICINE</b> </div>	<p>0.9 mg/kg (max. 90 mg)</p> <p>10% as bolus, then remainder as infusion <sup>(9)</sup></p>	<p>-Reconstitute vials as per manufacturer instructions. -Withdraw bolus dose from vial and administer. -Withdraw infusion dose from vial and add to 100 mL bag and administer. <sup>(9)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Bolus:</b> 1 to 2 minutes <sup>(9)</sup></p> <p><b>Infusion:</b> 60 minutes <sup>(9)</sup></p>	<p>-Avoid thrombolytics, antiplatelet agents and anticoagulants for 24 hours post administration of alteplase for ischaemic stroke. <sup>(9)</sup></p> <p><a href="#">Pregnancy Category B1</a></p> <p>See: <a href="#">-Protocol for Intravenous Thrombolysis in Acute Ischaemic Stroke</a></p> <p><b>DERS Entries:</b> alteplase ischaemic stroke</p>
<b>alteplase</b> <i>Pulmonary Embolism</i> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;"> <b>CHECK INDICATION</b>  <b>HIGH RISK MEDICINE</b> </div>	<p><b>&lt;65 kg:</b> 10 mg bolus, then 1.5 mg/kg (max. 90 mg) as infusion <sup>(9)</sup></p> <hr/> <p><b>≥65 kg:</b> 10 mg bolus, then 90 mg as infusion <sup>(9)</sup></p>	<p>-Reconstitute vials as per manufacturer instructions. -Withdraw bolus dose from vial and administer. -Withdraw infusion dose from vial and add to 100 mL bag and administer. <sup>(9)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Bolus:</b> 1 to 2 minutes <sup>(9)</sup></p> <p><b>Infusion:</b> 2 hours <sup>(9)</sup></p>	<p>-Heparin therapy can be initiated or resumed when aPTT values are less than double the upper limit of normal. <sup>(9)</sup></p> <p><a href="#">Pregnancy Category B1</a></p> <p><b>DERS Entries:</b> alteplase PE &lt;65kg alteplase PE ≥=65kg</p>

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
amiNOPHYLLine	<b>Loading dose:</b> 5 to 6 mg/kg <sup>(9)</sup> (4)  A loading dose is not required in patients taking regular theophylline <sup>(9)</sup>	<b>Loading:</b> 50 mL (via syringe driver) <sup>(17)</sup>  500 mL (via infusion pump) <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Loading:</b> 30 minutes <sup>(3)</sup>	-For use <b>ONLY</b> under express instruction of <b>FACEM / ETS / Intensivist</b> . -Avoid extravasation <sup>(3)</sup> -amiNOPHYLLine 100 mg ≈ theophylline 80 mg <sup>(9)</sup>  *Maintenance infusion rate ranges from 0.5 mg/kg/hour (liver dysfunction) to 1 mg/kg/hour (young adult smokers). In the absence of the above, the usual rate is 0.5 mg/kg/hour <sup>(9)</sup> <a href="#">Pregnancy Category (theophylline) A</a>
	<b>Maintenance:</b> 500 mg <sup>(3)</sup>	<b>Maintenance:</b> 500 mL (via infusion pump) <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Maintenance:</b> 0.5 mg/kg/hour* <sup>(3)</sup>  approx. 0.5 mL/kg/hour (via infusion pump) <sup>(3)</sup>	<b>DERS Entries:</b> amiNOPHYLLine LOAD amiNOPHYLLine maintenance  -Ensure the weight used to calculate the dose is the weight entered on the infusion device.
		50 mL (via syringe driver) <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	approx. 0.05 mL/kg/hour (via syringe driver) <sup>(3)</sup>	
amiODAROne CENTRAL  <div style="border: 1px solid black; padding: 2px; display: inline-block;">ETS ✓</div>	<b>Loading Dose:</b> 5 mg/kg (max. 300 mg) <sup>(9)</sup>	<b>Loading Dose:</b> 100 mL (via infusion pump)  Glucose 5%	<b>Loading:</b> 20 minutes <sup>(3)</sup>	-Use glucose 5% and rigid PVC or non-PVC containers <b>ONLY</b> <sup>(3)</sup> -Use low sorbing non-DEHP or PE-lined giving sets. <sup>(3)</sup> All B. Braun "Space@" giving sets are DEHP-free. -Continuous cardiac monitoring required. <sup>(3)</sup> -Pain, phlebitis, and necrosis are common if given via peripheral vein, central administration is preferred. <sup>(3)</sup> -Use central line if concentration >2 mg/mL <sup>(3)</sup> <a href="#">Pregnancy Category C</a>
	<b>Maintenance:</b> 15 mg/kg (max. 1200 mg)	<b>Maintenance:</b> 100 mL (via infusion pump)	<b>Maintenance:</b> 24 hours <sup>(3)</sup>	
	900 mg / 100 mL 1200 mg / 100 mL	Glucose 5%		
amiODAROne Peripheral  <div style="border: 1px solid black; padding: 2px; display: inline-block;">ETS ✓</div>	<b>Loading Dose:</b> 5 mg/kg (max. 300 mg) <sup>(9)</sup>	<b>Loading Dose:</b> 250 mL (via infusion pump) <sup>(3)</sup>  Glucose 5% <sup>(3)</sup> 50 mL (via syringe driver) <sup>(17)</sup>  Glucose 5% <sup>(3)</sup>	<b>Loading:</b> 20 minutes <sup>(3)</sup>	<b>DERS Entries:</b> amiODAROne LOAD CENTRAL amiODAROne LOAD periph amiODAROne maint. CENTRAL amiODAROne maint. periph.
	<b>Maintenance:</b> 15 mg/kg (max. 1200 mg) <sup>(9)</sup>	<b>Maintenance:</b> 500 mL (via infusion pump) <sup>(3)</sup>	<b>Maintenance:</b> 24 hours <sup>(3)</sup>	
	900 mg / 500 mL 1200 mg / 500 mL	Glucose 5% <sup>(3)</sup>		


Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>argipressin</b> Diabetes Insipidus <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>VASOPRESSOR</b>  <b>CHECK INDICATION</b> </div>	2 units <sup>(28)</sup> <sup>(27)</sup>	50 mL <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.2 units/hour <sup>(28)</sup> <sup>(27)</sup> <i>approx. 5 mL/hour</i>  <b>Usual range:</b> 0.1 to 0.8 units/hour <sup>(28)</sup> <sup>(27)</sup> <i>approx. 2.5 to 20 mL/hour</i>	-Suitable for administration via peripheral line, however a central line is preferred. -Extravasation may cause tissue necrosis. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(3)</sup> -Titrate in 0.2 mL increments to target urine output. <sup>(28)</sup> <sup>(27)</sup>  <b>DERS Entries:</b> argipressin diab. insipidus
<b>argipressin</b> Sepsis Vasopressor <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>VASOPRESSOR</b>  <b>CHECK INDICATION</b> </div>	20 units <sup>(28)</sup> <sup>(27)</sup>	50 mL <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.02 units/min and titrate to target MAP <sup>(28)</sup> <sup>(27)</sup> <i>approx. 3 mL/hour</i>  <b>Usual range:</b> 0.01 to 0.04 units/min <sup>(28)</sup> <sup>(27)</sup> <i>approx. 1.5 to 6 mL/hour</i>	-Suitable for administration via central access only. <sup>(3)</sup> -Extravasation may cause tissue necrosis. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(3)</sup>  See: - <a href="#">Peripheral Vasopressor Infusion Guideline - Adults</a> - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> argipressin sepsis
<b>calcium chloride</b> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK MEDICINE</b>  <b>HIGH RISK MEDICINE</b> </div>	<b>Intermittent Infusion:</b> 3.4 mmol calcium (5 mL of 10% solution) <sup>(10)</sup>	<b>Intermittent Infusion:</b> 100 mL <sup>(10)</sup>  Sodium chloride 0.9%	<b>Intermittent Infusion:</b> at least 20 minutes <sup>(10)</sup>	-Highly irritant. Extravasation can cause tissue necrosis. <sup>(3)</sup> -A central line is recommended, except in emergencies. <sup>(3)</sup> -Rapid administration may cause hot flushes, chalky taste, peripheral vasodilation, hypotension, bradycardia, cardiac arrhythmias, syncope, and cardiac arrest <sup>(3)</sup> <b>-Calcium gluconate is the preferred calcium salt</b> -For use in CRRT, refer to <a href="#">local policies</a> . <a href="#">Exempt from Pregnancy Categorisation</a>  <b>DERS Entries:</b> calcium chloride intermittent calcium chloride continuous
	<b>Continuous Infusion:</b> 20.4 mmol calcium (30 mL of 10% solution) <sup>(10)</sup>	<b>Continuous Infusion:</b> 970 mL (to make 1 L) <sup>(10)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Continuous Infusion:</b> Initially 1.02 mmol/hour then titrate to target serum calcium <sup>(10)</sup>  <i>approx. 50 mL/hour</i>	

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>calcium gluconate</b>  <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>CHECK MEDICINE</b>  <b>HIGH RISK MEDICINE</b>  <b>ETS ✓</b> </div>	<b>Intermittent Infusion:</b> 2.2 mmol calcium (10 mL of 10% solution)  4.4 mmol calcium (20 mL of 10% solution) <sup>(10)</sup>	<b>Intermittent Infusion:</b> 100 mL <sup>(10)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Intermittent Infusion:</b> 30 minutes <sup>(10)</sup>	-Highly irritant. Extravasation can cause tissue necrosis. <sup>(3)</sup> -Rapid administration may cause hot flushes, chalky taste, peripheral vasodilation, hypotension, bradycardia, cardiac arrhythmias, syncope, and cardiac arrest <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>
	<b>Continuous Infusion:</b> 22 mmol calcium (100 mL of 10% solution) <sup>(10)</sup>	<b>Continuous Infusion:</b> 900 mL (to make 1 L) <sup>(10)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Continuous Infusion:</b> Initially 1.1 mmol/hour then titrate to target serum calcium <sup>(10)</sup>  <i>approx. 50 mL/hour</i>	<b>DERS Entries:</b> calcium gluconate 2.2mmol calcium gluconate 4.4mmol calcium gluconate continuous calcium gluconate intermittent calcium gluconate LOAD P'Thy calcium gluconate maint. P'Thy
<b>cisatracurium</b> <i>Acute Respiratory Distress Syndrome (ARDS)</i>  <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>CHECK INDICATION</b>  <b>PARALYSING AGENT</b>  <b>HIGH RISK MEDICINE</b> </div>	<b>Loading Dose:</b> 0.15 mg/kg <sup>(9)</sup>  <b>Maintenance Infusion:</b> 100 mg <sup>(3)</sup>	<b>Loading Dose:</b> Undiluted <sup>(3)</sup>  <b>Maintenance Infusion:</b> 50 mL ( <i>via syringe driver</i> ) <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Loading Dose:</b> Give rapidly over 5 to 10 seconds <sup>(3)</sup>  <b>Maintenance Infusion:</b> 0.5 to 3 microg/kg/min (maximum 10 microg/kg/min) <sup>(9)</sup>  <i>approx. 0.015 to 0.09 mL/kg/hour</i>	-Continuous monitoring required. -Ensure patient is fully sedated before administering. -Discard giving set and flush well after infusion to avoid re-paralysis during recovery. <sup>(3)</sup> <a href="#">Pregnancy Category C</a>  See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)
	100 mg / 50 mL ( <i>via syringe driver</i> )			
<b>cisatracurium</b> <i>Adjunct to anaesthesia or sedation</i>  <div style="border: 1px solid black; padding: 2px; text-align: center;"> <b>CHECK INDICATION</b>  <b>PARALYSING AGENT</b>  <b>HIGH RISK MEDICINE</b> </div>	<b>Maintenance Infusion:</b> 100 mg	<b>Maintenance Infusion:</b> 50 mL ( <i>via syringe driver</i> )  <i>Sodium chloride 0.9%</i>	<b>Maintenance Infusion:</b> 0.5 to 10 microg/kg/min <sup>(9)</sup>  <i>approx. 0.015 to 0.3 mL/kg/hour</i>	<b>DERS Entries:</b> cisatracurium



Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>clonidine</b> Sedation  <div style="background-color: #800080; color: white; padding: 2px; display: inline-block;">CHECK INDICATION</div>	<b>Continuous Infusion:</b> 1200 microg ( <i>via infusion pump</i> )  600 microg ( <i>via syringe driver</i> ) (28)	<b>Continuous Infusion:</b> 100 mL ( <i>via infusion pump</i> )  50 mL ( <i>via syringe driver</i> )  <i>Sodium chloride 0.9%</i> (3)	<b>Continuous Infusion:</b> 0.2 to 2 microg/kg/hour (27) (28)  <i>approx.</i> <i>0.017 to 0.17 mL/kg/hour</i>	-Titrate to RASS. -Monitor BP and HR, Notify MO if SBP <90 mmHg and/or HR <60 bpm. (28) (27) -Sudden withdrawal of clonidine infusion may result in agitation, sweating and hypertension. Reduce dose gradually, rate of reduction will depend on duration of infusion. <a href="#">Pregnancy Category B3</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> clonidine CONTINUOUS
<b>clonidine</b> Hypertension  <div style="background-color: #800080; color: white; padding: 2px; display: inline-block;">CHECK INDICATION</div>	<b>Intermittent Infusion:</b> 150 to 300 microg (9)	<b>Intermittent Infusion:</b> 100 mL (3)  <i>Sodium chloride 0.9%</i> (3)	<b>Intermittent Infusion:</b> 10 to 15 minutes (3)	-A transient increase in BP of 5 to 10 mmHg lasting approximately 5 minutes may occur if administered too rapidly. (9) Monitor BP and HR (3) <a href="#">Pregnancy Category B3</a>  <b>DERS Entries:</b> clonidine intermittent
<b>dexmedetomidine</b>	400 microg ( <i>via infusion pump</i> ) (9)  200 microg ( <i>via syringe driver</i> ) (27)	100 mL ( <i>via infusion pump</i> ) (3)  <i>Sodium chloride 0.9%</i> (3)  50 mL ( <i>via syringe driver</i> ) (27)  <i>Sodium chloride 0.9%</i> (3)	<b>Initially:</b> 0.2 microg/kg/hour then titrate to effect. (27)  <b>Usual range:</b> 0.2 to 1 microg/kg/hour (3)  <b>Maximum rate:</b> 1.5 microg/kg/hour (27)  <i>approx. 0.05 mL/kg/hour</i>	<b>-DO NOT BOLUS</b> (27) -Cardiac monitoring required. (27) -Monitor BP and HR, Notify MO if SBP <90 mmHg and/or HR <60 bpm (27) <a href="#">Pregnancy Category B1</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> dexmedetomidine

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>DOBUTamine hydrochloride</b> CENTRAL  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <span style="background-color: #ff00ff; color: white; padding: 2px;">CHECK MEDICINE</span>  <span style="background-color: #e0e0e0; padding: 2px;">CHECK ROUTE</span>  <span style="background-color: #d8bfd8; padding: 2px;">VASOPRESSOR</span> </div>	500 mg (via infusion pump) <sup>(3)</sup> <sup>(29)</sup>	100 mL (via infusion pump) <sup>(3)</sup> <sup>(29)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 2.5 to 5 microg/kg/min (use IBW) then titrate to effect <sup>(3)</sup> <sup>(28)</sup>  <i>approx. 0.03 to 0.06 mL/kg/hour</i>  <b>Usual range:</b> 2.5 to 10 microg/kg/min (use IBW) <sup>(3)</sup> <i>approx. 0.03 to 0.12 mL/kg/hour</i>  <b>Maximum rate:</b> 40 microg/kg/min <sup>(27)</sup>	-Continuous cardiac monitoring required <sup>(3)</sup> -Solution should be clear and colourless but may develop a pink hue that darkens over time. This does not affect potency. <sup>(29)</sup> -Contains sodium metabisulfite which may cause allergic reactions in susceptible people <sup>(3)</sup> <a href="#">Pregnancy Category B2</a>  See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> DOBUTamine CENTRAL
	250 mg (via syringe driver) <sup>(3)</sup> <sup>(29)</sup>	50 mL (via syringe driver) <sup>(3)</sup> <sup>(29)</sup>  Glucose 5% <sup>(3)</sup>		
<b>DOBUTamine hydrochloride</b> Peripheral  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <span style="background-color: #ff00ff; color: white; padding: 2px;">CHECK MEDICINE</span>  <span style="background-color: #e0e0e0; padding: 2px;">CHECK ROUTE</span>  <span style="background-color: #d8bfd8; padding: 2px;">VASOPRESSOR</span> </div>	250 mg <sup>(28)</sup> <sup>(27)</sup>	250 mL <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 2.5 to 5 microg/kg/min (use IBW) then titrate to effect <sup>(3)</sup> <sup>(28)</sup>  <i>approx. 0.15 to 0.3 mL/kg/hour</i>  <b>Usual range:</b> 2.5 to 10 microg/kg/min (use IBW) <sup>(3)</sup> <i>approx. 0.15 to 0.6 mL/kg/hour</i>  <b>Maximum rate:</b> 40 microg/kg/min <sup>(27)</sup>	-Continuous cardiac monitoring required <sup>(3)</sup> -Solution should be clear and colourless but may develop a pink hue that darkens over time. This does not affect potency. <sup>(29)</sup> -Contains sodium metabisulfite which may cause allergic reactions in susceptible people <sup>(3)</sup> -May be administered via LARGE peripheral vein while awaiting placement of a central line. <sup>(3)</sup> -Extravasation causes tissue necrosis, monitor infusion site closely. <sup>(3)</sup> <a href="#">Pregnancy Category B2</a>  See: <a href="#">-Peripheral Vasopressor Infusion Guideline - Adults</a> <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> DOBUTamine peripheral

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>DOPamine</b> CENTRAL  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <p style="background-color: #ff00ff; color: white; margin: 0;">CHECK MEDICINE</p> <p style="background-color: #cccccc; margin: 0;">CHECK ROUTE</p> <p style="background-color: #cccccc; margin: 0;">VASOPRESSOR</p> </div>	400 mg (via infusion pump) <sup>(27)</sup>	100 mL (via infusion pump) <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 2 to 5 microg/kg/min then titrated to effect <sup>(3) (9)</sup>  <i>approx.</i> 0.03 to 0.075 mL/kg/hour	-Continuous cardiac monitoring required. <sup>(3)</sup> -Avoid extravasation. <sup>(9)</sup> -For peripheral administration, use at least an 18-gauge cannula sited in a brachial or cephalic vein at or above the elbow. <sup>(30)</sup> -Contains metabisulfite which may cause allergic reactions in susceptible people. <sup>(3)</sup> <a href="#">Pregnancy Category B3</a>  See: <a href="#">-Peripheral Vasopressor Infusion Guideline - Adults</a> <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)
	200 mg (via syringe driver) <sup>(17) (27)</sup>	50 mL (via syringe driver) <sup>(17) (27)</sup>  Glucose 5% <sup>(3)</sup>		
<b>DOPamine</b> Peripheral  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <p style="background-color: #ff00ff; color: white; margin: 0;">CHECK MEDICINE</p> <p style="background-color: #cccccc; margin: 0;">CHECK ROUTE</p> <p style="background-color: #cccccc; margin: 0;">VASOPRESSOR</p> </div>	200 mg <sup>(17) (27)</sup>	500 mL <sup>(17) (27)</sup>  250 mL (if fluid restricted) <sup>(17) (27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 2 to 5 microg/kg/min then titrated to effect <sup>(3) (9)</sup>  <i>approx.</i> 0.3 to 0.75 mL/kg/hour (in 500 mL)  <i>approx.</i> 0.15 to 0.38 mL/kg/hour (in 250 mL)	<b>DERS Entries:</b> DOPamine CENTRAL DOPamine peripheral DOPamine peripheral Low Vol
<b>esmolol</b>	500 mg <sup>(27) (28)</sup>	50 mL (undiluted) <sup>(27) (28)</sup>	<b>Initially:</b> 500 microg/kg over 1 minute, <sup>(27) (28)</sup> followed by:  <b>Usual rate:</b> 25 to 200 microg/kg/min <sup>(27) (28)</sup>  <b>Maximum rate:</b> 200 microg/kg/min <sup>(3)</sup>	-Continuous cardiac monitoring required. <sup>(3)</sup> -Central line preferred but may be infused via large peripheral vein. <sup>(27)</sup> -Extravasation may cause tissue necrosis. <sup>(3)</sup> -Notify Pharmacy as soon as possible after commencement of infusion to ensure ongoing medication supply. <sup>(27)</sup>  <b>DERS Entries:</b> esmolol
<b>fentanyl</b> Sedation  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <p style="background-color: #4b0082; color: white; margin: 0;">CHECK INDICATION</p> <p style="background-color: #00b0f0; color: white; margin: 0;">OPIOID</p> <p style="background-color: #ff0000; color: white; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #00ff00; color: white; margin: 0;">ETS ✓</p> </div> <div style="text-align: center; margin-top: 5px;">  </div>	500 microg <sup>(28)</sup>	50 mL <sup>(28)</sup>  Sodium chloride 0.9%	<b>Initially:</b> 20 microg/hour then titrated to effect <sup>(28)</sup>  <i>approx.</i> 2 mL/hour	-Titrate to RASS / pain relief. <sup>(27)</sup> <a href="#">Pregnancy Category C</a>          <b>DERS Entries:</b> fentanyl sedation

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>furosemide</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block;">ETS ✓</div>	500 mg <sup>(28)</sup> <sup>(27)</sup>	50 mL (undiluted) <sup>(3)</sup> <sup>(28)</sup> <sup>(27)</sup>	<b>Initially:</b> 20 mg/hour then titrate to target urine output <sup>(28)</sup> <sup>(27)</sup>  <i>approx. 2 mL/hour</i>  <b>Maximum rate:</b> 240 mg/hour (4 mg/min) <sup>(3)</sup>  <b>Maximum dose:</b> 1000 mg/24 hours <sup>(9)</sup>	-Protect from light <sup>(3)</sup> -Monitor serum potassium <sup>(27)</sup> -Central administration preferred; peripheral administration may cause phlebitis <sup>(27)</sup> <a href="#">Pregnancy Category C</a>  <b>DERS Entries:</b> furosemide
<b>glucose 50%</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block;">ETS ✓</div>	25 g (50 mL) <sup>(3)</sup>	50 mL (undiluted) <sup>(3)</sup>	Up to 0.5 g/kg/hour <sup>(3)</sup>  <i>approx. 1 mL/kg/hour</i>	-Use central venous access or large peripheral vein. Avoid extravasation. <sup>(3)</sup> -Monitor hydration status – hypertonic glucose may cause dehydration. <sup>(3)</sup> -Faster rates may be used if given in combination with insulin for the management of hyperkalaemia. <sup>(3)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>  <b>DERS Entries:</b> glucose hypertonic 50%
<b>glyceryl trinitrate</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block;">HYPOTENSIVE AGENT</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">ETS ✓</div>	50 mg <sup>(3)</sup>	100 mL ( <i>via infusion pump</i> ) <sup>(3)</sup>  <i>Glucose 5%</i> <sup>(3)</sup>  <hr/> 50 mL ( <i>via syringe driver</i> ) <sup>(3)</sup>  <i>Glucose 5%</i> <sup>(3)</sup>	<b>Initially:</b> 25 microg/min then titrated to effect <sup>(9)</sup>  <i>approx. 3 mL/hour (via infusion pump)</i>  <i>approx. 1.5 mL/hour (via syringe driver)</i>	-Use non-PVC infusion bags/bottles and giving sets. <sup>(3)</sup> -Check blood pressure and heart rate every 2 to 3 minutes during titration. -Continuous cardiac monitoring may be required. <sup>(3)</sup> <a href="#">Pregnancy Category B2</a> See: <a href="#">-Specialised Medication – Intravenous Glyceryl Trinitrate in Critical Care Areas Guideline</a> <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> glyceryl trinitrate

Section 3: Critical Care Intravenous Infusion Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<p><b>heparin</b></p> <div data-bbox="143 288 432 376" style="border: 1px solid black; padding: 2px;"> <p style="background-color: #FF00FF; color: white; text-align: center; margin: 0;">CHECK MEDICINE</p> <p style="background-color: #FF0000; color: white; text-align: center; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #00FF00; color: white; text-align: center; margin: 0;">ETS ✓</p> </div>	25,000 units <sup>(31)</sup>	500 mL <sup>(31)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	Refer to nomogram on <a href="#">MR170C WA Anticoagulation Medication Chart</a> <sup>(31)</sup>	-Refer to <a href="#">MR170C WA Anticoagulation Medication Chart</a> for monitoring requirements.  <a href="#">Pregnancy Category C</a>  <b>DERS Entries:</b> heparin
<p><b>heparin</b> <i>Low Volume Infusion</i></p> <div data-bbox="143 584 432 671" style="border: 1px solid black; padding: 2px;"> <p style="background-color: #FF00FF; color: white; text-align: center; margin: 0;">CHECK MEDICINE</p> <p style="background-color: #FF0000; color: white; text-align: center; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #00FF00; color: white; text-align: center; margin: 0;">ETS ✓</p> </div>	25,000 units <sup>(32)</sup>	50 mL <sup>(32)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	Refer to <a href="#">MR170C.1 Heparin Infusion Nomogram (Fluid Restricted Patients)</a> <sup>(32)</sup>  Place a line through the original nomogram on Page 3 of the WA Antocoagulation Medication Chart to indicate the MR170C.1 Heparin Infusion Nomogram is in use. <sup>(32)</sup>	<b>CAUTION:</b> Check infusion device programming carefully, incorrect programming may lead to 10-fold overdose and patient harm. -Refer to <a href="#">MR170C.1 Heparin Infusion Nomogram (Fluid Restricted Patients)</a> for monitoring requirements.  <a href="#">Pregnancy Category C</a>  <b>DERS Entries:</b> heparin low volume

Section 3: Critical Care Intravenous Infusion Guide (Adults)


Critical Care Medication Administration for Adults Guideline

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>hydrALAZINE</b>  <div style="border: 1px solid black; background-color: #FFC0CB; padding: 2px; display: inline-block;"> <b>CHECK MEDICINE</b>                      ETS ✓                 </div>	20 mg <sup>(3)</sup> (via infusion pump)	500 mL <sup>(3)</sup> (via infusion pump)  Sodium Chloride 0.9% <sup>(3)</sup>	<b>Initially:</b> 200 to 300 microg/min, reducing rate when adequate response achieved. <sup>(15)</sup>  approx. 300 to 450 mL/hour  <b>Usual range:</b> 50 to 150 microg/min <sup>(15)</sup>  approx. 75 to 225 mL/hour	-Continuous BP, HR, and foetal monitoring required <sup>(15)</sup> <a href="#">Pregnancy Category C</a>  -See also: - <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a> - <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a> - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> hydrALAZINE hydrALAZINE low volume
	20 mg <sup>(3)</sup> (via infusion pump)	100 mL <sup>(3)</sup> (via infusion pump)  Sodium chloride 0.9% <sup>(3)</sup>	<b>Initially:</b> 200 to 300 microg/min, reducing rate when adequate response achieved. <sup>(15)</sup>  approx. 60 to 90 mL/hour (via infusion pump) approx. 12 to 18 mL/hour (via syringe driver)	
<b>hydrALAZINE</b> Low Volume Infusion  <div style="border: 1px solid black; background-color: #FFC0CB; padding: 2px; display: inline-block;"> <b>CHECK MEDICINE</b>                      ETS ✓                 </div>	40 mg <sup>(3)</sup> (via syringe driver)	40 mL <sup>(3)</sup> (via syringe driver)  Sodium chloride 0.9% <sup>(3)</sup>	<b>Usual range:</b> 50 to 150 microg/min <sup>(15)</sup>  approx. 15 to 45 mL/hour (via infusion pump) approx. 3 to 9 mL/hour (via syringe driver)	

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>insulin</b> Diabetic Ketoacidosis <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <p style="background-color: #4a4a8a; color: white; text-align: center; margin: 0;">CHECK INDICATION</p> <p style="background-color: #f08080; color: white; text-align: center; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #e0ffe0; color: green; text-align: center; margin: 0;">ETS ✓</p> </div>	50 units <sup>(23) (33) (34) (35)</sup>  Use Actrapid® ONLY	50 mL <sup>(23) (33) (34) (35)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	Initially 0.1 units/kg/hour then titrate to effect. <sup>(23) (33) (34) (35)</sup>  <i>approx. 0.1 mL/kg/hour</i>	-Refer to linked policy (below) and MR157B for monitoring requirements. <a href="#">Exempt from Pregnancy Categorisation</a>  See: - <a href="#">Adult Diabetic Ketoacidosis Guideline</a> - <a href="#">MR157B WACHS Adult Diabetic Ketoacidosis (DKA) Treatment &amp; Monitoring Chart</a>  <b>DERS Entries:</b> insulin: DKA
<b>insulin</b> Hyperosmolar Hyperglycaemic State <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <p style="background-color: #4a4a8a; color: white; text-align: center; margin: 0;">CHECK INDICATION</p> <p style="background-color: #f08080; color: white; text-align: center; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #e0ffe0; color: green; text-align: center; margin: 0;">ETS ✓</p> </div>	50 units <sup>(36)</sup>  Use Actrapid® ONLY	50 mL <sup>(36)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	Initially 0.05 units/kg/hour then titrate to effect. <sup>(10)</sup>  <i>approx. 0.05 mL/kg/hour</i>	-Monitor BGL at least every 2 hours. -Stop infusion, inform MO and increase monitoring to every 15 minutes if BGL <4 mmol/L <sup>(37)</sup>  <a href="#">Exempt from Pregnancy Categorisation</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> insulin: HHS
<b>insulin</b> Hyperkalaemia <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <p style="background-color: #4a4a8a; color: white; text-align: center; margin: 0;">CHECK INDICATION</p> <p style="background-color: #f08080; color: white; text-align: center; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #e0ffe0; color: green; text-align: center; margin: 0;">ETS ✓</p> </div>	10 units <sup>(16) (38)</sup>  Use Actrapid® ONLY	50 mL <sup>(16) (38)</sup>  Glucose <u>50%</u> <sup>(3)</sup>	15 minutes <sup>(16) (38)</sup>	-Monitor BGL prior to administration, 15 minutes post infusion, and then hourly for up to 6 hours (12 hours in renal impairment). <sup>(39)</sup>  <a href="#">Exempt from Pregnancy Categorisation</a>  See: - <a href="#">Hyperkalaemia Guideline</a> - <a href="#">MR176 Intravenous Fluid Treatment Chart</a>  <b>DERS Entries:</b> insulin: hyperkalaemia

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>insulin</b> Glycaemic Control  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <p style="background-color: #4a4a8a; color: white; margin: 0;">CHECK INDICATION</p> <p style="background-color: #ffcccc; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #e6ffe6; margin: 0;">ETS ✓</p> </div>	50 units <sup>(3)</sup>  Use Actrapid® ONLY	50 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	As per BGL: a <i>suggested</i> starting rate is 2 to 6 units/hour, however treatment must be individualised for each patient. <sup>(37)</sup>  <i>approx. 2 to 6 mL/hour</i>	-Concurrent glucose infusion may also be required. Ensure insulin infusion is not administered unopposed. -Monitor BGL at least every 2 hours. -Stop infusion, inform MO and increase monitoring to every 15 minutes if BGL <4 mmol/L <sup>(37)</sup> <a href="#">Exempt from Pregnancy Categorisation</a>  See: - <a href="#">Diabetes – Inpatient Management Clinical Practice Standard</a> - <a href="#">MR157A WACHS Insulin Infusion Order Chart</a>  <b>DERS Entries:</b> insulin variable rate
<b>insulin</b> High-dose Insulin Euglycaemia Therapy (HIET)  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <p style="background-color: #4a4a8a; color: white; margin: 0;">CHECK INDICATION</p> <p style="background-color: #ffcccc; margin: 0;">HIGH RISK MEDICINE</p> <p style="background-color: #e6ffe6; margin: 0;">ETS ✓</p> </div>	500 units <sup>(3)</sup>  <b>HIGH-DOSE INDICATION-SPECIFIC THERAPY (HIET-only)</b>	50 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Initially:</b> 1 unit/kg/hour <sup>(10)</sup>  <i>approx. 0.1 mL/kg/hour</i>  Increase rate by 1 unit/kg/hour until adequate response achieved. <sup>(10)</sup>  <b>Maximum rate:</b> 10 units/kg/hour <sup>(10)</sup>	-Only in consultation with FACEM / ETS / Clinical Toxicologist. -Concurrent glucose infusion required to maintain euglycaemia. Ensure insulin infusion is not administered unopposed. <a href="#">Exempt from Pregnancy Categorisation</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> Insulin: HIET



Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments	
<b>isoprenaline</b> CENTRAL  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <b>CHECK ROUTE</b>                      ETS <input type="checkbox"/> </div>	6 mg <sup>(3)</sup>	100 mL (via infusion pump) <sup>(3)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.5 to 5 microg/min then titrate to effect <sup>(3)</sup> approx. 0.5 to 5 mL/hour  <b>Usual range:</b> 2 to 10 microg/min <sup>(3)</sup>  <b>Maximum rate:</b> Rates ≥30 microg/min have been used in advanced stages of shock <sup>(9)</sup>	-'CENTRAL' preparation can be given peripherally in emergency situations while waiting for placement of a central line. Use a large peripheral vein and a proximal site such as the anterior cubital fossa. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(3)</sup> -If HR >110 beats per minute, consider reducing infusion rate or temporarily discontinuing the infusion. <sup>(9)</sup> <a href="#">Pregnancy Category A</a>  See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> isoprenaline CENTRAL	
	3 mg <sup>(3)</sup>	50 mL (via syringe driver) <sup>(3)</sup>  Glucose 5% <sup>(3)</sup>			
<b>isoprenaline</b> Peripheral  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <b>CHECK ROUTE</b>                      ETS <input type="checkbox"/> </div>	2 mg <sup>(9)</sup>	500 mL <sup>(9)</sup>  Glucose 5%	<b>Initially:</b> 0.5 to 5 microg/min then titrate to effect <sup>(3)</sup> approx. 7.5 to 75 mL/hour  <b>Usual range:</b> 2 to 10 microg/min <sup>(3)</sup>  <b>Maximum rate:</b> 20 microg/min <sup>(27)</sup>	-Continuous cardiac monitoring required. <sup>(3)</sup> -If HR >110 beats per minute, consider reducing infusion rate or temporarily discontinuing the infusion. <sup>(9)</sup> <a href="#">Pregnancy Category A</a>  See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> isoprenaline peripheral	
<b>ketamine</b> Analgesia Sedation  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <b>HIGH RISK MEDICINE</b>                      ETS <input checked="" type="checkbox"/> </div> <div style="text-align: center; margin-top: 5px;">  </div>	<b>Rapid Induction (for sedation):</b> 1 to 2 mg/kg <sup>(6)</sup> <sup>(17)</sup>	Dilute with an equal volume of sodium chloride 0.9% <sup>(9)</sup>	At least 1 minute <sup>(3)</sup>	See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> ketamine (mg/hr) ketamine (mg/kg/hr)	
	<b>Infusion:</b> 200 mg <sup>(28)</sup>	100 mL (via infusion pump) <sup>(28)</sup>  Sodium Chloride 0.9% <sup>(3)</sup>	<b>Initially:</b> 0.1 to 0.2 mg/kg/hour <sup>(28)</sup> and titrate to RASS and Pain Scores Approx. 0.05 to 0.1 mL/kg/hr (in 100 mL)		
		50 mL (via syringe driver) <sup>(17)</sup>  Sodium Chloride 0.9% <sup>(3)</sup>	Approx. 0.025 to 0.05 mL/kg/hr (in 50 mL)		

Section 3: Critical Care Intravenous Infusion Guide (Adults)

Critical Care Medication Administration for Adults Guideline

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>labetalol</b> CENTRAL	200 mg <sup>(18)</sup>	40 mL (undiluted) <sup>(3)</sup> (via syringe driver)	<b>Initially:</b> 20 mg/hour, then titrate to effect, adjusting rate at 15 to 30 minute intervals <sup>(18)</sup>  approx. 4 mL/hour  <b>Maximum rate:</b> 160 mg/hour <sup>(18)</sup>  <b>Maximum dose:</b> 300 mg/24 hours (including any bolus doses given) <sup>(18)</sup>	-Continuous cardiac monitoring required. <sup>(3)</sup> <a href="#">Pregnancy Category C</a>  -See also: - <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a> - <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a> - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> labetalol CENTRAL
<b>labetalol</b> Peripheral	200 mg <sup>(18)</sup>	100 mL <sup>(18)</sup> <i>Sodium chloride 0.9%</i>	<b>Initially:</b> 20 mg/hour, then titrate to effect, adjusting rate at 15 to 30 minute intervals <sup>(18)</sup>  approx. 10 mL/hour  <b>Maximum rate:</b> 160 mg/hour <sup>(18)</sup>  <b>Maximum dose:</b> 300 mg/24 hours (including any bolus doses given) <sup>(18)</sup>	-Continuous cardiac monitoring required. <sup>(3)</sup> -Ensure volume of addition (40 mL) is removed from infusion bag before adding medication. <sup>(18)</sup> -Monitor closely for extravasation <sup>(3)</sup> <a href="#">Pregnancy Category C</a>  -See also: - <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a> - <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a> - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> labetalol peripheral
<b>levetiracetam</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green;">ETS ✓</div>	<b>Maintenance:</b> 250 to 1,500 mg <sup>(9)</sup>	100 mL <sup>(3)</sup> <i>Sodium Chloride 0.9%</i> <sup>(3)</sup>	15 minutes <sup>(3)</sup>	<a href="#">Pregnancy Category B3</a>  <b>DERS Entries:</b> levetiracetam levetiracetam 500 mg levetiracetam 1000 mg levetiracetam 1500 mg

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments		
<b>levosimendan (SAS)</b>	12.5 mg <sup>(40)</sup>	250 mL <sup>(40)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.05 microg/kg/min, increasing to 0.1 microg/kg/min after 60 minutes (if tolerated) <sup>(40)</sup>  <b>Usual range:</b> 0.05 to 2 microg/kg/min <sup>(40)</sup>  <i>approx. 0.06 mL/kg/hour</i>	-A peripheral line can be used if necessary while waiting for placement of a central line. <sup>(3)</sup> -Loading doses are not typically administered due to hypotension. <sup>(40)</sup> -Dose changes take 30 to 60 minutes to take effect. <sup>(3)</sup> -Use actual body weight up to 120 kg <sup>(40)</sup> -Continuous cardiac monitoring required. Continue ECG, BP, and HR monitoring for at least 3 days after stopping the infusion or until patient is stable. <sup>(3)</sup> -This medicine is available via the Special Access Scheme (SAS), prescriber to complete online Category A form as per local procedure to obtain and document supply.  <a href="#">Exempt from Pregnancy Categorisation (SAS)</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant) - <a href="#">SAS and AP Scheme Portal</a>  <b>DERS Entries:</b> levosimendan (SAS) maint.		
<b>lidocaine (lignocaine)</b> <i>Arrhythmia</i>  <table border="1" data-bbox="107 1109 430 1168"> <tr><td><b>LOCAL ANAESTHETIC</b></td></tr> <tr><td><b>ETS ✓</b></td></tr> </table>	<b>LOCAL ANAESTHETIC</b>	<b>ETS ✓</b>	2000 mg <sup>(27) (28)</sup>	500 mL <sup>(27) (28)</sup>  Glucose 5% <sup>(3)</sup>	<b>1<sup>st</sup> hour:</b> 4 mg/min ( <i>approx. 60 mL/hour</i> ) <sup>(10)</sup>  <b>2<sup>nd</sup> hour:</b> 3 mg/min ( <i>approx. 45 mL/hour</i> ) <sup>(27) (28)</sup>  <b>3<sup>rd</sup> hour:</b> 2 mg/min ( <i>approx. 30 mL/hour</i> ) <sup>(27) (28)</sup>  <b>4th hour onwards (maintenance):</b> 1 mg/min ( <i>approx. 15 mL/hour</i> ) <sup>(27) (28)</sup>	-Continuous cardiac monitoring required. <sup>(3)</sup> <a href="#">Pregnancy Category A</a>  See: - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> lidocaine: arrhythmia
<b>LOCAL ANAESTHETIC</b>						
<b>ETS ✓</b>						

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments				
<b>lidocaine (lignocaine)</b> Pain  <table border="1"> <tr><td>LOCAL ANAESTHETIC</td></tr> <tr><td>ETS ✓</td></tr> </table>	LOCAL ANAESTHETIC	ETS ✓	400 mg <sup>(3)</sup>	100 mL <sup>(3)</sup>  Sodium Chloride 0.9% <sup>(3) (41)</sup>	1 to 2 mg/kg/hour <sup>(41)</sup>  approx. 0.25 to 0.5 mL/kg/hour	-For use under the direction of an Acute Pain Service ONLY. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(41)</sup> <a href="#">Pregnancy Category A</a>  <b>DERS Entries:</b> lidocaine: pain		
LOCAL ANAESTHETIC								
ETS ✓								
<b>magnesium sulfate</b> <b>PRE-MIXED BAG</b> Neuroprotection of the Foetus Pre-Eclampsia Eclampsia  <table border="1"> <tr><td>CHECK INDICATION</td></tr> <tr><td>CHECK MEDICINE</td></tr> <tr><td>HIGH RISK MEDICINE</td></tr> <tr><td>ETS ☐</td></tr> </table>	CHECK INDICATION	CHECK MEDICINE	HIGH RISK MEDICINE	ETS ☐	32 mmol magnesium <sup>(21) (22)</sup>	100 mL (pre-mixed bag) <sup>(21) (22)</sup>	<b>Loading dose:</b> 16 mmol over 20 minutes approx. 150 mL/hour (pre-mixed bag) <sup>(21) (22)</sup>  <b>Maintenance infusion:</b> 4 mmol/hour approx. 12.5 mL/hour (pre-mixed bag) <sup>(21) (22)</sup>  <b>Further seizures:</b> 8 mmol over 5 minutes approx. 300 mL/hour (pre-mixed bag) <sup>(21) (22)</sup>  <b>Note:</b> Use Programmed Bolus function	<a href="#">Exempt from Pregnancy Categorisation</a>  -See also: - <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a> - <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a>  -32 mmol magnesium ≡ 8 g magnesium <sup>(3)</sup>  <b>DERS Entries:</b> magnesium sulf. eclamp. pmix
CHECK INDICATION								
CHECK MEDICINE								
HIGH RISK MEDICINE								
ETS ☐								
<b>magnesium sulfate</b> <b>16 mmol/100 mL bags</b> Neuroprotection of the Foetus Pre-Eclampsia Eclampsia  <table border="1"> <tr><td>CHECK INDICATION</td></tr> <tr><td>CHECK MEDICINE</td></tr> <tr><td>HIGH RISK MEDICINE</td></tr> <tr><td>ETS ✓</td></tr> </table>	CHECK INDICATION	CHECK MEDICINE	HIGH RISK MEDICINE	ETS ✓	16 mmol magnesium <sup>(21) (22)</sup>  (8 mL of 2.47 g/5 mL solution)  Prepare 2 bags (load + maintenance)  Prepare additional bags if required for further seizure activity.	100 mL <sup>(21) (22)</sup>  Sodium Chloride 0.9% <sup>(3)</sup>	<b>Loading dose (1<sup>st</sup> bag):</b> 16 mmol over 20 minutes <sup>(21) (22)</sup> approx. 300 mL/hour  <b>Maintenance infusion (2<sup>nd</sup> bag):</b> 4 mmol/hour <sup>(21) (22)</sup> approx. 25 mL/hour  <b>Further seizures:</b> 8 mmol over 5 minutes <sup>(21) (22)</sup> approx. 600 mL/hour <b>NB:</b> Use Programmed Bolus function	<a href="#">Exempt from Pregnancy Categorisation</a>  -See also: - <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a> - <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a>  -16 mmol magnesium ≡ 4 g magnesium <sup>(3)</sup>  <b>DERS Entries:</b> magnesium sulf. eclamp. LOAD magnesium sulf. eclamp. maint. magnesium sulf. eclamp. RAPID
CHECK INDICATION								
CHECK MEDICINE								
HIGH RISK MEDICINE								
ETS ✓								

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>magnesium sulfate</b> <i>Torsades de Pointes</i> <i>VF/Pulseless VT</i> <i>Cardiac Arrest</i>  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <div style="background-color: #4b0082; color: white; padding: 2px; text-align: center;">CHECK INDICATION</div> <div style="background-color: #ff0000; color: white; padding: 2px; text-align: center;">HIGH RISK MEDICINE</div> <div style="background-color: #008000; color: white; padding: 2px; text-align: center;">ETS ✓</div> </div>	20 mmol magnesium <sup>(5)</sup>	100 mL <sup>(3)</sup>  <i>Sodium Chloride 0.9%</i> <sup>(3)</sup>	4 hours <sup>(5)</sup>  <b>Maximum rate:</b> 0.6 mmol magnesium per minute <sup>(3)</sup>	<b>-For bolus information refer to <a href="#">Section 2</a></b> <a href="#">Exempt from Pregnancy Categorisation</a>  <b>DERS Entries:</b> magnesium sulfate
<b>magnesium sulfate</b> <i>Refractory Asthma</i>  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <div style="background-color: #4b0082; color: white; padding: 2px; text-align: center;">CHECK INDICATION</div> <div style="background-color: #ff0000; color: white; padding: 2px; text-align: center;">HIGH RISK MEDICINE</div> <div style="background-color: #008000; color: white; padding: 2px; text-align: center;">ETS ✓</div> </div>	10 mmol magnesium <sup>(10)</sup>	100 mL <sup>(10)</sup>  <i>Sodium Chloride 0.9%</i> <sup>(3)</sup>	20 minutes <sup>(10)</sup>	<a href="#">Exempt from Pregnancy Categorisation</a>  <b>DERS Entries:</b> magnesium sulfate RAPID
<b>metaraminol</b>  <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <div style="background-color: #800080; color: white; padding: 2px; text-align: center;">VASOPRESSOR</div> <div style="background-color: #008000; color: white; padding: 2px; text-align: center;">ETS ✓</div> </div>	20 mg <sup>(24)</sup>	40 mL ( <i>via syringe driver</i> ) <sup>(24)</sup>  <i>Glucose 5%</i> <sup>(24)</sup>	<b>Titrate to target MAP</b> <sup>(24)</sup>  <b>Usual range:</b> 0.5 to 10 mg/hour <sup>(24)</sup> <i>approx. 1 to 20 mL/hour</i>	-Continuous cardiac monitoring required. <sup>(3)</sup> -A central line is preferred, but a large peripheral vein may be used if necessary. <sup>(3)</sup> -Extravasation may cause tissue necrosis. <sup>(3)</sup> -Contains metabisulfite, which may cause allergic reactions in susceptible people. <sup>(3)</sup> -noradrenaline (norepinephrine) is preferred for ongoing vasopressor support. <sup>(24)</sup> -Bolus doses of 0.5 to 1 mg every 2 to 5 minutes may be administered using Programmed Bolus Function as required for transient hypotension or while establishing infusions of other vasopressors <sup>(24)</sup> <a href="#">Pregnancy Category C</a>  See: - <a href="#">Peripheral Vasopressor Infusion Guideline - Adults</a> - <a href="#">MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> metaraminol

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>midazolam</b> Sedation <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <b>BENZODIAZEPINE</b>  <b>HIGH RISK MEDICINE</b>            ETS ✓            S4R         </div>	50 mg (single strength) <sup>(27) (28)</sup>  100 mg (double strength) <sup>(27) (28)</sup>	50 mL <sup>(27) (28)</sup>  <i>Glucose 5%</i> <sup>(3)</sup>	<b>Initially:</b> 2 mg/hour, then titrate to RASS <sup>(27) (28)</sup> <i>approx. 2 mL/hour (single strength)</i> <i>approx. 1 mL/hour (double strength)</i>  <b>Usual range:</b> 0 to 10 mg/hour <i>approx. 0 to 10 mL/hour (single strength)</i> <i>approx. 0 to 5 mL/hour (double strength)</i>	-Midazolam infusion is not recommended in patients that are not ventilated except on FACEM / ETS / Intensivist order. <sup>(27) (28)</sup> <a href="#">Pregnancy Category C</a>  <b>DERS Entries:</b> midazolam
<b>milrinone</b>	20 mg ( <i>via infusion pump</i> ) <sup>(3) (42)</sup>	100 mL ( <i>via infusion pump</i> ) <sup>(3) (42)</sup>  <i>Glucose 5%</i> <sup>(3) (42)</sup>	<b>Initially:</b> 0.1 microg/kg/min <sup>(42)</sup> , then titrate in accordance with haemodynamic and clinical response with dose adjustments every 2 to 4 hours. <i>approx. 0.03 mL/kg/hour</i>  <b>Usual range:</b> 0.125 to 0.35 microg/kg/min <i>approx. 0.04 to 0.105 mL/kg/hour</i>  <b>Maximum rate:</b> 0.75 microg/kg/min <sup>(42)</sup> <i>approx. 0.225 mL/kg/hour</i>  <b>Maximum dose:</b> 1.13 mg/kg/24 hours <sup>(9)</sup>	-Loading doses are not typically administered, due to hypotension <sup>(42)</sup> -A peripheral line can be used if necessary while waiting for placement of a central line. Use a large peripheral vein and monitor closely for extravasation. <sup>(3)</sup> -Continuous cardiac monitoring required. <sup>(3)</sup> -Use ABW up to 120kg, then use AdjBW for dose calculations <sup>(42)</sup> <a href="#">Pregnancy Category B3</a>  <b>DERS Entries:</b> milrinone LOAD milrinone maintenance
	10 mg ( <i>via syringe driver</i> ) <sup>(3) (42)</sup>	50 mL ( <i>via syringe driver</i> ) <sup>(3) (42)</sup> <i>Glucose 5%</i> <sup>(3) (42)</sup>		

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<p><b>morphine</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p style="text-align: center; margin: 0;">OPIOID</p> <p style="text-align: center; margin: 0; color: red;">HIGH RISK MEDICINE</p> <p style="text-align: center; margin: 0; color: green;">ETS ✓</p> <p style="text-align: center; margin: 0; color: red;">S8</p> </div>	<p>50 mg (single strength) <sup>(27) (28)</sup></p> <p>100 mg (double strength) <sup>(27) (28)</sup></p>	<p>50 mL <sup>(27) (28)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Initially:</b> 0.02 to 0.04 mg/kg/hour, then titrate to pain relief / RASS <sup>(27)</sup> <i>approx. 0.02 to 0.04 mL/kg/hour (single strength)</i> <i>approx. 0.01 to 0.02 mL/kg/hour (double strength)</i></p> <p><b>Usual range:</b> 0.5 to 10 mg/hour <sup>(27)</sup> <i>approx. 0.5 to 10 mL/hour (single strength)</i> <i>approx. 0.25 to 5 mL/hour (double strength)</i></p>	<p>-Doses &gt;5 mg/hour not recommended in patients that are not ventilated except on FACEM / ETS / Intensivist order.</p> <p>-Continuous SpO<sub>2</sub> monitoring required. <sup>(28)</sup></p> <p>-Morphine sulfate and morphine hydrochloride contain approximately equal amounts of morphine base per milligram <sup>(9)</sup></p> <p>See: <a href="#">-Intravenous Opioid Administration Policy</a></p> <p><a href="#">Pregnancy Category C</a></p> <p><b>DERS Entries:</b> morphine</p>
<p><b>morphine + midazolam</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p style="text-align: center; margin: 0; color: orange;">BENZODIAZEPINE</p> <p style="text-align: center; margin: 0;">OPIOID</p> <p style="text-align: center; margin: 0; color: red;">HIGH RISK MEDICINE</p> <p style="text-align: center; margin: 0; color: green;">ETS ✓</p> <p style="text-align: center; margin: 0; color: blue;">S4R</p> <p style="text-align: center; margin: 0; color: red;">S8</p> </div>	<p><b>morphine: 50 mg</b></p> <p><b>midazolam: 50 mg</b> <sup>(17)</sup></p>	<p>500 mL (<i>via infusion pump</i>) <sup>(17)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p> <hr/> <p>50 mL (<i>via syringe driver</i>) <sup>(17)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Initially:</b> 0.02 to 0.08 mg/kg/hour, then titrate to pain relief / RASS <sup>(17)</sup></p> <p><i>approx. 0.2 to 0.8 mL/kg/hour (in 500 mL)</i></p> <p><i>approx. 0.02 to 0.08 mL/kg/hour (in 50 mL)</i></p>	<p><a href="#">Pregnancy Category C</a></p> <p><b>DERS Entries:</b> morphine + midazolam</p>
<p><b>naloxone hydrochloride</b></p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p style="text-align: center; margin: 0;">OPIOID ANTAGONIST</p> <p style="text-align: center; margin: 0; color: green;">ETS ✓</p> </div>	<p><b>Standard infusion:</b> 2 mg <sup>(3)</sup></p> <p><b>If high naloxone requirements:</b> 10 mg <sup>(27)</sup></p>	<p>100 mL <sup>(3)</sup></p> <p><i>Sodium chloride 0.9%</i> <sup>(3)</sup></p>	<p><b>Initially:</b> Start at two thirds of the total effective bolus dose per hour then titrate to GCS / RR <sup>(10)</sup></p> <p><b>Usual range:</b> 100 to 400 microg/hour <sup>(27)</sup> <i>approx. 5 to 20 mL/hour (2 mg infusion)</i></p> <p><i>approx. 1 to 4 mL/hour (10 mg infusion)</i></p>	<p>-E.g., if 300 microg required to achieve initial response, commence infusion at 200 microg/hour.</p> <p>Target RR &gt; 8 to 10 <sup>(27)</sup></p> <p><a href="#">Pregnancy Category B1</a></p> <p><b>DERS Entries:</b> naloxone</p>

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
nimodipine	10 mg (undiluted) <sup>(3)</sup>	50 mL (undiluted) <sup>(3)</sup>  <b>Co-Infusion via Y-site:</b> <i>Glucose 5% OR</i> <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Patients ≥70 kg AND stable BP</b> <b>Initially (1<sup>st</sup> and 2<sup>nd</sup> hour):</b> 1 mg/hour for 2 hours <sup>(3)</sup> <i>approx. 5 mL/hour</i>	-Co-infusion of compatible fluid required via Y-site or 3-way stopcock at 4 times the rate of the niMODIPine infusion <sup>(3)</sup> -Light sensitive, use UV-Protect Amber PVC-Free line. <sup>(3)</sup> -A peripheral line can be used if necessary while waiting for placement of a central line. Use a large peripheral vein and monitor closely for extravasation. <sup>(3)</sup> -Monitor BP. <sup>(3)</sup> <a href="#">Pregnancy Category C</a>
			<b>Patients &lt;70 kg OR unstable BP</b> <b>Initially (1<sup>st</sup> and 2<sup>nd</sup> hour):</b> 0.5 mg/hour for 2 hours <sup>(3)</sup> <i>approx. 2.5 mL/hour</i>	
			<b>3<sup>rd</sup> hour onwards (if tolerated):</b> 2 mg/hour <sup>(3)</sup> <i>approx. 10 mL/hour</i>	<b>DERS Entries:</b> niMODIPine



Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments			
<b>noradrenaline (norepinephrine)</b> CENTRAL  <table border="1"> <tr><td>VASOPRESSOR</td></tr> <tr><td>CHECK ROUTE</td></tr> <tr><td>ETS ✓</td></tr> </table>	VASOPRESSOR	CHECK ROUTE	ETS ✓	8 mg (via infusion pump) <sup>(28)</sup> <sup>(27)</sup>	100 mL (via infusion pump) <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.05 microg/kg/min then titrate to MAP and/or CPP <sup>(27)</sup>  approx. 0.038 mL/kg/hour  <b>Usual range:</b> 0.01 to 0.5 microg/kg/min <sup>(27)</sup>  approx. 0.008 to 0.38 mL/kg/hour	<b>DO NOT BOLUS</b>  -Continuous cardiac monitoring required. <sup>(3)</sup> -Double and quadruple strength infusions are available in the DERS Library for patients with increased requirements. -Contains sodium metabisulfite, which may cause allergic reactions in susceptible people. <sup>(3)</sup> <a href="#">Pregnancy Category B3</a> <sup>(9)</sup>  <b>DERS Entries:</b> noradrenaline CENTRAL
	VASOPRESSOR						
CHECK ROUTE							
ETS ✓							
4 mg (via syringe driver) <sup>(28)</sup> <sup>(27)</sup>	50 mL (via syringe driver) <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>						
<b>noradrenaline (norepinephrine)</b> Peripheral  <table border="1"> <tr><td>VASOPRESSOR</td></tr> <tr><td>CHECK ROUTE</td></tr> <tr><td>ETS ✓</td></tr> </table>	VASOPRESSOR	CHECK ROUTE	ETS ✓	4 mg <sup>(28)</sup> <sup>(27)</sup>	500 mL <sup>(28)</sup> <sup>(27)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.05 microg/kg/min then titrate to MAP and/or CPP <sup>(27)</sup>  approx. 0.38 mL/kg/hour  <b>Usual range:</b> 0.01 to 0.5 microg/kg/min <sup>(27)</sup>  approx. 0.075 to 3.75 mL/kg/hour	<b>DO NOT BOLUS</b>  -Continuous cardiac monitoring required. <sup>(3)</sup> -Contains sodium metabisulfite, which may cause allergic reactions in susceptible people. <sup>(3)</sup> -Use a large peripheral vein and a proximal site such as the anterior cubital fossa. <sup>(3)</sup> -Extravasation can cause tissue necrosis. -If this occurs, refer to <a href="#">Peripheral Vasopressor Infusion Guideline - Adults</a>  <a href="#">Pregnancy Category B3</a>  <b>DERS Entries:</b> noradrenaline peripheral
VASOPRESSOR							
CHECK ROUTE							
ETS ✓							
<b>octreotide</b>  <table border="1"> <tr><td>CHECK MEDICINE</td></tr> </table>	CHECK MEDICINE	500 microg <sup>(28)</sup> <sup>(27)</sup>	500 mL <sup>(28)</sup> <sup>(27)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Bolus Dose:</b> 25 to 50 microg in 10 mL sodium chloride 0.9% over 3 to 5 minutes	-Multiple formulations and strengths available. Check product. -May cause hyper- or hypoglycaemia, BGL monitoring may be required. <sup>(3)</sup> <a href="#">Pregnancy Category C</a>		
CHECK MEDICINE							
<b>octreotide</b> Low Volume Infusion  <table border="1"> <tr><td>CHECK MEDICINE</td></tr> </table>	CHECK MEDICINE	500 microg <sup>(28)</sup> <sup>(27)</sup>	100 mL <sup>(28)</sup> <sup>(27)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Ensure bolus dose administered before preparing infusion.</b>  <b>Infusion:</b> 25 to 50 microg/hour <sup>(10)</sup>  25 to 50 mL/hour (in 500 mL) 5 to 10 mL/hour (in 100 mL)	<b>DERS Entries:</b> octreotide: variceal bleeding		
CHECK MEDICINE							

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>oxytocin</b> Post-Partum Haemorrhage <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK MEDICINE</b>              ETS ✓           </div>	40 units <sup>(43)</sup>  <b>PRE-MIXED BAG:</b> 43.9 units	500 mL <sup>(43)</sup>  <i>Sodium chloride 0.9%</i>  <b>PRE-MIXED BAG:</b> 549 mL	<b>Prophylactic:</b> 125 mL/hour (10 units/hour) <sup>(43)</sup> , and if necessary increase to:  <b>Therapeutic:</b> 250 mL/hour (20 units/hour) <sup>(43)</sup>  <b>Maximum rate:</b> 250 mL/hour (20 units/hour) <sup>(43)</sup>	-If postpartum blood loss >500 mL due to atony, start at <b>therapeutic rate</b> . <sup>(43)</sup> -Refer to guidelines for stopping and weaning criteria.  -See: <a href="#">-Primary Postpartum Haemorrhage Guideline</a> <a href="#">-MR72A WACHS Primary Post Partum            Haemorrhage Record</a> <a href="#">-WNHS Postpartum Complications</a>
<b>oxytocin</b> Low Volume Infusion Post-Partum Haemorrhage <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK MEDICINE</b>              ETS ✓           </div>	40 units <sup>(43)</sup>	50 mL <sup>(43)</sup>  <i>Sodium chloride%</i>	<b>Prophylactic:</b> 12.5 mL/hour (10 units/hour), and if necessary increase to:  <b>Therapeutic:</b> 25 mL/hour (20 units/hour) <sup>(43)</sup>  <b>Maximum rate:</b> 25 mL/hour (20 units/hour) <sup>(43)</sup>	<b>DERS Entries:</b> oxytocin: PPH oxytocin: PPH low volume  <a href="#">Pregnancy Category B3</a>
<b>pantoprazole</b> Upper Gastrointestinal Bleed <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">             ETS ✓           </div>	<b>Loading dose:</b> 80 mg <sup>(10)</sup>  <b>Maintenance infusion:</b> 80 mg <sup>(3)</sup> <b>OR</b> 200 mg <sup>(3)</sup>	<b>Loading dose:</b> 100 mL <sup>(10)</sup>  <b>Maintenance infusion:</b> 100 mL <sup>(3)</sup> <b>OR</b> 250 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Loading dose:</b> 15 to 30 minutes <sup>(3)</sup>  <b>Maintenance infusion:</b> 8 mg/hour <sup>(10)</sup>  <i>approx. 10 mL/hour</i>	<b>DERS Entries:</b> pantoprazole UGIB contin. pantoprazole UGIB intermit.
<b>phenylephrine</b> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">             VASOPRESSOR           </div>	20 mg (via infusion pump) <sup>(28) (27)</sup>  10 mg (via syringe driver) <sup>(28) (27)</sup>	100 mL (via infusion pump) <sup>(28) (27)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>  50 mL (via syringe driver) <sup>(28) (27)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Initially:</b> 0.5 microg/kg/min, then titrate to MAP <sup>(27)</sup>  <i>approx. 0.15 mL/hour</i>  <b>Usual range:</b> 0.5 to 6 microg/kg/min <sup>(28) (27)</sup>  <i>0.15 to 1.8 mL/kg/hour</i>	-Continuous BP monitoring required <sup>(3)</sup>  See: <a href="#">-MR170V WACHS Variable Rate Medication            Chart</a> (or approved local variant)  <a href="#">Pregnancy Category B2</a>  <b>DERS Entries:</b> phenylephrine

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments				
<p><b>potassium CHLORIDE</b> CENTRAL</p> <table border="1"> <tr><td>CHECK ROUTE</td></tr> <tr><td>CHECK MEDICINE</td></tr> <tr><td>HIGH RISK MEDICINE</td></tr> </table>	CHECK ROUTE	CHECK MEDICINE	HIGH RISK MEDICINE	<p>50 mmol potassium</p> <p>40 mmol potassium (premixed bag)</p>	<p>50 mL (undiluted)</p> <p>100 mL (premixed bag)</p>	<p>Titrate to potassium level.</p> <p><b>Usual range:</b> 10 to 20 mmol/hour<sup>(27)</sup></p> <p><b>Maximum rate:</b> 20 mmol/hour<sup>(44)</sup></p> <p>Rates greater than 20 mmol/hour are potentially hazardous and are not permitted.<sup>(44)</sup></p>	<p>-Pre-mixed potassium infusion bags are to be used for all intravenous potassium administration when possible.</p> <p>-Under exceptional circumstances, the prescription and preparation of a non-standard solution of potassium is permitted after consultation with the <b>most senior</b> medical practitioner available. The name of the most senior medical practitioner must be documented on the medication chart order.<sup>(44)</sup></p> <p>-Ensure admixture is thoroughly mixed to avoid a large potassium bolus. Fully invert the bag/syringe AT LEAST ten times before administering.<sup>(45)</sup></p>	
CHECK ROUTE								
CHECK MEDICINE								
HIGH RISK MEDICINE								
<p><b>potassium CHLORIDE</b> Peripheral</p> <table border="1"> <tr><td>CHECK ROUTE</td></tr> <tr><td>CHECK MEDICINE</td></tr> <tr><td>HIGH RISK MEDICINE</td></tr> <tr><td>ETS ✓</td></tr> </table>	CHECK ROUTE	CHECK MEDICINE	HIGH RISK MEDICINE	ETS ✓	<p>10 mmol potassium (pre-mixed bag)</p> <p>20 mmol potassium</p> <p>40 mmol potassium (pre-mixed bag)</p> <p><b>Maximum concentration for peripheral administration (except 10 mmol/100 mL pre-mixed bags) is 40 mmol/L (potassium)<sup>(3)</sup></b></p>	<p>100 mL (pre-mixed bag)</p> <p>1000 mL (pre-mixed bag)</p> <p>1000 mL (pre-mixed bag)</p> <p><i>Multiple diluents available – check bag matches prescription</i></p>	<p>10 mmol/hour<sup>(3)</sup></p> <p><b>Maximum rate:</b> 10 mmol/hour<sup>(3)</sup></p> <p>Up to 20 mmol/hour may be administered peripherally when treating DKA as per the <a href="#">Adult Diabetic Ketoacidosis Guideline</a></p>	<p>-Undiluted potassium solutions may ONLY be administered in Critical Care Areas with appropriate monitoring.</p> <p>-Continuous ECG monitoring required when rate &gt;10 mmol/hour.<sup>(3)</sup></p> <p>-Do not add potassium to hanging IV bags.</p> <p>-Never administer potassium via gravity.<sup>(45)</sup></p> <p>See:  <a href="#">-Potassium Supplementation Policy</a>  <a href="#">-Adult Diabetic Ketoacidosis Guideline</a></p> <p><a href="#">Exempt from Pregnancy Categorisation</a></p> <p><b>DERS Entries:</b>  potassium chlor. 10mmol bag  potassium chlor. 20mmol/L  potassium chl. 30mmol/L + CSL  potassium chlor. 40mmol.L  potassium chlor. MOLAR</p>
CHECK ROUTE								
CHECK MEDICINE								
HIGH RISK MEDICINE								
ETS ✓								

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>potassium DIHYDROGEN PHOSPHATE</b> CENTRAL <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">             CHECK ROUTE              CHECK MEDICINE              HIGH RISK MEDICINE           </div>	10 mmol phosphate <sup>(3)</sup>  40 mmol phosphate <sup>(9)</sup>  <b>Contains 1 mmol potassium per 1 mmol phosphate.</b>	100 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	2 to 6 hours <sup>(3)</sup>  <b>Maximum rate:</b> 10 mmol/hour <sup>(3)</sup>  Slower infusion rates are preferred to avoid phosphate intoxication <sup>(9)</sup> and improve patient response	-Under exceptional circumstances, the prescription and preparation of a non-standard solution of potassium is permitted after consultation with the <b>most senior</b> medical practitioner available. The name of the most senior medical practitioner must be documented on the medication chart order. <sup>(44)</sup> -Ensure admixture is thoroughly mixed to avoid a large potassium bolus. Fully invert the bag/syringe AT LEAST ten times before administering. <sup>(3)</sup>
<b>potassium DIHYDROGEN PHOSPHATE</b> Peripheral <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">             CHECK ROUTE              CHECK MEDICINE              HIGH RISK MEDICINE           </div>	10 mmol phosphate <sup>(3)</sup>  20 mmol phosphate <sup>(3)</sup>  40 mmol phosphate <sup>(3)</sup>  <b>Contains 1 mmol potassium per 1 mmol phosphate. Maximum concentration for peripheral administration is 40 mmol/L (phosphate)</b> <sup>(3)</sup>	250 mL (pre-mixed bag) <sup>(3)</sup>  500 mL <sup>(3)</sup>  1000 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	2 to 6 hours <sup>(3)</sup>  Slower infusion rates are preferred to avoid phosphate intoxication <sup>(9)</sup> and improve patient response	-Continuous ECG monitoring required when rate >10 mmol/hour. <sup>(3)</sup> -Do not add potassium to hanging IV bags. -Never administer potassium via gravity. <sup>(3)</sup>  See: <a href="#">-Potassium Supplementation Policy</a> <a href="#">-Specialised Medication – Intravenous Phosphate Supplementation in Adults Guideline</a>  <a href="#">Exempt from Pregnancy Categorisation</a>  See also: <a href="#">sodium DIHYDROGEN PHOSPHATE</a>  <b>DERS Entries:</b> potassium dihy. phos. CENTR potassium dihy. phos. periph.

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<p><b>propOFol</b> Sedation in Intensive Care</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p style="background-color: yellow; margin: 0;">INDUCTION AGENT</p> <p style="background-color: yellow; margin: 0;">HIGH RISK MEDICINE</p> <p style="margin: 0;">ETS <input type="checkbox"/></p> </div> <p style="text-align: center; color: blue; border: 1px solid blue; border-radius: 50%; width: 20px; margin: 0 auto;">S4R</p>	<p>200 mg<sup>(9)</sup></p> <p>500 mg<sup>(9)</sup></p> <p>1000 mg<sup>(9)</sup></p>	<p>20 mL (undiluted)<sup>(9)</sup></p> <p>50 mL (undiluted)<sup>(9)</sup></p> <p>100 mL (undiluted)<sup>(9)</sup></p>	<p><b>Usual range:</b> 1 to 3 mg/kg/hour<sup>(27)</sup> <i>approx. 0.1 to 0.3 mL/kg/hour</i></p> <p><b>Maximum rate:</b> 4 mg/kg/hour<sup>(27)</sup> <i>approx. 0.4 mL/kg/hour</i></p>	<p>-Contraindicated in patients with allergies to soya, peanut, or egg lecithin.<sup>(3)</sup></p> <p>-Continuous cardiorespiratory monitoring required. Resuscitation facilities must be available.<sup>(3)</sup></p> <p>-If used for ≥72 hours, monitor CK twice weekly to check for propOFol-related infusion syndrome (PRIS).<sup>(27)</sup></p> <p>-Each 1 mL propOFol (1%) provides 0.1 g lipid (1.1 kcal)<sup>(9)</sup></p> <p>-Remove line at end of infusion to avoid inadvertent re-sedation.<sup>(3)</sup></p> <p><a href="#">Pregnancy Category C</a></p> <p>See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)</p> <p><b>DERS Entries:</b> propOFol (mg/kg/hr) propOFol (mL/hr)</p>
<p><b>propOFol</b> Maintenance of General Anaesthesia</p> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p style="background-color: yellow; margin: 0;">INDUCTION AGENT</p> <p style="background-color: yellow; margin: 0;">HIGH RISK MEDICINE</p> <p style="margin: 0;">ETS <input type="checkbox"/></p> </div> <p style="text-align: center; color: blue; border: 1px solid blue; border-radius: 50%; width: 20px; margin: 0 auto;">S4R</p>	<p>200 mg<sup>(9)</sup></p> <p>500 mg<sup>(9)</sup></p> <p>1000 mg<sup>(9)</sup></p>	<p>20 mL (undiluted)<sup>(9)</sup></p> <p>50 mL (undiluted)<sup>(9)</sup></p> <p>100 mL (undiluted)<sup>(9)</sup></p>	<p><b>Use of Target-Controlled Infusion (TCI) modes on enabled devices is preferred.</b></p> <p><b>If not using TCI, usual range:</b> 4 to 12 mg/kg/hour<sup>(9)</sup> <i>approx. 0.4 to 1.2 mL/kg/hour</i></p> <p>Available on: BD Alaris™ PK/Alaris™ PK Plus B. Braun Infusomat® Space B. Braun Perfusor® Space</p>	<p>-TCI modes should only be used by clinicians familiar with the process and relevant devices.</p> <p>-Marsh<sup>(46)</sup> and Schnider<sup>(47)</sup> (48) TCI models are available on both Alaris™ and B. Braun devices.</p> <p><a href="#">Pregnancy Category C</a></p> <p><b>DERS Entries:</b> TCI Propofol</p>

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>salbutamol</b> <i>Tocolysis</i> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK INDICATION</b>  ETS ✓ </div>	5 mg <sup>(49)</sup>	100 mL <sup>(49)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Initially:</b> 10 microg/min then increase by 3.3 microg/min every 30 minutes. <sup>(49)</sup> <i>approx. 12 mL/hour, increasing  by 4 mL/hour every 30 minutes.</i>  <b>Maximum rate:</b> 30 microg/min <sup>(49)</sup> <i>approx. 36 mL/hour</i>	See: - <a href="#">Preterm Labour Policy</a> - <a href="#">Imminent Unplanned Birth at a Non-Birthing Site Policy</a> - <a href="#">WNHS Preterm Labour Clinical Practice Guideline</a>  <a href="#">Pregnancy Category A</a>  <b>DERS Entries:</b> salbutamol obstetric
<b>salbutamol</b> <i>Asthma  Bronchospasm</i> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK INDICATION</b>  ETS ✓ </div>	5 mg <sup>(3)</sup>	500 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Initially:</b> 5 microg/min then titrate to effect. <sup>(9)</sup> <i>approx. 30 mL/hour</i>  <b>Usual range:</b> 5 to 20 microg/min <sup>(27)</sup> <i>approx. 30 to 120 mL/hour</i>  <b>DERS Hard Limit:</b> 45 microg/minute <i>approx. 270 mL/hour</i>	-Titrate to avoid tachycardia <sup>(27)</sup> -Monitor potassium and cardiorespiratory function <sup>(27)</sup>  -Do not reduce rate by more than 5 to 10 mL/hr every hour. <sup>(27)</sup>  <a href="#">Pregnancy Category A</a>  <b>DERS Entries:</b> salbutamol
<b>salbutamol</b> <i>Low Volume Infusion  Asthma  Bronchospasm</i> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <b>CHECK INDICATION</b>  ETS ✓ </div>	10 mg ( <i>via infusion pump</i> ) <sup>(17)</sup>	100 mL ( <i>via infusion pump</i> ) <sup>(17)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>	<b>Initially:</b> 5 microg/min <sup>(9)</sup> <i>approx. 3 mL/hour</i>  <b>Usual range:</b> 5 to 20 microg/min <sup>(9)</sup> <i>approx. 3 to 12 mL/hour</i>  <b>DERS Hard Limit:</b> 45 microg/min <i>approx. 27 mL/hour</i>	-Titrate to avoid tachycardia <sup>(27)</sup> -Monitor potassium and cardiorespiratory function <sup>(27)</sup>  -Do not reduce rate by more than 5 to 10 mL/hr every hour. <sup>(27)</sup>  <a href="#">Pregnancy Category A</a>  <b>DERS Entries:</b> salbutamol low volume
	5 mg ( <i>via syringe driver</i> ) <sup>(17)</sup>	50 mL ( <i>via syringe driver</i> ) <sup>(17)</sup>  <i>Sodium chloride 0.9%</i> <sup>(3)</sup>		

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>sodium bicarbonate 8.4%</b> CENTRAL  <div style="border: 1px solid black; padding: 2px; width: fit-content;">CHECK INDICATION ETS ✓</div>	100 mmol bicarbonate (100 mL 8.4% solution)  <b>Contains 1 mmol sodium per 1 mmol bicarbonate</b> <sup>(3)</sup>	100 mL (undiluted 8.4% solution)	4 to 8 hours <sup>(3)</sup>	-The 8.4% solution is hypertonic and highly irritant; extravasation may cause tissue necrosis. <sup>(3)</sup>  <a href="#">Exempt from Pregnancy Categorisation</a>
<b>sodium bicarbonate 1.26% “isotonic”</b> Peripheral  <div style="border: 1px solid black; padding: 2px; width: fit-content;">CHECK INDICATION</div>	150 mmol (150 mL 8.4% solution) <sup>(27)</sup>	1000 mL <b>See Comments</b>  <i>Water for Injections</i> <sup>(3)</sup>  <i><b>NB water for injections may not be stored in medication rooms. Check AIRVO equipment storage locations.</b></i>  <i>Also compatible with Glucose 5%</i> <sup>(3)</sup>	4 to 8 hours <sup>(3)</sup>	<b>Preparation:</b> -Remove 150 mL from a 1000 mL bag of <b>water for injections</b> and add 150 mL sodium bicarbonate 8.4% solution and mix well. <sup>(3)</sup> -This gives an approximately isotonic solution of sodium bicarbonate 1.26% <sup>(45)</sup>  <b>DERS Entries:</b> sodium bicarbonate 100mmol sodium bicarbonate 150mmol
<b>sodium chloride 3% (hypertonic)</b>  <div style="border: 1px solid black; padding: 2px; width: fit-content;">ETS □</div>	~50 mmol sodium (100 mL 3% solution)  ~125 mmol sodium (250 mL 3% solution)  ~500 mmol sodium (1000 mL 3% solution)	100 mL (pre-mixed bag)  250 mL (pre-mixed bag)  1000 mL (pre-mixed bag)  <b>Use ONLY pre-mixed bags.</b>	Refer to <a href="#">Electrolyte Abnormalities: Hyponatraemia</a> in Therapeutic Guidelines for rate of sodium replacement.  <b>Recommended rate of change in serum sodium:</b> 4 to 8 mmol/L per day (4 to 6 mmol/L per day if additional risk factors present) <sup>(10)</sup>	-Rapid correction of hyponatraemia may produce permanent central nervous system injury due to osmotic demyelination. <sup>(10)</sup> -Check ABG and serum sodium every 2 hours <sup>(27)</sup>  <b>Maximum rate of change in serum sodium:</b> ≤10 mmol/L in the first 24 hours <sup>(10)</sup> ≤18 mmol/L in the first 48 hours <sup>(10)</sup>  <b>DERS Entries:</b> sodium chloride 3%
<b>sodium DIHYDROGEN PHOSPHATE</b>  <div style="border: 1px solid black; padding: 2px; width: fit-content;">CHECK ROUTE CHECK MEDICINE HIGH RISK MEDICINE</div>	10 mmol phosphate <sup>(3)</sup>  20 mmol phosphate <sup>(3)</sup>  40 mmol phosphate <sup>(3)</sup>	100 mL / 250 mL <sup>(3)</sup>  250 mL / 500 mL <sup>(3)</sup>  100 mL * / 500 mL / 1000 mL <sup>(3)</sup>  <i>Sodium chloride 0.9%</i>  <b>* 40 mmol/100 mL on consultant order via central access ONLY</b>	2 to 6 hours <sup>(3)</sup>  Slower infusion rates are preferred to avoid phosphate intoxication <sup>(9)</sup> and improve patient response	<a href="#">Exempt from Pregnancy Categorisation</a> See also: - <a href="#">potassium DIHYDROGEN PHOSPHATE</a> - <a href="#">Specialised Medication – Intravenous Phosphate Supplementation in Adults Guideline</a>  <b>DERS Entries:</b> sodium dihy. phos. CENTRAL sodium dihy. phos. 10 periph. sodium dihy. phos. 20 periph. sodium dihy. phos. 40 periph.

Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>sodium nitroprusside</b> CENTRAL	100 mg <sup>(27)</sup> <sup>(28)</sup>	100 mL <sup>(27)</sup> <sup>(28)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.3 microg/kg/min then titrate to effect. <sup>(3)</sup> approx. 0.018 mL/kg/hour  <b>Maximum rate:</b> 10 microg/kg/min may be used for <u>up to 10 minutes</u> <sup>(3)</sup> approx. 0.6 mL/kg/hour	<b>-Protect infusion bag from light and use within 24 hours.</b> <sup>(3)</sup> -Cover the bag with aluminium foil. An amber line is <b>NOT</b> required. <sup>(3)</sup> Discard the infusion if the colour changes, particularly to blue, green, or red. <sup>(3)</sup> -Avoid extravasation <sup>(3)</sup> -Continuous BP monitoring required. -Avoid abrupt withdrawal or cessation of infusion. <sup>(50)</sup> -Use IBW for dose calculations <sup>(27)</sup>
<b>sodium nitroprusside</b> Peripheral	50 mg <sup>(27)</sup> <sup>(28)</sup>	500 mL <sup>(27)</sup> <sup>(28)</sup>  Glucose 5% <sup>(3)</sup>	<b>Initially:</b> 0.3 microg/kg/min then titrate to effect. <sup>(3)</sup> approx. 0.18 mL/kg/hour  <b>Maximum rate:</b> 10 microg/kg/min may be used for <u>up to 10 minutes</u> <sup>(3)</sup> approx. 6 mL/kg/hour	-Prolonged rapid or high-dose infusions can produce clinically significant methaemoglobinaemia and cyanide toxicity. <sup>(3)</sup> -Monitor blood cyanide levels if treatment >72 hours <sup>(27)</sup> <sup>(28)</sup>  See: <a href="#">-MR170V WACHS Variable Rate Medication Chart</a> (or approved local variant)  <b>DERS Entries:</b> sodium nitroprusside CENTR sodium nitroprusside perhiph.
<b>sodium valproate</b>  <b>HIGH RISK MEDICINE</b>	<b>Epilepsy / Bipolar Disorder:</b> 1 to 2 g (20 to 30 mg/kg) <sup>(4)</sup>  <b>Status Epilepticus:</b> 40 mg/kg (maximum 3 g) <sup>(4)</sup>  <b>NB: in status epilepticus, doses may be given undiluted at a maximum rate of 10 mg/kg/min</b> <sup>(3)</sup>	100 to 1000 mL <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>  <b>Maximum concentration:</b> 8 mg/mL <sup>(9)</sup>	<b>Intermittent infusion:</b> 15 to 60 minutes <sup>(3)</sup>  <b>Maximum rate:</b> 20 mg/minute <sup>(3)</sup>  <b>Continuous infusion:</b> 1 to 2 mg/kg/hour <sup>(3)</sup>  <b>Maximum dose:</b> 2500 mg/24 hours <sup>(9)</sup>	-Dizziness may occur a few minutes after injection, but will resolve within a few minutes <sup>(3)</sup> -Rapid administration into a peripheral line commonly causes pain and irritation <sup>(3)</sup>  <a href="#">Pregnancy Category D</a>  <b>DERS Entries:</b> sodium valproate intermittent sodium valproate continuous sodium valproate LOAD
<b>thiamine hydrochloride</b>  <b>ETS ✓</b>	100 to 500 mg <sup>(10)</sup>	100 mL <sup>(3)</sup>  Sodium chloride 0.9%	30 minutes <sup>(3)</sup>	<a href="#">Exempt from Pregnancy Categorisation</a>  <b>DERS Entries:</b> thiamine





Medicine Qualifier	Amount in bag/syringe for initial therapy	Volume Preferred Diluent	Time / Rate Equivalent rate	Comments
<b>thiopental sodium</b>	940 mg <sup>(27)</sup> <sup>(28)</sup>  <b>OR</b>  1000mg <sup>(27)</sup> <sup>(28)</sup>  Prepare 2 vials (either 470 mg or 500 mg each depending on brand availability)	50 mL (via syringe driver)  Sodium chloride 0.9% <sup>(3)</sup>	<b>Initially:</b> 125 mg/hour then titrated to effect. <sup>(28)</sup>  approx. 6.65 mL/hour (using 940 mg/50 mL) <b>OR</b> approx. 6.25 mL/hour (using 1000 mg/50 mL)  <b>Usual range:</b> 0 to 300 mg/hour <sup>(27)</sup>  approx. 0 to 16 mL/hour (using 940 mg/50 mL) <b>OR</b> approx. 0 to 15 mL/hour (using 1000 mg/50mL)	-Continuous cardiorespiratory monitoring required. <sup>(3)</sup> -Extravasation may cause tissue necrosis. -Boluses of 75 to 125 mg may be given <sup>(27)</sup> <sup>(28)</sup> via the programmed bolus function. -Levels can accumulate with prolonged infusion and may delay recovery. <sup>(27)</sup> <sup>(28)</sup>  <b>DERS Entries:</b> thiopental
<b>tranexamic acid</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block; color: green;">ETS ✓</div>	1 g <sup>(3)</sup>	100 mL <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	20 minutes <sup>(3)</sup>  A prolonged infusion over 8 hours may be indicated in some scenarios. <sup>(3)</sup>  <b>Maximum rate:</b> 1 g over 10 minutes (100 mg/min) <sup>(3)</sup>	-Rapid administration may cause dizziness and hypotension <sup>(3)</sup> <a href="#">Pregnancy Category B1</a>  <b>DERS Entries:</b> tranexamic acid tranexamic acid 1g
<b>vasopressin</b>	<i>See <a href="#">Argipressin</a></i>			
<b>vecuronium</b>  <div style="border: 1px solid black; padding: 2px; display: inline-block; background-color: #f0f0f0;"><b>PARALYSING AGENT</b> <b>HIGH RISK MEDICINE</b> ETS □</div>	<b>Maintenance infusion:</b> 10 mg <sup>(3)</sup>	<b>Maintenance infusion:</b> 50 mL <sup>(3)</sup>  Sodium chloride 0.9% <sup>(3)</sup>	<b>Maintenance infusion:</b> 0.8 to 1.4 microg/kg/min <sup>(9)</sup> approx. 0.24 to 0.42 mL/kg/hour	<a href="#">Pregnancy Category C</a> -Flush pre- and post- administration with 10 to 20 mL sodium chloride 0.9% to prevent inadvertent re-paralysis. <sup>(3)</sup>  <b>DERS Entries:</b> vecuronium

## 2.4 Guideline Information and Document Control

### Colour Coding and Medication Flags

This guideline incorporates recommendations from several Australian Commission on Safety and Quality in Health Care (ACSQHC) standards:

- [National Standard for User-Applied Labelling of Injectable Medicines, Fluids and Lines](#) <sup>(51)</sup>
- [National Mixed-Case Lettering List](#) <sup>(52)</sup>
- [Recommendations for terminology, abbreviations and symbols used in medicines documentation](#) <sup>(53)</sup>
- [National Guidelines for On-Screen Display of Medicines Information](#) <sup>(54)</sup>

Flag	Rationale
<b>INDUCTION AGENT</b>	Colours as per National Standard for User Applied Labelling of Injectable Medicines, Fluids and Lines (ISO 26825:2008) <sup>(51)</sup>
<b>BENZODIAZEPINE</b>	
<b>PARALYSING AGENT</b> <sup>1</sup>	
<b>OPIOID</b>	
<b>VASOPRESSOR</b> <sup>2</sup>	
<b>LOCAL ANAESTHETIC</b>	
<b>ANTICHOLINERGIC AGENT</b>	
<b>ANTIEMETIC</b>	
<b>BENZODIAZEPINE ANTAGONIST</b>	Colours as per National Standard for User Applied Labelling of Injectable Medicines, Fluids and Lines (ISO 26825:2008) <sup>(51)</sup>
<b>RELAXANT REVERSAL AGENT</b>	
<b>OPIOID ANTAGONIST</b>	White diagonal stripes represent agents with an opposite action (including antagonists)
<b>HYPOTENSIVE AGENT</b>	
<b>CHECK INDICATION</b>	To assist in identification of medicines with multiple listings, where the dose, rate or volume may differ based on the <b>indication</b> .
<b>CHECK ROUTE</b>	To assist in identification of medicines with multiple listings where the dose, rate or volume may differ based on the <b>route of administration</b> .
<b>CHECK MEDICINE</b>	To assist in identification of medicines that may be misread due to similarities with medications listed in close proximity.
<b>HIGH RISK MEDICINE</b>	To assist in identification of medicines classified as High Risk in the <a href="#">WACHS High Risk Medications Procedure</a>
	To assist in identification of medications classified as Schedule 4 Restricted (S4R).
	To assist in identification of medications classified as Schedule 8 (S8).
<b>ETS</b> ✓ Stocked at all ETS-enabled sites	<b>ETS</b> □ May not be stocked at smaller ETS-enabled sites
To assist in identification of medicines that are on the <a href="#">Minimum Medication Stock List for ETS Sites</a> . Regional variations exist, refer to <a href="#">Imprest Search</a> on Formulary One.	

<sup>1</sup> **suxamethonium** appears as reverse plate letters within a black bar as per ISO 26825:2008

<sup>2</sup> **adrenaline (epinephrine)** appears as reverse plate letters within a black bar as per ISO 26825:2008

## Pregnancy Categorisations

In Australia, medications are categorised following the [Australian Categorisation System for Prescribing Medicines in Pregnancy](#). Unlike the systems used in other jurisdictions, **this system is not hierarchical**.

- Human data are lacking or inadequate for medicines in the B1, B2 and B3 categories
- Subcategorisation of the B category is based on animal data
- The allocation of a B categorisation **does not** imply greater safety than a C categorisation
- Medicines in category D are not absolutely contraindicated during pregnancy.

Due to legal considerations in Australia, sponsor companies have, in some cases, applied a more restrictive category than can be justified based on available data.

Specialist medicines information for use in pregnancy can be found on the [King Edward Memorial Hospital \(KEMH\) website](#).

Additional information and a [database search tool](#) can be found on the TGA website.

Category	TGA Definition
<b>A</b>	Medicines which have been taken by a large number of pregnant women and women of childbearing age without any proven increase in the frequency of malformations or other direct or indirect harmful effects on the foetus having been observed.
<b>B</b>	Medicines which have been taken only by a limited number of pregnant women and women of childbearing age, without an increase in the frequency of malformation or other direct or indirect effect on the human foetus having been observed.
	<b>1</b> Studies in animals have not shown evidence of an increased occurrence of foetal damage
	<b>2</b> Studies in animals are inadequate or may be lacking, but available data show no evidence of an increased occurrence of foetal damage.
<b>3</b> Studies in animals have shown evidence of an increased occurrence of foetal damage, the significance of which is considered uncertain in humans.	
<b>C</b>	Medicines which, owing to their pharmacological effects, have caused or may be suspected of causing, harmful effects on the human foetus or neonate without causing malformations. These effects may be reversible. Accompanying texts should be consulted for further details.
<b>D</b>	Medicines which have cause, are suspected to have caused, or may be expected to cause an increase incidence of human foetal malformations or irreversible damage. These medicines may also have adverse pharmacological effects. Accompanying texts should be consulted for further details.
<b>X</b>	Medicines which have such a high risk of causing permanent damage to the foetus that they should not be used in pregnancy or when there is a possibility of pregnancy.
<b>Exempt</b>	The Prescribing Medicines in Pregnancy Database does not include all medicines approved for use in Australia. Certain classes of medicines are exempted from receiving a pregnancy category. <sup>(55)</sup> Refer to the Product Information <sup>(9)</sup> or <a href="#">KEMH Guideline/Monograph</a> for further information.

### 3. Roles and Responsibilities

**Prescribers** are responsible for the safe prescribing and monitoring of medicines. All orders must be documented, completely and unambiguously, on a WACHS endorsed medication chart. The chart must be completed in a printed or written form or by means of an endorsed electronic medication management (eMM) system for administration within the health service.

**Nurses and midwives** are responsible for the safe administration and monitoring of medicines.

**Pharmacists** are responsible for providing clinical review of medicines.

**All staff** are required to:

- work within their scope of practice appropriate to their level of training and job role responsibilities,
- support the safe prescribing, administration, and monitoring of medicines,
- work within policies and guidelines to make sure that WACHS is a safe, equitable, and positive place to be.

**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 relating to medications are to be reported via the approved clinical incident management system (CIMS) e.g. DATIX, and managed as per the WACHS [Medication Prescribing and Administration Policy](#) and the MP 0122/19 [Clinical Incident Management Policy](#). The WACHS Medication Safety Committee and local Medicines and Therapeutics Committees review clinical incident data relevant to medications.

This guideline will be reviewed as required to determine effectiveness, relevance, and currency. At a minimum it will be reviewed every five years by the WACHS Medication Safety Committee.

Guidelines are designed to provide staff with evidence-based recommendations to support appropriate actions in specific settings and circumstances. As such, WACHS guidelines should be followed in the first instance. In the clinical context, where a patient's management should vary from an endorsed WACHS guideline, this variation and the clinical opinion as to reasons for variation must be documented in accordance with the [Documentation Clinical Practice Standard](#).

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## 6. Definitions

Term	Definition
<b>Critical Care Areas</b>	High-acuity areas providing advanced medical care, such as Emergency Departments, High-Dependency Areas/Units, Intensive Care Units, Operating Theatres, and Post-Anaesthetic Care Units

### List of Acronyms/Abbreviations

Acronym/Abbreviation	Term	Acronym/Abbreviation	Term
<b>ABG</b>	Arterial Blood Gas	<b>HR</b>	Heart Rate
<b>ABW</b>	Actual Body Weight	<b>IBW</b>	Ideal Body Weight
<b>ACSQHC</b>	Australian Commission on Safety and Quality in Health Care	<b>ICP</b>	Intracranial Pressure
<b>AdjBW</b>	Adjusted Body Weight	<b>IM</b>	Intramuscular
<b>aPTT</b>	Activated Partial Thromboplastin Time (seconds)	<b>INR</b>	International Normalised Ratio
<b>BGL</b>	Blood Glucose Level	<b>IOP</b>	Intraocular Pressure
<b>BP</b>	Blood Pressure	<b>IV</b>	Intravenous
<b>CIMS</b>	Clinical Incident Management System	<b>MAP</b>	Mean Arterial Pressure
<b>CK</b>	Creatine Kinase	<b>PCA</b>	Patient Controlled Analgesia
<b>CPP</b>	Cerebral Perfusion Pressure	<b>PIVC</b>	Peripheral Intravenous Catheter
<b>CPR</b>	Cardiopulmonary Resuscitation	<b>PVC</b>	Polyvinyl Chloride
<b>CVC</b>	Central Venous Catheter	<b>RASS</b>	Richmond Agitation Sedation Scale
<b>DEHP</b>	Diethylhexyl phthalate	<b>RR</b>	Respiratory Rate
<b>DERS</b>	Dose Error Reduction Software	<b>RSI</b>	Rapid Sequence Induction
<b>ECG</b>	Electrocardiogram	<b>TGA</b>	Therapeutic Goods Administration
<b>ETS</b>	Emergency Telehealth Service	<b>VF</b>	Ventricular Fibrillation
<b>GCS</b>	Glasgow Coma Scale	<b>VT</b>	Ventricular Tachycardia

## 7. Document Summary

<b>Coverage</b>	WACHS-wide
<b>Audience</b>	Nursing, midwifery, medical and pharmacy staff
<b>Records Management</b>	Clinical: <a href="#">Health Record Management Policy</a>
<b>Related Legislation</b>	<a href="#">Medicines and Poisons Act 2014</a> (WA) <a href="#">Medicines and Poisons Regulations 2016</a> (WA)
<b>Related Mandatory Policies / Frameworks</b>	<ul style="list-style-type: none"> <li>• MP 0077/18 <a href="#">Statewide Medicines Formulary Policy</a></li> <li>• MP 0131/20 <a href="#">High-Risk Medication Policy</a></li> <li>• <a href="#">Mandatory Standard for Intravenous Potassium</a></li> </ul>
<b>Related WACHS Policy Documents</b>	<ul style="list-style-type: none"> <li>• <a href="#">Acute Behavioural Disturbance in Emergency Departments Guideline</a></li> <li>• <a href="#">Acute Stroke Clinical Standards and Guidelines – Endorsed for Use in Clinical Practice Policy</a></li> <li>• <a href="#">Adult Diabetic Ketoacidosis Guideline</a></li> <li>• <a href="#">Diabetes – Inpatient Management Clinical Practice Standard</a></li> <li>• <a href="#">High Risk Medications Procedure</a></li> <li>• <a href="#">Hyperkalaemia Guideline</a></li> <li>• <a href="#">Imminent Unplanned Birth at a Non-Birthing Site Policy</a></li> <li>• <a href="#">Intravenous Opioid Administration Policy</a></li> <li>• <a href="#">Irukandji Syndrome Management Guideline</a></li> <li>• <a href="#">Maternity and Newborn Care Resources – Endorsed for Use in Clinical Practice Policy</a></li> <li>• <a href="#">Medication Prescribing and Administration Policy</a></li> <li>• <a href="#">Peripheral Intravenous Cannula (PIVC) Guideline</a></li> <li>• <a href="#">Peripheral Vasopressor Infusion Guideline - Adults</a></li> <li>• <a href="#">Perth Children’s Hospital (PCH) Guidelines – Endorsed for Use in Clinical Practice Policy</a></li> <li>• <a href="#">Potassium Supplementation Policy</a></li> <li>• <a href="#">Preterm Labour Policy</a></li> <li>• <a href="#">Primary Postpartum Haemorrhage Guideline</a></li> <li>• <a href="#">Procedural Sedation – Emergency Department Clinical Practice Standard</a></li> <li>• <a href="#">Snakebite Management Guideline</a></li> <li>• <a href="#">Use of Prismaflex® Continuous Renal Replacement Therapy using Citrate as an Anticoagulant Procedure – Bunbury Hospital</a></li> <li>• <a href="#">Use of Prismaflex® Continuous Renal Replacement Therapy using Heparin as an Anticoagulant or No Anticoagulant Procedure – Bunbury Hospital</a></li> </ul> <p><b>Specialised Medication:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Intravenous Glyceryl Trinitrate in Critical Care Areas Guideline</a></li> <li>• <a href="#">Intravenous Phosphate Supplementation in Adults Guideline</a></li> <li>• <a href="#">Phenytoin (Injectable) for Adult Patients Guideline</a></li> </ul>

<p><b>Other Related Documents</b></p>	<ul style="list-style-type: none"> <li>• <a href="#">Antidotes and Antivenom – Recommended Toxicology Critical Medicine Stockholding</a></li> <li>• <a href="#">Antidotes and Antivenom – Administration Guide</a></li> <li>• <a href="#">Hypertension in Pregnancy: Magnesium Anticonvulsant Therapy (KEMH)</a></li> <li>• <a href="#">Magnesium Sulfate for Neuroprotection of the Fetus (KEMH)</a></li> <li>• <a href="#">Minimum Medication Stock List for ETS Sites (TRIM Link)</a></li> <li>• <a href="#">Protocol for Intravenous Thrombolysis in Acute Ischaemic Stroke</a></li> <li>• <a href="#">RFDS Clinical Manual – Part 2: Medication Infusion Guidelines (v10.1)</a></li> <li>• WNHS <a href="#">Postpartum Complications</a></li> <li>• WNHS <a href="#">Preterm Labour Clinical Practice Guideline</a></li> </ul>
<p><b>Related Forms</b></p>	<ul style="list-style-type: none"> <li>• <a href="#">MR72A WACHS Primary Post-Partum Haemorrhage Record</a></li> <li>• <a href="#">MR140 WACHS Medical Emergency Response – Code Blue Record</a></li> <li>• <a href="#">MR157A WACHS Insulin Infusion Order Chart</a></li> <li>• <a href="#">MR157B WACHS Adult Diabetic Ketoacidosis (DKA) Treatment &amp; Monitoring Chart</a></li> <li>• <a href="#">MR170.5 WACHS PCIA-IV Opioid Infusion Prescription and Additional Observation Chart</a></li> <li>• <a href="#">MR170.6 WACHS PCIA-IV Opioid Infusion Continuation Sheet</a></li> <li>• <a href="#">MR170C WA Anticoagulation Medication Chart</a></li> <li>• <a href="#">MR170C.1 Heparin Infusion Nomogram (Fluid Restricted Patients)</a></li> <li>• <a href="#">MR170V WACHS Variable Rate Medication Chart</a></li> <li>• <a href="#">MR172A WACHS Tenecteplase Checklist</a></li> <li>• <a href="#">MR176 Intravenous Fluid Treatment</a></li> </ul>
<p><b>Related Training</b></p>	<p>Available from <a href="#">MyLearning</a>:</p> <ul style="list-style-type: none"> <li>• High Risk Medications: Introduction (HRMINT EL2)</li> <li>• High Risk Medications: Insulin Declaration (HRMI EL2)</li> <li>• High Risk Medications: Anticoagulants Declaration (HRMA EL2)</li> </ul>
<p><b>Aboriginal Health Impact Statement Declaration (ISD)</b></p>	<p>ISD Record ID: 3395</p>
<p><b><a href="#">National Safety and Quality Health Service (NSQHS) Standards</a></b></p>	<p>1.07, 1.27, 4.01, 4.04, 4.13, 4.15</p>
<p><b><a href="#">Aged Care Quality Standards</a></b></p>	<p>Nil</p>
<p><b><a href="#">Chief Psychiatrist's Standards for Clinical Care</a></b></p>	<p>Nil</p>
<p><b>Other Standards</b></p>	<p>Nil</p>

## 8. Document Control

Version	Published date	Current from	Summary of changes
1.00	18 November 2024	18 November 2024	New guideline

## 9. Approval

<b>Policy Owner</b>	Executive Director Clinical Excellence
<b>Co-approver</b>	Executive Director Nursing and Midwifery
<b>Contact</b>	WACHS Director Pharmacy (Chief Pharmacist)
<b>Business Unit</b>	Clinical Excellence and Medical Services
<b>EDRMS #</b>	ED-CO-24-400131
<p><i>Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the Copyright Act 1968, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.</i></p>	

The authors of the original version of this guideline wish to acknowledge the previous site-endorsed works that were used to compile this guideline:

- Intravenous Infusion Orders for Common Medications in the Emergency Department and Intensive care Unit Guideline (Bunbury Hospital, WACHS South West)
- Adult Resuscitation and Medical Emergency Drugs (Fiona Stanley Fremantle Hospitals Group, South Metropolitan Health Service)
- Common Orders for Continuous Intravenous Infusions in Critical Care Areas Clinical Guideline (Royal Perth Hospital, East Metropolitan Health Service)

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

## Appendix A: Initial Rate Calculation Table




Initial Rate Calculations (values in mL/hour)													
Weight (kg) → Rate (mL/kg/hour) ↓	30	40	50	60	70	80	90	100	110	120	130	140	150
0.015	0.45	0.6	0.75	0.9	1.05	1.2	1.35	1.5	1.65	1.8	1.95	2.1	2.25
0.017	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.7	1.87	2.04	2.21	2.38	2.55
0.025	0.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.25	3.5	3.75
0.03	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3	3.3	3.6	3.9	4.2	4.5
0.04	1.2	1.6	2	2.4	2.8	3.2	3.6	4	4.4	4.8	5.2	5.6	6
0.05	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5
0.06	1.8	2.4	3	3.6	4.2	4.8	5.4	6	6.6	7.2	7.8	8.4	9
0.07	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7	7.7	8.4	9.1	9.8	10.5
0.09	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9	9.9	10.8	11.7	12.6	13.5
0.1	3	4	5	6	7	8	9	10	11	12	13	14	15
0.12	3.6	4.8	6	7.2	8.4	9.6	10.8	12	13.2	14.4	15.6	16.8	18
0.15	4.5	6	7.5	9	10.5	12	13.5	15	16.5	18	19.5	21	22.5
0.17	5.1	6.8	8.5	10.2	11.9	13.6	15.3	17	18.7	20.4	22.1	23.8	25.5
0.19	5.7	7.6	9.5	11.4	13.3	15.2	17.1	19	20.9	22.8	24.7	26.6	28.5
0.25	7.5	10	12.5	15	17.5	20	22.5	25	27.5	30	32.5	35	37.5
0.3	9	12	15	18	21	24	27	30	33	36	39	42	45
0.375	11.25	15	18.75	22.5	26.25	30	33.75	37.5	41.25	45	48.75	52.5	56.25
0.38	11.4	15.2	19	22.8	26.6	30.4	34.2	38	41.8	45.6	49.4	53.2	57
0.5	15	20	25	30	35	40	45	50	55	60	65	70	75
0.6	18	24	30	36	42	48	54	60	66	72	78	84	90
2.5	75	100	125	150	175	200	225	250	275	300	325	350	375
5	150	200	250	300	350	400	450	500	550	600	650	700	750
6	180	240	300	360	420	480	540	600	660	720	780	840	900
10	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500

## Appendix B: Weight-Based Infusion Rate Calculation Guide

Medicine	Standard Order	Common Dose/Rate and Titrations	Patient Weight		
			60 kg	80 kg	100 kg
<b>adrenaline (epinephrine)</b>  <b>VASOPRESSOR</b>	<b>CENTRAL</b> 6 mg in 100 mL <b>OR</b> 3 mg in 50 mL (0.06 mg/mL - <i>single strength</i> )	<b>Initial Rate:</b> 0.05 microg/kg/min <sup>(27)</sup>	3 mL/hour	4 mL/hour	5 mL/hour
		<b>Example Titration:</b> 0.01 microg/kg/min <sup>(27)</sup>	0.6 mL/hour	0.8 mL/hour	1 mL/hour
	<b>Peripheral</b> 3 mg in 500 mL (0.006 mg/mL)	<b>Initial Rate:</b> 0.05 microg/kg/min <sup>(27)</sup>	30 mL/hour	40 mL/hour	50 mL/hour
		<b>Example Titration:</b> 0.01 microg/kg/min <sup>(27)</sup>	6 mL/hour	8 mL/hour	10 mL/hour
<b>clonidine</b>	<b>CENTRAL / Peripheral</b> 1,200 microg in 100 mL <b>OR</b> 600 microg in 50 mL (12 microg/mL)	<b>Initial Rate:</b> 0.2 microg/kg/hour <sup>(27)</sup>	1 mL/hour	1.33 mL/hour	1.66 mL/hour
		<b>Example Titration:</b> 0.1 microg/kg/hour <sup>(27)</sup>	0.5 mL/hour	0.66 mL/hour	0.83 mL/hour
<b>dexmedetomidine</b>	<b>CENTRAL / Peripheral</b> 400 microg in 100 mL <b>OR</b> 200 microg in 50 mL (4 microg/mL - <i>single strength</i> )	<b>Initial Rate:</b> 0.2 microg/kg/hour <sup>(27)</sup>	3 mL/hour	4 mL/hour	5 mL/hour
		<b>Example Titration:</b> 0.1 microg/kg/hour <sup>(27)</sup>	1.5 mL/hour	2 mL/hour	2.5 mL/hour

Medicine	Standard Order	Common Dose/Rate and Titrations	Patient Weight		
			60 kg	80 kg	100 kg
<b>DOBUTamine hydrochloride</b>  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;">VASOPRESSOR</div>	<b>CENTRAL</b> 500 mg in 100 mL <b>OR</b> 250 mg in 50 mL (5 mg/mL)	<b>Initial Rate:</b> 2.5 to 5 microg/kg/min <sup>(28) (3)</sup> (use IBW)	1.8 to 3.6 mL/hour	2.4 to 4.8 mL/hour	3 to 6 mL/hour
		<b>Example Titration:</b> 1 microg/kg/min <sup>(27)</sup>	0.72 mL/hour	0.96 mL/hour	1.2 mL/hour
	<b>Peripheral</b> 250 mg in 250 mL (1 mg/mL)	<b>Initial Rate:</b> 2.5 to 5 microg/kg/min <sup>(28) (3)</sup> (use IBW)	9 to 18 mL/hour	12 to 24 mL/hour	15 to 30 mL/hour
		<b>Example Titration:</b> 1 microg/kg/min <sup>(27)</sup>	3.6 mL/hour	4.8 mL/hour	6 mL/hour
<b>DOPamine</b>  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;">VASOPRESSOR</div>	<b>CENTRAL</b> 400 mg in 100 mL <b>OR</b> 200 mg in 50 mL (4 mg/mL)	<b>Initial Rate:</b> 2 to 5 microg/kg/min <sup>(27)</sup>	1.8 to 4.5 mL/hour	2.4 to 6 mL/hour	3 to 7.5 mL/hour
		<b>Example Titration:</b> 1 microg/kg/min <sup>(27)</sup>	0.9 mL/hour	1.2 mL/hour	1.5 mL/hour
	<b>Peripheral</b> 200 mg in 500 mL (0.4 mg/mL)	<b>Initial Rate:</b> 2 to 5 microg/kg/min <sup>(27)</sup>	18 to 45 mL/hour	24 to 60 mL/hour	30 to 75 mL/hour
		<b>Example Titration:</b> 1 microg/kg/min <sup>(27)</sup>	9 mL/hour	12 mL/hour	15 mL/hour



Medicine	Standard Order	Common Dose/Rate and Titrations	Patient Weight		
			60 kg	80 kg	100 kg
<b>noradrenaline (norepinephrine)</b>  <b>VASOPRESSOR</b>	<b>CENTRAL</b> 8 mg in 100 mL <b>OR</b> 4 mg in 50 mL (0.08 mg/mL - <i>single strength</i> )	<b>Initial Rate:</b> 0.05 microg/kg/min <sup>(27)</sup>	2.25 mL/hour	3 mL/hour	3.75 mL/hour
		<b>Example Titration:</b> 0.01 microg/kg/min <sup>(27)</sup>	0.45 mL/hour	0.6 mL/hour	0.75 mL/hour
	<b>Peripheral</b> 4 mg in 500 mL (0.008 mg/mL)	<b>Initial Rate:</b> 0.05 microg/kg/min <sup>(27)</sup>	22.5 mL/hour	30 mL/hour	37.5 mL/hour
		<b>Example Titration:</b> 0.01 microg/kg/min <sup>(27)</sup>	4.5 mL/hour	6 mL/hour	7.5 mL/hour
<b>propOFol</b> <i>Sedation in Intensive Care</i>  <b>INDUCTION AGENT</b> 	<b>CENTRAL / Peripheral</b> 200 mg in 20 mL 500 mg in 50 mL 1000 mg in 100 mL (10 mg/mL)	<b>Initial Rate:</b> 1 to 3 mg/kg/hour <sup>(27)</sup>	6 to 18 mL/hour	8 to 24 mL/hour	10 to 30 mL/hour
		<b>Example Titration:</b> 0.1 mg/kg/hour <sup>(27)</sup>	0.6 mL/hour	0.8 mL/hour	1 mL/hour
<b>remifentanil</b> <i>Analgesia</i>  <b>OPIOID</b> 	<b>CENTRAL / Peripheral</b> 1 mg in 50 mL (0.02 mg/mL - <i>single strength</i> )	<b>Initial Rate:</b> 0.1 microg/kg/min <sup>(27)</sup>	18 mL/hour	24 mL/hour	30 mL/hour
		<b>Example Titration:</b> 0.025 microg/kg/min <sup>(27)</sup>	4.5 mL/hour	6 mL/hour	7.5 mL/hour
<b>remifentanil</b> <i>Sedation</i>  <b>OPIOID</b> 	<b>CENTRAL / Peripheral</b> 5 mg in 50 mL <b>OR</b> 10 mg in 100 mL (0.1 mg/mL)	<b>Initial Rate:</b> 0.1 microg/kg/min <sup>(27)</sup>	3.6 mL/hour	4.8 mL/hour	6 mL/hour
		<b>Example Titration:</b> 0.025 microg/kg/min <sup>(27)</sup>	0.9 mL/hour	1.2 mL/hour	1.5 mL/hour

Medicine	Standard Order	Common Dose/Rate and Titrations	Patient Weight		
			60 kg	80 kg	100 kg
sodium nitroprusside	<b>CENTRAL</b> 100 mg in 100 mL (1 mg /mL)	<b>Initial Rate:</b> 0.3 microg/kg/min <sup>(3)</sup> <sup>(27)</sup> (use IBW)	1.08 mL/hour	1.44 mL/hour	1.8 mL/hour
		<b>Example Titration:</b> 0.1 microg/kg/min <sup>(27)</sup>	0.36 mL/hour	0.48 mL/hour	0.6 mL/hour
	<b>Peripheral</b> 50 mg in 500 mL (0.1 mg/mL)	<b>Initial Rate:</b> 0.3 microg/kg/min <sup>(3)</sup> <sup>(27)</sup> (use IBW)	10.8 mL/hour	14.4 mL/hour	18 mL/hour
		<b>Example Titration:</b> 0.1 microg/kg/min <sup>(27)</sup>	3.6 mL/hour	4.8 mL/hour	6 mL/hour

## Appendix C: Paediatric Medication Monograph Quick Links

The [RFDS Clinical Manual – Part 2: Medication Infusion Guidelines \(v10.1\)](#) includes limited information for preparation, administration and dosing of medication in paediatric patients. As the tertiary paediatric referral service in WA, the following PCH Monographs are the preferred reference source for use at WACHS Sites:

- [Adrenaline \(Epinephrine\) – Paediatric](#)
- [Aminophylline – Paediatric](#)
- [Amiodarone – Paediatric](#)
- [DOBUTamine – Paediatric](#)
- [DOPamine – Paediatric](#)
- [Hypertonic Saline \(Sodium Chloride 3% and 23.4%\) – Paediatric](#)
- [Insulin – Paediatric](#)
- [Isoprenaline – Paediatric](#)
- [Ketamine – Paediatric](#)
- [Magnesium – Paediatric](#)
- [Metaraminol – Paediatric](#)
- [Midazolam – Paediatric](#)
- [Morphine – Paediatric](#)
- [Noradrenaline \(Norepinephrine\) – Paediatric](#)
- [Propofol – Paediatric](#)
- [Salbutamol – Paediatric](#)
- [Vecuronium – Paediatric](#)