

Applicable area: **ICU, HDU**

These guidelines are intended for and to be used only by experienced critical care staff under direct supervision of HNELHN Intensive Care Specialists in designated HNE Intensive Care Area Clinical Stream units. The authors are not responsible for inappropriate use of these guidelines.

| ADULT | Frusemide IV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------|---------------------------------|------|--|--|-------|--------------------------------|--|--|--|-------|-------------------------|-----|-----------------|------|------------|----------------------|--|--|--|------------|----------|------|-------|--|--|--|--|--|--|----------------------|------------|---------|------|--|------------------|--|--|--|--|
| Indication for use ¹⁻⁴ | Effective diuresis in fluid-overloaded states | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contraindications ¹ | Severe hypovolaemia, hypokalaemia, or hypomagnesaemia; pregnancy Obstructive and anuric acute renal failure (for continuous infusion) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Background ¹ | Potent loop diuretic that inhibits sodium and chloride absorption at the proximal and distal tubules and ascending loop of Henle to promote diuresis. Diuresis within 5 minutes, peaks at 30 minutes, lasts 2 hours – longer if renal impairment present | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Precautions ¹ | <ol style="list-style-type: none"> Oliguric acute renal failure (for continuous infusion) Risperidone – concurrent use in elderly dementia patients has been associated with increased mortality Concurrent nephrotoxic or ototoxic drugs (e.g., aminoglycosides) or severe renal impairment – maximum administration rate 4 mg/min | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dosage ¹⁻³ | <p>IV bolus 10 to 80 mg over 2 to 5 min. Consider continuous infusion if urine output not increased after 1 hour. Severe renal impairment, up to 200 mg in divided doses (e.g., 40 mg repeated in 4–6 hours) may be required.</p> <p>IV continuous infusion Administer 20 to 80 mg IV bolus then start infusion at 5 mg/hour Dose range 1 to 40 mg/hour. Titrate to targeted urine output e.g., 1 to 1.5 mL/kg/h Maximum rate 4 mg/min i.e., 240 mg/hour – see “Adverse effects”</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duration of therapy ² | Decreased effectiveness by 40% after 3 days | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prescription | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Date</td> <td style="width: 45%;">Medication (Print Generic Name)</td> <td style="width: 15%;">Date</td> <td style="width: 15%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>18/10</td> <td>Frusemide 500mg in 50mL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Route</td> <td>Dose & Hourly Frequency</td> <td>PRN</td> <td>Max dose/24 hrs</td> <td>Time</td> </tr> <tr> <td>CVC</td> <td>0 – 4 mL/hour</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Indication</td> <td>Pharmacy</td> <td>Dose</td> <td>Route</td> <td></td> </tr> <tr> <td>Max. rate 4 mL/hr. Target UO > 100 mL/hr</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Prescriber Signature</td> <td>Print Name</td> <td>Contact</td> <td>Sign</td> <td></td> </tr> <tr> <td><i>A. Doctor</i></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | Date | Medication (Print Generic Name) | Date | | | 18/10 | Frusemide 500mg in 50mL | | | | Route | Dose & Hourly Frequency | PRN | Max dose/24 hrs | Time | CVC | 0 – 4 mL/hour | | | | Indication | Pharmacy | Dose | Route | | Max. rate 4 mL/hr. Target UO > 100 mL/hr | | | | | Prescriber Signature | Print Name | Contact | Sign | | <i>A. Doctor</i> | | | | |
| Date | Medication (Print Generic Name) | Date | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18/10 | Frusemide 500mg in 50mL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Route | Dose & Hourly Frequency | PRN | Max dose/24 hrs | Time | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CVC | 0 – 4 mL/hour | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Prescriber Signature | Print Name | Contact | Sign | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>A. Doctor</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preparation and administration ^{3,4} | IV continuous infusion: Central Venous Line Draw up 500 mg in 50 mL undiluted solution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Compatibilities | See Australian Injectable Drugs Handbook via CIAP or hard copy on the ward | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monitoring requirements | Hourly urine output, frequent electrolyte monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adverse effects ¹⁻⁴ | Hypovolaemia and hypotension; electrolyte disturbance especially potassium and magnesium; ototoxicity with high doses, rapid rates (faster than 4 mg/min) or concomitant ototoxic drugs e.g., aminoglycosides | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Basis of guideline | <ol style="list-style-type: none"> 1. MIMS online, 2010 2. Asare K. Management of Loop Diuretic Resistance in the Intensive Care Unit. <i>Am J Health-Sys Pharm</i> 2009;66(18):1635-1640 3. Optimum dosage and side effects of loop diuretics – Up To Date online, 2010 4. Treatment of refractory edema in adults – Up To Date online 2010, |
| Groups consulted | Staff specialists, medical trainees, senior nursing and pharmacists (or relevant directors of pharmacy) of the Intensive Care Area Clinical Stream |
| Keywords | HNE Intensive Care Area Clinical Stream, ICU, frusemide, iv infusion, prescribing guideline |

| AUTHORISATION | | |
|--|--|----------------------------------|
| Author | Dr Katrina Ellem | Reviewer: Lynn Choo |
| Position | Medical Director | Specialist ICU Pharmacist |
| Department | Intensive Care Unit Calvary Mater Newcastle | Pharmacy John Hunter Hospital |
| Department Contact | Lynn Choo lynn.choo@hnehealth.nsw.gov.au | |
| GOVERNANCE | | |
| Enactment date | June 2011 | |
| Expiry date | June 2014 | |
| Ratification by John Hunter ICU Executive Committee | 1 August 2011 | |
| Ratification by Area ICU Stream Medical Lead | Dr Martin Rowley | June 2011 |
| Ratification date by Area Quality Use of Medicines Committee | 14 June 2011 | |
| Chairperson, Area Quality Use of Medicines Committee | Professor Ian Whyte | June 2011 |
| Process for removal of previous version of Guideline completed | Replaces Tamworth Guideline | |
| Approved Guideline distributed | Lynn Choo | 19 Oct 2011 |
| Location | | |
| Guideline Number | | |
| Version Number | 1.3 | |