

SESLHD POLICY COVER SHEET



Health
South Eastern Sydney
Local Health District

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| NAME OF DOCUMENT | Medicine: Frusemide (Furosemide) use in Adult Chronic Heart Failure Patients |
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| EXECUTIVE SPONSOR or EXECUTIVE CLINICAL SPONSOR | Dr Mark Sader Stream Director, Cardiac and Respiratory Services |
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| KEY TERMS | Medicine Heart Failure Diuretic |
| SUMMARY | To initiate an evidence-based treatment regime when symptoms of fluid retention occur in adult people with a diagnosis of chronic heart failure (CHF) across South Eastern Sydney Local Health District (SESLHD). |

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1. POLICY STATEMENT

To initiate an evidence-based treatment regime when symptoms of fluid retention occur in adult people with a diagnosis of chronic heart failure (CHF) across South Eastern Sydney Local Health District (SESLHD). There are two guidelines (GP - Appendix I and Appendix II patient) and one protocol (nursing staff- Appendix III) developed with an aim of standardising the care of CHF patients with symptoms of fluid retention. The guidelines/protocol also aims to stabilise CHF patients within their home environment and with the aim of reducing avoidable / inappropriate admissions to hospital.

2. BACKGROUND

Chronic Disease is an important health and social issue which results in many hospitalisation episodes, usually with longer lengths of stay, which is compounded by the fact that some patients (approximately 30-45%) can have multiple chronic diseases. To improve management of these patients in the community setting, the available evidence advises us that

- Self-care models where appropriate assist in improved management. Therefore patients should be empowered and engaged in their management plans.
- Strengthening the community care aspect of care delivery improves management, and therefore consistent GP practices should be endorsed
- Improved access to specialist practitioners provides additional support for both community staff and patients providing a more responsive and effective service. Nurses who are trained and competent in specialist care are best placed to delivery this type of service from a holistic patient-centred perspective
- That the above triad will result in improved quality of care, reduced admissions to acute facilities, and lowers lengths of stays for those patients with good community support structures in place.

The Area Heart Failure Committee (SESLHD) identified the need for the development of guidelines and protocol for GPs, patients, cardiologists and specialist heart failure nursing staff to initiate a suggested treatment regime when heart failure patients exhibit symptoms of fluid retention.

3. DEFINITIONS

Diuretic therapy is important in relieving the symptoms of fluid retention associated with chronic heart failure. Flexible diuretic regimens are useful in the management of CHF and have demonstrated relief of symptoms and reduced incidence of unplanned hospitalisations.

4. RESPONSIBILITIES

The Area Heart Failure Committee has developed and agreed on this procedure from the available evidence and through expert consensus management. The Area Heart Failure Committee is a sub-group of the Cardiac and Respiratory Services Clinical Stream.

Key stakeholders targeted for the administration of this procedure include general practitioners, patients, cardiologists and specialist heart failure program nursing and allied staff within SESLHD.

5. PROCEDURE

The targeted users of the procedure (Appendices 1, 11 and 111) include: general practitioners, patients, specialist heart failure nurses and cardiologists. This document aims to initiate the suggested treatment strategies when symptoms occur that have been documented in each of the suggested guidelines.

6. DOCUMENTATION

[Flexible Diuretic Guidelines \(Target audience: General Practitioners\) Area HB 011 Action Plan for Adjusting Your Frusemide Dose - Patient Information Sheet Area Form F182 \(Target audience: Heart Failure patients\)](#)
[Nursing Authorisation for Adjusting a Frusemide Dose – Area Form F183 \(Target audience: Specialists Heart Failure Nursing staff and Cardiologists\)](#)

7. AUDIT

Not required

8. REFERENCES

Core consensus evidence - as the evidence on the use of diuretics in heart failure is limited, the core evidence sources are the consensus management guidelines available for Australia and New Zealand, as well as those guidelines internationally approved in Europe and the United States.

- Heart Foundation (2006). Guidelines for the prevention, detection and management of chronic heart failure in Australia, 2006. National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand.
http://www.heartfoundation.com.au/downloads/CHF_2006_Introduction-Contents_PDF-130KB.pdf
- The Task Force on Acute Heart Failure of the European Society of Cardiology (2005). Executive summary of the guidelines on the diagnosis and treatment of acute heart failure. *European Heart Journal* 26(4):384-416.
- American Heart Association/ACC Practice Guidelines (2005). Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult. *Circulation* 112: 1825-1852.

Other evidence and current clinical opinion include:

- Angheta I (2006). B-type Natriuretic Peptide Rapid Assay: A Diagnostic Test for Heart Failure. *Dimensions of Critical Care Nursing* 25(4):149-154.

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- Prasun MA, Kocheril AG, Klass PH, et al (2005). The effects of a sliding scale diuretic titration protocol in patients with heart failure. *J Cardiovasc Nursing* 20(1):62-70.
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- Robinson DM, Curran MP, Lyseng-Williamson KA (2007). Imidapril: A Review of its Use in Essential Hypertension, Type 1 Diabetic Nephropathy and Chronic Heart Failure. *Drugs* 67(9):1359-1378.
- Silvers S, Howell JM, Kosowsky JM, Rokos IC, Jagoda AS (2007). Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department with Acute Heart Failure Syndromes. *Annals of Emergency Medicine* 49(5):627-669.
- Tsao L & Gibson CM (2004). Heart Failure: An Epidemic of the 21st Century. *Critical Pathways in Cardiology: A Journal of Evidence-Based Medicine* 3(4):194-204.

10. REVISION HISTORY

| Date | Revision No. | Author and Approval |
|---------------|--------------|--|
| Jan 2007 | Draft 1 | Written, developed and approved by the Area Heart Failure Committee. |
| May 2007 | Draft 2 | Re-drafted with evidence sources and policy statement - by Committee and Area Executive Officer |
| June 2007 | Draft 3 | Intranet draft for general comments and send to D&T department heads and DONs. Ratified by Area Cardiac Services |
| August 2007 | 0 | Brendan Docherty, Clinical Stream Manager - Critical Care & Cardiac Services and approved by Dr Roger Allan, Director Cardiac Care Clinical Stream and Susan Browbank, Acting Director Clinical Operations. Approved by Area Clinical Council Committee 25 July 2007 and Area Executive Committee 21 August 2007. |
| Sept 2008 | 1 | Renumbered from a Clinical Stream Procedure to a SESIH Procedure and minor formatting to cover sheet and header. No changes made to content. |
| February 2012 | 2 | Reviewed by Area Heart Failure Committee |
| February 2012 | 3 | Renumbered and rebadged into SESLHD template by the Acting District Policy Officer |

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| May 2012 | 3 | Changes approved by A/Prof. David McKenzie Stream Director, Cardiac and Respiratory Services |
| May 2018 | 4 | Minor Review |
| July 2018 | 4 | Endorsed by Executive Sponsor |
| August 2018 | 4 | Endorsed by SESLHD Quality Use of Medicines Committee |

Appendix 1 – GP Guidance (Flexible Frusemide (Furosemide)/Diuretic Guidelines)

Diuretic therapy is important in relieving the oedematous symptoms of CHF. Flexible diuretic regimens are useful in the management of CHF and have demonstrated relief of symptoms. In patients with fluid overload, the aim is to achieve an increase in urine output and weight reduction of 0.5 - 1 kg daily, generally with loop diuretics, until euvolaemia (evaluated from clinical symptoms and signs as well as the patient’s body weight) is achieved. Flexible diuretic regimens can be managed by medical/nursing personnel or by patients under the supervision of medical/nursing personnel.

Patients who optimally should be considered for a flexible diuretic regimen are those:

- Who are currently maintained on Frusemide (Furosemide) or no diuretic
- Who have had an admission to hospital with a clinical diagnosis of congestive heart failure (systolic and/or diastolic failure) and further signs of venous congestion (elevated jugular venous pressure, presence of crepitations and presence of peripheral oedema)
- Already on optimal pharmacological therapy as tolerated.
- Able to self -monitor weight daily or patients with carer or in dependent care
- Ability to complete a diary and understand titration instructions or have a carer able to assist

Exclusion Criteria

- Known allergy to loop diuretics or sulphonamides
- Documented cognitive impairment and absence of responsible carer
- Known barrier to compliance

Caution and precautions

It is important to note that escalating diuretic requirements may indicate worsening CHF, worsening renal function and/or diuretic resistance. Addition of spironolactone may be considered in this situation provided that serum potassium and renal function are acceptable. Alternatively, administration of an oral thiazide or intravenous Frusemide (Furosemide) may overcome resistance to oral Frusemide (Furosemide). Consult with a cardiologist/local specialist if in doubt.

Recommended dosage adjustment:

Oral administration

For patients who are **not** currently prescribed Frusemide (Furosemide):

- The dose will be initiated according to their weight gain, i.e. 20 mg per kg weight gained
- If no weight gain but other symptoms are apparent, as listed above, a dose of 20-40mg daily will be initiated.

For patients who are currently prescribed Frusemide (Furosemide) a dose adjustment 40mg per day for 2 days, as follows:

| Current dose | Adjusted dose |
|-----------------------|----------------------|
| 40mg mane | 80mg mane |
| 80mg mane | 80mg mane, 40mg midi |
| 40mg mane, 40mg midi | 80mg mane, 40mg midi |
| 80 mg mane, 40mg midi | 80mg BD |

Patients on larger dose of Frusemide (Furosemide) may benefit from an increase in the dose to the maximum recommended dose of 500mg daily.

Parenteral Administration

Parenteral dosing with Frusemide (Furosemide) should be considered if there are ongoing signs and symptoms of fluid retention after flexible dosing with oral Frusemide (Furosemide).

- Initiate at a dose of 20 - 80 mg
- To avoid ototoxicity IV doses will be administered no faster than 4mg/minute.

NB: The oral bioavailability of Frusemide (Furosemide) is about 50% (i.e. 20 mg IV is equivalent to 40 mg oral). After initiation or any change in the diuretic dose, blood chemistry (UEC) should be checked within two to three days and potassium imbalance managed with consideration of concomitant therapy.

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Appendix II – Patient Information Sheet

***Action Plan for adjusting your Frusemide (Furosemide) dose
(To be approved and signed by your GP or Cardiologist)***

Name: _____

It is important to detect fluid build up early and treat it promptly. **“REMEMBER: THE EARLY WARNING SIGNS”**

A simple way of monitoring if you are retaining fluid is to weigh yourself daily.

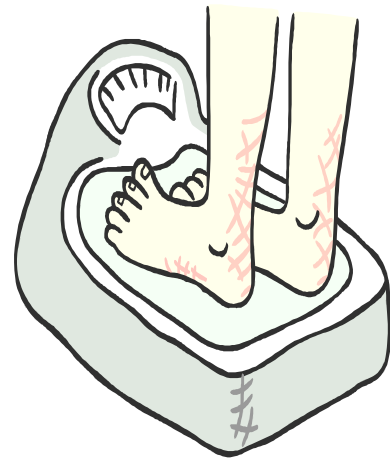
“ Weight gain often means fluid build up”

“1Kg(2lb) = 1 litre body fluid”

It is important that you weigh yourself at the same time every day and in similar clothing.

If your weight increases by more than 2kg (4lb) over 1-2 days or you:

- Feel more short of breath than usual
- Wake up at night due to shortness of breath
- Need to sit upright to breathe properly
- Notice swelling in your ankles, legs or abdomen



“You need to initiate your action plan”

Take an extra..... mg (.... tablets) of your Frusemide (Furosemide) (INSERT BRAND NAME).

If your symptoms improve by the next day go back to your usual dose.
If your symptoms persist make an appointment to see your GP within 24hrs

CAUTION!!

Do not take extra Frusemide (Furosemide) (INSERT BRAND NAME) if you are experiencing any of the following:

- Rapid weight loss below your normal weight (more than 2kg/4lb)
- Develop a temperature or infection
- Develop diarrhoea or experience vomiting for a number of days
- Feel dizzy or giddy

If any of these symptoms occur- THEN contact your GP within 24hrs.

Medical practitioner signature: _____

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Appendix III – Nurse Authorisation Protocol (2 pages)

NURSING AUTHORISATION FOR ADJUSTING A FRUSEMIDE (FUROSEMIDE) DOSE

This prescription authorises (INSERT NAME OF SERVICE) to initiate the following dose adjustment of Frusemide (Furosemide) based on the clinical guidelines overleaf.

The flexible diuretic regime will be implemented when the following symptoms occur:

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| Weight gain of 2kg/4lb over 2-3 days and/or Increasing shortness of breath and/or nocturnal dyspnoea and/or JVP raised above 4cm and/or Increased ankle swelling or abdominal swelling with severe leg oedema |
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Recommended dosage adjustment:

The patient should be advised to increase their dose of Frusemide (Furosemide) by 40mg per day for 2 days, as follows:

| Current dose | Adjusted dose |
|-----------------------|----------------------|
| 40mg mane | 80mg mane |
| 80mg mane | 80mg mane, 40mg midi |
| 40mg mane, 40mg midi | 80mg mane, 40mg midi |
| 80 mg mane, 40mg midi | 80mg BD |

**If the patient is taking 80 mg twice daily, the HF nurse should contact their GP/Cardiologist for further advice.

The patient's diuretic dose should be increased initially for two days and the patient should be reviewed by the HF nurse in consultation with the patients' GP following changes to diuretic dose.

Medical Practitioner signature: _____

Designation: _____

Date: _____

(PLEASE FAX THIS AUTHORITY WITHIN 24 hrs to
 (Authority valid for 3 months from date of signature)

NURSING GUIDELINES FOR ADJUSTING FRUSEMIDE (FUROSEMIDE) DOSE

Diuretic therapy is important in relieving the symptoms of fluid retention associated with CHF. Flexible diuretic regimens are useful in the management of CHF and have demonstrated relief of symptoms and reduced incidence of unplanned hospitalisation.

Prior to adjusting the Frusemide (Furosemide) dose ensure that the following have been organised:

- A signed authorisation has been provided by the GP. If the GP is unavailable a Cardiologist may provide authorization.
- Ensure the 'ideal dry weight' has been recorded.

Action:

Monitor and record:

1. Weight
2. Pulse, B.P & lung sounds
3. Assess JVP
4. Assess for peripheral oedema
5. If the patient is hypotensive (systolic pressure < 100mmHg) associated with symptoms of dizziness, consult with the GP or Cardiologist prior to initiating regime
- 6.

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| Initiate adjusted Frusemide (Furosemide) dose when one or more of the following occur |
| Rapid weight gain (2kg/4lb in 2 days) or, |
| Raised JVP or |
| Peripheral oedema (2+ on oedema scale) including swelling of the abdomen |
| Increased dyspnoea and lung congestion on auscultation or, |
| Nocturnal dyspnoea (> 2 nights) |

7. Patient must be reviewed the following day and symptoms reassessed.
8. After 2 days the patient's condition to be reviewed in consultation with a medical practitioner.