SESLHD PROCEDURE COVER SHEET

NAME OF DOCUMENT	Administration of Subcutaneous Medications in Palliative Care using a NIPRO Surefuser™
TYPE OF DOCUMENT	Procedure
DOCUMENT NUMBER	SESLHDPR/666
DATE OF PUBLICATION	April 2025
RISK RATING	Medium - L
LEVEL OF EVIDENCE	National Safety and Quality Health Service Standards: Standard 1 – Clinical Governance Standard 4 – Medication Safety Standard 5 – Comprehensive Care
REVIEW DATE	April 2028
FORMER REFERENCE(S)	N/A
EXECUTIVE SPONSOR	SESLHD Clinical Stream Director, Palliative and End of Life Care
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FUNCTIONAL GROUP(S)	Cancer and Palliative Care Medicine Medicines and Therapeutics Related Policy Documents
KEY TERMS	Palliative care, community, medications, subcutaneous medications
SUMMARY	This procedure outlines the requirements for the safe administration of subcutaneous medications via a Surefuser™ by nurses within SESLHD palliative care services

Administration of subcutaneous infusions in Palliative Care using a Surefuser™

SESLHDPR/666

1. POLICY STATEMENT

This procedure outlines the safe administration of continuous subcutaneous medications in the Palliative Care Setting using a NIPRO Surefuser™. The following procedure has been devised for use in SESLHD in the inpatient and community settings.

This procedure should be used in conjunction with policy SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care.

2. BACKGROUND

The aim of this procedure is to outline and explain an alternative way to provide a continuous background infusion of medications to control symptoms when a battery operated, reusable syringe driver is unavailable\

NIPRO Surefuser™ is NOT used at St George or The Sutherland Hospital

3. PRODUCT INFORMATION

- The NIPRO Surefuser™ is an elastomeric infusion pump designed to deliver drugs over a specific period of time. Once the NIPRO Surefuser™+ is filled with medication and connected to the subcutaneous Saf-T-intima, it will immediately begin delivering medication. The elastomeric 'balloon' inside the device constantly pushes medication through the tubing as it deflates and continues until the NIPRO Surefuser™+ is empty or disconnected.
- The NIPRO Surefuser™ is disposable and is for single use only.
- Different models can hold different volumes and run at different rates.
- **TWO products are approved for use in SESLHD**

Product	Volume	Infusion Time	Infusion Rate
NIPRO Surefuser™ 50 mL x 1 Day, 2.1 mL/hr	50 mL	24 hours (1 Day)	2.1 mL/hr
NIPRO Surefuser™ 100 mL x 2 Days, 2.1 mL/hr	100 mL	48 hours (2 Days)	2.1 mL/hr

- **Check with site palliative care clinical nurse consultant which model is used at specific site.**
    - 100 mL and 50 mL used at Calvary
    - 50 mL used at POWH

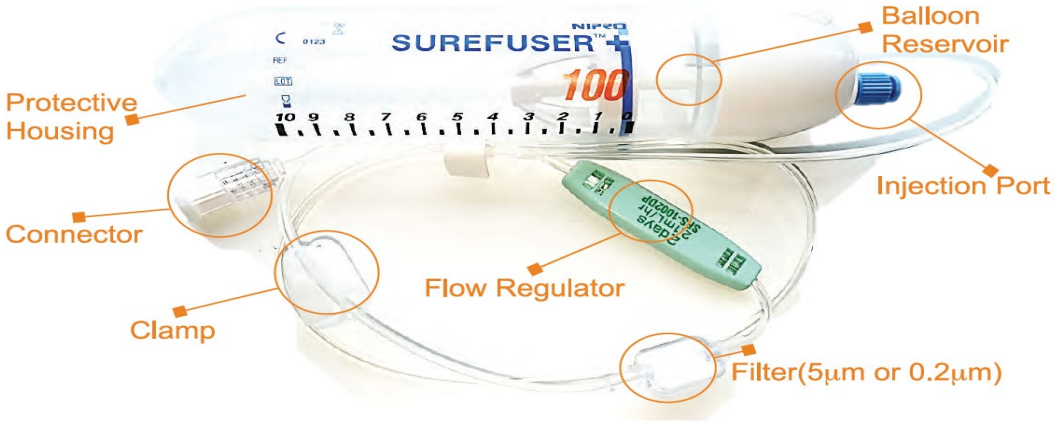


Figure 1:Image reproduced with the permission of Nipro Australia Pty Ltd

4. RESPONSIBILITIES

Line Managers will:

- Ensure staff are aware of and adhere to the procedure as outlined.

Nursing Staff will:

- Be familiar with the procedures outlined in this document prior to using the NIPRO Surefuser™
- Document all actions and conversations in patients written or electronic (e.g. eMR) progress notes.

5. DEFINITIONS

- **NIPRO Surefuser™:** A single use self-priming infusion device which works by slow compression of a balloon at a set rate per hour. It is an alternative continuous subcutaneous infusion device to a syringe driver
- **Surefuser™ Balloon Reservoir:** The balloon reservoir in the Surefuser™ holds the medication. As it constricts, it pushes the medication out through the infusion line at the set rate for the device.
- **Surefuser™ Flow Regulator:** The flow regulator is colour coded depending on the rate of flow and is located on the line. It ensures that the medication is infusing at the correct rate.
- **The BD Saf-T-Intima™:** A durable soft winged infusion cannula is made of polyurethane. The only part of the device that is metal is the introducer which is removed on insertion leaving a soft polyurethane catheter under the skin to which the NIPRO Surefuser™ can be attached.

  Often called a ‘Butterfly”, the BD Saf-T-Intima is recommended to:

  - Increase patient comfort.
  - Reduce site reaction.
  - Reduce needle stick injury.

Refer to below policy for further information on placement and care of patient when using the device: SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care.

6. ASSESSMENT

- Registered Nurses must be competent to set up and administer medications via a NIPRO Surefuser™. Enrolled Nurses (EENs) can only check the set up.
- To become proficient to set up without supervision requires:
    1) Watch education video here (https://vimeo.com/403504780)
    2) Supervision by CNE or Palliative Care Registered Nurse

7. EQUIPMENT

- Medication/s as per medication order
- 70% v/v Isopropyl Alcohol swabs
- 50 mL or 100 mL of appropriate diluent - either water for injection or sodium chloride 0.9% for injection. Please note SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care recommends water for injection be used, however the educational video refers to sodium chloride 0.9%.
- Drawing up needles
- NIPRO Surefuser™
- Non-sterile kidney dish
- 50 mL Luer Lok syringe
- BD Saf-T -intima™

8. PROCEDURE

(Please watch the educational video "A nurse's guide to using the Surefuser™ device in the palliative care setting" by Nepean Blue Mountains Health)

1) Use 70% Alcohol hand rub or wash hands as per NSW Ministry of Health Policy PD2023_025 - Infection Prevention and Control in Healthcare Settings and don gloves.
2) Check medication/s as per NSW Health Policy Directive PD2022_032 - Medication Handling
3) With two nurses, (note in community it is one nurse) one of whom is a registered nurse to cross-check, draw up the prescribed medication/s using clean technique

    Note: if using more than one medication ensure compatibility (using local or national compatibility guidelines) and draw up all medications prior to adding the diluents to the syringe.

4) Add medications to 50 mL Luer-Lok syringe and draw up water for injection or sodium chloride 0.9% (as deemed appropriate by the compatibility chart*) refer to SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care to a total volume of 50 mL. Gently invert the syringe several times to mix.

5) Remove the port cap and fill the balloon reservoir with the medication via the port using the following method:
    I. Ensure that the clamp is closed
    II. Place one hand on the Protective Housing and the other on the syringe. Pressure must be applied **only on the syringe** and not on the Surefuser™.
    III. Check the injection port for leaks and make sure that there is no damage in the Balloon Reservoir.
    IV. Make sure that the syringe does not separate from the port during the filling process.
    V. As per video, place both hands on the syringe for a secure grip. Press the syringe barrel slowly down allowing the solution to flow into the balloon reservoir. Pressure must be applied only on the syringe not on the NIPRO Surefuser™.
    VI. Ensure balloon reservoir is filled with the correct solution volume and disconnect syringe. Note: if using *NIPRO Surefuser™ 100 mL x 2 Days, 2.1 mL/hr* device you must add another 50 mL of diluent to make a total volume of 100 mL
    VII. Once the balloon is filled with the required volume replace blue cap on end of injection port.
    VIII. Ensure white cap on connector remains in place until connected to patient's Saf-T-Intima.
6) To prime the line, raise the tubing above the level of the balloon and open the clamp. The liquid automatically flows through the line. Once priming is complete close the clamp.
7) Attach the medication additive label to the NIPRO Surefuser™ ensuring that you do not obstruct the volume marks as per the Australian Commission on Safety and Quality in Health Care (ACSQHC) - National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines (Labelling Standard).
8) Place required equipment in the kidney dish for transport to the patient. For inpatients administration, this requires two registered nurses to cross-check.
9) Connect as per SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care.
10) Ensure white cap remains in place until connected to patient's BD Saf-T-intima™ and ensure that connections are secure.
11) Ensure that the flow regulator is securely attached to the patient's skin with a strong transparent dressing. Please do not use tape as this will not be strong enough.
12) As the flow regulator is temperature dependent the subcutaneous site may need to be changed if the patient is peripherally cool and moved to a more appropriate area.
13) Ensure that the NIPRO Surefuser™ is parallel to the subcutaneous site as having it too high or too low will affect the flow rate.

14) Unused medication will need to be discarded appropriately as per the NSW Health Policy Directive PD2022_032 - Medication Handling:

- Where only a portion of a schedule 8 medication is administered, the remainder of the medication must be discarded in the presence of the witness to the administration.

9. DOCUMENTATION

- The words 'via Surefuser™' need to be added by the doctor/Nurse Practitioner to the order to cover governance and safety in any care setting.
- The nurses administering the NIPRO Surefuser™ must sign they have administered the medications.
- Document in patient medical records (e.g. Powerchart).

10. MEDICATION COMPATABILITY

- As per SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care

11. LABELLING

Nursing staff must:

- Ensure the medication label is attached to the surface ensuring that the balloon is still visible. Do not place the label over the volume marking of the *protective housing* on the NIPRO Surefuser™ or at the end of it.
- Adhere to NSW Health Policy Directive PD2022_032 - Medication Handling.

12. DOSING CHANGES

- If medication/s or dose/s are changed a new infuser needs to be commenced and the old one discarded as per NSW Health Policy Directive PD2022_032 – Medication Handling.

13. DISPOSAL OF SUREFUSER

- The Surefuser™ is a single use device and needs to be discarded after each use.
- Once disconnected from the patient the entire device should be discarded in a sharps container.
- If there is medication remaining in the Surefuser™ it does not need to be emptied prior to discarding. Discard as per NSW Health Policy Directive PD2022_032 - Medication Handling.
- Volumes to be discarded should be documented by 2 nurses in the Surefuser™ Observation Chart.

14. SUREFUSER™ OBSERVATIONS

Inpatient - Observations are attended every four hours and documented on the 'NIPRO Surefuser™ Check Form' (Appendix 2).

Community - Observations attended daily or second daily dependent on 24 hr or 48 hr Surefuser™. Family are educated and given instructions regarding observations.

Observations may include: (Surefuser™ observations may vary depending on care setting)

- Surefuser™ label matches prescription
- volume remaining
- location and condition of subcutaneous BD Saf-T intima™ cannula site
- line connections are secure
- the clamp is in open
- ensure regulator is secured to the skin.

15. TROUBLESHOOTING

Please refer to Appendix 1 - Troubleshooting Guide if you have any difficulties. If this does not resolve the issue, please contact the Palliative Care Team.

16 KNOWLEDGE EVALUATION

Q1: Which patients within SESLHD are able to be prescribed a NIPRO Surefuser™ subcutaneous infusion device?

A1: A palliative care patient known to the Palliative Care Team meeting the criteria for the End of Life Care Plan

Q2: When loading the NIPRO Surefuser™ 50 mL/1 day (2.1 ml/hr) what is the required amount of medication plus diluent (WFI) that needs to be added to the device's balloon reservoir?

A2: Exactly 50 mL

Q3: When commencing a subcutaneous infusion using the NIPRO Surefuser ™ device what important points need to be considered to ensure correct flow rate?

A3: The flow regulator and body of the Surefuser ™ device need to be kept in line or parallel to the subcutaneous needle insertion site and as the flow regulator is temperature dependent you need to monitor if patient becomes too hot or cold.

17. ACKNOWLEDGEMENT

A very special thank you to Linda Ora, CNC, and the Supportive and Palliative Care nurses at Nepean Blue Mountains LHD who produced the educational video and Surefuser™ check form and have granted permission for these to be utilised by other services.

18. AUDIT

The managers, CNCs and CNEs will review the IMS system and investigate any near misses or incidents involving the Surefuser™.

19. REFERENCES

- Australian Commission on Safety and Quality in Health Care (ACSQHC) National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines (Labelling Standard)
- NSW Ministry of Health Policy Directive PD2022_032 - Medication Handling
- NSW Ministry of Health Policy Directive PD2023_025 - Infection Prevention and Control in Healthcare Settings
- NSW Ministry of Health GL2024_002 - Blood and Body Substances Occupational Exposure Prevention
- NSW Ministry of Health Policy Directive PD2012_069 - Documentation in the Health Care Record
- SESLHDPR/19 - Subcutaneous Needle Insertion and Management
- SESLHDPD/160 - Medication Administration by Enrolled Nurses
- SESLHDPR/175 - Administration of Subcutaneous Medications in Palliative Care
- NIPRO Surefuser™- Ambulatory balloon infuser; Instructions for use.

20. APPENDICES

Appendix 1 - Surefuser™ Trouble Shooting Guide
Appendix 2 - Surefuser™ Observation Form

21. VERSION AND APPROVAL HISTORY

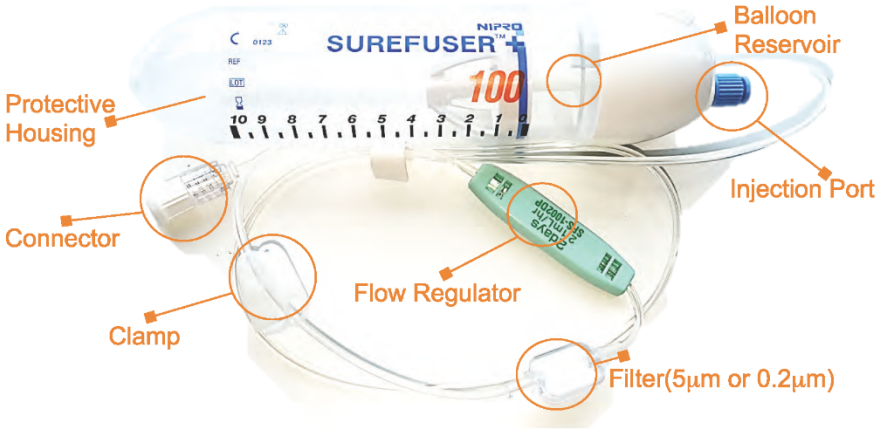
Date	Version	Version and approval notes
April 2020	1	Trish Sutton, Palliative Care CNC, Prince of Wales Hospital Caroline Pugh, Palliative Care CNS, Prince of Wales Dr Wei Lee, Clinical Research Fellow, Sacred Heart Palliative Care Unit Elizabeth Davies, Palliative Care CNC, St Vincent's Hospital Dr Davinia Seah Staff Specialist, Sacred Heart Palliative Care Unit Anne Williams, CNS Sacred Heart Palliative Care Unit
May 2020	1	Draft for comment period. Approved by Executive Sponsor. Formatted by Executive Services, prior to tabling at June 2020 Quality Use of Medicines Committee.
June 2020	1	Approved at June 2020 Quality Use of Medicine Committee noting 'normal saline' and 'N/S' to be amended to 'sodium chloride 0.9%' and 'ml' changed to 'mL'. Submitted to Clinical and Quality Council for tabling at July 2020 meeting.
July 2021	2	Minor review: regarding the disposal of the device; Surefuser observation chart was updated to the current form. Approved by Executive Sponsor.
August 2021	2.1	Reviewed by Quality Use of Medicine Committee – amendments suggested. For re-submission to Quality Use of Medicine Committee.
September 2021	2.1	Approved by Quality Use of Medicine Committee.

Date	Version	Version and approval notes
December 2022	3	Minor review: Updates include device only to used in the Palliative care setting under the supervision of palliative care staff; only to used if no syringe driver available; updates noting that 50 mL only to used at POWH and STG, Calvary community team can ONLY use 100 mL.
February 2023	3.1	Quality Use of Medicines Committee: approved with amendments. Amendments accepted in full by the author, review team and the Executive Sponsor.
18 March 2024	3.2	Minor review Updates Calvary use both 50 ml and 100ml. Discard device and medication as per NSW Health Policy Directive PD2022_032 - Medication Handling. Links updated. Approved at SESLHD Drug and Therapeutics Committee.
11 April 2025	3.3	Minor review: change of risk rating from Extreme to Medium – L; addition of sentence stating Surefuser NOT used at SGH or TSH; use of the word syringe driver rather than specific brand; changed from aseptic to clean technique; updated links in Reference list. Approved by SESLHD Drug and Therapeutics Committee.

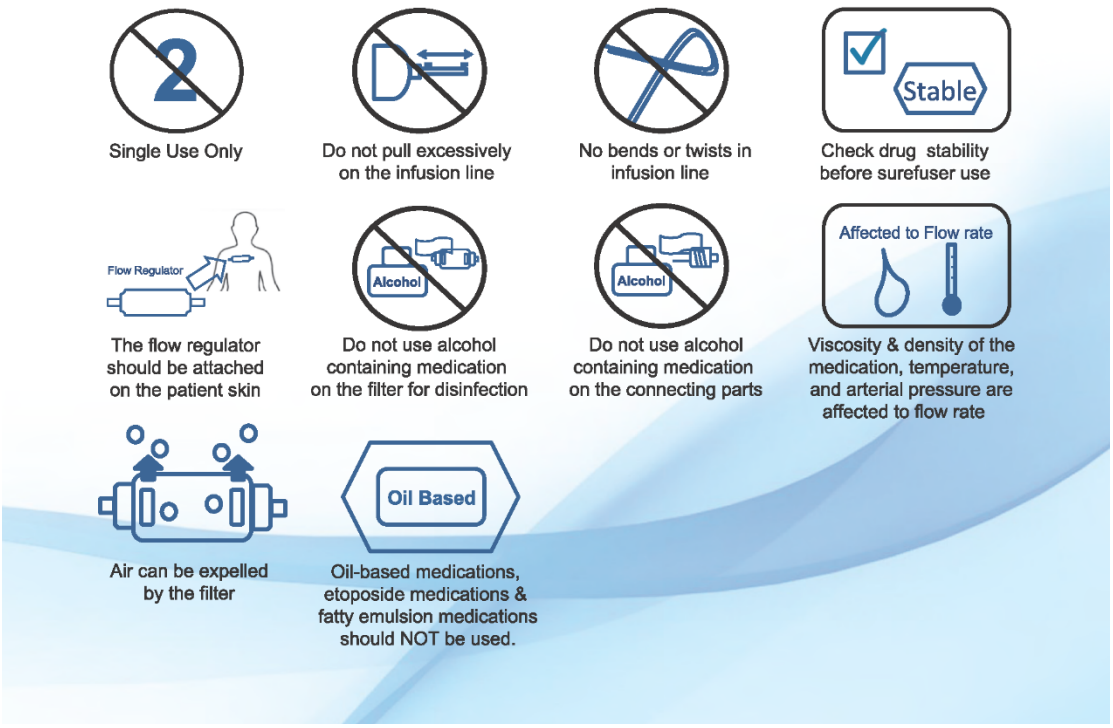
Appendix 1: Surefuser Trouble Shooting Guide

NIPRO
Your Partner in Health Care

Feature of Surefuser™ +



■ Caution for Surefuser™ +



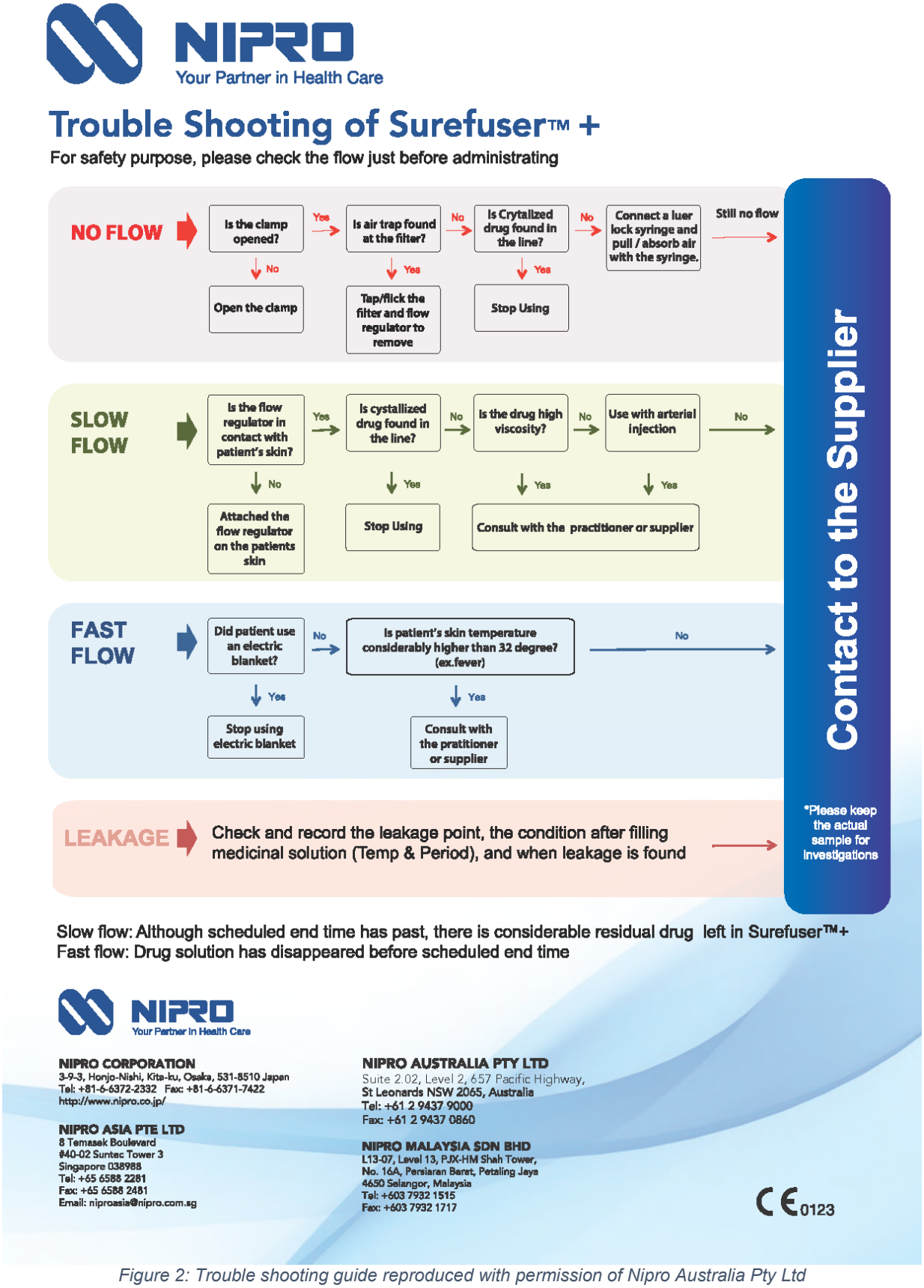


Figure 2: Trouble shooting guide reproduced with permission of Nipro Australia Pty Ltd

Appendix 2: Surefuser™+ observation form

SUREFUSER™+ NURSING CHECK CHART - CHECK INFUSION AT A MINIMUM OF EVERY 4 HOURS

FAMILY NAME:	
GIVEN NAMES:	
MRN:	D.O.B:
MALE / FEMALE	LOCATION/WARD:

Date	Time	Duration hours/days Infusion time (in days) located on the flow regulator *(Blue - 1 day, Green - 2 days)*	Volume of device 50mL or 100mL	Rate mLs/hour Located on flow regular	Subcutaneous Site Document condition in progress notes	Volume to be Infused 0 - 5 50mL device 0 - 10 100mL device Note blue line on numbered scale	Clamp check off/on	Signature

Acknowledgement: 'CNC, and the Supportive and Palliative Care nurses at Nepean Blue Mountains LHD who produced the educational video and Surefuser™ check form and have granted permission for these to be utilised by other services'.