

SESLHD PROCEDURE COVER SHEET



Health
South Eastern Sydney
Local Health District

NAME OF DOCUMENT	Peripheral Intravenous Cannulation (PIVC) Insertion, Care and Removal (Adults)
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LEVEL OF EVIDENCE	National Safety and Quality Health Service Standards: 1 – Governance for Safety and Quality in Health Service Organisations 3 – Preventing and Controlling Healthcare Associated Infections 4 – Medication Safety 5 – Patient Identification and Procedure Matching NHMRC (2010) <i>Australian Guidelines for the Prevention and Control of Infection in Healthcare</i> NSW Ministry of Health Guideline - GL2013_013 <i>Peripheral Intravenous Cannulation (PIVC) Insertion and Post Insertion Care in Adult Patients</i>
REVIEW DATE	June 2019
FORMER REFERENCE(S)	SESLHDPR/234 Peripheral Intravenous Cannulation
EXECUTIVE SPONSOR or EXECUTIVE CLINICAL SPONSOR	SESLHD Director Clinical Governance
AUTHOR	SESLHD Infection Prevention and Control Committee and Infection Control Policy Working Party
POSITION RESPONSIBLE FOR THE DOCUMENT	Infection Control Policy Working Party SESLHD-InfectionControl@health.nsw.gov.au
KEY TERMS	Peripheral intravenous cannula, PIVC, IV, adult, cannulation, escalation, infection
SUMMARY	A local procedure to supplement the NSW Ministry of Health Guideline - GL2013_013 <i>Peripheral Intravenous Cannulation (PIVC) Insertion and Post Insertion Care in Adult Patients</i> and to outline the clinical requirements for care of PIVCs.

COMPLIANCE WITH THIS DOCUMENT IS MANDATORY

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Peripheral Intravenous Cannulation (PIVC) Insertion, Care and Removal (Adults)

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1. POLICY STATEMENT

This document is written to complement the [NSW Ministry of Health Guideline - GL2013_013 Peripheral Intravenous Cannula \(PIVC\) Insertion and Post Insertion Care in Adult Patients](#). This document aims to reinforce safe practices whilst addressing the local needs and should be used in conjunction with NSW Ministry of Health Guideline GL2013_013. Ensure an assessment is undertaken for all patients requiring a PIVC to ensure correct selection of device (See appendix 1).

2. BACKGROUND

PIVC is one of the most common invasive procedures performed in a healthcare setting. However, it is also a procedure associated with morbidity and rarely mortality. Morbidity and mortality from a PIVC is preventable by adhering to standardised practices such as hand hygiene and aseptic technique. Multiple attempts at peripheral intravenous cannulation increase the risk of mechanical and infective complications such as bacteraemia or sepsis. An escalation procedure to minimise this risk must be followed in the event that there are two failed cannulation attempts.

3. RESPONSIBILITIES

Only trained or experienced clinicians who can demonstrate competency and recognition of prior learning are able to insert a peripheral intravenous cannula. These include:

- Medical Officers
- Medical Radiation Scientists – Radiographers and Nuclear Medicine Technologists
- Registered Nurses / Registered Midwives
- Specialty and extended practice Enrolled Nurses.

Every person has responsibility for the health and safety of our patients. To ensure our patient safety standards are met and sustained, the following responsibilities are assigned:

3.1 Clinical Governance Unit

- Promote safe peripheral vein cannulation, documentation and post insertion care
- Promote the peripheral vein cannulation procedure within SESLHD
- Ensure dissemination and implementation of the procedure within organisations
- Ensure that auditing practices are routinely undertaken
- Ensure that PIVC related infections entered into the Incident Information Management System (IIMS) are monitored.

3.2 Clinical Stream Manager will:

- Promote safe peripheral vein cannulation, documentation and post insertion care
- Promote this procedure within SESLHD clinical departments.

3.3 General Managers will:

- Ensure successful implementation of this procedure within their organisation(s)
- Ensure that an unsuccessful insertion escalation procedure is developed for each healthcare facility
- Ensure that any healthcare associated Staphylococcus aureus bacteraemia related to a PIVC is investigated and that all PIVC related infections are entered into IIMS

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- Ensure that clinical staff inserting PIVC devices are trained and assessed to insert PIVC in accordance with this procedure.

3.4 Nurse Managers/Nurse Unit Managers will:

- Ensure that equipment that can assist with safe and effective insertion of an intravenous cannula into a peripheral vein for both patient and clinician is available.

3.5 Educators will:

- Provide education and training on the correct and safe intravenous cannulation of peripheral veins and documentation.

3.6 Clinical and Medical Staff will:

- Complete education and training to ensure knowledge and practical skill for peripheral intravenous cannulation
- Assess every patient to determine appropriate intravenous access
- Identify patient, explain the procedure, obtain verbal consent and ascertain any allergies
- Document the time, place and reason for insertion of the PIVC
- Document condition of the insertion site using the Visual Infusion Phlebitis (VIP) score each shift
- Maintain aseptic technique during PIVC insertion, access, and removal. Refer to local escalation protocols in the event of two unsuccessful attempts.

4. PROCEDURE

4.1 Infection Prevention and Control Principles

The prevention of infection is important in optimising outcomes and minimising risks associated with the use of PIVCs. These elements include but are not limited to: the use of personal protective equipment, hand hygiene, aseptic technique, and correct disposal of equipment and medical waste.

4.2 Aseptic Technique

- Refer to [CEC Infection Prevention and Control Practice Handbook](#).

4.3 Work Health and Safety

- The use of safety needle devices and closed Intravenous Therapy (IVT) systems should be implemented and the correct disposal of sharps and medical waste followed
- Ensure the correct use of PPE for insertion, access, and removal to prevent occupational exposures.

4.4 Patient and vein assessment and site selection (see Appendix 1)

- Check for contraindications e.g. arteriovenous (AV) fistula, lymph node clearance history, presence of thrombus/phlebitis, impaired circulation, implantable devices e.g. pas-port™ etc.
- Avoid lower limbs, areas of flexion, and the anterior aspect of the wrist. Select a vein, suitable to cannula size and therapy required. The smallest size IVC appropriate to therapy should be used
- Select the most distal area of the vein appropriate allowing subsequent cannulations to progress proximally
- Ensure device selection is suitable to therapy required and consider alternative venous access:

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- If intravenous therapy is to continue for longer than six days
- If the patient has poor venous access
- Multi-lumen access required
- Treatment includes administration of vesicant solutions, (i.e. solutions that if infiltrated by escaping the vein are capable of causing pain, ulceration, necrosis and sloughing of damaged tissue) consideration must be given to referring the patient for insertion of an alternate vascular access device such as a Midline or Central Venous Access Device. These alternate devices should be considered where ongoing infusion of solutions with a pH range outside of 5-9 or an osmolarity greater than 500 mOsmols/L are prescribed.

4.5 Escalation of difficult PIVC access

- When difficulty arises during insertion of a PIVC (more than two attempts required) and a more experienced clinician is not available, or when complications arise and the patient deteriorates, escalation procedures to minimise patient harm should be initiated. Refer to Appendix 3 for local protocols.

4.6 Flushing of PIVC and post insertion care

- Use sterile 0.9% saline for injection in a 10ml syringe to flush PIVC after insertion, before and after each medication/infusion is given, and at least every eight hours if not otherwise used
- Document flushes as per local protocols on medication chart/ eMEDs
- If the PIVC is being accessed more than twice a day (other than to flush PIVC), a continuous infusion is highly recommended. PIVC continuous infusions should be maintained as closed systems
- To minimise discomfort and avoid potential infection and occlusion of site, no temporary disconnections to be performed (e.g. showering, transfers, mobilisation).

4.7 PIVC documentation post insertion

- Phlebitis or inflammation of the vein usually results from trauma of cannulation or ongoing administration of medications and fluids which irritate the vein. Signs include localised redness and swelling, pain along length of vein and vein being hard and cord-like. A VIP score is utilised to monitor the patient for phlebitis. If a cannula has a VIP of two or more, cannula must be removed, otherwise this may lead to more severe complications for our patients such as localised infection, sepsis and necrosis.
- In the event that a localised or systemic infection is diagnosed as per [SESLHDPD/280 Mandatory Reporting of Peripheral Intravenous Cannula \(PIVC\) Related Infection/Phlebitis in the Incident Management System \(IIMS\)](#) an IIMS must be entered
- The VIP score must be completed once per shift, and documented on either the Nursing Care Plan or within the clinical notes. Refer to Appendix 2
- Any changes or events regarding the PIVC should be contemporaneously documented within the clinical notes
- If a medical officer requests that a PIVC remains in situ past usual dwell time, the reason and plan must be documented in the clinical notes, including the date to review the cannula e.g. next day.

4.8 Indications for routine removal of PIVC and post removal documentation

- The PIVC should be reviewed daily to determine whether it is still required. Standard precautions must be used during removal of PIVC.
- Situations where the routine removal of PIVC should be considered (in consultation with the treating team) include:

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- Change from IV to oral medication and/or cessation of IV Fluids and PIVC no longer required
- If Visual Infusion Phlebitis (VIP) score exceeds two or more
- If local infection or sepsis is suspected, a swab of the insertion site, and blood cultures may be ordered by the medical officer
- If insertion date cannot be determined from Nursing Care Plan, clinical notes or written on IVC
- If device inserted in an emergency situation and dwell time exceeds 24 hours and there is no medical officer documentation indicating device should be left *in situ*
- If device otherwise exceeds dwell time of 72 hours and there is no medical officer documentation indicating that the device should be left *in situ*.
- Removal date, time and condition of PIVC site should be documented in the clinical notes including reason for removal (e.g. PIVC no longer required, infection, or VIP score two or more)
- Ongoing monitoring of condition of PIVC site for at least 48 hours post insertion should also be documented in clinical notes.

4.9 Patient Information Brochures

- Patient Information brochures should be made available to every patient requiring PIVC insertion
- [Caring for your Cannula brochures](#) are available in multiple translations and are accessible via the Multicultural Health Communication webpage.

4.10 Discharge Planning With A PIVC In Situ

PIVCs should not be left *in situ* post discharge unless documented arrangements have been made. In the rare exception that this occurs; there must be a documented plan in place for ongoing monitoring and removal of the PIVC. The patient should be provided with [Caring for your Cannula brochures](#) and be supplied with information about their PIVC and who will be responsible for their PIVC dressings, care and administration of therapy and removal.

4.11 IIMS follow-up of PIVC site infections

As per [SESLHDPD/280 Mandatory Reporting of Peripheral Intravenous Cannula \(PIVC\) Related Infection/Phlebitis in the Incident Management System \(IIMS\)](#)

5. AUDIT

National Standard 3 audits as per individual facility audit schedules.

6. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
December 2009	0	Monika Kebsch, Nurse Manager, Workforce, St Vincent's Hospital Approval granted in October 2009 at the Area Clinical Council meeting
January 2013	1	Inclusion of additional wording removal as soon as possible after they are no longer clinically required in the policy statement as approved by the Infection Control Consultants Forum and recommended by St George Hospital SAC report (1342511-20)

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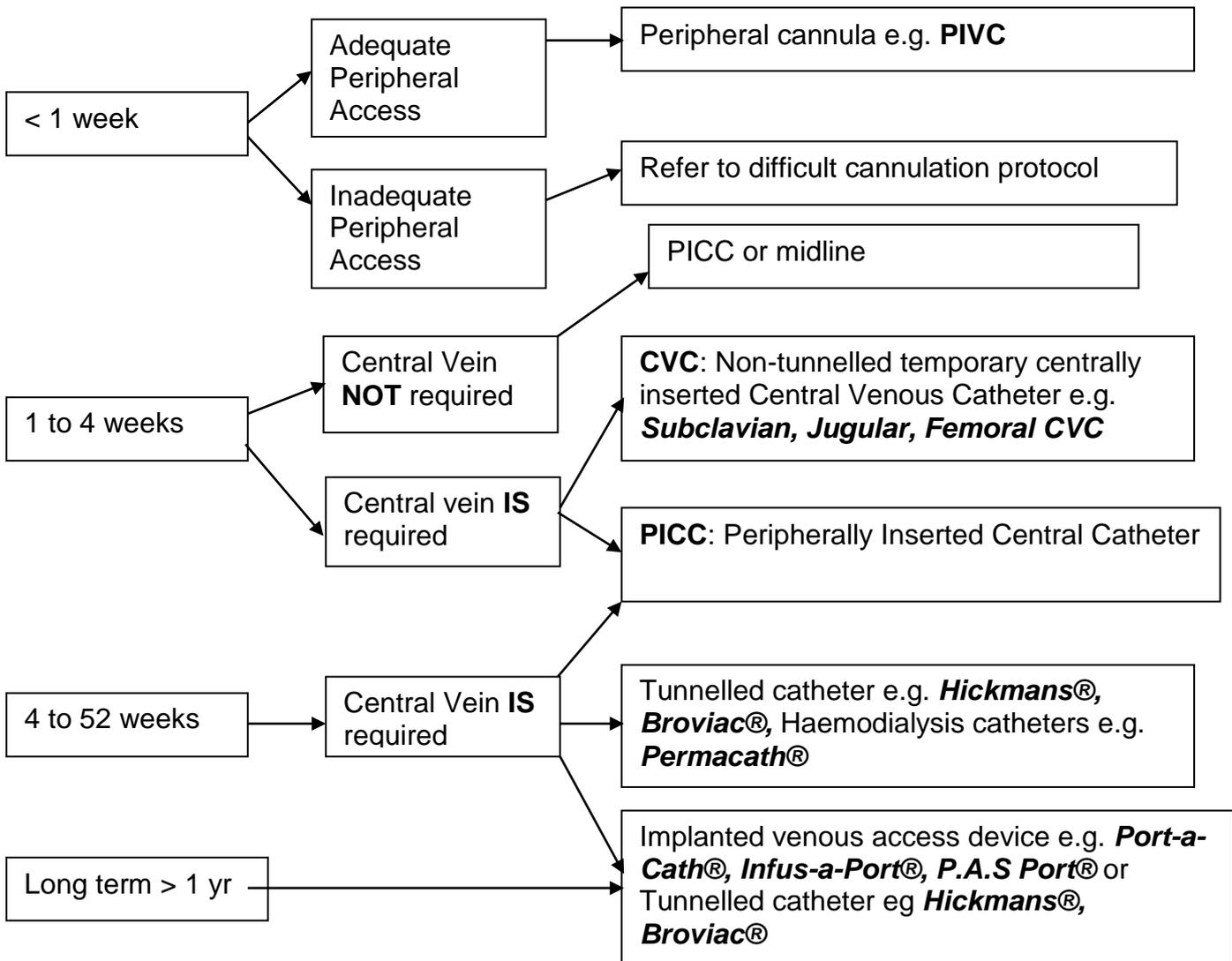
February 2017	2	Endorsed by Executive Sponsor for Draft for Comment
May 2017	2	Submitted to MES for review and approval prior to submission to SESLHD Clinical and Quality Council for endorsement
June 2017	2	Approved by Clinical and Quality Council

7. REFERENCES

- [NSW Ministry of Health Guideline - GL2013_013 Peripheral Intravenous Cannula \(PIVC\) Insertion and Post Insertion Care in Adult Patients](#)
- [NSW Ministry of Health Policy - PD2007_036 Infection Control Policy](#)
- [NSW Ministry of Health Policy - PD2010_058 Hand Hygiene Policy](#)
- [SESLHDPD/280 Mandatory Reporting of Peripheral Intravenous Cannula \(PIVC\) Related Infection/Phlebitis in the Incident Management System \(IIMS\)](#)
- [CEC Infection Prevention and Control Practice Handbook](#)
- [SGSHHS CLIN038 Peripheral Intravenous Cannulation - Accreditation Process](#)
- [SGSHHS CLIN098 Medications - Nurse/Midwife Initiated](#)
- [Clinical Excellence Commission 2016. National Standard for User-Applied Labelling of Injectable Medicines, Fluids and Lines](#)
- [Caring for your Cannula brochures](#)

Appendix 1: Appropriate device selection

CONSIDER DURATION OF TREATMENT
CONSIDER TYPE OF INFUSATE e.g. Vesicant, Hypertonic,
Ph extremes
CONSIDER PATIENT'S ACTIVITIES OF DAILY LIVING

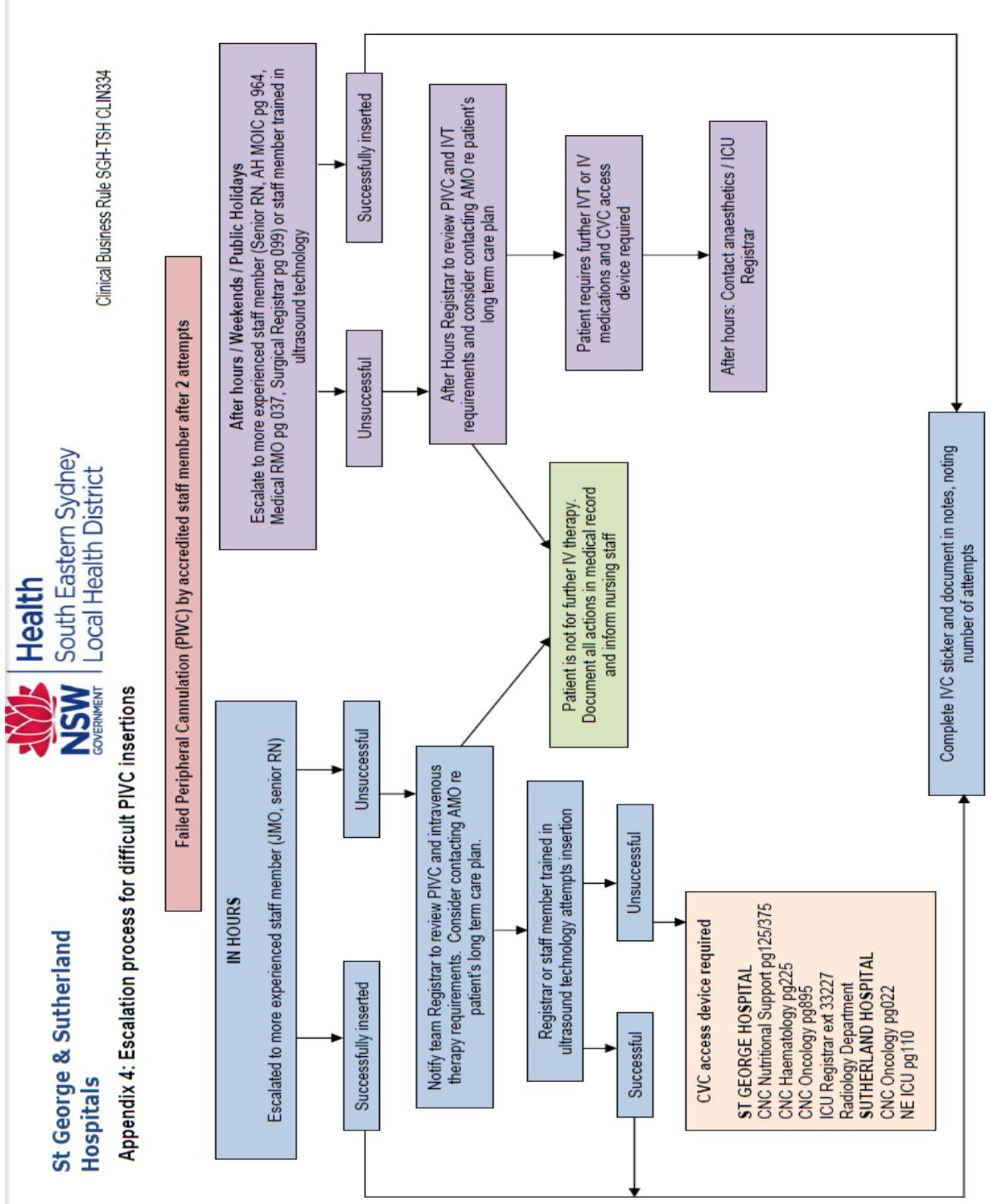


CONSIDER REFERRAL & SERVICE / DEPARTMENT TO INSERT DEVICE
Accredited nursing staff and medical staff for cannulation, Vascular Surgeon's, Intensive Care Registrars/Residents, Interventional Radiologist, and Clinical Nurse Consultants for cannulation and PICCs

Appendix 2 – Visual Infusion Phlebitis Score (VIP score)

V.I.P. Score (Visual Infusion Phlebitis Score) Developed by Andrew Jackson, 1997		
0	I.V site appears healthy	No signs of Phlebitis Observe Cannula
1	One of the following is evident Slight pain near I.V. site or slight redness near I.V.site	Possible first signs of phlebitis Observe Cannula
2	Two of the following is evident Pain near I.V. site Erythema Swelling	Early stage of phlebitis Resite cannula
3	All of the following are evident Pain along path of cannula Erythema Induration	Medium stage of phlebitis • Resite cannula Consider treatment
4	The following are evident and extensive Pain along path of cannula Erythema Swelling Palpable venous cord Pyrexia	Advanced stage of phlebitis (or start of thrombophlebitis) • Resite cannula Consider treatment
5	All of the following are evident and extensive: Pain along the path of the cannula Erythema Swelling Palpable venous cord Pyrexia	Advanced stage of thrombophlebitis • Initiate treatment • Resite cannula

Appendix 3 Local Escalation plans
St George and Sutherland Hospital



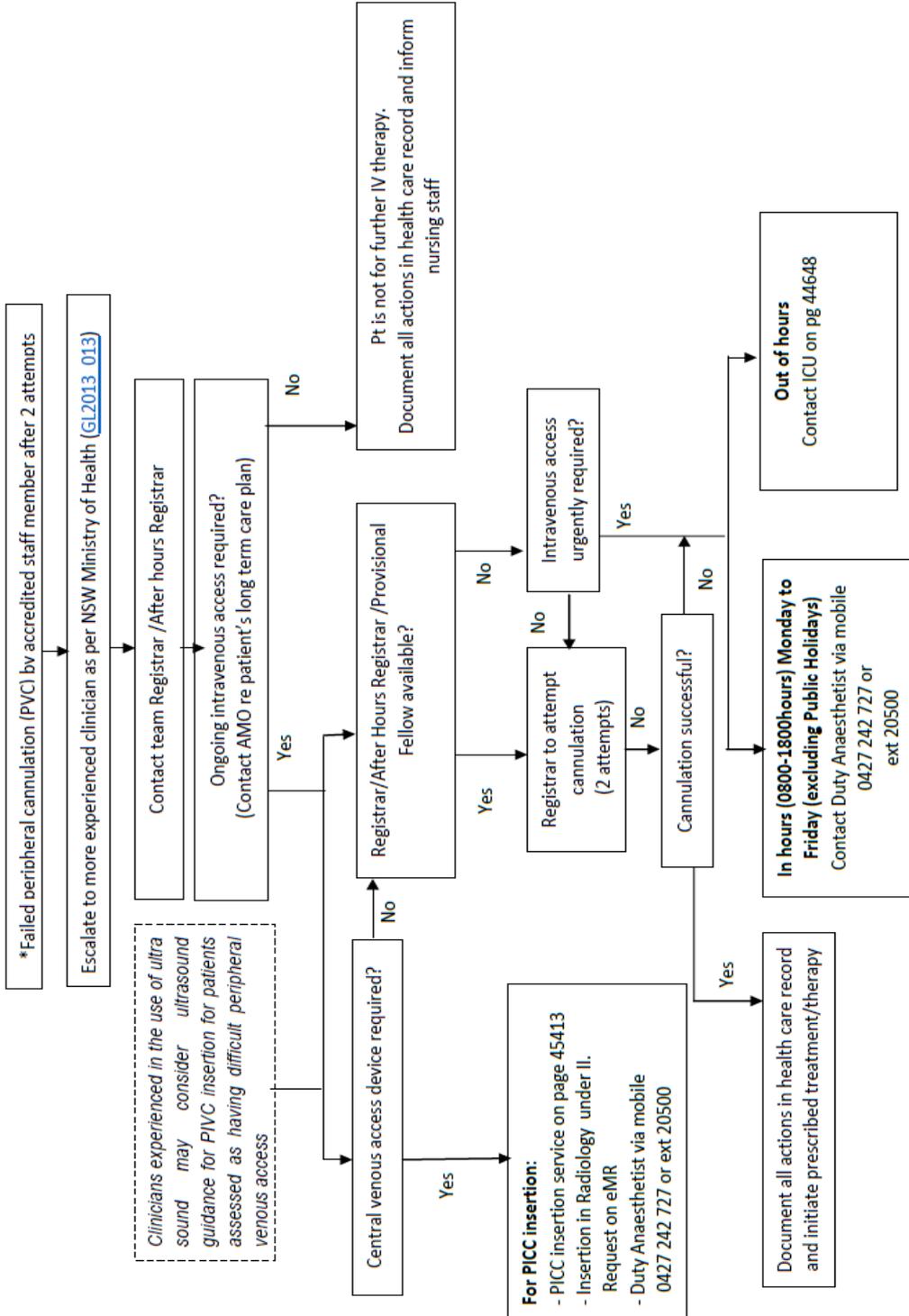
Appendix 3 Local Escalation Plans
Prince of Wales



Prince of Wales Hospital and Community Health Services

Escalation procedure for difficult Peripheral Intravenous Cannula insertion

Consider learning opportunities for other clinicians. Ensure JMO or RN are present for cannulation for teaching purposes



Approved by POW/SSEH Policy and Procedure Review Committee- July 2016. POWH CLIN019 TRIM No: T16/38592 Revision due: August 2019