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Peripherally Inserted Central Catheter (PICC) Dressing Management Clinical Guideline

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Government of South Australia
SA Health

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Peripherally Inserted Central Catheter (PICC) Dressing Management Clinical Guideline

1. Introduction

Peripherally inserted central catheters (PICC) provide direct access to the patient's bloodstream and therefore pose a serious risk for infection from microorganisms introduced either at the time of insertion or while being cared for whilst *in situ*.

This guideline describes the procedure for performing a dressing change for a peripherally inserted central catheter (PICC) that is secured with an adhesive securement device.

The guideline will promote a consistent and standardised approach to management of PICC dressings throughout SA Health facilities.

2. Definitions

In the context of this document:

- **Adhesive securement device refers to:** a device used to secure the placement of a catheter, typically using a medical adhesive, to attach the device to the skin. Adhesive securement devices need to be changed routinely every seven days, or sooner if clinically indicated.
- **Aseptic Technique refers to:** a technique that protects patients during invasive clinical procedures by employing infection control measures that minimise, as far as practically possible, the presence of pathogenic organisms. While the principles of aseptic technique remain constant for all procedures, the level of practice will change depending upon a standard risk assessment.
- **Chlorhexidine impregnated sponge or dressing means:** a dressing product impregnated with chlorhexidine that is applied to the insertion site to reduce the bacterial load and therefore reduce the risk of central line associated sepsis. It is available as an impregnated disc (e.g.Biopatch™) or a gel (Tegaderm CHG™) and requires a weekly change, or sooner if clinically indicated.
- **Don means:** putting on personal protective equipment (PPE).
- **Insertion site refers to:** the site where the catheter exits from the skin.
- **Flush refers to:** throughout the document denoting a 0.9% sodium chloride flush. Required before and after all treatment administrations, blood sampling and whenever directed.
- **Peripherally Inserted Central Catheter (PICC) means:** single, double or triple lumen open or closed (valved) catheter; these are mainly inserted in peripheral veins (brachial, basilic or cephalic). Some PICCs are pressure injectable which allows administration of CT contrast. PICCs can remain *in* situ for up to 12 months.
- **Pulsatile technique refers to:** a 'stop, start' technique, where 2mls is injected followed by a pause, then a further 2mls followed by a pause, repeated until the completion of the administered fluid. Using a pulsatile technique increases the turbulence within the catheter and helps to maintain catheter patency.
- **Securement device refers:** for the purpose of this guideline, the term securement device relates to the type used including adhesive securement device, suture or subcutaneous securement (e.g. SecureAcath™)
- **Semi-permeable transparent dressing means:** a dressing which has a high moisture vapour transmission rate (MVTR). These dressings help to reduce the accumulation of moisture under the dressing; this can help to maintain the integrity of the dressing and reduce bacterial colonisation.

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3. General

3.1. Requirements

All SA Health services are to align their procedures for the management of PICC dressings with this document to minimise the risk of infection and ensure a standardised level of care.

PICC dressing management should be performed by, or under direct supervision of, a healthcare worker who has the relevant knowledge, skills and training.

Strict adherence to hand hygiene and aseptic technique is required for the PICC dressing change.

Appendix A provides detailed information to assist health services with the implementation of this policy guideline and appendix B provides a pictorial representation of the information.

Key points to consider prior to performing the dressing change:

- The photo is an example of a PICC dressing post insertion.
- A gauze swab may be placed over the insertion site by the staff inserting it, to absorb any exudate post insertion.

  Note: that if at insertion there has been gauze or product applied to manage bleeding, the dressing will need to be changed within one day of insertion.
- The dressing should be changed every seven days, or sooner if the integrity of the dressing is compromised.
- Undertake positive patient identification as per SA Health's Patient Identification Guideline. Confirm the patient's identity using the three nationally approved patient/client identifiers: patient/client full name, date of birth, medical record number.
- **ASK** the patient to state (and where indicated spell) their full name and date of birth.
- **ALWAYS** check this against the patient's ID band.
- **NEVER** ask the patient 'are you Mr Jones?', for example, as the patient may have misheard and mistakenly agree.
- **NEVER** assume the patient is in the right bed or that the name tag above the bed is correct.
- Document the PICC dressing change, clinical assessment of site and external measurement length.

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3.2. Implementation and monitoring

Implementation of this guideline is designed to promote consistency of practice and minimise the occurrence of healthcare-associated blood stream infections related to intravenous lines, and consequently reduce the potential for patient harm.

Local Health Networks are responsible for the implementation of the recommendations contained within this document, including the training and competency assessment of staff who perform these procedures.

The effectiveness of this guideline will be monitored through:

- regular auditing of aseptic technique
- regular review of blood stream infection rates by all SA Health public hospitals. Data are reported monthly as part of the Safety and Quality hospital performance indicator set.
- in-depth epidemiological analysis of healthcare associated infection rates, conducted annually by the SA Health Infection Control Service as part of the statewide healthcare infection surveillance system.

4. Safety, quality and risk management

National Standard 1 Clinical Governance	National Standard 2 Partnering with Consumers	National Standard 3 Preventing & Controlling Healthcare-Associated Infection	National Standard 4 Medication Safety	National Standard 5 Comprehensive Care	National Standard 6 Communicating for Safety	National Standard 7 Blood Management	National Standard 8 Recognising & Responding to Acute Deterioration
☒	☐	☒	☐	☐	☐	☐	☐

5. Eligibility criteria

Inclusion

This guideline is for use by all SA Health clinical staff working within SA Health services who have the relevant knowledge, skills, and training in the management of PICCs.

6. Appendices

- PICC dressing procedure
- PIVV procedure pictogram

7. Reference

7.1. National guidelines

- NHMRC (2019) Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Queensland Department of Health (2015). Guideline - Peripherally inserted central venous catheters (PICC) https://www.health.qld.gov.au/__data/assets/pdf_file/0032/444497/icare-picc-guideline.pdf

7.2. SA Health directives and guidelines

- Clinical Communication and Patient Identification Clinical Directive, 2019

7.3. Additional resources

- Australian and New Zealand Intensive Care Society (2012) Central Line Insertion and Maintenance Guideline. Available at https://www.anzics.com.au/clabsi/
- Centers of Disease Control and Prevention (2011) Guideline for the Prevention of Intravascular Catherter Related Infections. Available at https://www.cdc.gov/infectioncontrol/guidelines/BSI/index.html
- EviQ Cancer Treatments Online. (2016). Clinical Procedure - Central Venous Access Device – Dressing and Needleless Injection Cap Change. Available at https://www.eviq.org.au/clinical-resources/central-venous-access-devices-cvads/900-central-venous-access-device-dressing-and-n
- Infusion Nurses Society (2016) Infusion Nursing Standards Policies and Procedures, Chapter 4 Site care and Maintenance, CVAD Dressing pp. 116-119

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8. Document Ownership & History

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10/01/20	V1.1	Acting Director, Communicable Disease Control Branch	Move to new template and update references
1/08/17	V1	SA Policy Committee	Original SA Policy Committee approved version.

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Appendix 1 – PICC dressing procedure

Equipment required for a routine dressing change

> Non-sterile gloves x 1 pair	> 2% chlorhexidine in 70% alcohol skin preparation
> Sterile gloves x 1 pair	> Needleless connector for each lumen
> Medicated sponge for aseptic hand wash	> Sterile dressing pack
> Sterile hand towels x 1	> Large transparent semi permeable dressing (e.g.Tegaderm™ or Opsite IV 3000™)
> 10ml syringe x 2	> 10mls 0.9% normal saline x 2
> Needleless blunt connector x 2 (*if required*)	> Adhesive securement device (e.g.StatLock®, GripLok®, Modulare®)
> Chlorhexidine impregnated sponge or dressing	> 70% alcohol or 2% chlorhexidine & 70% alcohol impregnated swabs for disinfection of connectors/bungs
> Plastic backed protector sheet	> Waste paper bag/bin

Note: Assess number of lumens as this will increase some equipment requirements.

1.	• Ask the patient to state (and where indicated spell) their full name and date of birth. Always check this against the patient's ID band. • **Check with the patient and/or the patient medical record written or electronic for any allergy to skin preparation solution or dressing products.** • Explain the procedure to the patient, including that the procedure will require the patient to remain still for the duration of the procedure, and obtain consent. • Conduct patient assessment of compliance. If patient is disorientated, confused, or non compliant it is recommended that you seek additional assistance with this procedure. • Perform hand hygiene. • Don personal protective equipment (PPE) as required.
2.	• Measure external catheter length (exit point from skin to end of bung/connector) • Compare with insertion measurement. If there is greater than 2cm discrepancy, report to treating medical team as the PICC line tip location requires investigation. Do not use pending review by medical team. • Assess insertion site for any visible abnormalities e.g. redness, tenderness, swelling, or exudate. Gently palpate the insertion site and ask the patient if there is any tenderness or pain. If there are any abnormal signs or symptoms contact the treating medical team for a collaborative decision regarding intervention, including potential device removal.
3.	• Perform hand hygiene. • Don non-sterile disposable gloves. • Using an aseptic technique open the dressing pack and sterile items. • Place a non-sterile blue plastic backed sheet under the arm to protect clothing and bedding from skin preparation solution run off.
4.	• Gently remove existing dressing, beginning at the device hub. Avoid inadvertently dislodging the catheter, as it may have adhered to the dressing. • Hold the skin firmly and close to the transparent film edge to prevent the skin from tearing as the dressing is removed. • Apply adhesive strip if required.

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5.	• Remove adhesive stabilisation device according to manufacturer's directions for use. Remove gently; 70% alcohol maybe used to assist removal where required. • Take care not to touch the insertion site at any time throughout this procedure. • A subcutaneous stabilisation device is not removed with each dressing change. • If sutures have been used, carefully assess their integrity. If loose, other methods of stabilisation may be necessary. • **Take care not to dislodge or accidently withdraw the unsecured catheter.** • Apply adhesive tape/ strip to hold the PICC to skin (if required).
6.	• Remove gloves, discard waste. • Perform a one minute aseptic hand wash and dry hands with the sterile hand towels.
7.	• Don **sterile** gloves.
8.	• Remove chlorhexidine impregnated sponge (if present) with sterile forceps. • Discard forceps. • Inspect PICC insertion site for swelling, redness and exudate. If there is exudate present, swab the site for cultures as per local procedure.
9.	• Disinfect the insertion site with 2% chlorhexidine in 70% alcohol solution using a gauze swab from the dressing pack or a commercially pre-prepared sterile 2% chlorhexidine in 70% alcohol swab stick. • Disinfection should be performed using a circular motion moving in concentric circles from the insertion site outwards, or basket weave pattern, as per manufacturer's instructions. • This step should be repeated a total of three times using a new gauze or impregnated sponge for each application, and each application should be allowed to air dry prior to the next application. • Allow to air dry which may take approximately 30 – 60 seconds. **Note: care should be taken not to dislodge the unsecured catheter**
10.	• Apply the adhesive stabilisation device as per manufacturer's instructions. • Use skin preparation if supplied, prior to application of stabilisation device. **Positioning tips:** • Take care when selecting the position of the PICC once dressed and secured. • Keep the PICC away from the cubital fossa to prevent bending and fracturing. Bend the patient's arm to ensure there will be no kinks or bends in the catheter. • Keep the external length of the PICC away from the insertion site • Do not allow the lumen to overlap the insertion site as this will cause irritation and increase the risk of infection. • Position the bung on the outer portion of the arm to assist with accessing the bung and to prevent the PICC from rubbing against the chest wall. • If possible, position the connectors/bungs downwards to prevent the weight of the line interfering with the seal of the transparent dressing.
11.	• Apply appropriately sized chlorhexidine impregnated sponge (if there are no contraindications) • If a Biopatch® is used – the blue side should face up. Ensure 360 degree contact with the skin.
12.	• Apply a large semi permeable transparent dressing. The insertion site should be positioned in the centre of the dressing. • The adhesive securement device must also be completely covered. • Use an additional large semipermeable transparent dressing if required. • Take care not to overlap dressings above insertion site. • Gently press the transparent dressing to ensure firm skin contact. • If adhesive tape/ strip was used – remove this now.

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13.	• Prepare new connectors/bungs. • Prime new connectors/bungs with 0.9% normal saline using a 10ml syringe, leaving the syringe attached. • Disinfect each old connector/bung for 15 seconds with separate 70% alcohol or 2% chlorhexidine in 70% alcohol wipe/swab for each one. • Remove old connectors/bungs. **Note: a non-valved PICC requires clamping of each lumen before removing connectors/bungs; a valved PICC does not require clamping prior to removal of connectors/bungs**
14.	• Disinfect/scrub lumen(s) for 15 seconds with 70% alcohol or 2% chlorhexidine in 70% alcohol impregnated swabs and allow to air dry. • Apply new connectors/bungs, unclamp lumen if required, and flush the PICC with 0.9% sodium chloride or a suitable flushing solution using pulsatile technique. • Write the date of dressing change on the border of the transparent film dressing.
15.	• Cover the PICC dressing with appropriately sized TubigripTM or elasticated viscose tubular bandage. The bandage should be cut to a reasonable length to cover the entire dressing plus approximately 4cm (i.e. not too short, as this places undue pressure on the stabilisation device, leading to patient discomfort). This bandage helps protect the PICC and external lumens and connectors/bungs. • Remove sterile gloves. • Dispose of sterile gloves and dressing material as per organisation guidelines.
16.	• Perform hand hygiene.
17.	• Measure external length of catheter and compare with pre-dressing measurement (exit point from skin to end of bung/connector). • Compare with insertion measurement. If there is greater than 2cm discrepancy, report to treating medical team as the PICC line tip location requires investigation. Do not use pending review by medical team.
18.	• Perform hand hygiene. • Document the PICC dressing change, clinical assessment of site and external measurement length. • Check patient comfort, offer consumer information sheet: PICC Consumer Information (for adults).

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Appendix 2 – PICC dressing procedure pictogram