York Teaching Hospital NHS
NHS Foundation Trust

Policy of Infection Prevention Principles For Vascular Lines

Author:	Linda Horton-Fawkes
Owner:	Infection Prevention Team
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Target audience:	All Trust Clinical Staff
Relevant Regulations and Standards	

Version History Log

This area should detail the version history for this document. It should detail the key elements of the changes to the versions.

Version	Date Approved	Version Author	Status & location	Details of significant changes
1	May 2011	Linda Horton-Fawkes		
2	July 2011	Linda Horton-Fawkes		Change to wording re CDT competency training in monitoring and compliance section. Removal of Peripheral Cannulation link. One line in main text inserted re dating the dressing after cannula insertion.

Contents

1 Introduction & Scope

The aim of this policy is to outline the general principles for safe insertion, care and maintenance of all intravenous catheters, for all patients at all times. It is for all registered health care professionals involved who are trained to undertake such procedures, and are deemed competent. (See section 10.1).

2 Definitions

Asepsis - is the absence of infectious organisms such as bacteria, fungi, viruses, or other microorganisms which may cause disease.

Aseptic techniques – are those aimed at minimising infection, ensuring that only uncontaminated objects/fluids make contact with sterile/susceptible sites.

Antisepsis – is the removal of transient microorganisms from the skin by the use of chemical solutions, for disinfection.

Aseptic non-touch technique (ANTT) – ensuring that key parts are not touched or contaminated during an aseptic procedure.

Key Part – a key part is the sterile part of equipment that comes into direct contact with other key/sterile parts i.e. exposed lumens of catheters, intravenous (I.V) line connections, needles, syringe tips etc.

3 Policy Statement

Insertion of Intravenous devices:

The insertion of intravascular cannulae is an aseptic non touch technique (link to Asepsis Policy). **These techniques should be employed during any procedure that bypasses the body's natural defences.** (Epic 2 - 2007)

There are many different devices which may be utilized to attain venous access. Although the methods of insertion may differ depending on which device is used, and aftercare may vary, there are several core principles which must be adhered in reference to insertion and ongoing care for all catheter types.

- Catheter selection – care must be given to the selection of the appropriate device dependent on the predicted length of time the device will be required and the purpose the device will serve.

- Insertion site – certain devices have recommended sites for insertion, i.e. CVC lines, PICC and midlines (please refer to local protocols). Peripheral catheters offer more flexibility for site selection; however the antecubital fossa should be avoided for routine cannulation and should be reserved for emergency use only.

- Skin Preparation – Use 2% chlorhexadine gluconate in 70% isopropyl alcohol, clean for 30 seconds and allow drying for 30 seconds. (Single patient povidone – iodine application may be used if there is sensitivity to the former)

- Personal protective clothing (PPE) – are single use items and should be disposed of immediately after each procedure (link to: Standard Precautions policy).

- Hand Hygiene – correct effective hand hygiene techniques must be undertaken before and after each patient contact, and before applying gloves prior to the procedure. (Link to: Hand Hygiene policy).

- Aseptic technique – an aseptic non touch technique should be used (link to: Asepsis policy).

- Dressing – use a sterile transparent semi permeable dressing to allow observation of the insertion site, write date and time of insertion on the dressing.

Safe disposal of sharps – a sharps container must be available at point of use and should not be overfilled; do not re sheath needles; do not pass sharps from hand to hand. (Link to: Blood Borne Viruses policy and Sharps policy).

- Documentation – insertion of all devices must be recorded and must clearly state date and time of insertion.

(Adapted from: Saving Lives: Reducing Infection, Delivering Clean Safe Care).

Ongoing care:

- Hand Hygiene – effective hand hygiene must be performed before and after patient contact and prior to undertaking an aseptic task.
- Site inspection – there must be regular observation for signs of infection, at least once daily, this must be clearly documented in nursing/medical records.
    - Device access – ANTT must be used, ports or hubs must be cleaned for 30 seconds with 2% chlorhexadine in 70% isopropyl alcohol and allowed to dry for 30 seconds prior to accessing the port or hub. Systems should be closed systems, attained by use of self closing access ports such as a bionector, access should be gained via this route.
    - Disconnection - must be kept to an essential minimum, lines no longer required must be discarded immediately; during temporary suspension any disconnected line must have the key part protected with a sterile bung, and must be re-connected using ANTT and following thorough cleaning of the keys parts as above.
- **The line must be clearly labelled with patient details, and date and time the line needs to be replaced**. **(N.B. Arterial lines are colour coded red).**
- Device replacement – this varies depending on device used (see local protocols), however if there are signs of infection associated with the device a clinical decision is required to assess whether the line should be removed.

3.1 Administration set replacement

- Immediately after administration of blood and blood products.
- Total parenteral nutrition after 24hrs
- All other fluid sets after 72hrs

4 Equality Impact Assessment

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at an unreasonable or unfair disadvantage over others.

In the development of this policy, the Trust has considered its impact with regard to equalities legislation.

5 Accountability

All healthcare professionals are responsible and accountable to the Chief Executive for the correct implementation of this policy. Medical staff are professionally accountable through the General Medical Council, and nurses are professionally accountable to the Nursing and Midwifery Council.

The Trust expects all health care professionals involved in the performance of aseptic procedures to be familiar with current policies and legislation, and to ensure they attend the relevant training courses, and be able to demonstrate a satisfactory level of competence measured by formal assessment.

6 Consultation, Assurance and Approval Process

6.1 Consultation Process

This policy has been endorsed by the Hospital Infection Prevention and Control Committee.

6.2 Quality Assurance Process

Following consultation with stakeholders and relevant consultative committees, this policy has been reviewed by the Trust's Quality Assurance group to ensure it meets the NHSLA standards for the production of procedural documents.

6.3 Approval Process

Following completion of the Quality Assurance Process, this policy, and any subsequent policy revisions will require the approval of the CDT and HIPC.

7 Review and Revision Arrangements

The review of this document will take place with the collaboration of all parties involved, within 2 years or earlier if there are recommended changes in practice or legislation.

8 Dissemination and Implementation

8.1 Dissemination

This policy is available in alternative formats, such as Braille or large font, on request to the author of the policy.

8.2 Implementation of Policies

Once approved previous electronic versions of this document will be archived accordingly on the Trust's electronic portal Horizon. The current version of the document will be published on the above site. Information related to the latest version of the document will be available from Infection Prevention Department and Trust wide information i.e. team brief. This policy will be made available to service users and the public, on request, and in the format requested.

The Policy will be disseminated through the Consultants, Matrons and Ward Managers by e-mails and meetings.

9 Document Control including Archiving Arrangements

9.1 Register/Library of Policies

This policy will be stored on the Trust's electronic portal, Horizon, on the policies and procedures site and will be stored both in an alphabetical list as well as being accessible through the portal's search facility.

9.2 Archiving Arrangements

On review of this policy, archived copies of previous versions will be automatically held on the version history section of each policy document on Horizon. It is the responsibility of the Publisher(s) to ensure that version history is maintained on Horizon.

9.3 Process for Retrieving Archived Policies

To retrieve a former version of this policy from Horizon, the publisher of this policy, identified on the front sheet, should be contacted.

10 Monitoring Compliance With and the Effectiveness of Policies

This policy will be monitored for compliance with the minimum requirements outlined below.

10.1 Process for Monitoring Compliance and Effectiveness

In order to fully monitor compliance with this policy and to ensure that the minimum requirements are met, the policy will be monitored as follows:

Minimum Requirements	Monitoring
a. ANTT performed for all insertions and manipulations	Saving Lives audit Ongoing peer review and competency assessment by ANTT champions
b. Prevention of adverse sequelae following device insertion	Audit of insertion and ongoing monitoring documentation Saving Lives
c. Safe device management	Audit of insertion and ongoing monitoring documentation
d. Practitioners are fully trained and deemed competent prior to undertaking the procedure	CDT undertakes the primary cannulation training, with competency sign off by Assessors in the clinical areas.

10.2 Standards/Key Performance Indicators

Hygiene Code Criterion 8.

Saving Lives High Impact Intervention No's 1,2,3

11 Trust Associated Documentation

Related policies on Horizon:

- Hand Hygiene Policy
- Antiseptic and Decontamination Policy
- Training Identification Policy
- BBV Policy
- Standard precautions
- Asepsis
- Sharps

12 External References

Epic 2: *Guidelines for Preventing Healthcare Associated Infection in NHS Hospitals.* The Journal of Hospital Infection (2007) Vol. 65 Supp 1

Saving Lives: Reducing Infection, Delivering Clean Safe Care (2007) www.dh.gov.uk

National Patient Safety Agency (2007) *Promoting the safer use of injectable medicines. Multi-professional safer practice standards for: prescribing, preparing and administering injectable medicines in clinical areas.* London: NPSA. www.npsa.nhs ref; **NPSA/2007/20**

Glossary

Arterial lines - is a thin catheter inserted into an artery. It is most commonly used to monitor the blood pressure in real-time (rather than by intermittent measurement), and to obtain samples for arterial blood gas measurements.

Arteriovenous (AV) fistula - a fistula created by joining an artery and a vein together through anastomosis for the purposes of haemodialysis.

Arteriovenous (AV) grafts - are similar to fistulas except that an artificial vessel is used to join the artery and vein. The graft usually is made of a synthetic material. Grafts are inserted when the patient's vasculature does not permit a fistula.

Central line - A catheter that is passed through a vein to end up in the thoracic portion of the vena cava or in the right atrium of the heart. A central venous line is also called a central venous catheter. Sometimes, 'venous' is omitted and it is called a central line or central catheter.

Intravascular device - the device used to administer a solution into a vein.

Midline catheter – usually inserted at the ante cubital fossa site, the line ends approximately at the top of, or just past the shoulder.

Implantable ports (sometimes called Portacaths or subcutaneous ports) – are generally inserted into the right internal jugular vein. The port itself is a small medical appliance that is installed beneath the skin in the upper chest, just below the clavicle or collar bone.

Peripheral cannula - a device as above, inserted into a superficial vein.

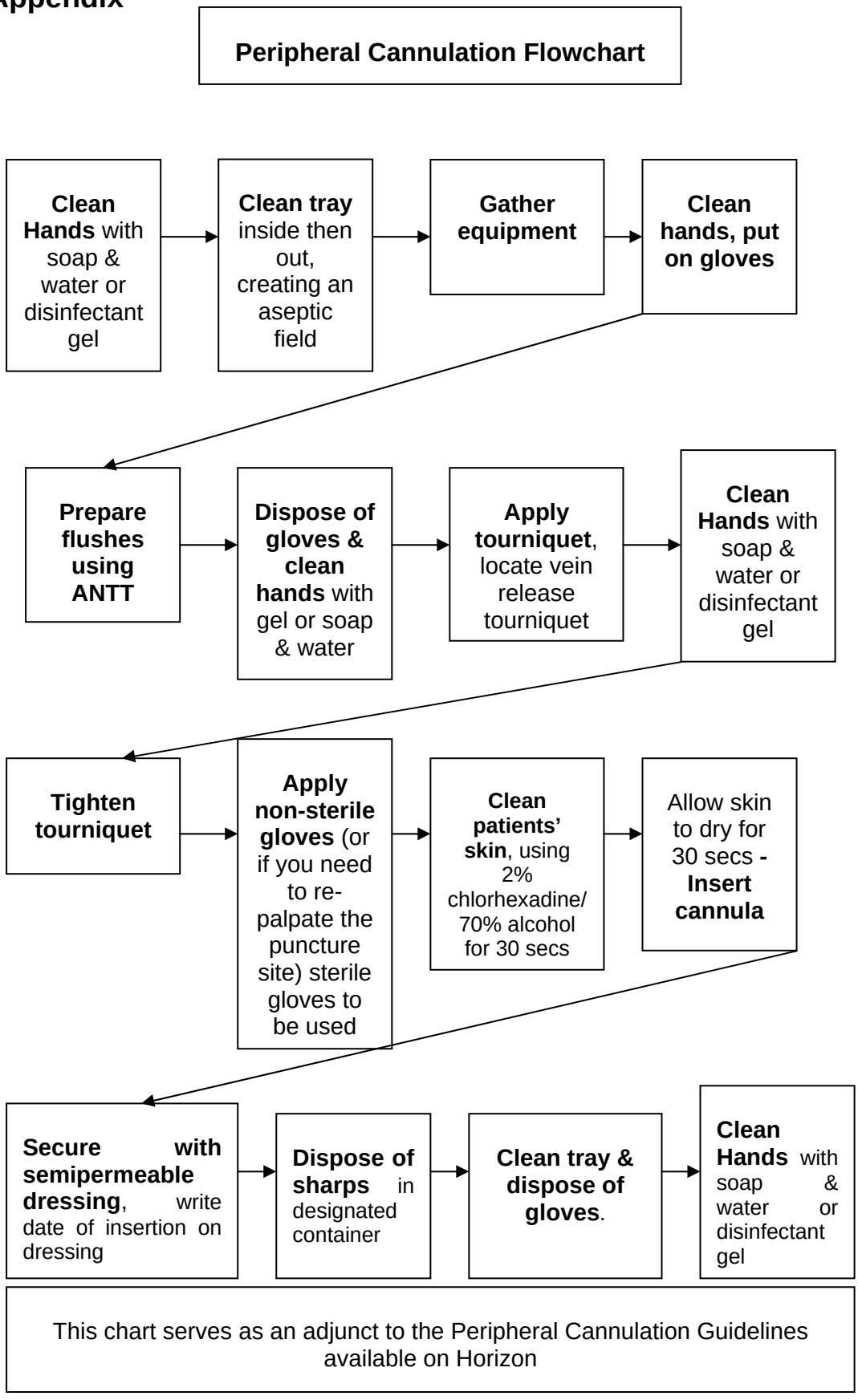
PICC (Peripherally inserted central catheters) - usually sited at the antecubital fossa site and inserted into the cephalic vein or basilic vein, it terminates in the superior vena cava.

Tessio lines - is a double lumen, tunnelled permanent catheter, two separate lines sit close to each other in a vein and lie side by side under the skin, and emerge lower down on the chest.

Risk Assessment – the method used to quantify the risk to health and safety

13 Appendices – Flowchart Insertion of peripheral Cannulae

Appendix


Peripheral Cannulation Flowchart
Clean Hands with soap & water or disinfectant gel
Clean tray inside then out, creating an aseptic field
Gather equipment
Clean hands, put on gloves
Prepare flushes using ANTT
Dispose of gloves & clean hands with gel or soap & water
Apply tourniquet, locate vein release tourniquet
Clean Hands with soap & water or disinfectant gel
Tighten tourniquet
Apply non-sterile gloves (or if you need to re-palpate the puncture site) sterile gloves to be used
Clean patients' skin, using 2% chlorhexadine/ 70% alcohol for 30 secs
Allow skin to dry for 30 secs - Insert cannula
Secure with semipermeable dressing, write date of insertion on dressing
Dispose of sharps in designated container
Clean tray & dispose of gloves.
Clean Hands with soap & water or disinfectant gel
This chart serves as an adjunct to the Peripheral Cannulation Guidelines available on Horizon